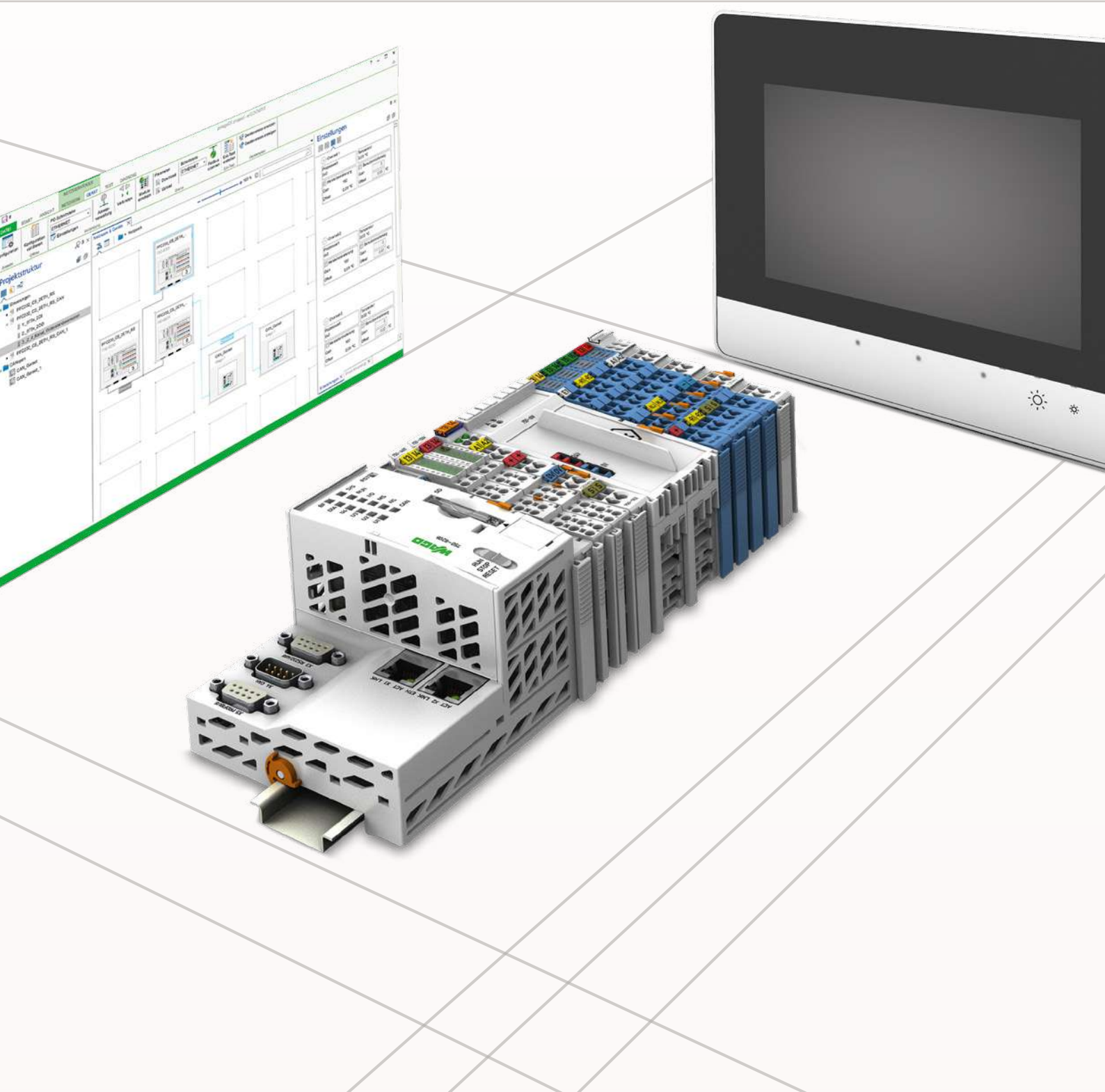


Automation Technology

Full Line Catalog, Volume 3 – Edition 2017/2018

3



WAGO Full Line Catalogs



Volume 1, Rail-Mount Terminal Block Systems

- Rail-Mount Terminal Blocks
- Rail-Mount Terminal Blocks with Pluggable Connector (X-COM®-SYSTEM)
- Patchboard Systems
- Terminal Strips
- PUSH WIRE® Connectors for Junction Boxes
- Lighting Connectors
- Shield Connecting System



Volume 2, PCB Terminal Blocks and Connectors

- PCB Terminal Blocks
- SMD PCB Terminal Blocks
- *MULTI CONNECTION SYSTEM (MCS)*
- Pluggable PCB Terminal Blocks
- Feedthrough Terminal Blocks
- Specialty Connectors
- Empty Housings



Volume 3, Automation Technology

- Software
- Operating & Monitoring
- Controllers
- Modular I/O-SYSTEM, IP20/IP67
- Industrial Switches
- Radio Technology, *TO-PASS®* Telecontrol Technology
- IP67 Sensor/Actuator Boxes, IP67 Cables and Connectors



Volume 4, Interface Electronic

- Relay and Optocoupler Modules
- *JUMPFLEX®* Signal Conditioners and Isolation Amplifiers
- Current and Energy Measurement Technology
- *EPSITRON®* Power Supply System
- Interface Modules and System Wiring
- Overvoltage Protection
- Empty Housings



Volume 5, *WINSTA®* – The Pluggable Connection System

- Pluggable Connectors
- Snap-In Device Connectors
- Pluggable PCB Connectors
- Distribution Connectors
- Cable Assemblies
- Flat Cable Systems
- Distribution Boxes

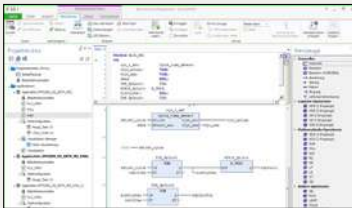
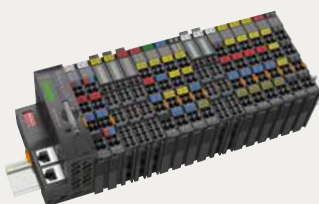
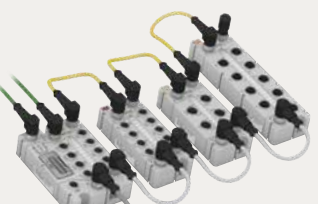


Volume 6, Marking

- Terminal Block Marking
- Cable and Conductor Marking
- Device Marking
- Printer
- Software
- Marker Carriers

Software		Software Engineering Software, Runtime Software, Applications	6	1
		Operation and Monitoring Web-Panel <i>e!DISPLAY 7300T</i> , Control-Panel <i>PERSPECTO®</i>	32	2
Controller		Controller PFC100/PFC200, PFC200 XTR, 750 Series Controllers, 750 XTR Controllers	46	3
I/O-Systems		750 and 753 Series I/O-System Fieldbus Couplers and I/O Modules (IP20)	94	4
		750 XTR I/O-System Fieldbus Couplers and I/O Modules (IP20) for eXTReMe Environments	290	5
		SPEEDWAY I/O-System Fieldbus Couplers and I/O Modules (IP67)	318	6
Infrastructure		Industrial Switches	376	7
		Radio Technology <i>Bluetooth®</i> , EnOcean and WLAN Components	390	8
		Telecontrol Technology — TO-PASS® GSM, GPRS, GPS, SMS	406	9
		Sensor/Actuator Boxes M8 and M12 Passive Distribution Boxes (IP67)	422	10
		Accessories and Tools	442	11
		Technical Section	512	12
		Indexes and Addresses	540	13

WAGO Automation Technology

Software	Engineering Software  • PC-based software • Customized tools for every automation task	Runtime Software  • Standard machine component • Comprehensive, fully tested software modules for controlling, regulating, operating & monitoring	Mobile Software (Apps)  • Machine operation and monitoring on tablet and smartphone
Operation & Monitoring	PERSPECTO® Control Panels  • Merging of control and visualization • 8.9–38.1 cm (3.5–15") 2	e!DISPLAY 7300T – Web Panels  • High-performance HMI display for Web-based visualization • 10.9–25.7 cm (4.3–10.1") • Visualization from CODESYS 2 and e!COCKPIT (based on CODESYS 3)	
Controllers	PFC100/PFC200 Controllers  • Maximum performance in a minimum space • Also programmable in high-level languages based on Linux® • Security packages with SSH and SSL/TLS • Runtime system for CODESYS 2 (only PFC200) and 3 3.1	PFC200 XTR Controllers  The advantages of the PFC Controller combined with the characteristics for extreme environments: • High processing speed • Multiple interfaces • eXTremely robust and maintenance-free 3.2	
I/O-Systems	I/O-System – 750 and 753 Series  • Highly versatile • More than 500 modules available • Functional safety • Ex i 4	I/O-System – 750 XTR Series  For demanding applications where the following are critical: • Extreme temperature stability • Immunity to interference and impulse-voltage withstand • Vibration and shock resistance 5	I/O-System – SPEEDWAY  • Uncompromising protection, even in the harshest environments outside the control cabinet • Degree of protection: IP67 • Fully encapsulated 6
Infrastructure	Industrial Switches  • Copper cables • Fiber optic cables • Ring redundancy 7	Radio Technology  • Bluetooth® • WLAN • EnOcean® 8	TO-PASS® Telecontrol Technology  For applications that go beyond site boundaries • Telecontrol technology based on GSM/GPRS 9

Software Solutions (Applications)



- Reusable, customizable solutions

1

1 – Software

Engineering Software	10
Runtime Software	22
Mobile Software (Apps)	26
Software Solutions (Applications)	28

2 – Operating & Monitoring

e!DISPLAY 7300T – Web Panels	40
PERSPECTO® Control Panels	42

2

750 Series Controllers



3.3

- Controllers for all prominent fieldbus systems
- Programmable to IEC 61131-3
- Ideally combination with the WAGO 750 I/O-SYSTEM modules

750 XTR Controllers



3.4

- For demanding applications in which the following are critical:
- Extreme temperature stability
 - Immunity to electromagnetic interference and impulse voltages
 - Vibration and shock resistance

3

3 – Controllers

2 – PERSPECTO® Control Panels	42
3.1 – PFC100/PFC200 Controllers	49
3.2 – PFC200 XTR Controllers	61
3.3 – 750 Series Controllers	69
3.4 – 750 XTR Controllers	87

I/O-Systems

4 – 750 and 753 Series	95
4.1 – Fieldbus Couplers	105
4.2 ... 4.10 – I/O Modules	121
5 – 750 XTR Series	291
6 – SPEEDWAY	319

Infrastructure

7 – Industrial Switches	377
8 – Radio Technology	391
9 – TO-PASS® Telecontrol Technology	407
10 – Sensor/Actuator Boxes	423
11 – Accessories	
Power Supplies	444
Cables and Pluggable Connectors, IP67	452

Sensor/Actuator Boxes



10

- M8 and M12 sensor/actuator boxes
- Machine-mounted passive signal recording and output
- Fully encapsulated

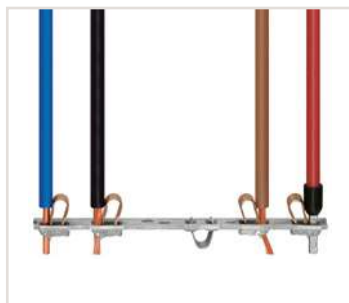
Accessories
Tools

11

Operating WAGO Connection Technologies

Please follow the applicable product-specific termination instructions:

PUSH-IN CAGE CLAMP®



Push-in CAGE CLAMP® terminates the following copper conductors:
solid



stranded



fine-stranded,
also with tinned
single strands



fine-stranded,
tip-bonded



fine-stranded,
with ferrule
(gastight crimped)



fine-stranded,
with pin terminal
(gastight crimped)

The universal connection with an additional advantage:

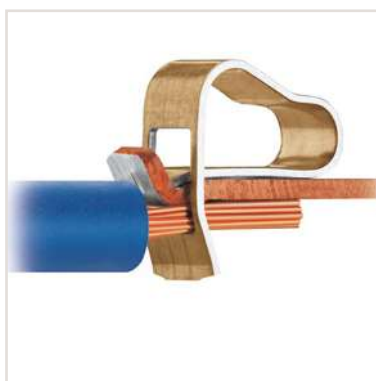
Push-in connection

Terminate solid and stranded, as well as ferruled conductors, by simply pushing them in – no operating tool needed.

Termination for all conductor types:

- Open clamping unit
- Insert the conductor
- Release clamp – done!

CAGE CLAMP®



CAGE CLAMP® terminates the following copper conductors:
solid



stranded



fine-stranded,
also with tinned
single strands



fine-stranded,
tip-bonded



fine-stranded,
with ferrule
(gastight crimped)



fine-stranded,
with pin terminal
(gastight crimped)

The universal connection for solid, stranded and fine-stranded conductors

Termination:

- Open clamping unit
- Insert the conductor
- Release clamp – done!

Operating WAGO Connection Technologies

Please follow the applicable product-specific termination instructions:

POWER CAGE CLAMP®



POWER CAGE CLAMP terminates the following copper conductors: solid



stranded



fine-stranded, also with tinned single strands



fine-stranded, with ferrule (gastight crimped)

The universal connection for conductors larger than 35 mm² (2 AWG)

Termination:

- Open clamp by turning an Allen wrench counter-clockwise
- Press the integrated latch to open clamping unit for hands-free wiring
- Insert the conductor
- A small counter-clockwise rotation closes the clamp, securing conductor

PUSH WIRE®

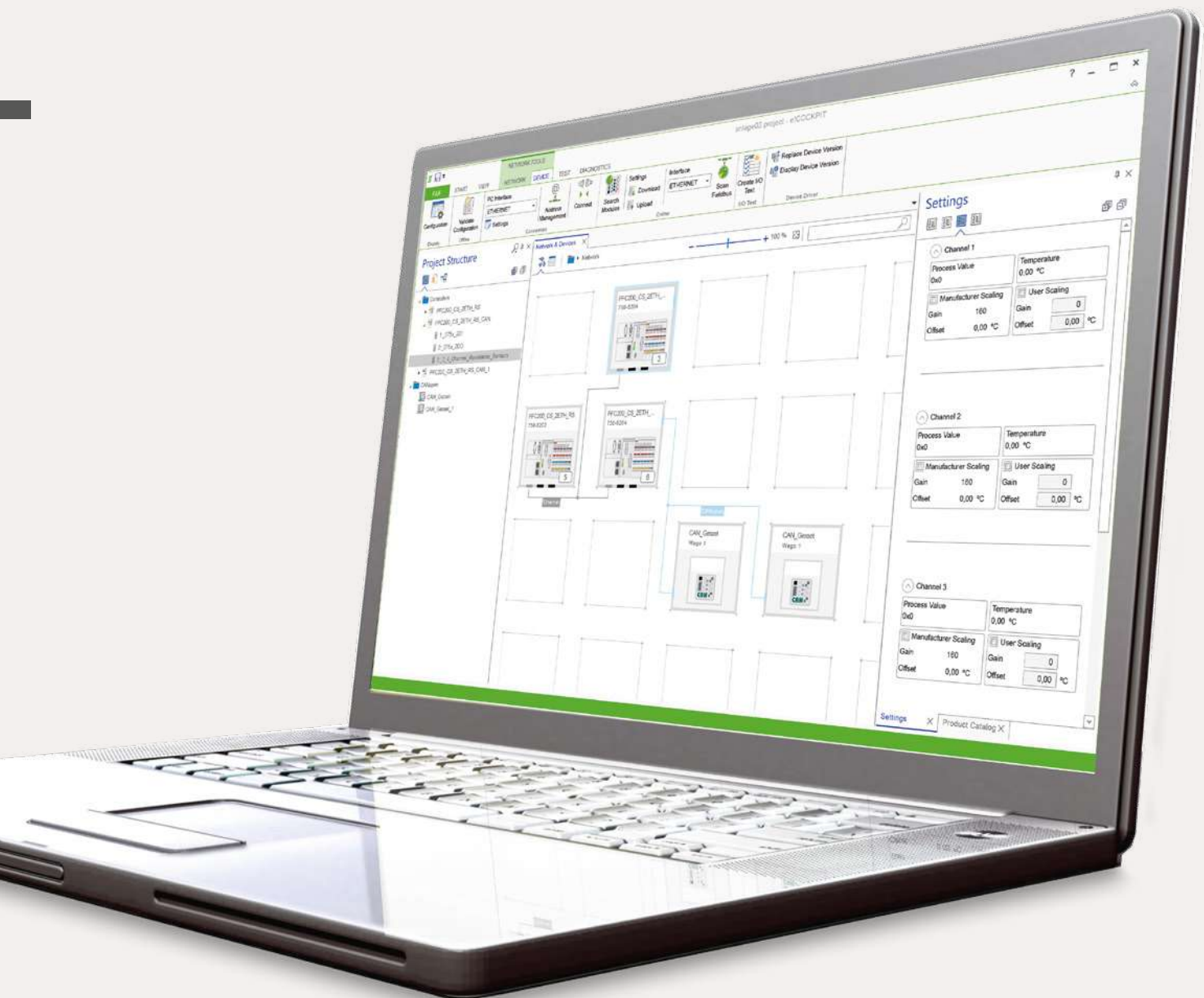


PUSH WIRE® terminates the following copper conductors: solid

PUSH WIRE® connection for solid and stranded conductors (depending on the model used)

Termination:

Tool-free, twist-free terminations for solid and rigid stranded conductors – simply push into unit



Software

Engineering Software

- PC-based software
- Customized tools for every automation task

Runtime Software

- Standard machine component
- Comprehensive, tested software modules for control, regulation, operation & monitoring

Mobile Software (Apps)

- Machine operation and monitoring via tablet and smartphone

Software Solutions (Applications)

- Reusable, customizable solutions

Software

Engineering Software, Runtime Software, Mobile Software and Software Solutions



			Page
General Product Information			8
	Description	Item No.	
Engineering Software			
Designing and Marking	<i>smart</i> Designer	Online	Full Line Catalog Volume 6
	<i>product</i> LOCATOR	Download	
	<i>smart</i> MARKING	Download	
Programming and Configuration Software	<i>e!</i> COCKPIT	2759-0101	10
	WAGO-I/O-PRO	759-911	12
	WAGO-I/O-CHECK	759-920	13
	TO-PASS® Configuration Software	759-930	14
	IEC 60870 / IEC 61850 Configurator	Download	16
	BACnet Configurator	Download	18
	DALI Configurator	Download	19
	LON® Configurator	Download	20
Plug-Ins	Device- and Industry-Specific Configurators		
	WAGO ETS Plug-In	Download	21
Runtime Software			
Libraries	<i>e!</i> COCKPIT (based on CODESYS 3)	Download	22
	WAGO-I/O-PRO (based on CODESYS 2)	Download	23
Mobile Software (Apps)			
	WAGO WebVisu App	Download	26
Software Solutions (Applications)			
	TO-PASS® Web Portal	761-700	28
		761-701	
		761-702	
		761-703	
		761-704	
	Telecontrol Gateway	759-200	29
Accessories			
	Configuration cables, USB communication cables, <i>Bluetooth</i> ® adapter		30

Software

General Product Information

1

Software Factors into Success

Projects in production, process and building automation are characterized by increasingly short implementation times, ever more complex structures and the increasing role of software as part of the overall solution. In fact, software is becoming an essential factor that influences the success of a project.

Engineering software is used for both machine and system development, as well as the implementation of building automation projects. Runtime software controls the devices at operating time.

Customized Software Tools

Significant challenges must be overcome to develop, operate and maintain modern machines and systems, as well as program, configure and commission applications for building automation. Customized software tools are available as needed for every task — embedded in integrated engineering or as a stand-alone tool for a set of dedicated functions.

CODESYS as an Integrated Environment



All WAGO controllers are equipped with the high-performing CODESYS industry standard. This allows software development in IEC 61131-3 PLC programming languages (ST, FBD, LD, IL, SFC and CFC). As a trusted programming environment, CODESYS guides developers, allowing them to reuse and further develop existing projects without relearning software. This means that modern paradigms, such as Object-Oriented Programming (OOP), or modern visualization technologies are available.

Pre-made Software Solutions

Pre-made software solutions or applications simplify automation. Such solutions involve reusable software that can be used for the specific application by making simple adjustments. This approach saves time and money.

Open to Proven Standards



The software is open to well-established standards, making it an investment in the future. The software supports all prominent fieldbuses, for example. Thus, WAGO components can be seamlessly integrated into engineering software via standardized device description files. In addition, connecting controllers to fieldbus systems via WAGO engineering software is an easy task — opening up all the advantages of existing field devices. Ultimately, WAGO software is based on modern IT standards and development methods — guaranteeing long-term viability.

Extensive Import and Export Functionality



The software tools are impressive with their ability to exchange project data with external software tools involved in the development process, which prevents costly, error-prone double entry.

Industry-Specific Configurators



Whether industry, process or building automation, every sector and industry has specific requirements. Therefore, plug-ins specifically customized for the needs of individual industries are available in addition to the common software base. These plug-ins can be used, for example, to measure energy or easily configure a DALI network.

Advantages:

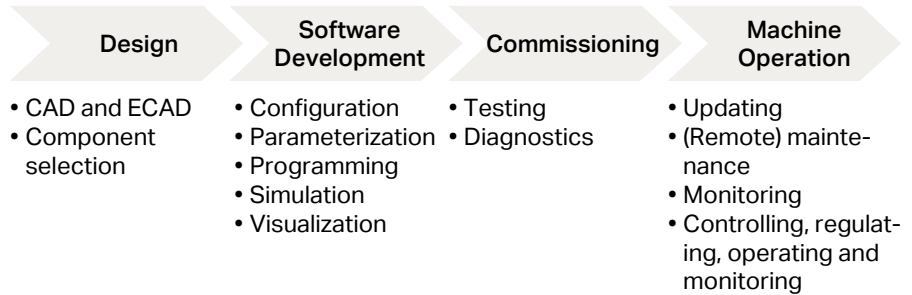
- Customized software for every automation task
- Extensive import functions from external design tools
- Plug-ins for industry-specific development environments
- Comprehensive software solutions for various industries
- Simple and secure licensing

Software

General Product Information

Software for Mechanical Engineering

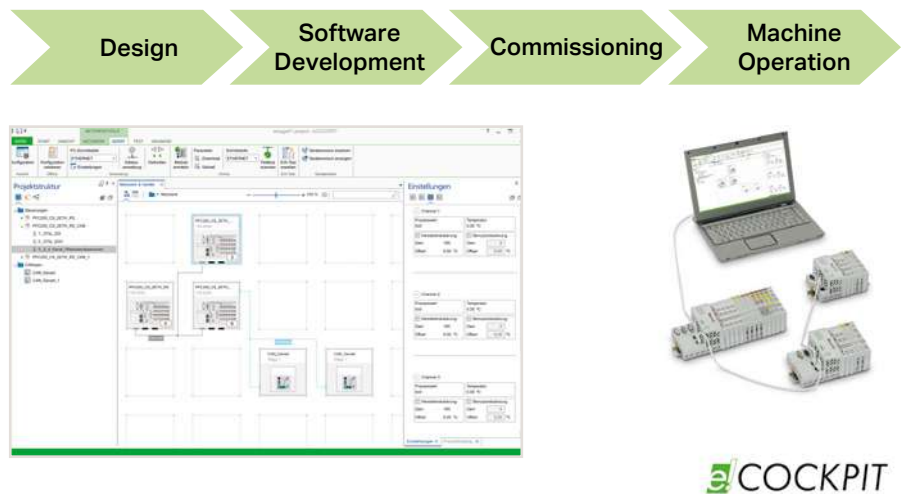
Software is used in every phase of machine and system automation — from design to successful machine operation.



Engineering Software

Quickly implementing complex machine functions is critical in modern mechanical engineering applications. PC-based engineering software supports all development activities. The focus is on simple configuration, timely programming and efficient commissioning of automation network components.

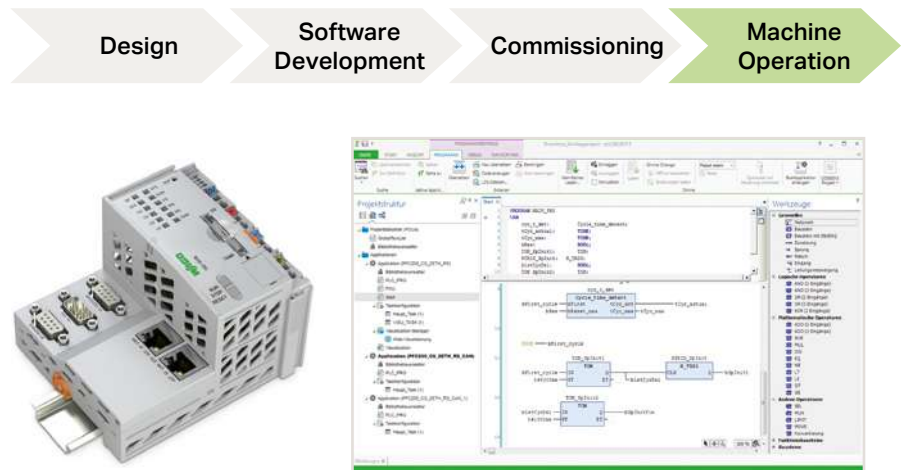
Engineering tools are typically not permanently linked to the machine — they only communicate with the machine during startup and maintenance.



Runtime Software

The machine is controlled by runtime software that determines behavior, while enabling both operation and current status monitoring for the user. It also transmits operating data to higher-level systems. With comprehensive, tried-and-tested software function blocks (IEC libraries), development goals are reached more quickly.

Unlike engineering software, runtime software operates continuously — it is a part of the machine and ensures correct operation.



Mobile Software (Apps)

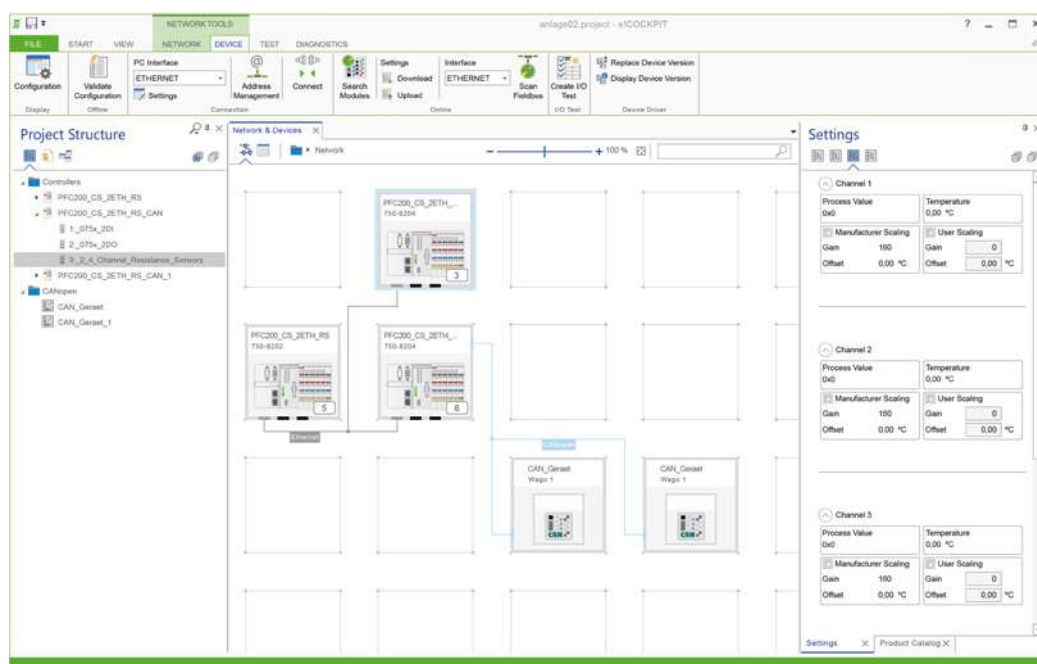
Software on mobile devices can also be productive in the industrial environment. The software allows users, for example, to quickly and easily operate and monitor automation processes from a smartphone or tablet — from anywhere.

Mobile software typically communicates only with the machine's controller for a specific application.



e!COCKPIT

Engineering Software, based on CODESYS 3



Preparing machines and systems for faster startup: *e!COCKPIT* the new engineering software shortens development time for automation projects while impressing with a modern and clearly laid out user interface. At the software's core is CODESYS 3, which provides the simple and versatile creation of applications.

Ensuring a project's long-term viability through sustainable cost savings hinges on a user's ability to quickly adapt to new software that offers a high degree of reusability. This sharpens your competitive edge by reducing your time to market.

WAGO set out to fulfill these exact requirements by developing its own engineering software: *e!COCKPIT*. This integrated development environment supports every automation task from hardware configuration, programming, simulation and visualization up to commissioning — all in one software package.

Use the programming tool to cover all important automation bases while simultaneously engineering particularly complex projects quickly and easily.

e!COCKPIT		
License type	Number PCs	Item No.
Workstation license	2	2759-0101/1110-2002
Multi-user license	5	2759-0101/1110-2005
Multi-user license	10	2759-0101/1110-2010
Multi-user license	15	2759-0101/1110-2015
Multi-user license	20	2759-0101/1110-2020
Site license	unlimited	2759-0101/1110-3000
Buy-out license	unlimited	2759-0101/1110-4000

Workstation license:

Can be installed on up to two PCs (e.g., notebook & desktop)

Multi-user license:

Can be installed up to the number specified

Site license:

Allows the installation of an unlimited number of licenses at one location

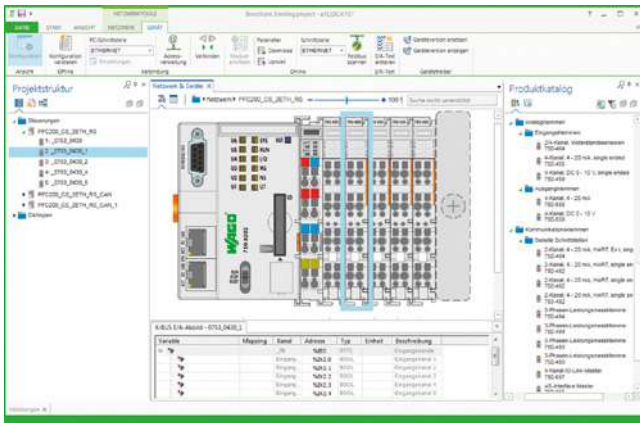
Buy-out license:

Allows the installation of an unlimited number of licenses in one company at all company sites in that country. In addition the software may be used in all products produced by the company that contain WAGO automation technology and therefore form a functional unit.

Supported operating systems	Windows 7 (32- and 64-bit), Windows 8, Windows 8.1 (32- and 64-bit)
System requirements	
Processor	Core2Duo
Memory	2 GB
Hard disk storage	1024 MB (min.)
Graphics resolution	1,366 x 768 px
Supported devices	Controllers based on CODESYS 3,; I/O modules (750/753)
Supported fieldbuses	CANopen, MODBUS TCP/UDP, MODBUS RTU, PROFIBUS
Supported device descriptions	DTP, EDS, GSD
Connectivity	TCP, USB, OPC, CODESYS network variables, CODESYS DataServer
Programming languages per IEC 61131-3	ST, KOP, FBS, AWL, AS, CFC
Import/export formats	CODESYS 3 project files (*.project)
Delivery type	Installation file (download)
Data sheet and further information, see:	wago.com/ecockpit

Internet connection may be required for license activation.

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Configuration and Parameterization

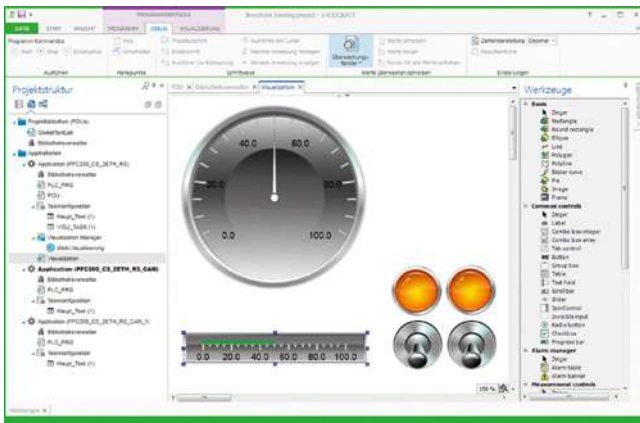
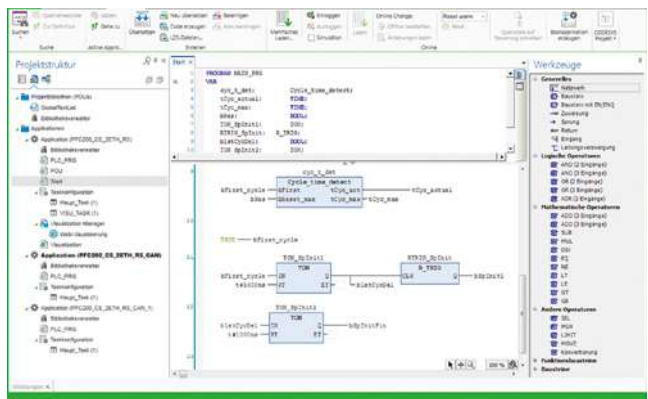
The integrated e!COCKPIT configurators provide modern operating tools and workspaces, such as:

- Graphical network topology: Complex dependencies between network participants and their current states are easily and intuitively accessed.
- Drag & Drop: Simplifies interaction with devices.
- Copy & Paste: Individual devices or whole network branches can be duplicated quickly.
- Batch processing: Parameter values are set simultaneously for several devices.

Programming

e!COCKPIT offers multiple software development options:

- IEC 61131-3 PLC programming languages: Structured Text (ST), Ladder Diagram (LD), Function Block Diagram (FBD), Instruction List (IL), Sequential Function Chart (SFC), Continuous Function Chart (CFC).
- For flexibility, all programming languages can be combined with one another.
- Created programs can be easily debugged on the engineering PC via simulation.
- New paradigms such as object-oriented programming are included.



Visualization

Advanced user interfaces for operating and monitoring machines are standard. Today, HMI-based design is a critical factor that influences the purchase of an entire automation line. e!COCKPIT employs Drag & Drop to streamline the design of modern user interfaces. The integrated visualization editor provides:

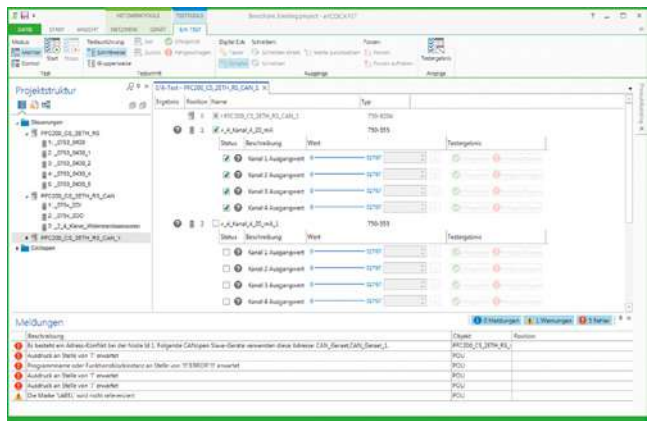
- Access to IEC program variables.
- Closed simulation of HMI and PLC program on the engineering PC.
- Guaranteed language independence via Unicode character set.
- Current standards such as HTML 5 or CSS.

Diagnostics

Being acutely aware of the automation network's current status is an absolute must for the rapid detection and elimination of errors — be it during development in the office or directly on the machine during commissioning.

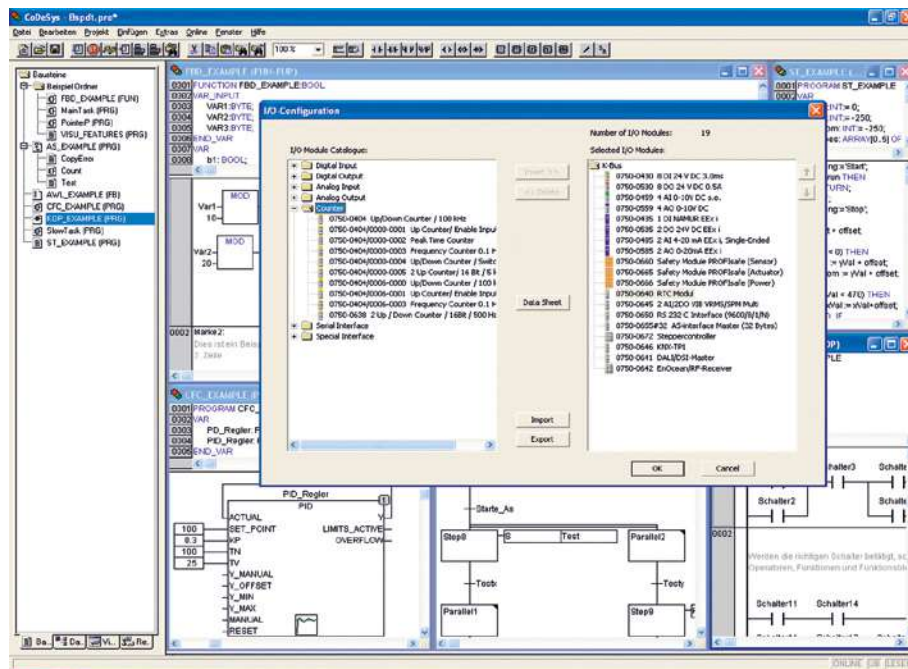
e!COCKPIT provides comprehensive diagnostic capabilities:

- Individual views always display the controllers' status information, for example, both graphically and in tabular form.
- To keep project on time, error messages are transmitted directly and clearly.
- The structured wiring test function systematically identifies wiring errors.



WAGO-I/O-PRO

Engineering Software, based on CODESYS 2



WAGO-I/O-PRO is a programming and visualization tool for control programs. This software is used to develop PLC applications for WAGO-I/O-SYSTEM 750 Programmable Fieldbus Controllers.

WAGO-I/O-PRO also offers the option of programming products from other manufacturers within the CODESYS automation alliance in addition to the standard programmable CODESYS automation alliance products from WAGO.

WAGO-I/O-PRO runs in line with the IEC 61131-3 standard. This standard describes the requirements of a programming system. The IL, SFC, LD, FBD and ST programming languages are supported. The optimal programming language can be chosen for each application.

With extensive programming functions, the software readily meets the increasing requirements of control program development (e.g., reusability and modularization).

- Highly efficient translation between programming languages
- Automatic declaration of variables
- Library management

Integrated test and diagnostic functions also streamline and accelerate the implementation of processes for PLC projects.

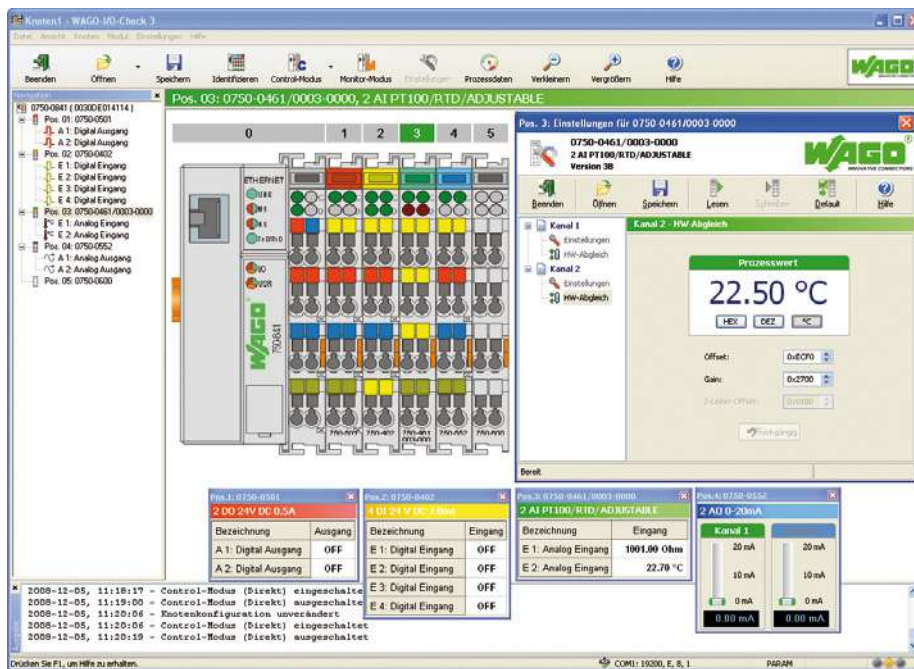
- Online status indication in program code
- Offline simulation
- Integrated process visualization
- Recording and graphical presentation of project variables

WAGO-I/O-PRO		
Version	Delivery type	Item No.
RS-232 Set	CD-ROM and Serial Communication Cable	759-333
USB Set	CD-ROM and USB Communication Cable	759-333/000-923
CD	CD-ROM	759-911

Supported operating systems	Windows XP (SP3 or later), Windows 7
System requirements	
Processor	1 GHz or higher, with 32-bit (x86) or 64-bit (x64)
Memory	min. 1 GB RAM
Hard disk storage	min. 300 MB
Graphics resolution	min. 1024 x 786
Other system requirements	Open serial interface; CD-ROM and Mouse required
Delivery type	Installation file (download)
Data sheet and further information, see:	wago.com/759-333

Windows® is a registered trademark of Microsoft Corporation.

WAGO-I/O-CHECK



WAGO-I/O-CHECK is an easy-to-use Windows application for operating and displaying a WAGO-I/O-SYSTEM 750 node without connecting the node to a fieldbus system. The software reads the configuration from the node and displays it as an on-screen graphic. The graphic can be printed together with a configuration list as documentation.

With WAGO-I/O-CHECK, it is possible to display and determine the process data of the bus modules. The field wiring, including all sensors and actuators, can thus be checked before startup.

Application-specific settings, such as the baud rate or sensor types, can be made with select interface, Pt100 and thermocouple modules.

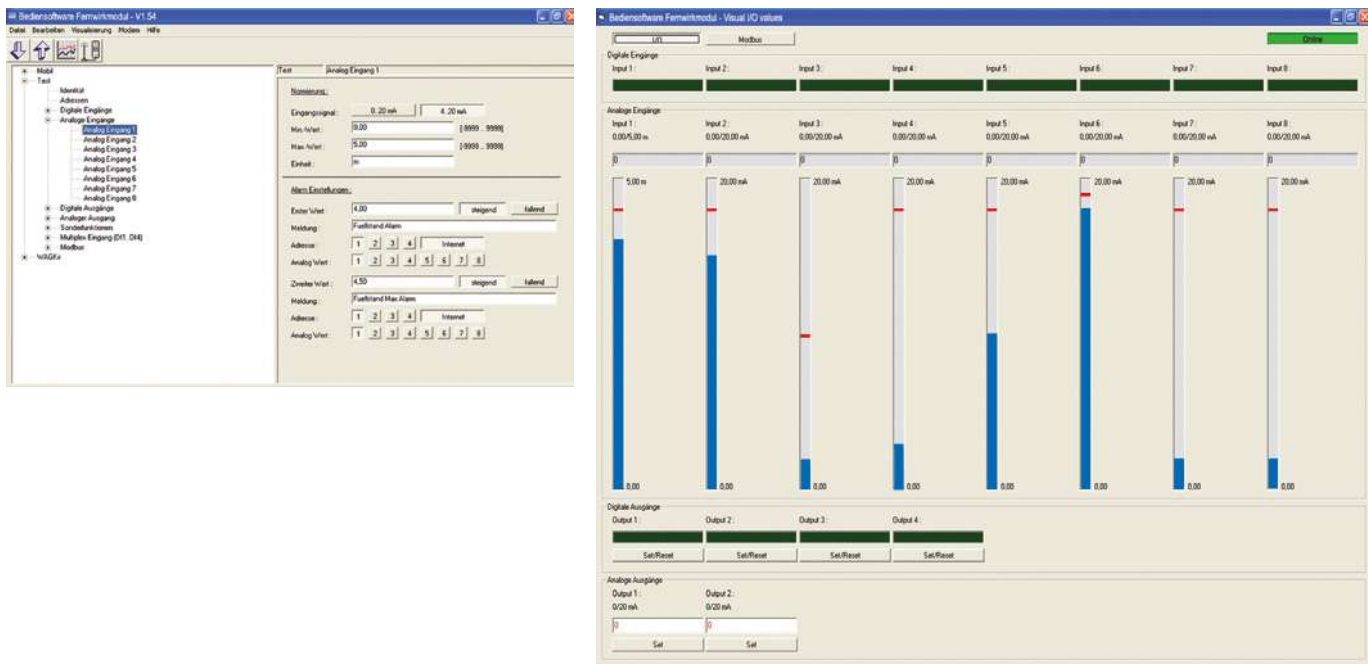
For communicating between WAGO-I/O-CHECK and the node, the coupler must be connected at a PC's vacant serial or USB port using the communication cable supplied in the kit with the system.

WAGO-I/O-CHECK		
Version	Delivery type	Item No.
RS-232 Set	CD-ROM and Serial Communication Cable	759-302
USB Set	CD-ROM and USB Communication Cable	759-302/000-923
CD	CD-ROM	759-920

Supported operating systems	Windows XP (SP3 or later), Windows 7
System requirements	
Processor	1 GHz or higher, with 32-bit (x86) or 64-bit (x64)
Memory	min. 1 GB RAM
Hard disk storage	min. 150 MB
Graphics resolution	min. 1024 x 786
Other system requirements	CD-ROM and Mouse required
Delivery type	Installation file (download)
Data sheet and further information, see:	wago.com/759-302

Windows® is a registered trademark of Microsoft Corporation.

TO-PASS® Configurator



Software for configuring TO-PASS® Telecontrol Modules.

Compatible with Windows XP and Windows 7.
Communication with modules via RS-232 port, USB port (via USB adapter, included in accessories) or external GSM modem.

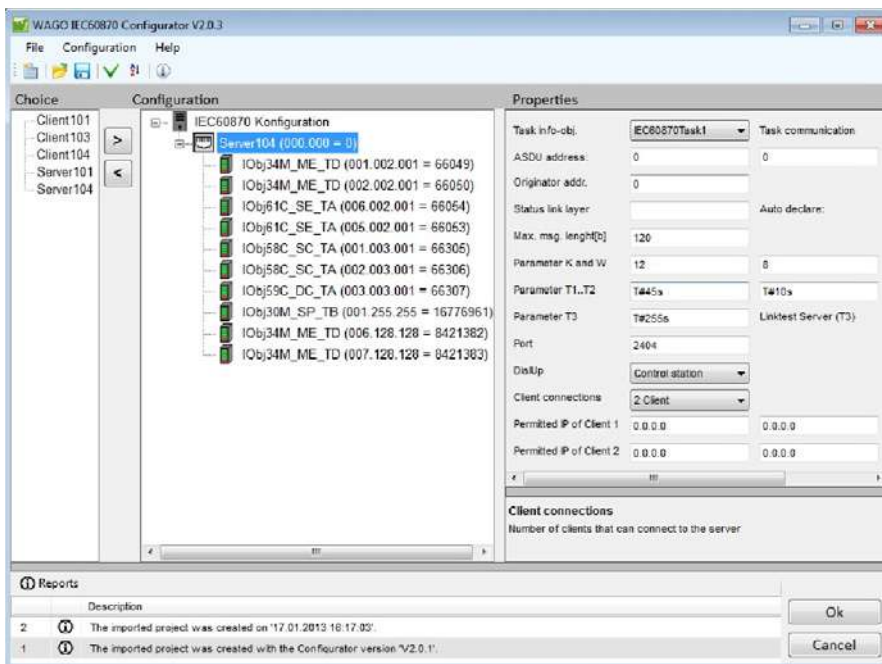
- Easy module parameterization without programming experience
- Display current process values
- Line diagram for both data and event loggers
- Test module's GSM signal strength
- Documentation and archival of configuration data
- "Fast Copy" function for the multiplication of configuration data
- German and English language interfaces

TO-PASS® Configurator			Supported operating systems	Windows XP Professional, Windows 7
Version	Delivery type	Item No.	System requirements	
CD	CD-ROM	759-930	Processor	Pentium mind. 500 MHz or faster
			Memory	min. 512 MB (Windows XP); min. 1 GB (Windows 7)
			Hard disk storage	min. 5 MB
			Graphics resolution	min. 1024 x 768
			Other system requirements	Open serial or USB interface; Configuration cable, CD-ROM and Mouse required
			Delivery type	Installation file (download)
			Data sheet and further information, see:	wago.com/759-930

Windows® is a registered trademark of Microsoft Corporation.

IEC 60870 Configurator

Configuration dialog integrated in WAGO-I/O-PRO v2.3 for IEC 60870-5-101/103/104 communication parameterization



IEC 60870 configuration dialog

The IEC 60870 Configurator is part of the WAGO-I/O-PRO v2.3 software. The configurator fully supports the IEC 60870-5-101/103/104 specific functions of all WAGO telecontrollers.

The configurator sets up IEC 60870 objects, while configuring data exchange to the PLC application or I/O modules. Import and export functions in CSV format allow configured data to be transmitted to other engineering tools.

The IEC 60870-5-101 and 104 protocols are supported on both client and server sides, while the IEC 60870-5-103 protocol is exclusively supported on the client side. This permits the creation of gateways that convert one protocol into another, e.g., allowing protection devices to be read out via IEC 60870-5-103 and data to be transmitted to the network control system via IEC 60870-5-104.

Various options are available for the time synchronization of telecontrol substations (server). Time synchronization can be performed either via the IEC 60870 protocol with object 103 or via (S)NTP. Using the WAGO 750-640 Module, clock time can also be synchronized via DCF77 or GPS.

IEC-60870-5-101/104 information objects can be used to monitor the direction of single, double and step messages. Bit patterns, counter values, as well as normalized, scaled and floating-point measurement values can also be used. All information objects can be transmitted with or without a time stamp. This also applies to information objects in control direction.

An IEC 60870-5-104 server can simultaneously maintain up to four connections to the control system (client).

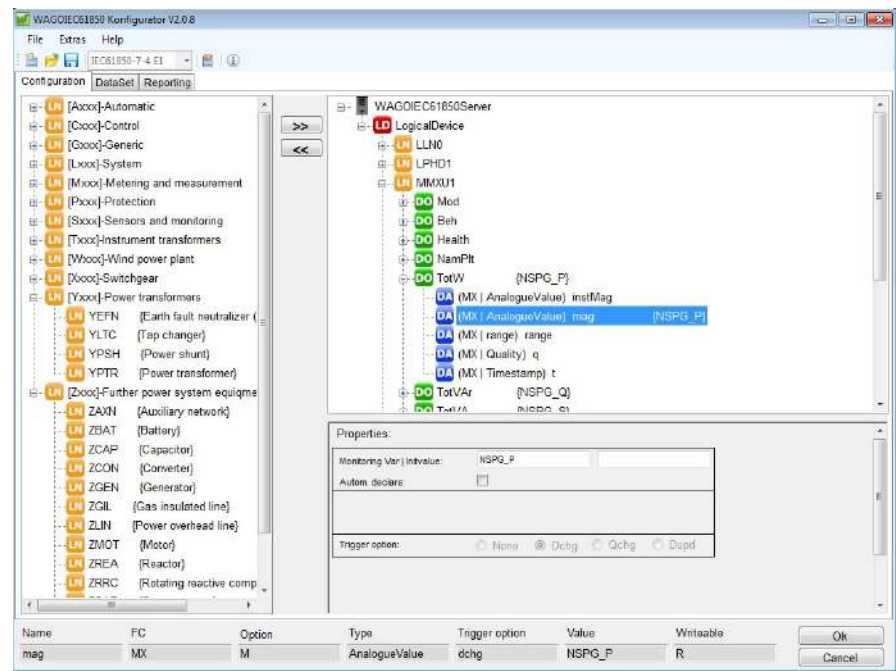
IEC 60870 Configurator

Integrated in WAGO-I/O-PRO v2.3

System requirements	WAGO-I/O-PRO Version 2.3.9.40 or higher
Function	IEC 60870-5-101 Server and Client IEC 60870-5-103 Client IEC 60870-5-104 Server and Client
Supported controllers	
PFC200 Controller	750-8202/025-001 750-8206/025-001
PFC200 XTR Controller	750-8202/040-001 750-8206/040-001
750 Controller	750-872 750-880/025-001 750-880/025-002
750 XTR Controller	750-880/040-001

IEC 61850 Configurator

Configuration dialog integrated in WAGO-I/O-PRO v2.3 for IEC 61850 communication parameterization



IEC 61850 configuration dialog

The IEC 61850 Configurator is part of the WAGO-I/O-PRO v2.3 software. The configurator fully supports the IEC 61850-specific functions of the WAGO tele-controllers.

The configurator sets up IEC 61850 objects, while configuring data exchange to the PLC application or I/O modules. Import and export functions in IEC 61850 SCL exchange format allow configured data to be transmitted to other engineering tools.

On the server side, the IEC 61850 Protocol is supported for MMS* communication to the control system. The controllers can also be operated as a GOOSE publisher or subscriber. This permits the creation of gateways that convert one protocol into another, e.g., allowing data from protection devices to be received via IEC 61850 Client and transmitted to the network control system via IEC 60870-5-104 Protocol.

Time synchronization is performed via SNTP, NTP, DCF77 and GPS (750-640 Module is also required for GPS). Various options are available for the time synchronization of telecontrol substations (server). Synchronization can be performed via (S)NTP or clock time can be synchronized via DCF77 or GPS using the WAGO 750-640 Module.

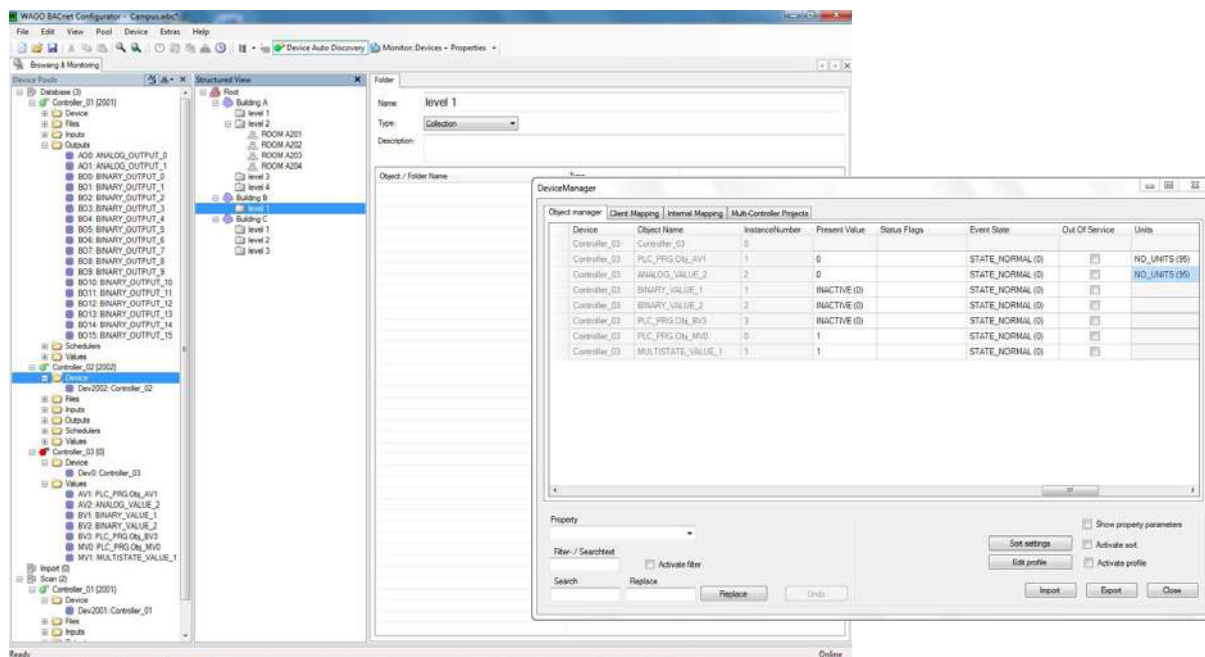
The IEC 61850 MMS server can simultaneously maintain up to five connections to the control system (client).

The IEC 61850 Client processes data from up to 10 servers with each 32 requests.

*MMS = Manufacturing Messaging Specification

IEC 61850 Configurator	System requirements	WAGO-I/O-PRO Version 2.3.9.47 or higher
Integrated in WAGO-I/O-PRO v2.3	Function	IEC 61850 Server and Client
	Object types	IEC 61850-7-4 and IEC 61400-25
	Data sets	static and dynamic
	Reporting	buffered and unbuffered
	Supported controllers	
	IEC 61850 Server	
	750 Controller	750-872
	Supported controllers	
	IEC 61850 Server and Client	
	PFC200 Controller	750-8202/025-001 750-8202/025-002 750-8206/025-001 750-8207/025-001
	PFC200 XTR Controller	750-8202/040-001 750-8206/040-001
	750 Controller	750-880/025-001 750-880/025-002
	750 XTR Controller	750-880/040-001

WAGO BACnet Configurator



WAGO's BACnet Configurator is an independent commissioning, configuration and management software.

The configurator fully supports the BACnet-specific functions of WAGO's 750-829, 750-830 and 750-831 BACnet Controllers.

The configurator creates and configures WAGO BACnet Controllers and sets up data exchange between the IEC application and BACnet objects. Import and export functions allow further processing of the configuration data.

For integration into existing BACnet networks, the BACnet devices available can be scanned, displayed in a browser and data exchange can be implemented for WAGO devices.

Among the configurator's capabilities are the logical structuring of the project and network, addressing of the controller and client/server configuration in every WAGO BACnet Controller.

The devices, objects and configuration data are displayed in a logical, structured network and browser view.

Depending on the function used, both online and offline operation is possible.

The configurator displays all configuration data. To edit BACnet objects, the configurator offers specific table views in which the corresponding properties of the object can be modified. Typical table editing functions, e.g., search/replace, sort, filter and show/hide, are available. The user can upload the updated configuration data to one or more controllers and save as a project.

The configurator provides a browser to view the BACnet object properties and modify current parameters (communicate value changes, write property values, utilize BACnet services, etc.).

Additionally, a Transaction Log window is available for client services.

WAGO BACnet Configurator

The WAGO BACnet Configurator can be downloaded for free at:
www.wago.com

Supported operating systems

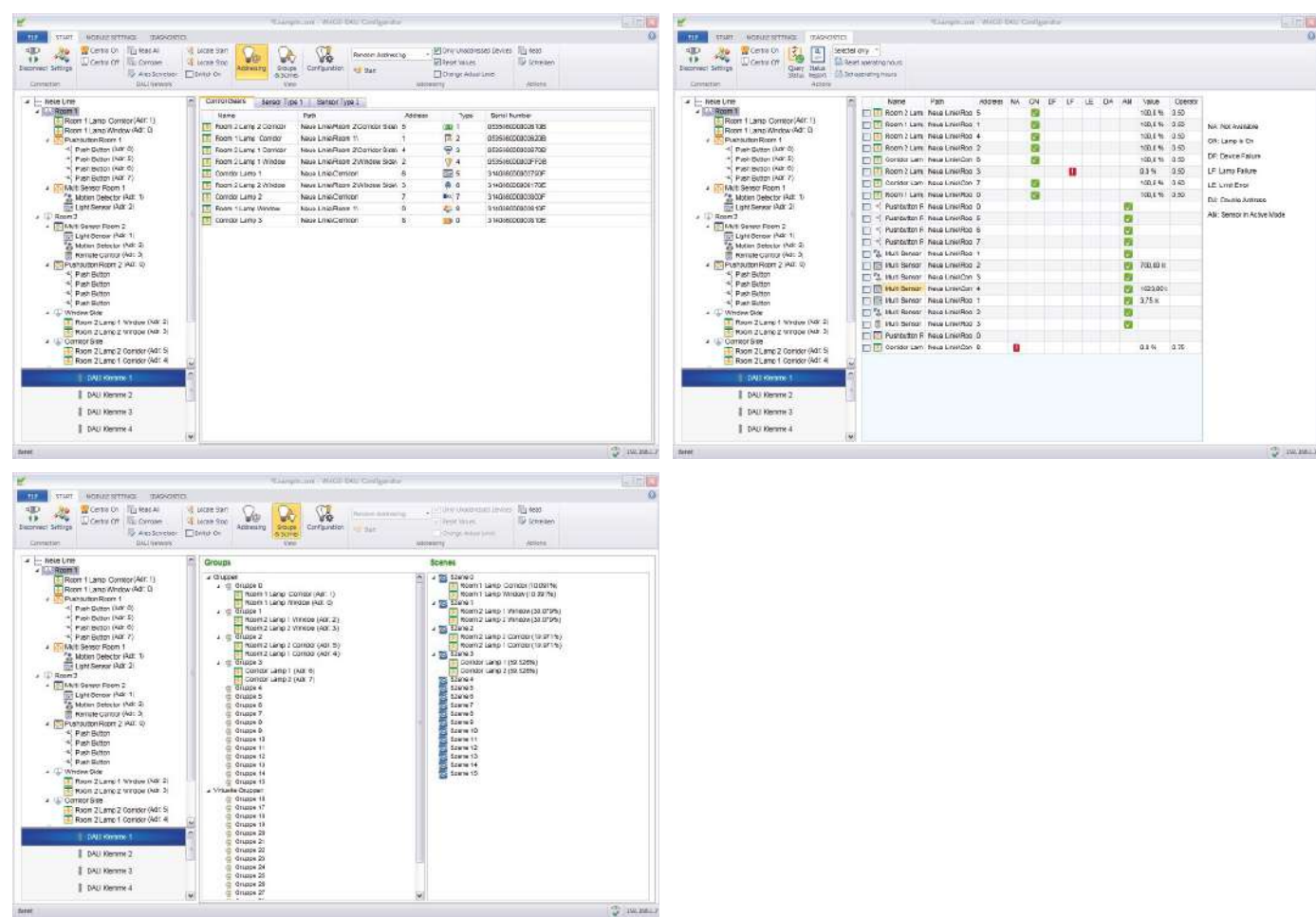
Windows XP (SP3 or later),
Windows 7

Windows® is a registered trademark of Microsoft Corporation.

 Software WAGO-I/O-CHECK
see Page 13

 Software WAGO-I/O-PRO V2.3
see Page 12

DALI Configurator



The DALI Configurator simplifies commissioning of a DALI network via 753-647 DALI Multi-Master Module. The configurator is available as a stand-alone Windows application or for use with WAGO-I/O-CHECK software.

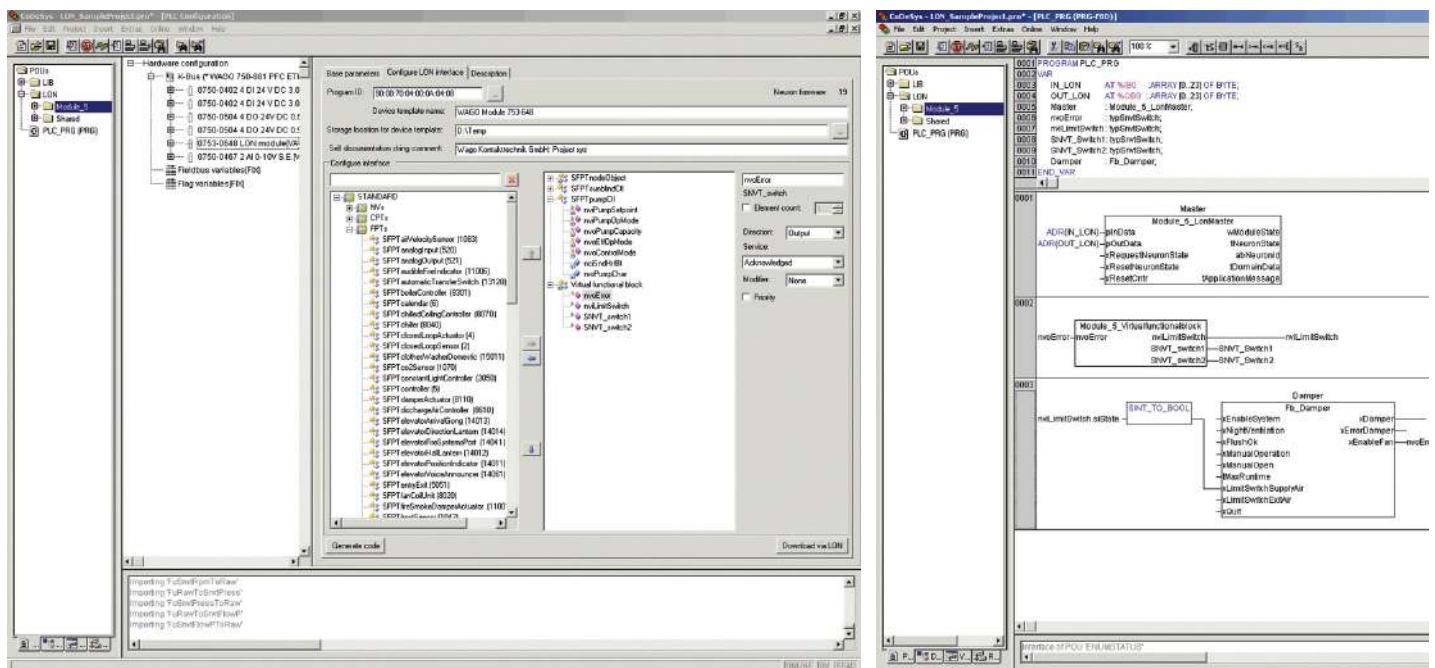
It provides the following functions: easy commissioning, configuration, service, support and maintenance of a DALI network. Comprehensive backup & restore features, as well as an offline configuration option for the entire DALI network (including ECGs and sensors) are available.

DALI Configurator

The DALI Configurator is available as part of WAGO-I/O-CHECK (Version 3.5.1 or higher) or as a stand-alone application (www.wago.com).

Features	Stand-alone software or for use with WAGO-I/O-CHECK
Commissioning function	Addressing, Scene and group formation, Control gear configuration, Offline configuration (option), Import and export functions, Project documentation
Service, support and maintenance functions	Backup & Restore, Status messages from defective ECGs/lamps, Double-address identification, Operating hours display, Diagnostics report
Windows-compliant user interface	Multiple selection for time-optimized configuration, Provides clear network view in a tree-like structure, Supports different commissioning workflows

LON® Configurator



The LON® Configurator is an integral part of the WAGO-I/O-PRO IEC 61131-3 programming environment. The configurator supports both the 753-648 LON® Module's LonWorks® network interface configuration and WAGO-I/O-PRO project integration.

Network variables of any type can be defined. In addition to standard network variable types (SNVTs) and standard configuration property types (SCPTs), user-defined types (UNVTs/UCPTs) and LonMark® functional profiles (FPTs) are also supported. Network variables are defined using the types and objects of the LonMark® resources installed on your computer.

IEC 61131-3 function blocks are automatically created in the IEC application, simplifying operation. The function blocks represent the LON® network interface in the IEC application. When starting the control unit, both the network variable interface and configuration data are automatically downloaded into the I/O module.

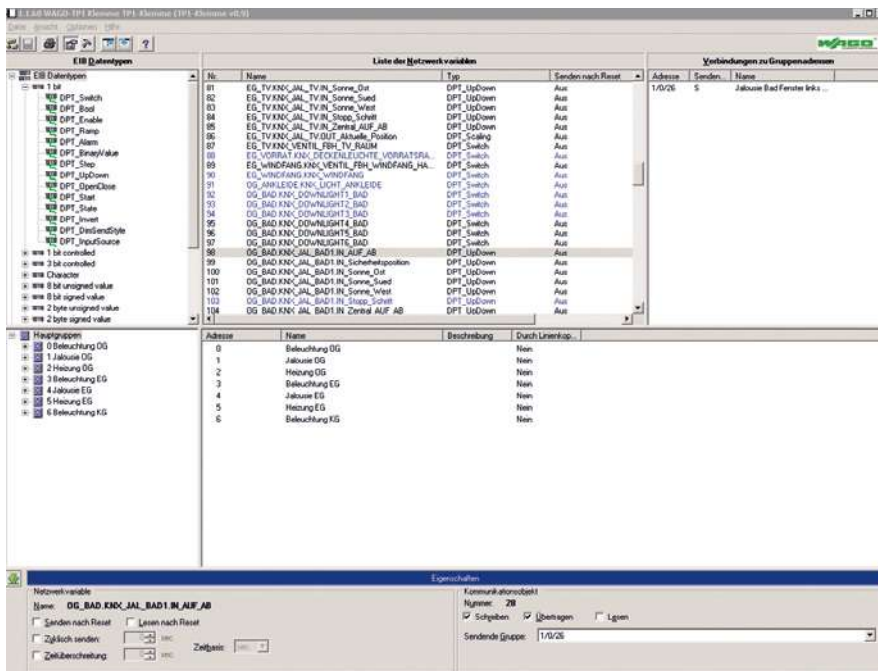
An external interface file (XIF) is created for offline configuration in a network management tool.

LON® Configurator

The LON® Configurator is available as part of WAGO-I/O-PRO (Version 2.3.9.34 or higher)

- Integral part of the WAGO-I/O-PRO programming software
- Defines and implements a LON® network interface
- Automatically generates IEC 61131-3 function blocks to represent the LON® network interface within an IEC application
- Downloads both network interfaces and configuration data when starting the control unit
- Checks configuration
- Generates XIF files

WAGO ETS Plug-in



The WAGO ETS Plug-In is a WAGO ETS product database extension that allows the use of WAGO devices, such as the 753-646 KNX/EIB/TP1 Module, 750-889 KNX IP Controller and KNXnet/IP Router (consisting of KNX/EIB/TP1 Module and KNX IP Controller).

The software's enhanced structure offers intuitive navigation, providing both new and experienced ETS users with exceptional usability.

The WAGO ETS Plug-In provides three clear user interfaces for various devices. Depending on the mode selected, either the KNX/EIB/TP1 Module, KNX IP Controller or the KNXnet/IP Router (IP Controller with KNX/EIB/TP1 Module in first position) are supported.

In the graphical interfaces, device parameters are easy to configure and only the options pertaining to the selected device are displayed.

During software development, creating a convenient and time-saving graphical user interface was heavily emphasized — and this is beneficial when assigning communication objects to group addresses. Two different Drag & Drop options and a context menu with an automatic filter function are available, enabling users to select their preferred method.

WAGO ETS Plug-in

The WAGO ETS Plug-In can be downloaded for free at:
www.wago.com

Supported operating systems

Windows XP, Windows 7

Miscellaneous

The plug-in requires the ETS product database.

Configuration

KNX/EIB/TP1 Module

Loading/assignment of IEC variables (communication objects)
 Creation/configuration of group addresses

Controller KNX IP

Assigning IP addresses
 Downloading the IEC application into the controller
 Loading/assignment of IEC variables (communication objects)
 Creation/configuration of group addresses

KNXnet/IP Router

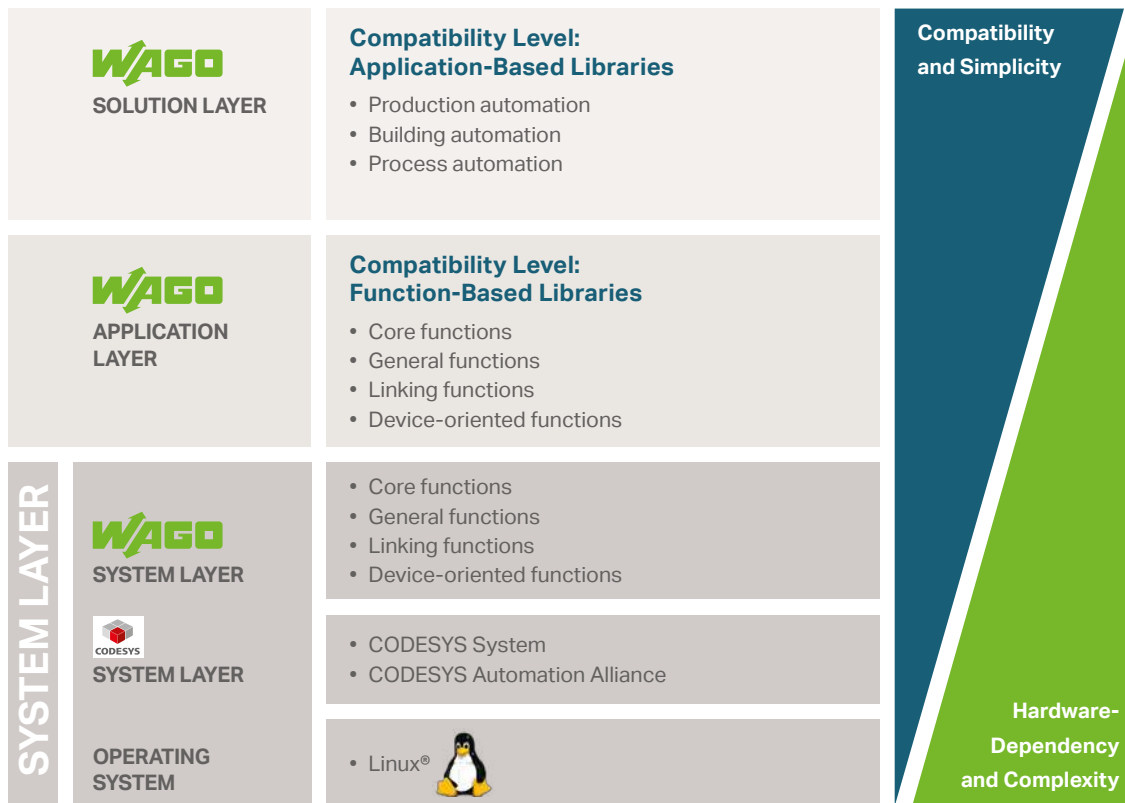
Assigning IP addresses
 Setting a routing multicast address
 Filtering/transmitting telegrams

Windows® is a registered trademark of Microsoft Corporation.

Runtime Software — Libraries

e!COCKPIT (based on CODESYS 3)

1



Runtime Software Controls the Machine

Machines and systems are controlled by runtime software that determines behavior, while enabling both operation and current status monitoring for the user. It also transmits operating data to higher-level systems. Unlike engineering software, runtime software operates continuously — it is a part of the machine and ensures correct operation.

Ready-to-Use Function Blocks Save Development Time

Comprehensive, tried-and-tested software function blocks (IEC libraries) expedite development. Thus, e!COCKPIT is supplemented with comprehensive IEC libraries.

Essentially, the libraries are divided into three abstraction layers:

- The solution layer primarily contains complete, easy-to-use software solutions for production, building and process automation.
- The application layer contains technology functions, e.g., communication, that are ideal for convenient application.
- The system layer provides experts with complete system access.

The upper layers are separated by compatibility levels. Essentially, this enables software to be developed independently of the hardware it will be used on. This provides the greatest degree of flexibility in selecting the right device for the right application, while retaining a uniform software base. It also provides investment security.

Function modules and libraries

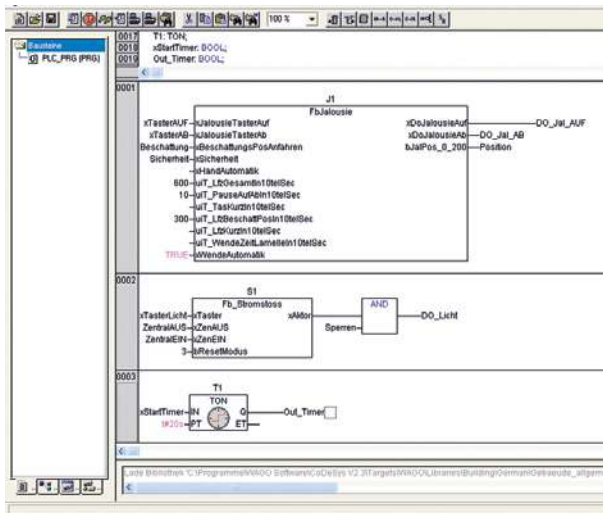
Integrated in e!COCKPIT

Software e!COCKPIT
see Page 10

Software WAGO-I/O-PRO V2.3
see Page 12

Runtime-Software — Libraries

WAGO-I/O-PRO (based on CODESYS 2)

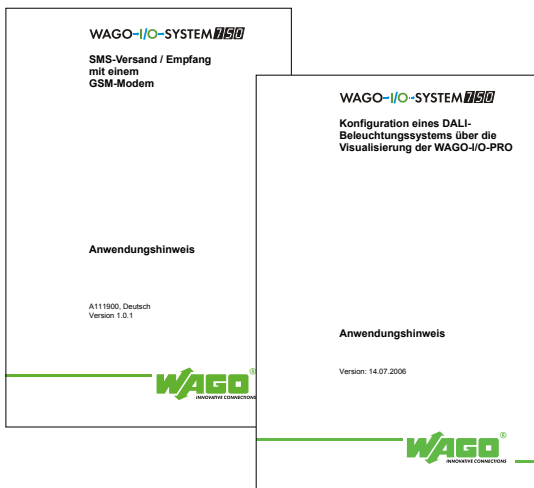


Room applications

Integrated in WAGO-I/O-PRO

The library contains custom function blocks for building automation; these accelerate the programming of building applications.

- Lighting
- Dimmers
- Lighting scenes
- Lighting control
- Sun protection
- Shading
- And other applications



Application Notes

Download: Current application notes can be downloaded at:
www.wago.com

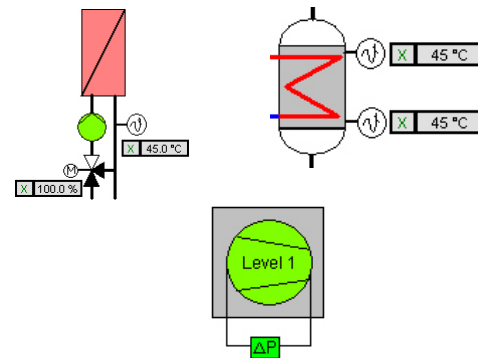
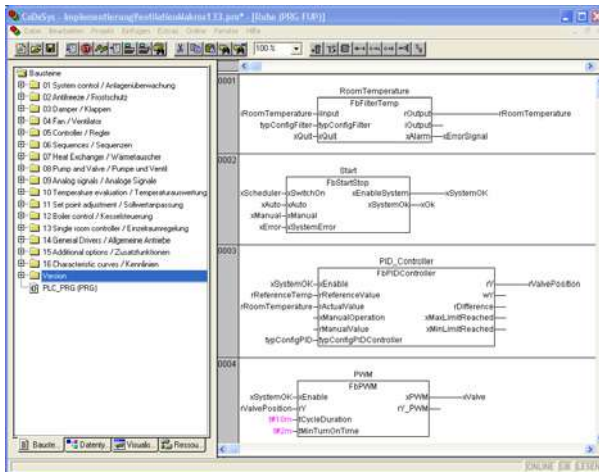
The application notes contain function blocks (FB) for communication applications.

- KNX/EIB
- DALI
- EnOcean radio technology
- MODBUS
- M-Bus
- MP-Bus
- SMI
- LonWorks®
- Email
- SMS
- And other applications

Runtime-Software — Libraries

WAGO-I/O-PRO (based on CODESYS 2)

1



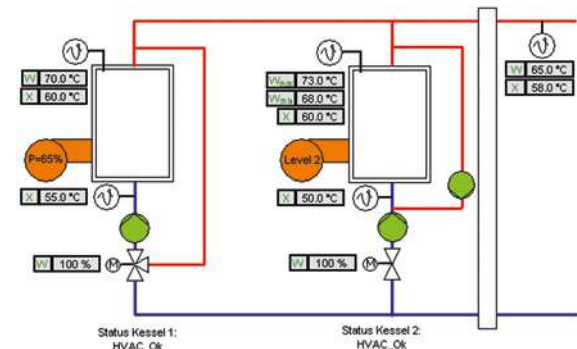
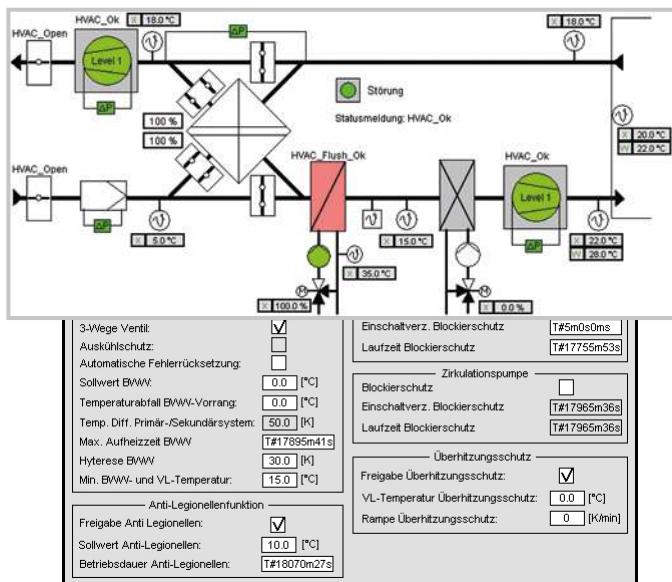
Graphical elements for HVAC applications

HVAC

Integrated in WAGO-I/O-PRO

The library contains function blocks (FB) to create automation applications for complex heating, ventilation and air-conditioning systems (HVAC).

These include: fault monitoring, starter circuits, monitoring frost protection systems, fan control (stepped/continuous), air mixture valve control, air heater/cooler control, cascade control of room/feed air temperature, free night cooling, summer/winter compensators, enthalpy calculations, PID controllers, filter monitoring, blockage protection, heating circuit control, heat recovery control, boiler control (stepped/continuous), boiler sequence, domestic hot water control, start/stop optimization, humidification and dehumidification (climate) and more.



Boiler sequence control

System macros

Download: Current application notes can be downloaded at:
www.wago.com

- District heating transfer station macros
- Boiler macros
- Heating circuit macros
- Drinking water heating macros
- Ventilation macros

WAGO WebVisu App for mobile system operation/monitoring



Using the WAGO WebVisu App, you can access CODESYS 2 WebVisu websites on mobile devices. The desired system or machine can then be operated and monitored at any time. Up to 100 controllers can be predefined for direct and quick access via the URL.

WAGO WebVisu App is available for free as an iOS version for iPhones and iPads in the Apple "App Store", and as an Android version for smartphones and tablets in the "Google Play" store.

Note: An overview of the supported WAGO controllers, operating manuals and application notes can be found on our website or at www.wago.com/webvisu.



QR Code for WebVisu App

Simply scan the QR code with your mobile device and you are automatically directed to the WebVisu App in the "App Store" or "Google Play".

Trademarks

Apple, the Apple logo, iPhone, iPad and iPod touch are registered trademarks of Apple Inc. registered in the USA and other countries. "App Store" is a service mark of Apple Inc.

Google Play™ is a registered trademark of Google Inc.



WAGO WebVisu App

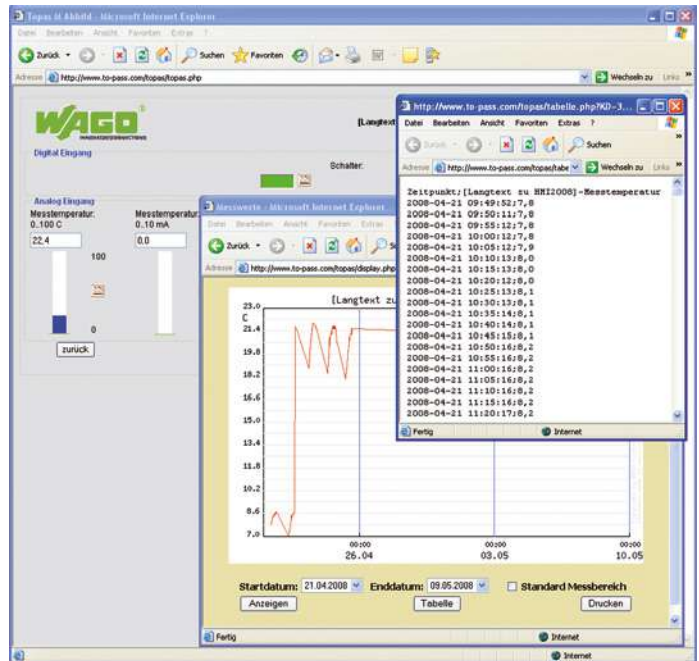
Download: Apple-Store or Google-Store

System requirements	
Operating system	iOS Version 4.3 or higher Android Version 2.2 or higher
Compatibility	iPhone, iPad and iPod touch Android smartphones and tablets
Further information see:	wago.com/webvisu

TO-PASS® Web Portal

WEB portal for visualizing and archiving measured values and messages

1



The TO-PASS® product family is designed for wireless communication of signals and messages. Connection is established via the GSM global mobile radio network. Beyond other communication channels (e.g., email, SMS or fax), the devices can also transmit data to a Web server. This allows the creation of a permanent GPRS connection that's similar to a dedicated line.

The process image (i.e., states and values of all digital and analog inputs of a TO-PASS® telecontrol module) is transmitted to the Web server with a time stamp at a configurable interval and then stored in the database. Standard data loggers and the cumbersome process of reading out data are no longer necessary. Controlling and managing data is simplified by using an Internet browser via: <http://www.to-pass.com>.

With the base module, a user receives a designated area on the Web portal. Access is protected with a username and password. Depending on the expansion level (starter, standard, unlimited), a varying number of devices can log into the portal.

The data recorder function allows digital, analog and MODBUS data from connected devices to be recorded and displayed from 90 minutes to 512 days. Data can also be exported in CSV format.

The "Admin" option is an addition to the base module. It allows the user to assign additional usernames with passwords, as well as customers and devices with different access authorizations.

The "Alarm" option is an addition to the base module. It allows the module to display and administer alarms generated from analog, digital and MODBUS values. Using analog values, up to four limit values can be configured for each measurement. An alarm list allows all alarms to be displayed and acknowledged. This option also allows the user to configure the recipients and the time that an alarm will be sent to them via SMS or e-mail.

The usage rights for the base module with "Admin" and "Alarm" options must be purchased once. Afterward, just a low flat-rate fee will be charged monthly.

TO-PASS® Web Portal	
Version	Item No.
Basic Unlimited (unlimited number of devices)	761-700
Basic Starter (max. 5 devices)	761-700/000-005
Basic Standard (max. 20 devices)	761-700/000-020
Monthly User Fees	761-701
Admin Unlimited (unlimited number of devices)	761-702
Admin. Starter (max. 5 devices)	761-702/000-005
Admin. Standard (max. 20 devices)	761-702/000-020
Alarm Unlimited (unlimited number of devices)	761-703
Alarm Starter (max. 5 devices)	761-703/000-005
Alarm Standard (max. 20 devices)	761-703/000-020
Individual	761-704

Software functionality	User administration via user name and password; Device activation via Internet; Configuration of measured values via Internet; History of measured values: unlimited number of data sets; Display of measured values: Table and graphical display; Evaluation of measured values: Graphical evaluation of measured values; Export of measured values: CSV format (MS Excel compatible)
Topology	No. of devices unlimited
Other required software	Microsoft® Internet Explorer with Internet access
Data sheet and further information, see:	wago.com/761-700

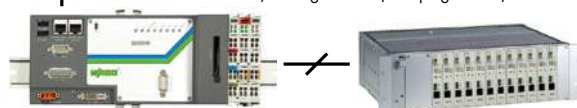
Internet Explorer is a registered trademark of Microsoft Corporation

WAGO Telecontrol Gateway



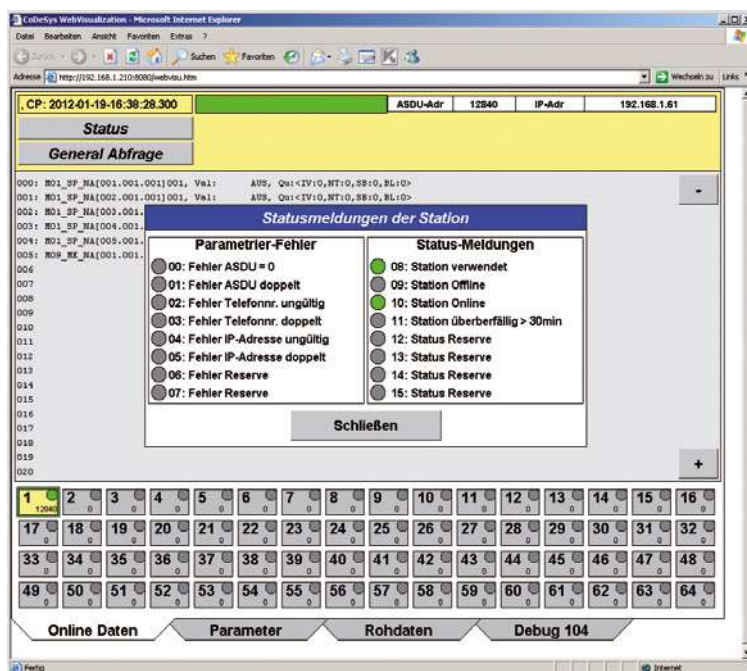
Connection to control system acc. to IEC 60870-5-101/-104

Max. 12 RS-232/-485 I/O modules and
ISDN/analog modem (19" plug-in card)



Max. 64 substations can be connected via fieldbus controller
acc. to IEC 60870-5:

- 101 via analog, GSM or ISDN dial-up connections
- 103 via RS-485 I/O module
- 104 via ETHERNET or GPRS



Parameter setting and diagnostics via Web server

WAGO Telecontrol Gateway (WTG), in connection with the controllers mentioned below, is a gateway software for communication between a maximum of 64 telecontrol substations (IEC 60870-5-101/-103/-104) and a control system equipped with an interface (IEC 60870-5-101/-104).

This gateway is ideal for connecting both telecontrol substations and for control system applications restricted by a transmission protocol or the number of connections.

In addition to data transfer bundling, the WAGO Telecontrol Gateway also supports coordination of incoming and outgoing analog, GSM or ISDN dial-up connections to substations.

Accessories for WAGO Telecontrol Gateway:

I/O-IPC-C10 Telecontrol: 758-874/000-130 or Controller 750-8202/025-001

RS-232/485 Module, WAGO-I/O-SYSTEM: 750-652

End Module, WAGO-I/O-SYSTEM: 750-600

19" rack, INSYS: 11-02-05-01-01.006

19" plug-in card (ISDN modem), INSYS: 11-02-05-03-01.003

Alternative: 19" plug-in card (analog modem), INSYS: 11-02-05-02-03.003

Telecontrol substation with ISDN dial-up modem:

WAGO Telecontroller: 750-872; additional 750/753 Series I/O Modules, if necessary

End Module, WAGO-I/O-SYSTEM: 750-600

RS-232 Null Modem Cable: 761-9011

ISDN modem (DIN-rail mount), INSYS ISDN-TA 4.0: 11-02-01-02-00.018

Telecontrol substation with an analog dial-up modem

WAGO Telecontroller: 750-872; additional 750/753 Series I/O Modules, if necessary

End Module, WAGO-I/O-SYSTEM: 750-600

RS-232 Null Modem Cable: 761-9011

Analog modem (DIN-rail mount), INSYS modem 56k 4.2: 11-02-01-01-40.039

Telecontrol substation with GSM connection

WAGO Telecontroller: 750-872; additional 750/753 Series I/O Modules, if necessary

End Module, WAGO-I/O-SYSTEM: 750-600

RS-232 Null Modem Cable: 761-9011

GSM modem (DIN-rail mount), INSYS GSM 4.3: 11-02-01-03-01.042

Magnetic foot antenna for INSYS GSM 4.3: 31-01-01.007

Telecontrol substation with DSL/ETHERNET connection:

WAGO Telecontroller: 750-872

Alternative: WAGO Telecontroller: 750-880/025-001

Additional 750/753 Series I/O Modules, if necessary

End Module, WAGO-I/O-SYSTEM: 750-600

WAGO Telecontrol Gateway Software

Version	Item No.
for 758-874/000-130	759-200
for 750-8202/025-001	759-200/000-002

Number of I/O modules	
for 758-874/000-130	max. 12 x 750-652 Modules
for 750-8202/025-001	max. 4 x 750-652 Modules
Number of connectable telecontrol substations	
for 758-874/000-130	max. 64
for 750-8202/025-001	max. 16
Data sheet and further information, see:	wago.com/759-200

Accessories

1



USB communication cable, USB-A, Service interface I/O-System 750		
Length	Item No.	Pack. Unit
2.5 m	750-923	1
5 m	750-923/000-001	1



USB communication cable, M8 plug straight, USB-A		
Length	Item No.	Pack. Unit
3 m	756-4101/042-030	1



USB Adapter, USB-A, RS-232 (SUB-D 9/25 pole)		
Length	Item No.	Pack. Unit
1 m	761-9005	1



RS-232 communication cable, RS-232 (SUB-D 9 pole), Service interface I/O-System 750		
Length	Item No.	Pack. Unit
1 m	750-920	1



Bluetooth® Adapter, Service interface I/O-System 750		
Item No.	Pack. Unit	
750-921	1	



Operation and Monitoring

e!DISPLAY 7300T Web Panels

- High-performance HMI display for Web-based visualization
- 10.9–25.7 cm (4.3–10.1")
- Visualization from CODESYS 2 and e!COCKPIT (based on CODESYS 3)

PERSPECTO® Control Panels

- Merging of control and visualization
- 8.9–38.1 cm (3.5–15")

PFC100/PFC200 Controllers

- Maximum performance in a minimum space
- Also programmable in high-level languages based on Linux®
- Security packages with SSH and SSL/TLS
- Runtime system for CODESYS 2 (only PFC200) and 3

Section 3.1 ►

PFC200 XTR Controllers

- The advantages of the PFC Controller combined with the characteristics for extreme environments:
- High processing speed
 - Multiple interfaces
 - eXTreme robust and maintenance-free

Section 3.2 ►►

750 Series Controllers

- Controllers for all prominent fieldbus systems
- Programmable to IEC 61131-3
- Ideally combinable with the WAGO 750 I/O-SYSTEM modules

Section 3.3 ►►►

750 XTR Controllers

- For demanding applications in which the following are critical:
- Extreme temperature stability
 - Immunity to electromagnetic interference and impulse voltages
 - Vibration and shock resistance

Section 3.4 ►►►►

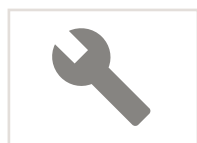
Operation and Monitoring Contents

2

	Page
General Product Information	34
Versions	35
Item Number Key	35
<i>e!DISPLAY</i> Interfaces and Types	36
<i>e!DISPLAY</i> Application and Installation Instructions	37
<i>PERSPECTO</i> ® Interfaces and Types	38
<i>PERSPECTO</i> ® Application and Installation Instructions	39
Standards and Rated Conditions	39
Approvals	39



	Screen Diagonal	Screen Resolution	ETHERNET		MODBUS RTU	CANopen	Item No.	
			Web Browser	MODBUS TCP				
<i>e!DISPLAY 7300T</i>, Web Panel	10.9 cm (4.3")	480 x 272 pixels	x				762-3000	40
	14.5 cm (5.7")	640 x 480 pixels	x				762-3001	40
	18 cm (7.0")	800 x 480 pixels	x				762-3002	41
	25.7 cm (10.1")	1280 x 800 pixels	x				762-3003	41
<i>PERSPECTO</i>®, Control Panels	8.9 cm (3.5")	320 x 240 pixels		x	x	M/S	762-3035/000-001	42
	14.5 cm (5.7")	320 x 240 pixels		x	x	M/S	762-3057/000-001	42
	26.4 cm (10.4")	640 x 480 pixels		x	x	M/S	762-3104/000-001	43
	30.7 cm (12.1")	800 x 600 pixels		x	x	M/S	762-3121/000-001	43
	38.1 cm (15")	1024 x 768 pixels		x	x		762-3150/000-001	43
	38.1 cm (15")	1024 x 768 pixels		x	x	M/S	762-3150/000-003	43



Accessories

Memory cards, mounting sets

44

M: Master, S: Slave

Operation and Monitoring

General Product Information

Operate, observe, visualize, diagnose in production and process industry: WAGO Web and control panels for small to medium-sized control and visualization tasks feature perfect usability and with the quickly created visualizations, set the focus on time savings.

Web Visualization

Displaying a visualization in a Web browser makes flexible options available. In addition to the Web Panels, visualizations can be displayed on nearly any device with a browser including smartphones and tablets; where needed, by using the WebVisu app.

Web Panels with an Aesthetic Design and Extra Performance

The *e!DISPLAY* HMI panel merges a sleek design and some of the industry's most powerful software: With *e!DISPLAY*, you can shape the high-tech image of your machine or system by displaying high-quality visualizations from both *e!COCKPIT* (CODESYS 3) and CODESYS 2 engineering software. The Web-based management feature of WAGO's controllers may also be operated using the stylish Web Panels. The modern design also packs new technology, such as HTML5, for programming via *e!COCKPIT*. A Java runtime for CODESYS 2 WebVisu is also on board.

Easy To Use — Set Brightness Directly on the Display

WAGO's *e!DISPLAY* Web Panel has a resistive touch screen, flanked by three status LEDs that indicate operating status and provide operational feedback. For Web Panel configuration and commissioning, an easy-to-customize configuration interface is available: All important settings are quickly and intuitively performed via Web-based management, like connecting to one or more WAGO controllers. Furthermore, sensors can automatically adjust the brightness of *e!DISPLAY* based on a room's ambient lighting conditions. For quick and easy custom settings, the display brightness can also be manually adjusted via a front-mount button.

Energy-Saving Sensors on the Web Panel Ensure Safety

e!DISPLAY has an integrated proximity sensor. This allows the visualization to be automatically re-displayed from the

energy-saving standby function and screensaver. A motion sensor simultaneously detects ambient lighting levels for brightness control.

Quick installation via unique mounting design

The *e!DISPLAY* Web Panel directly latches onto the switch cabinet via mounting clips for quick and easy tool-free installation. With special clamping elements, the IP65 degree of protection can be achieved for the front of the display. This design flexibility makes *e!DISPLAY* extremely versatile and suitable for a wide variety of applications. The VESA mount allows installation on a swivel arm or stand outside of the control panel.

Seamless Integration into the WAGO Product Range

The more harmonious component integration is, the better performance and reliability will be. *e!DISPLAY* provides visualizations via the *e!COCKPIT* engineering software (CODESYS V3) and CODESYS V2. A high-performance solution when combined with the PFC100 and PFC200 controllers

Control Panel with Target Visualization

In addition to visualization, the control panel also offers a PLC runtime. The result is a full-fledged automation device. It provides configurable functions for operation and monitoring, and can independently process control tasks.

The control panel's PLC function is based on the IEC-61131 compatible CODESYS environment and can be programmed in five different languages. In addition to pure programming, the programming system built on the CODESYS international standard allows offline simulation, fieldbus configuration, recipe management and much more. There is also a Webserver.

Fully Integrated Visualization

Complete integration of the visualization system in a control system allows direct integration of variables. In addition, created masks can easily be reused in various controller configurations.

Advantages:

e!DISPLAY

- Aesthetic design with enhanced performance
- Easy to use — set brightness directly on the device
- Energy-saving sensors ensure safety.
- Quick installation via unique mounting design

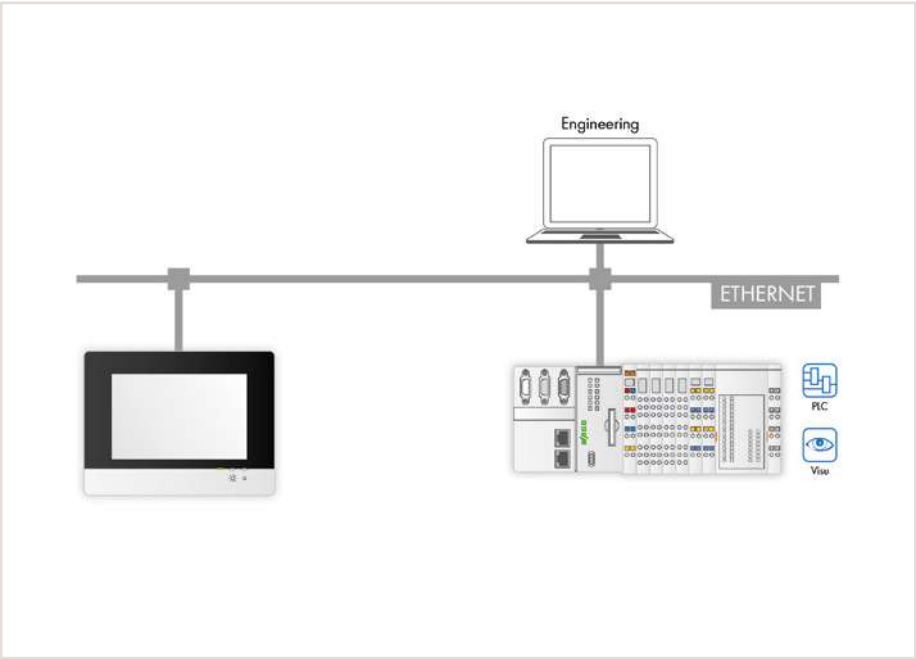
PERSPECTO®

- Multiple interfaces
- IEC-61131-compatible control functionality

Operation and Monitoring Versions

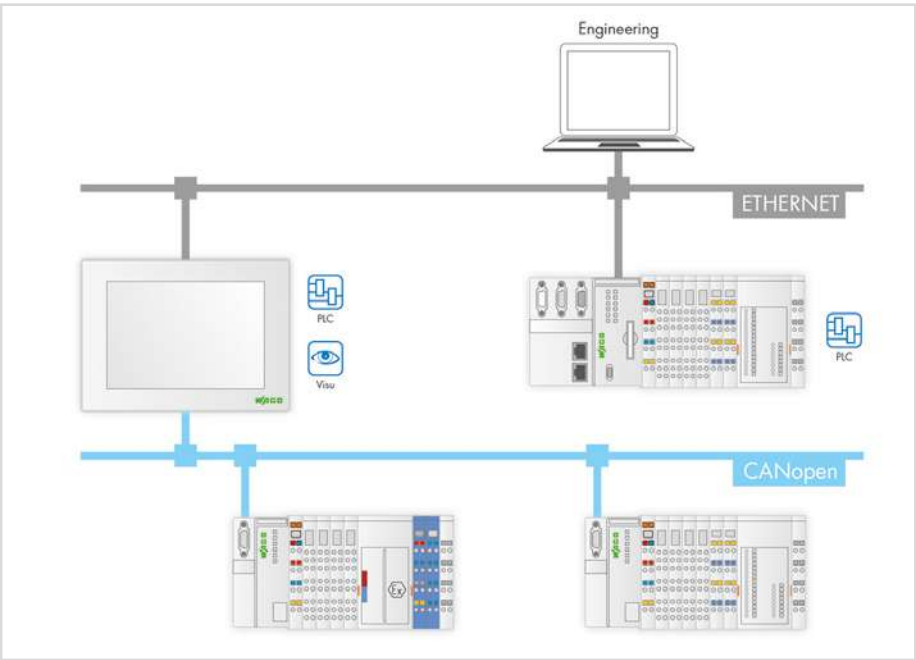
e!DISPLAY 7300T, Web Panel

Specifically configured as a Web browser, the Web Panel directly connects to controllers with integrated Web visualization. The e!COCKPIT (CODESYS 3) and CODESYS 2.3 Web visualizations have been specifically optimized for the Web Panel.



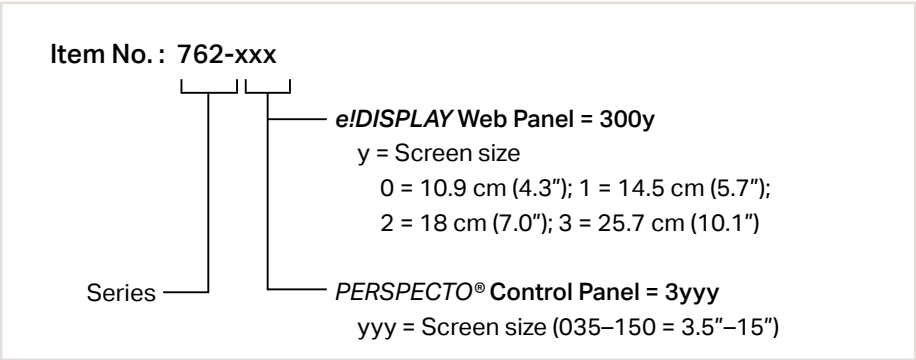
PERSPECTO® CP, Control Panel CP with Target Visualization

The Control Panel (CP) with Target Visu (TV) features full CODESYS runtime. With the WAGO-I/O-PRO development environment (based on CODESYS-2), applications and visualizations can be created and completely programmed. Existing CODESYS projects can be almost entirely converted and upgraded.



Item Number Key

Explanation of the components of an item number key



Operation and Monitoring

e!DISPLAY 7300T Interfaces and Types

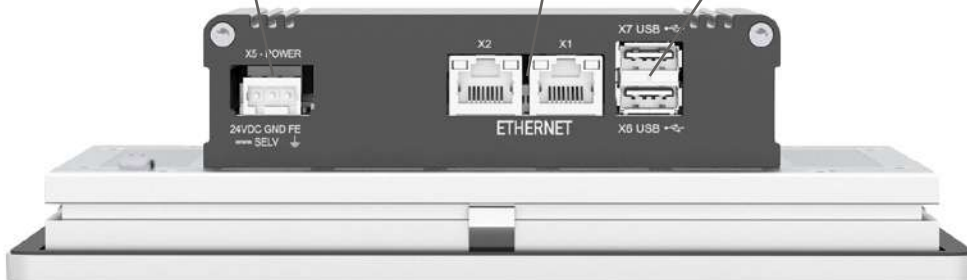
Two ETHERNET interfaces connect the Web Panel to the controller on which the Web visualization will be displayed via a Web server.

A mouse and keyboard can be connected to the two USB interfaces, or an external USB memory.

Supply voltage
24 VDC, SELV (18 ... 30 V)

2 x ETHERNET RJ-45

2 x USB host

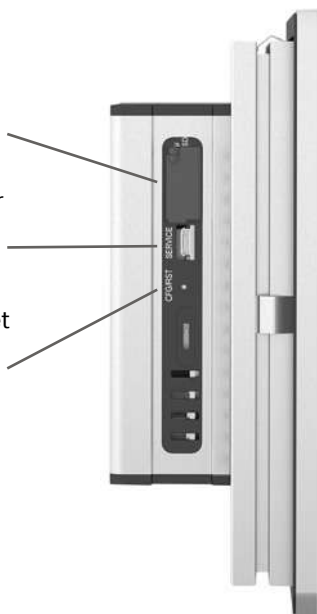


The interface and control element features are not dependent on screen diagonals; they are the same for all devices.

1 x MicroSD
memory card

Service for later
functions

CFG/RST
Config. and reset
button



Operation and Monitoring

e!DISPLAY 7300T Application and Installation Instructions

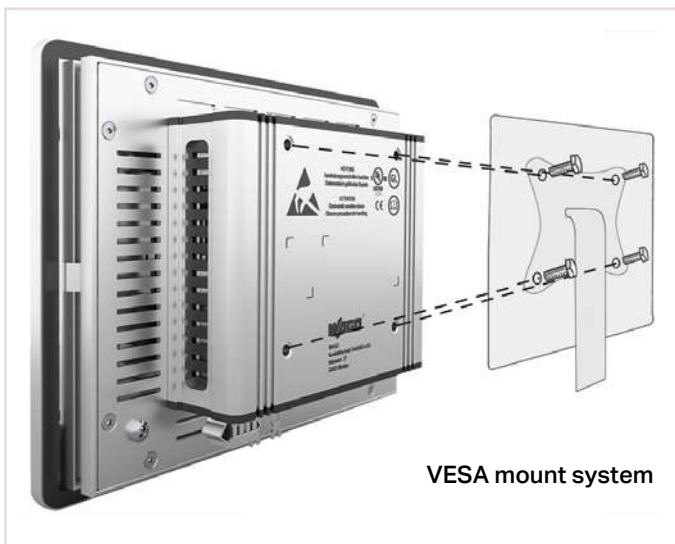


Two brightness adjustment keys are located directly on the front of the device, along with three diagnostics LEDs.

2

Mounting

e!DISPLAY directly latches onto the switch cabinet via mounting spring clips for quick and easy tool-free installation. Achieve the IP65 degree of protection for the front of the display with additional clamping screws. This design flexibility makes e!DISPLAY extremely versatile and suitable for a wide variety of applications. The VESA mount (VESA 75 standard, 75 mm hole spacing) allows universal mounting accessories to be conveniently used outside of the switch cabinet.



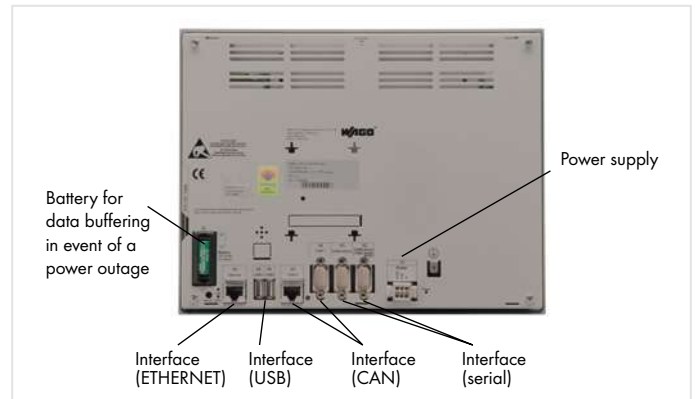
Operation and Monitoring

PERSPECTO® Interfaces and Types

Out of sight, but always in reach!

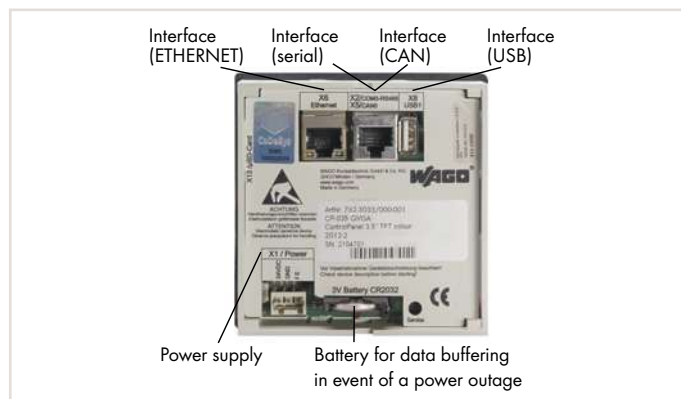
PERSPECTO® offers multiple interfaces, connection ports and other important function elements on the back side for maximized connectivity with minimized clutter.

10.4" version



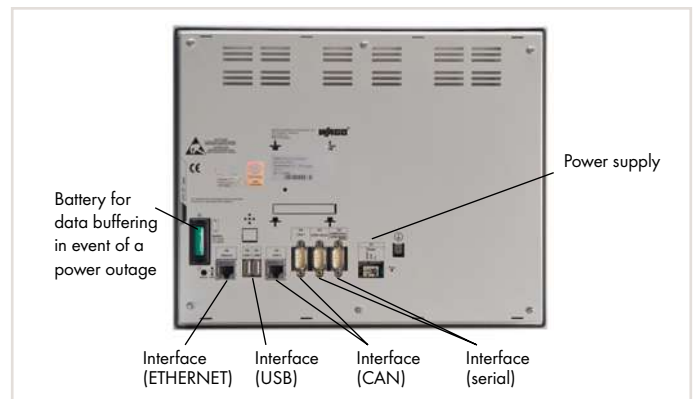
Interface (USB)	2 x USB 2.0 host (type A)
Interface (ETHERNET)	1 x 10/100 Mbit, RJ-45
Interface (CAN)	1 x CAN0 RJ-45, 1 x CAN1 D-Sub 9
Interface (serial)	1 x RS-232 D-Sub 9, 1 x RS-232 + RS-485/-422 D-Sub 9

3.5" version



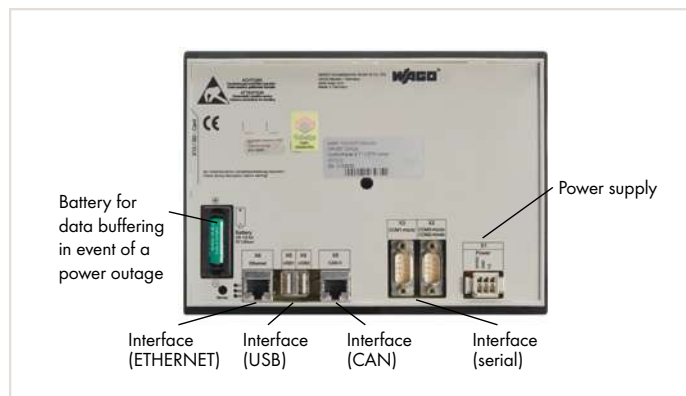
Interface (USB)	1 x USB 2.0 host (type A)
Interface (ETHERNET)	1 x 10/100 Mbit, RJ-45
Interface (CAN)	1 x CANopen RJ-45
Interface (serial)	RS-485 integrated into CAN

12.1" version



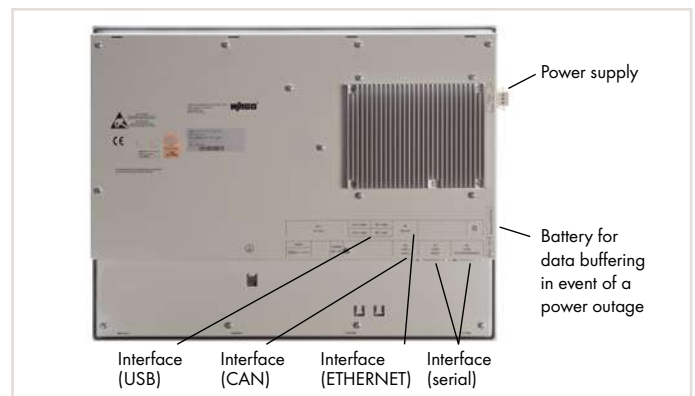
Interface (USB)	2 x USB 2.0 host (type A)
Interface (ETHERNET)	1 x 10/100 Mbit, RJ-45
Interface (CAN)	1 x CAN0 RJ-45, 1 x CAN1 D-Sub 9
Interface (serial)	1 x RS-232 D-Sub 9, 1 x RS-232 + RS-485/-422 D-Sub 9

5.7" version



Interface (USB)	2 x USB 2.0 host (type A)
Interface (ETHERNET)	1 x 10/100 Mbit, RJ-45
Interface (CAN)	1 x CANopen RJ-45
Interface (serial)	1 x RS-232 D-Sub 9, 1 x RS-232 + RS-485 D-Sub 9

15" version



Interface (USB)	4 x USB 2.0 host (type A)
Interface (ETHERNET)	1 x 10/100 Mbit, RJ-45
Interface (CAN)	Option (RJ-45)
Interface (serial)	1 x RS-232 D-Sub 9, 1 x RS-232 + RS-485/-422 D-Sub 9

Operation and Monitoring
PERSPECTO® Application and Installation Instructions



Degree of protection: Front IP65, back IP20

2

Standards and Rated Conditions
e!DISPLAY 7300T

General Specifications	
Operating system	Linux® 3.6.11
Control elements	Resistive touch panel, two capacitive keys, proximity switch
Durability	100,000 activations with touch pen
Supply voltage	24 VDC, SELV (–25 ... +30 %) with reverse voltage protection
Indicators	Diagnostics display, three color LEDs (red, green, blue)
Ambient temperature (operation)	0 ... +55 °C
Ambient temperature (storage)	–20 ... +80 °C
Relative humidity	10–90 %, non-condensing
Degree of protection	Front side IP65, back IP20

Standards and Rated Conditions
PERSPECTO®

General Specifications	
Operating system	Windows CE
Control elements	Touch, analog, resistive
Supply voltage	24 VDC (18–30 V)
Ambient temperature (operation)	0 ... +50 °C
Ambient temperature (storage)	–10 ... +60 °C
Relative humidity	10–85 %, non-condensing
Degree of protection	Front side IP65, back IP20

Approvals

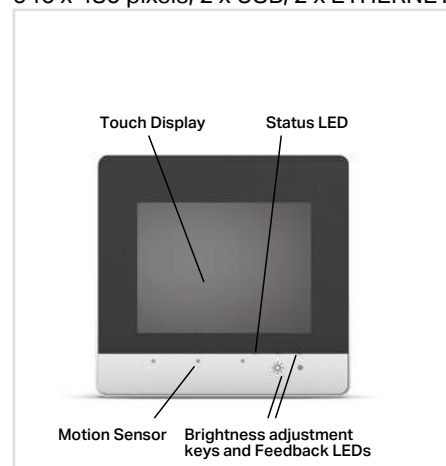
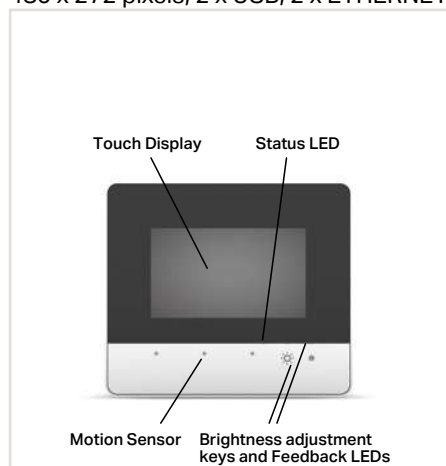
Overview of the approvals in the article comparison in Section 12, Technical Appendix, or online under www.wago.com



e!DISPLAY 7300T, Web Panels

Web panel, 10.9 cm (4.3"),
480 x 272 pixels, 2 x USB, 2 x ETHERNET

Web panel, 14.5 cm (5.7"),
640 x 480 pixels, 2 x USB, 2 x ETHERNET



Item Description	WP
Version	4.3 480x272 PIO1
Item No.	762-3000

Technical Data

Display	TFT, wide viewing angle
Screen size (diagonal)	10.9 cm (4.3")
Aspect	16:9
Display colors	16 million
Graphics resolution	480 x 272
Operating system	Linux®
Processor	ARM® Cortex™ A8 600 MHz
RAM/flash	512 Mb / 1024 Mb
Memory expansion	microSD (max. 2 Gb), microSDHC (max. 32 Gb)
Control elements	Resistive touch panel, 2 capacitive keys, proximity sensor
Diagnostic LEDs	3-color LED (red, green, blue)
Interfaces (USB)	2 x USB 2.0 host (type A)
Interface (ETHERNET)	2 ports 10/100Base-T (RJ-45), switch functionality
Dimensions (W x H x D)	155 x 135 x 58 mm
Panel cutout (W x H)	140 x 120 mm
Mounting	Clamping elements (included) or VESA mount (4 x M4x8)
Supply voltage	24 VDC, SELV (-25 ... +30 %) with reverse voltage protection
Ambient temperature (operation)	0 ... +55 °C
Approvals	CE, RoHS, UL 508*
Data sheet and further information, see:	wago.com/762-3000

Accessories	Item no.	Page
Memory Card	758-879/000-3102	44
Clamping elements	762-9001	45

* pending

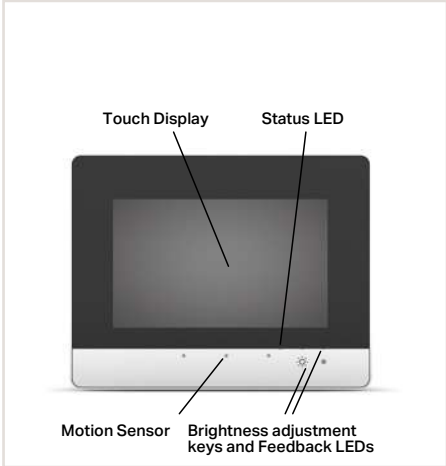
WP
5.7 640x480 PIO1
762-3001

Display	TFT, wide viewing angle
Screen size (diagonal)	14.5 cm (5.7")
Aspect	4:3
Display colors	262.000
Graphics resolution	640 x 480
Operating system	Linux® 3.6.11
Processor	ARM® Cortex™ A8 600 MHz
RAM/flash	512 Mb / 1024 Mb
Memory expansion	microSD (max. 2 Gb), microSDHC (max. 32 Gb)
Control elements	Resistive touch panel, 2 capacitive keys, proximity sensor
Diagnostic LEDs	3-color LED (red, green, blue)
Interfaces (USB)	2 x USB 2.0 host (type A)
Interface (ETHERNET)	2 ports 10/100Base-T (RJ-45), switch functionality
Dimensions (W x H x D)	172 x 163 x 58 mm
Panel cutout (W x H)	157 x 148 mm
Mounting	Clamping elements (included) or VESA mount (4 x M4x8)
Supply voltage	24 VDC, SELV (-25 ... +30 %) with reverse voltage protection
Ambient temperature (operation)	0 ... +55 °C
Approvals	CE, RoHS, UL 508*
Data sheet and further information, see:	wago.com/762-3001

Accessories	Item no.	Page
Memory Card	758-879/000-3102	44
Clamping elements	762-9001	45

* pending

Web panel, 17.8 cm (7.0"),
800 x 480 pixels, 2 x USB, 2 x ETHERNET



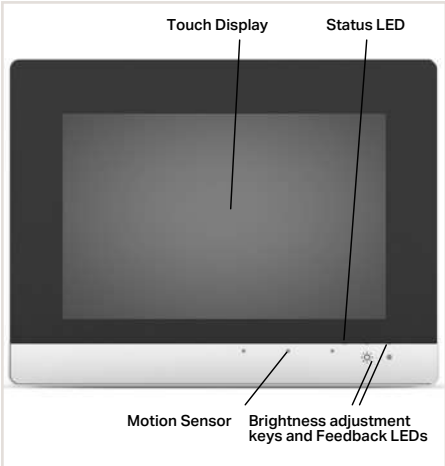
WP
7.0 800x480 PIO1
762-3002

TFT, wide viewing angle
18 cm (7.0")
16:9
16 million
800 x 480
Linux® 3.6.11
ARM® Cortex™ A8 600 MHz
512 Mb / 1024 Mb
microSD (max. 2 Gb), microSDHC (max. 32 Gb)
Resistive touch panel, 2 capacitive keys, proximity sensor
3-color LED (red, green, blue)
2 x USB 2.0 host (type A)
2 ports 10/100Base-T (RJ-45), switch functionality
213 x 167 x 58 mm
198 x 152 mm
Clamping elements (included) or VESA mount (4 x M4x8)
24 VDC, SELV (-25 ... +30 %) with reverse voltage protection
0 ... +55 °C
CE, UL 508*
wago.com/762-3002

Item no.	Page
758-879/000-3102	44
762-9001	45

* pending

Web panel, 25.7 cm (10.1"),
1280 x 800 pixels, 2 x USB,
2 x ETHERNET



WP
10.1 1280x800 PIO1
762-3003

TFT, wide viewing angle
25.7 cm (10.1")
16:9
16 million
1280 x 800
Linux® 3.6.11
ARM® Cortex™ A8 600 MHz
512 Mb / 1024 Mb
microSD (max. 2 Gb), microSDHC (max. 32 Gb)
Resistive touch panel, 2 capacitive keys, proximity sensor
3-color LED (red, green, blue)
2 x USB 2.0 host (type A)
2 ports 10/100Base-T (RJ-45), switch functionality
293 x 223 x 58 mm
278 x 208 mm
Clamping elements (included) or VESA mount (4 x M4x8)
24 VDC, SELV (-25 ... +30 %) with reverse voltage protection
0 ... +50 °C, 0 ... +55 °C (vertical mounting position)
CE, UL 508*
wago.com/762-3003

Item no.	Page
758-879/000-3102	44
762-9001	45

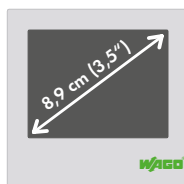
* pending

PERSPECTO®, Control Panels

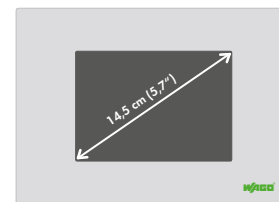
2



Control panel, 8.9 cm (3.5"),
320 x 240 pixels, Target Visualization



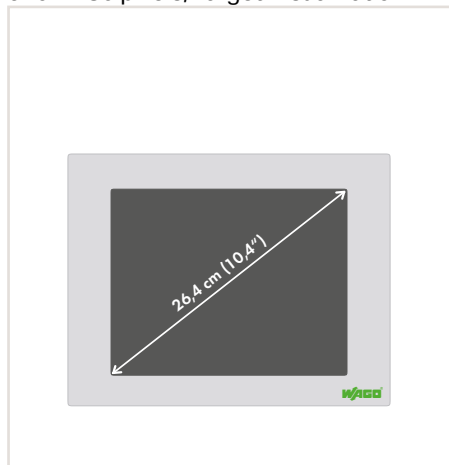
Control panel, 14.5 cm (5.7"),
320 x 240 pixels, Target Visualization



Item Description	CP	CP
Version	35 QVGA TV	57 QVGA
Item No.	762-3035/000-001	762-3057/000-001
Technical Data		
Display	TFT	TFT
Screen size (diagonal)	8.9 cm (3.5")	14.5 cm (5.7")
Display colors	32768 colors	4096 colors
Graphics resolution	320 x 240 pixels	320 x 240 pixels
Operating system	Windows CE 6.0	Windows CE 6.0
Processor	32-bit ARM9 200 MHz	32-bit ARM9 200 MHz
RAM/flash/SRAM	64 Mb / 64 Mb / 1 Mb	64 Mb / 64 Mb / 1 Mb
Program memory / data memory / non-volatile memory (retain)	1024 KB / 1024 KB / 128 KB	1024 KB / 1024 KB / 128 KB
Memory expansion	microSD (max. 2 Gb)	SD card (max. 2 Gb)
Control elements	Touch, analog, resistive	Touch, analog, resistive
Interfaces (USB)	1 x USB 2.0 host (type A)	2 x USB 2.0 host (type A)
Interface (ETHERNET)	1 x 10/100 Mbit, RJ-45	1 x 10/100 Mbit, RJ-45
Interface (CAN)	1 x CAN RJ-45	1 x CAN RJ-45
Interface (serial)	RS-485 integrated into CAN	1 x RS-232 D-Sub 9, 1 x RS-232 + RS-485 D-Sub 9
Dimensions (W x H x D)	96 x 96 x 29 mm	208 x 150 x 42 mm
Panel cutout (W x H)	91 x 91 mm	198 x 140 mm
Mounting	4 x clamping elements	4 x clamping elements
Supply voltage	24 VDC (18–30 V)	24 VDC (18–30 V)
Ambient temperature (operation)	0 ... +50 °C	0 ... +50 °C
Approvals	CE, ENEC, UL 508	CE, ENEC, UL 508
Data sheet and further information, see:	wago.com/762-3035/000-001	wago.com/762-3057/000-001
Accessories	Item no.	Page
Memory Card	758-879/000-3102	44
Mounting set	758-879/000-300	45

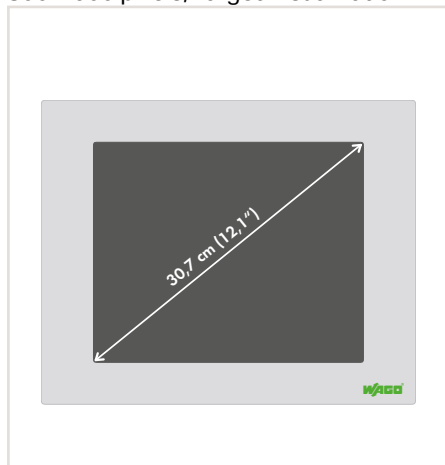
Item no.	Page	Item no.	Page
758-879/000-3102	44	758-879/000-001	44
758-879/000-300	45	758-879/000-301	45

Control panel, 26.4 cm (10.4"),
640 x 480 pixels, Target Visualization



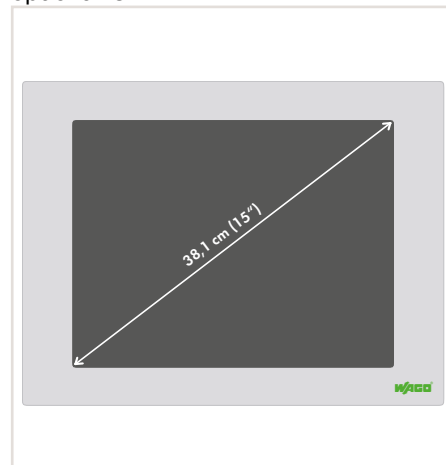
CP
104 VGA TV
762-3104/000-001

Control panel, 30.7 cm (12.1"),
800 x 600 pixels, Target Visualization



CP
121 SVGA TV
762-3121/000-001

Control panel, 38.1 cm (15.0"),
1024 x 768 pixels, Target Visualization,
optional: CAN



CP
150 XGA TV
762-3150/000-001
150 XGA CAN TV
762-3150/000-003

TFT
26.4 cm (10.4")
65536 colors
640 x 480 pixels
Windows CE 5.0
32-bit XScale 520 MHz
64 Mb / 32 Mb / 1 Mb
1024 KB / 1024 KB / 128 KB
CF card (max. 2 Gb)
Touch, analog, resistive
2 x USB 2.0 host (type A)
1 x 10/100 Mbit, RJ-45
1 x CAN0 RJ-45, 1 x CAN1 D-Sub 9
1 x RS-232 D-Sub 9, 1 x RS-232 + RS-485/-422 D-Sub
284 x 222 x 46 mm
268 x 206 mm
6 x clamping elements
24 VDC (18–30 V)
0 ... +50 °C
CE,
wago.com/762-3104/000-001

TFT
30.7 cm (12.1")
65536 colors
800 x 600 pixels
Windows CE 5.0
32-bit XScale 520 MHz
64 Mb / 32 Mb / 1 Mb
1024 KB / 1024 KB / 128 KB
CF card (max. 2 Gb)
Touch, analog, resistive
2 x USB 2.0 host (type A)
1 x 10/100 Mbit, RJ-45
1 x CAN0 RJ-45, 1 x CAN1 D-Sub 9
1 x RS-232 D-Sub 9, 1 x RS-232 + RS-485/-422 D-Sub
330 x 268 x 47 mm
312 x 250 mm
6 x clamping elements
24 VDC (18–30 V)
0 ... +50 °C
CE,
wago.com/762-3121/000-001

TFT
38.1 cm (15")
16 million colors
1024 x 768 pixels
Windows CE 6.0
Intel Atom® N270; 1.6 GHz
256 Mb / 128 Mb
1024 KB / 1024 KB / 128 KB
CF card (max. 2 Gb)
Touch, analog, resistive
4 x USB 2.0 host (type A)
1 x 10/100/1000 Mbit RJ-45
1 x CAN RJ-45
1 x RS-232 D-Sub 9, 1 x RS-232 + RS-485/-422 D-Sub
398 x 306 x 77 mm
383 x 291 mm
6 x clamping elements
24 VDC (18–30 V)
0 ... +45 °C
CE,
wago.com/762-3150/000-001
wago.com/762-3150/000-003

Item no.	Page
758-879/000-000	44
758-879/000-302	45

Item no.	Page
758-879/000-000	44
758-879/000-303	45

Item no.	Page
758-879/000-000	44
758-879/000-304	45

Accessories



MicroSD memory card, SLC-NAND,
2 GB, temperature range -40 ... 90 °C

Item Description	Memory Card microSD
Version	SLC-NAND 2GB T85°C
Item No.	758-879/000-3102

Technical Data

Memory	2 Gb (SLC)
Write/read cycles max.	17 Mb/s / 20 Mb/s
MTBF	4,000,000 hrs.
Service life	2,000,000 program/operating cycles
Ambient temperature (operation)	-40 ... +90 °C
Ambient temperature (storage)	-40 ... +90 °C
Relative humidity	95 % non-condensing
Dimensions W x H x D	15 x 11 x 1 mm
Vibration resistance	15 G
Shock resistance	50 G
Data transmission rate	Up to 20 Mb/s



SD memory card, SLC-NAND, 2 Gb,
temperature range -40 ... 90 °C

Item Description	Memory Card SD
Version	SLC-NAND 2GB T90°C
Item No.	758-879/000-001

Technical Data

Memory	2 Gb (SLC)
Write/read cycles max.	16 Mb/s / 22 Mb/s
MTBF	4,000,000 hrs.
Service life	2,000,000 program/operating cycles
Ambient temperature (operation)	-45 ... +90 °C
Ambient temperature (storage)	-45 ... +90 °C
Relative humidity	95 % non-condensing
Dimensions W x H x D	24 x 32 x 2.1 mm
Vibration resistance	15 G
Shock resistance	50 g operating, 1000 g not operating
Data transmission rate	Up to 22 Mb/s



CF memory card, SLC-NAND

Item Description	Memory Card CF
Version	SLC-NAND
Item No.	758-879/000-000

Memory	1 Gb (SLC)
Write/read cycles max.	Single: 20 Mbytes/s (max) / 10 Mbytes/s (max), Dual: 40 Mbytes/s (max) / 20 Mbytes/s (max)
MTBF	300,000 hrs.
Service life	2,000,000 program/operating cycles
Ambient temperature (operation)	-40 ... +85 °C
Ambient temperature (storage)	-55 ... +95 °C
Relative humidity	95 % non-condensing
Dimensions W x H x D	42.8 x 36.4 x 3.3 mm
Vibration resistance	Per IEC 60068-2-6
Shock resistance	Per IEC 60068-2-27
Data transmission rate	

Accessories



Connecting cable		
	Item no.	Pack. Unit
DVI-D		
3 m	758-879/000-100	1

Connecting cable		
	Item no.	Pack. Unit
USB A-B		
3 m	758-879/000-101	1

Clamping elements, for e!DISPLAY 7300T		
	Item no.	Pack. Unit
4 pieces	762-9001	1

Mounting set, for PERSPECTO Control Panels		
	Item no.	Pack. Unit
CP35	758-879/000-300	1
CP57	758-879/000-301	1
CP104	758-879/000-302	1
CP121	758-879/000-303	1
CP150	758-879/000-304	1



Controller

PERSPECTO® Control Panels

- Merging of control and visualization
- 8.9–38.1 cm (3.5–15")

◀ Section 2

PFC100/PFC200 Controller

- Maximum performance in a minimum space
- Also programmable in high-level languages based on Linux®
- Security packages with SSH and SSL/TLS
- Runtime system for CODESYS 2 (only PFC200) and 3

Section 3.1 ▶

PFC200 XTR Controllers

- The advantages of the PFC Controller combined with the characteristics for extreme environments:
- High processing speed
 - Multiple interfaces
 - eXTRemely robust and maintenance-free

Section 3.2 ▶▶

750 Series Controllers

- Controllers for all prominent fieldbus systems
- Programmable to IEC 61131-3
- Ideal combination with the WAGO 750 I/O-SYSTEM modules

Section 3.3 ▶▶▶

750 XTR Controllers

- For demanding applications in which the following are critical:
- Extreme temperature stability
 - Immunity to electromagnetic interference and impulse voltages
 - Vibration and shock resistance

Section 3.4 ▶▶▶▶

Controller
Overview

			Page
	PERSPECTO® Control Panels Combining controller and visualization into one device	2	42
	PFC100 and PFC200 Controllers Scalable IP20 controller family with various interfaces	3.1	49
	PFC200 XTR Controllers Scalable IP20 controllers with various interfaces for eXTReMe environmental conditions	3.2	61
	750 Series Controllers IP20 Microcontrollers	3.3	69
	750 XTR Controllers IP20 Microcontrollers for eXTReMe environments	3.4	87

Advantages:

- Fieldbus-independent — Supports all standard fieldbus protocols and ETHERNET standards
- Scalable performance — Fieldbus controllers, control panels, PFC100 and PFC200
- Programming per IEC 61131-3
- Flexible platform adapts to diverse applications and environments
- Combinable with the WAGO 750 I/O-SYSTEM — modular, compact, versatile



PFC100/PFC200 Controller

PFC100/PFC200 Controller

- Maximum performance in a minimum space
- Also programmable in high-level languages based on Linux®
- Security packages with SSH and SSL/TLS
- Runtime system for CODESYS 2 (only PFC200) and 3

750 Series Controllers

- Controllers for all prominent fieldbus systems
- Programmable to IEC 61131-3
- Ideal combination with the WAGO 750 I/O-SYSTEM modules

Section 3.3 ►►

PERSPECTO® Control Panels

- Merging of control and visualization
- 8.9–38.1 cm (3.5–15")

◀ Section 2

PFC200 XTR Controllers

- The advantages of the PFC Controller combined with the characteristics for extreme environments:
- High processing speed
- Multiple interfaces
- eXTRemely robust and maintenance-free

Section 3.2 ►

750 XTR Controllers

- For demanding applications in which the following are critical:
- Extreme temperature stability
- Immunity to electromagnetic interference and impulse voltages
- Vibration and shock resistance

Section 3.4 ►►►

PFC100/PFC200 Controller Contents

	Page
General Product Information	50
Versions	51
Interfaces and Types	51
Installation Instructions	52
Item Number Key	52
Standards and Rated Conditions	53
Approvals	53

	CPU	ETHERNET Modbus TCP	PROFIBUS	CANopen	Modbus RTU	Telecontrol protocols: IEC 60870, IEC 61850/61400, DNP3	Description	Item No.		
								Standard	T ext. temperature	
	Cortex A8, 600 MHz	x					PFC100 2ETH ECO	750-8100		54
	Cortex A8, 600 MHz	x					PFC100 2ETH	750-8101	750-8101/025-000	55
	Cortex A8, 600 MHz	x			x		PFC100 2ETH RS	750-8102	750-8102/025-000	55
	Cortex A8, 600 MHz	x			x		PFC200 2ETH RS	750-8202	750-8202/025-000	56
		x			x	x	PFC200 2ETH RS Tele T PFC200 2ETH RS Tele T ECO		750-8202/025-001 750-8202/025-002	56
	Cortex A8, 600 MHz	x		M/S			PFC200 2ETH CAN	750-8203	750-8203/025-000	57
	Cortex A8, 600 MHz	x		M/S	x		PFC200 2ETH RS CAN	750-8204	750-8204/025-000	57
	Cortex A8, 600 MHz	x	S	M/S	x		PFC200 2ETH RS CAN DPS	750-8206	750-8206/025-000	57
		x	S	M/S	x	x	PFC200 2ETH RS CAN DPS Tele T		750-8206/025-001	57
	Cortex A8, 600 MHz	x			x		PFC200 2ETH RS 3G	750-8207	750-8207/025-000	58
		x			x	x	PFC200 2ETH RS 3G Tele T		750-8207/025-001	58
	Cortex A8, 600 MHz	x	M		x		PFC200 CS 2ETH RS CAN DPM	750-8208	750-8208/025-000	59

M: Master, S: Slave

3.1
PFC
100/
200

PFC100/PFC200 Controller

General Product Information

PFC100/PFC200:

Maximum Performance in a Minimum Space

As a member of the WAGO control family, the PFC100 and PFC200 Controllers with e!RUNTIME excel with high processing speed and multiple interfaces for parallel communication. All versions feature two ETH-ERNET ports and — depending on the model — additional interfaces. The CANopen, PROFIBUS DP and MODBUS TCP/UDP/RTU protocols provide a flexible connection to fieldbus systems and external input/output devices. These fieldbus systems can be easily configured directly in WAGO's easy-to-use *e!COCKPIT* development environment.

The ETHERNET interfaces with an integrated switch also support all major IT protocols. In addition to multiple interfaces, the PFC100/PFC200 offers ample memory for your applications thanks to the internal flash memory and an integrated interface for memory cards.

Telecontrol technology

Standardized telecontrol protocols according to IEC 60870-5, IEC 61850, IEC 61400-25 or DNP3 ensure use of the PFC Controllers in telecontrol technology.

Link between Process Data and IT Application

The PFC100/PFC200 ideally combines real-time requirements with IT functionality. It supports both MODBUS/TCP and ETHERNET/IP for use in industrial environments. HTTP, SNMP, FTP, BootP, DHCP, DNS, telnet, SSH and other protocols simplify integration into IT environments.

Integrated Web pages and Web-based visualization provide IT applications with real-time process data. Furthermore, the PLC incorporates library functions for email, SOAP, ASP, IP configuration, ETHERNET sockets and file system.

Security on Board

The topics of ETHERNET communication and security are closely linked. To provide PFC Controller users with a high level of security, mechanisms for secure connections such as VPN, integrated firewall, HTTPS, FTPS, SSH and SSL/TLS are standard.

Modular Expandability

With the WAGO 750 I/O-SYSTEM, the PFC100/PFC200 can be expanded to almost any input/output interface. A modular, DIN-rail-mount design permits easy installation, expansion and modification of the I/O module without tools. The straightforward design prevents installation errors. In addition, proven CAGE CLAMP® technology offers fast, vibration-proof and maintenance-free connections that are independent of operator skill. Depending on the I/O module's granularity, field peripherals can be directly wired using 1-, 2-, 3- or 4-wire technology.

Maximum Reliability and Ruggedness

The PFC100/PFC200 is engineered and tested for use in the most demanding environments (e.g., temperature cycling, shock/vibration loading and ESD, etc.) according to the highest standards. Spring pressure connection technology guarantees continuous operation. Integrated QA measures in the production process and 100 % function testing ensure consistent quality.

Open-Source Software

The firmware used in the controllers was created based on open-source software.

The software packages used and their licenses are available from the download area under www.wago.com; please observe the rules stated there.

The controller firmware itself is available as a Board Support Package (BSP). If you are interested, simply contact our Technical Support AUTOMATION unit.

Advantages:

- Programming per IEC 61131-3
- Applications with higher-level languages
- Linux® real-time operating system
- Robust and maintenance-free
- Integrated Cyber-Security Packages

PFC100/PFC200 Controller Versions

Extended Temperature Range

Industrial automation technology is typically operated in temperatures ranging from 0 ... 55 °C. However, there are applications like telecontrol technology that require an extended temperature range. These version are available in an extended temperature range of -20 ... +60 °C.



ECO

The ECO version of the PFC200 limits the number of stackable I/O modules to four.

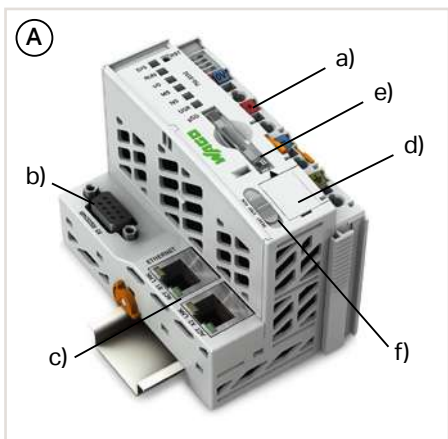
Telecontrol Technology

The telecontrol technology versions of the PFC200 are distinguished by the integrated, standardized telecontrol technology:

- IEC 60870-5
- IEC 61850
- IEC 61400-25
- DNP3

3.1

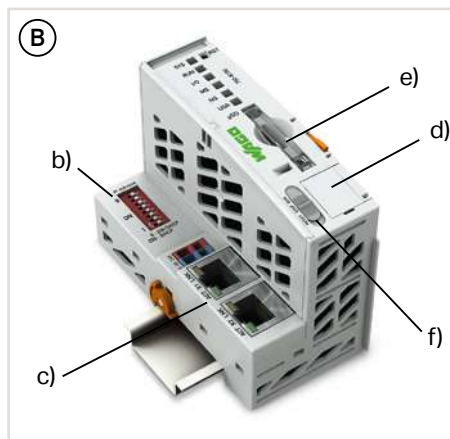
Interfaces and Types



- Includes supply module (a)
- Technical differences on the connection level (b)
- ETHERNET 2 x RJ-45 (c)
- Service interface (d)

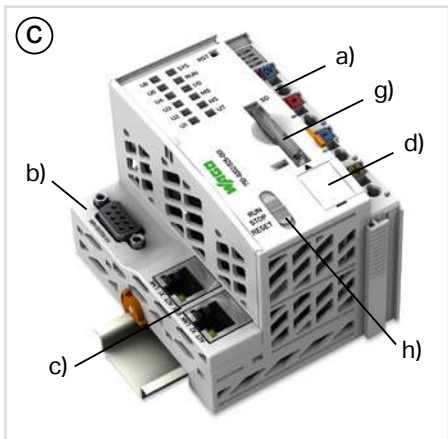
Housing Design (A)

- microSD card slot for external storage media (e)
- Stop/start switch (f)
- W x H x D (mm) 61.5 x 71.9 x 100



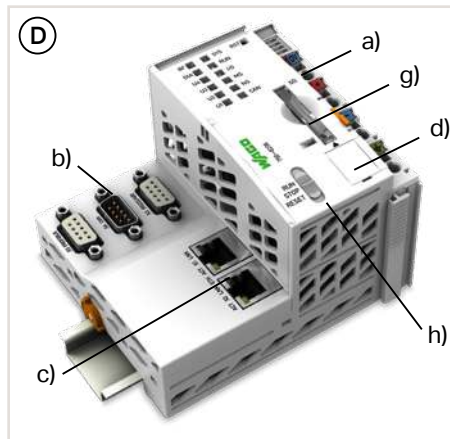
Housing Design (B)

- microSD card slot for external storage media (e)
- Stop/start switch (f)
- W x H x D (mm) 49.5 x 71.9 x 96.8



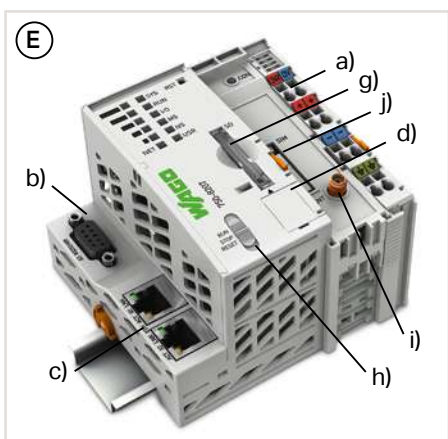
Housing Design (C)

- SD card slot for external storage media (g)
- Stop/start switch (h)
- W x H x D (mm) 78.6 x 71.9 x 100



Housing Design (D)

- SD card slot for external storage media (g)
- Stop/start switch (h)
- W x H x D (mm) 112 x 71.9 x 100



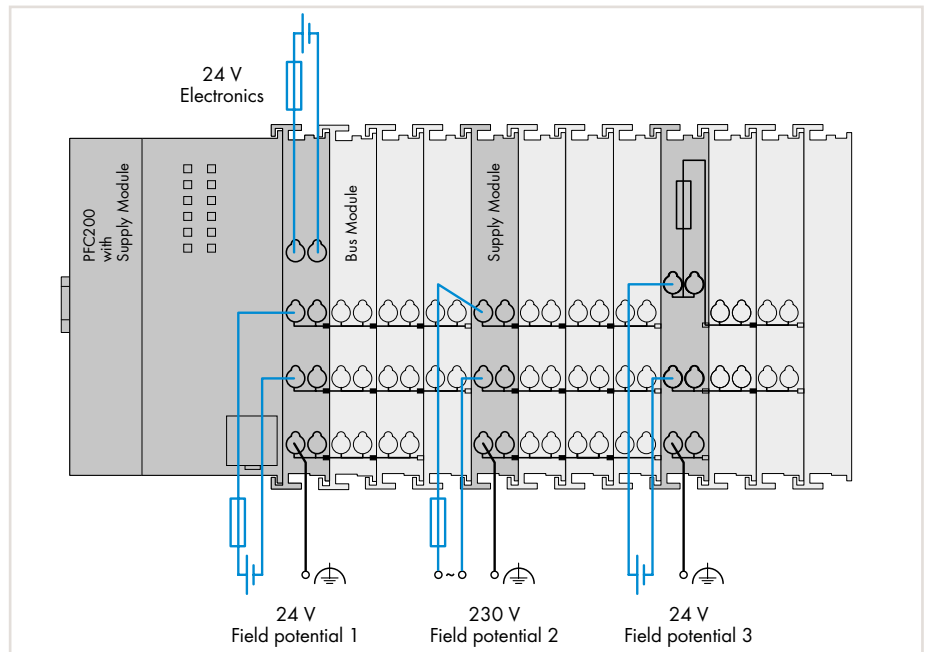
Housing Design (E)

- SD card slot for external storage media (g)
- Stop/start switch (h)
- GSM antenna connection (i)
- SIM card slot (j)
- W x H x D (mm) 102.5 x 71.9 x 100

PFC100/PFC200 Controller Installation Instructions

Supply Modules

Power is always channeled to the internal electronics power supply via the controller. The power supply to the field-side supply is electrically isolated. The division enables a separate supply for sensors and actuators. The I/O modules' connections automatically lead to transferring the supply voltages. Bus supply modules with diagnostics enable additional monitoring of the power supply. This ensures a flexible, user-specific supply design for a station. The current supply to the electronics is limited by a maximum value. If the sum of the internal current demand of all the I/O modules should exceed this value, an additional bus supply module is necessary. Even in this case, power supply to the field-side supply of 10 A may not be exceeded. However, different bus supply modules allow a new power supply, formation of potential groups and the implementation of emergency stop concepts.



Notes

Additional steps must be implemented specifically for the location the I/O-System is installed:

- Specific power and field-side power supply filters (750-624 or 750-626) are required for marine and onshore/offshore applications.
- A specific supply module (750-606) is required to operate intrinsically safe Ex i modules.
- Additionally, both a bus supply module and a field-side power supply filter are recommended when operating intrinsically safe Ex i modules for marine and onshore/offshore applications.
- As part of operating safety-related I/O modules, PELV/SELV power supply units must be used for 24 VDC supply of electronics and field. In addition, specific power and field-side power supply filters must be provided (750-626).

Please refer to the manual for details about the power supply's design.

Item Number Key

Explanation of the components of an item number key

Item No. : 750-81xx = PFC100

- 00: 2 x ETHERNET, ECO
- 01: 2 x ETHERNET
- 02: 2 x ETHERNET, RS-232/-485

Item No. : 750-82xx = PFC200

- 02: 2 x ETHERNET, RS-232/-485
- 03: 2 x ETHERNET, CAN
- 04: 2 x ETHERNET, RS-232/-485, CAN
- 06: 2 x ETHERNET, RS-232/-485, CAN, PROFIBUS-DP slave
- 07: 2 x ETHERNET, RS-232/-485, mobile radio module
- 08: 2 x ETHERNET, RS-232/-485, CAN, CANopen, PROFIBUS master

.../025-yyy: Extended temperature range of -20 ... +60 °C

- 000: Standard
- 001: Telecontrol standard
- 002: Telecontrol ECO

PFC100/PFC200 Controller

Standards and Rated Conditions

General Specifications	
System supply voltage	24 VDC (–25 ... +30 %)*; *For all shipbuilding certified couplers
Input current typ. at rated load (24 V)	550 mA, 750–8100: 300 mA
Isolation	500 V system/supply
Ambient temperature (operation)	0 ... +55 °C
Ambient temperature (operation) for versions with an extended temperature range	–20 ... +60 °C
Ambient temperature (storage)	–25 ... +85 °C
Ambient temperature (storage) for versions with an extended temperature range	–40 ... +85 °C
Relative humidity	95 % non-condensing
Relative humidity for versions with an extended temperature range	Max. 95 %, short-term condensation per Class 3K6 / IEC EN 60721-3-3 and E DIN 40046-721-3, taking a temperature range of –20 ... +60 °C into consideration (except wind-driven precipitation, water and ice formation)
Operating altitude	Without temperature derating: 0–2000 m; with temperature derating: 2000–5000 m (0.5 K / 100 m); max.: 5000 m
Pollution degree	2 per IEC 61131-2
Vibration resistance	0.5 g (4 g for all shipbuilding certified controllers) per IEC 60068-2-6
Shock resistance	15 g per IEC 60068-2-27
EMC immunity to interference	Per EN 61000-6-2 / shipbuilding applications
EMC emission of interference	Per EN 61000-6-3 / shipbuilding applications
Protection type	IP20
Mounting position	Any
Mounting type	35 mm DIN rail
Housing material	Polycarbonate, polyamide 6.6
Exposure to pollutants	Per IEC 60068-2-42 and IEC 60068-2-43
Permissible SO ₂ contaminant concentration at a relative humidity < 75 %	25 ppm
Permissible H ₂ S contaminant concentration at a relative humidity < 75 %	10 ppm
Wire connection	CAGE CLAMP®
Conductor sizes and strip lengths Standard Controller:	0.08 ... 2.5 mm ² / 28 ... 14 AWG; 8 ... 9 mm / 0.31 ... 0.35 inch
Conductor sizes and strip lengths ECO Controller:	0.08 ... 1.5 mm ² / 28 ... 16 AWG; 5 ... 6 mm / 0.22 inch
Current carrying capacity of the power jumper contacts	10 A

3.1

Approvals

Overview of the approvals in the article comparison in Section 12, Technical Appendix, or online under www.wago.com

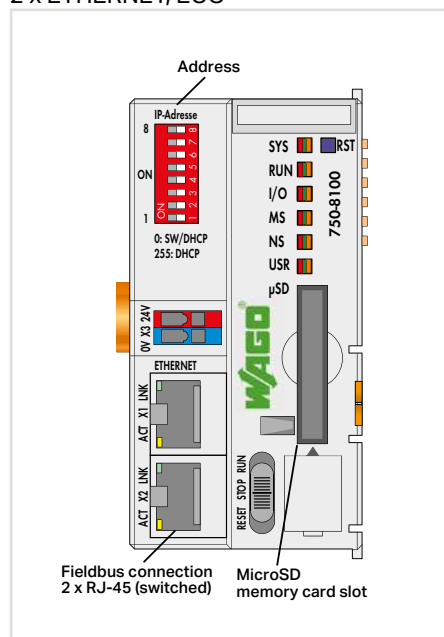


Controller PFC100

2 x ETHERNET, ECO



Figure: 750-8100



Item description	PFC100
Version	2ETH ECO
Item no.	750-8100

Technical Data

Fieldbus	MODBUS/TCP
Protocols	DHCP, DNS, NTP, FTP, FTPS, SNMP, HTTP, HTTPS, SSH, MODBUS (TCP, UDP)
Visualization	Web Visu, Webserver
Programming	e!COCKPIT (based on CODESYS 3)
CPU	Cortex A8, 600 MHz
Operating system	Real-time Linux (with RT-Preempt patch)
Non-volatile memory (hardware)	64 kB
Program memory / data memory / non-volatile memory (software)	10 MB* / 10 MB* / 64 kB
Number of I/O modules per node max.	250
Input and output process image (internal) max.	1000 words
Input and output process image (MODBUS) max.	32000 words
System supply voltage	24 VDC (-25 ... +30 %)
Total current for system supply	700 mA
Ambient temperature (operation)	0 ... +55 °C
Dimensions W x H x D	49.5 x 71.9 x 96.8 mm
Approvals	CE, Marine, UL 508**, ANSI/ISA**, ATEX/IECEX
Data sheet and further information, see:	wago.com/750-8100

Accessories

microSD memory card, 2 GB

Item no.	Page
758-879/000-3102	44

*Program and data memory (dynamically distributed)

**pending

e!COCKPIT Software
see Section 1

Mini-WSB Quick marking system
see Full Line Catalog, Volume 6

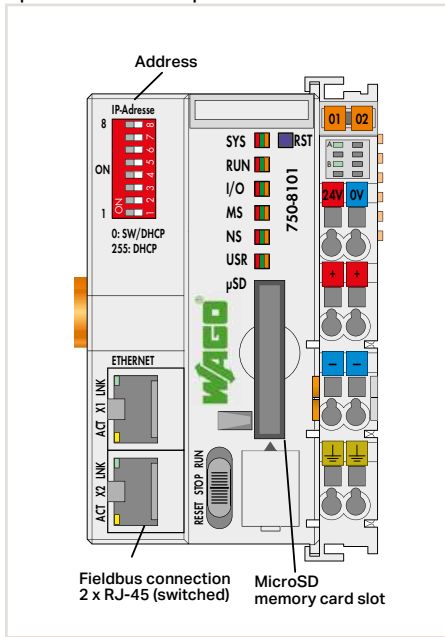
Approvals and corresponding ratings,
see Page 515 or www.wago.com

Controller PFC100

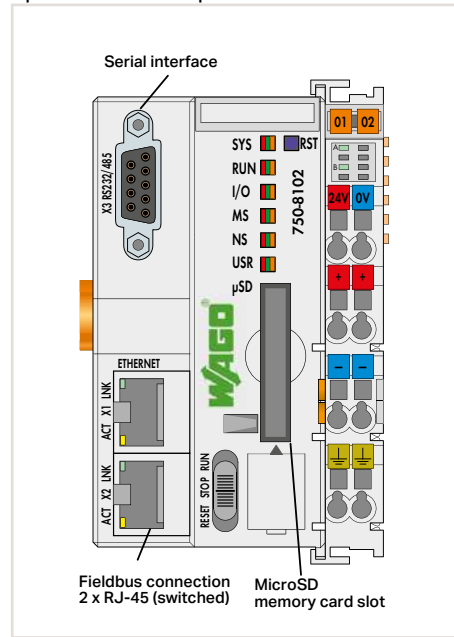


Figure: 750-8102

2 x ETHERNET,
optional: ext. temperature



2 x ETHERNET, RS-232/-485,
optional: ext. temperature



Item description	PFC100	
Version	2ETH	2ETH T
Item no.	750-8101	750-8101/025-000

Technical Data	
Fieldbus	MODBUS/TCP
Protocols	DHCP, DNS, NTP, FTP, FTPS, SNMP, HTTP, HTTPS, SSH, MODBUS (TCP, UDP)
Communication	
Visualization	Web Visu, Webserver
Programming	e!COCKPIT (based on CODESYS 3)
CPU	Cortex A8, 600 MHz
Operating system	Real-time Linux 3.18 (with RT-Preempt patch)
Non-volatile memory (hardware)	64 kB
Program memory / data memory / non-volatile memory (software)	12 MB* / 12 MB* / 64 kB
Number of I/O modules per node max.	250
Input and output process image (internal) (max.)	1000 words
Input and output process image (MODBUS) max.	32000 words
System supply voltage	24 VDC (-25 ... +30 %)
Total current for system supply	1700 mA
Ambient temperature (operation)	0 ... +55 °C -20 ... +60 °C
Dimensions W x H x D	61.5 x 71.9 x 100 mm
Approvals	CE, Marine, UL 508**, ANSI/ISA**, ATEX/IECEX
Data sheet and further information, see:	wago.com/750-8101

Accessories	Item no.	Page
microSD memory card, 2 GB	758-879/000-3102	44

*Program and data memory (dynamically distributed)
**pending

Item description	PFC100	
Version	2ETH RS	2ETH RS T
Item no.	750-8102	750-8102/025-000

Technical Data	
Fieldbus	MODBUS/TCP
Protocols	DHCP, DNS, NTP, FTP, FTPS, SNMP, HTTP, HTTPS, SSH, MODBUS (TCP, UDP)
Communication	RS-232/-485 serial interface (switchable)
Visualization	Web Visu, Webserver
Programming	e!COCKPIT (based on CODESYS 3)
CPU	Cortex A8, 600 MHz
Operating system	Real-time Linux 3.18 (with RT-Preempt patch)
Non-volatile memory (hardware)	128 kB
Program memory / data memory / non-volatile memory (software)	12 MB* / 12 MB* / 128 kB
Number of I/O modules per node max.	250
Input and output process image (internal) (max.)	1000 words
Input and output process image (MODBUS) max.	32000 words
System supply voltage	24 VDC (-25 ... +30 %)
Total current for system supply	1700 mA
Ambient temperature (operation)	0 ... +55 °C -20 ... +60 °C
Dimensions W x H x D	61.5 x 71.9 x 100 mm
Approvals	CE, Marine, UL 508**, ANSI/ISA**, ATEX/IECEX
Data sheet and further information, see:	wago.com/750-8102

Accessories	Item no.	Page
microSD memory card, 2 GB	758-879/000-3102	44

*Program and data memory (dynamically distributed)
**pending

Controller PFC200

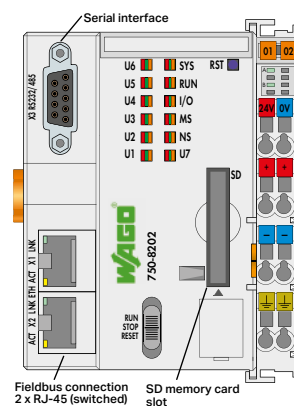
2 x ETHERNET, RS-232/-485,
optional: telecontrol, ext. temperature, ECO



Figure: 750-8203



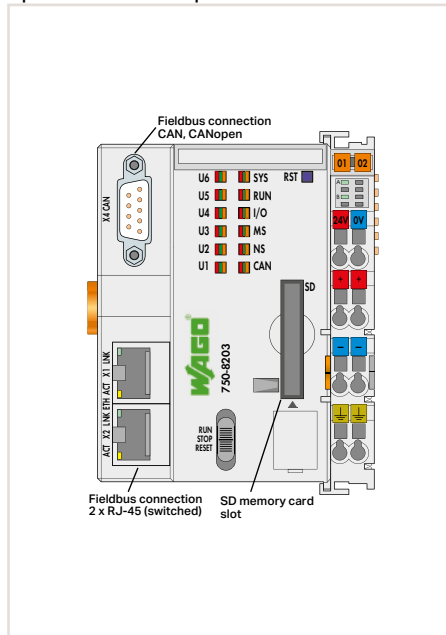
Figure: 750-8206



Item description	PFC200			
Version	2ETH RS	2ETH RS T	2ETH RS Tele T	2ETH RS Tele T ECO
Item no.	750-8202	750-8202/025-000	750-8202/025-001	750-8202/025-002
Technical Data				
Fieldbus	MODBUS/TCP			
Protocols	DHCP, DNS, NTP, FTP, FTPS, SNMP, HTTP, HTTPS, SSH, MODBUS (TCP, UDP, RTU)			
Communication			IEC 60870-5-101/-103/-104, IEC 61850-7-4, IEC 61400-25, DNP3	
Visualization	RS-232/-485 serial interface (switchable)			
Programming	Web Visu, Webserver			
CPU	WAGO-I/O-PRO V2.3 (based on CODESYS 2.3), e!COCKPIT (based on CODESYS 3)		WAGO-I/O-PRO V2.3 (based on CODESYS 2.3)	
Operating system	Cortex A8, 600 MHz			
Main memory (RAM) / internal memory (flash) / non-volatile memory (hardware)	Real-time Linux (with RT-Preempt patch)			
Program memory / data memory / non-volatile memory (software)	256 MB / 256 MB / 128 kB			
Number of I/O modules per node max.	CODESYS 2: 16 MB / 64 MB / 128 kB			
Input and output process image (internal) (max.)	e!RUNTIME: 60 MB* / 60 MB* / 128 kB			
Input and output process image (MODBUS)/ (PROFIBUS)/(CAN) max.	250		4	
System supply voltage	1000 words			
Total current for system supply	CODESYS 2: 1000 words / - / -			
Ambient temperature (operation)	e!RUNTIME: 32000 words / - / -			
Dimensions W x H x D	24 VDC (–25 ... +30 %)			
Approvals	1700 mA			
Data sheet and further information, see:	0 ... +55 °C		–20 ... +60 °C	
Accessories	78.6 x 71.9 x 100 mm			
SD memory card, 2 GB	CE,  Marine,  UL 508, ANSI/ISA			
	  ATEX/IECEx			
	wago.com/750-8202			
	Item no.		Page	
	758-879/000-001		44	

*Program and data memory (dynamically distributed)

2 x ETHERNET, CAN, CANopen,
optional: ext. temperature



PFC200	
2ETH CAN	2ETH CAN T
750-8203	750-8203/025-000

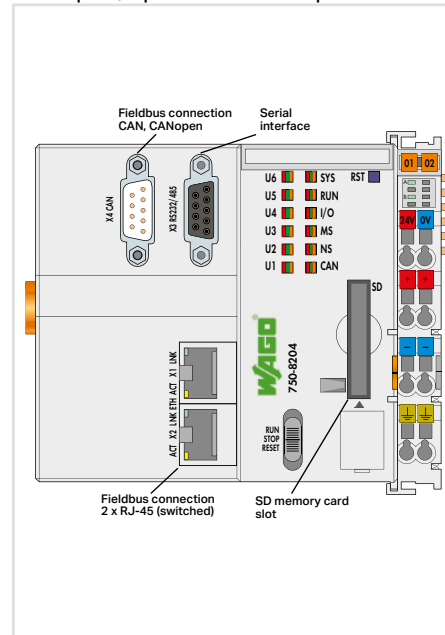
CAN, CANopen, MODBUS/TCP
DHCP, DNS, NTP, FTP, FTPS, SNMP, HTTP, HTTPS, SSH, MODBUS (TCP, UDP)

Web Visu, Webserver
WAGO-I/O-PRO V2.3 (based on CODESYS 2.3), e!COCKPIT (based on CODESYS 3)
Cortex A8, 600 MHz
Real-time Linux (with RT-Preempt patch)
256 MB / 256 MB / 128 kB
16 MB / 64 MB / 128 kB
60 MB* / 60 MB* / 128 kB
250
1000 words
1000 words / - / 2000 words
32000 words / - / 2000 words
24 VDC (-25 ... +30 %)
1700 mA
0 ... +55 °C
-20 ... +60 °C
78.6 x 71.9 x 100 mm
CE, Marine, UL 508, ANSI/ISA
ATEX/IECEx
wago.com/750-8203

Item no.	Page
758-879/000-001	44

*Program and data memory (dynamically distributed)

2 x ETHERNET, RS-232/-485, CAN,
CANopen, optional: ext. temperature



PFC200	
2ETH RS CAN	2ETH RS CAN T
750-8204	750-8204/025-000

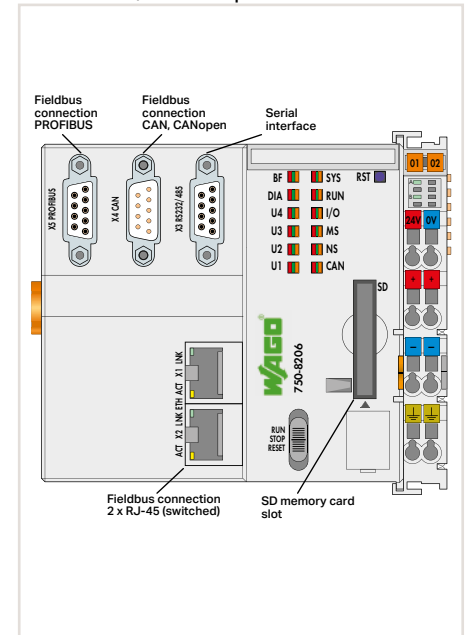
CAN, CANopen, MODBUS/TCP
DHCP, DNS, NTP, FTP, FTPS, SNMP, HTTP, HTTPS, SSH, MODBUS (TCP, UDP, RTU)

RS-232/-485 serial interface (switchable)
Web Visu, Webserver
WAGO-I/O-PRO V2.3 (based on CODESYS 2.3), e!COCKPIT (based on CODESYS 3)
Cortex A8, 600 MHz
Real-time Linux (with RT-Preempt patch)
256 MB / 256 MB / 128 kB
16 MB / 64 MB / 128 kB
60 MB* / 60 MB* / 128 kB
250
1000 words
1000 words / - / 2000 words
32000 words / - / 2000 words
24 VDC (-25 ... +30 %)
1700 mA
0 ... +55 °C
-20 ... +60 °C
112 x 71.9 x 100 mm
CE, Marine, UL 508, ANSI/ISA
ATEX/IECEx
wago.com/750-8204

Item no.	Page
758-879/000-001	44

*Program and data memory (dynamically distributed)

2 x ETHERNET, RS-232/-485, CAN,
CANopen, PROFIBUS slave, optional:
telecontrol, ext. temperature



PFC200		
2ETH RS CAN DPS	2ETH RS CAN DPS T	2ETH RS CAN DPS Tele T
750-8206	750-8206/025-000	750-8206/025-001

PROFIBUS, CAN, CANopen, MODBUS/TCP
DHCP, DNS, NTP, FTP, FTPS, SNMP, HTTP, HTTPS, SSH, MODBUS (TCP, UDP, RTU)

IEC 60870-5-101/-103/-104, IEC 61850-7-4, IEC 61400-25, DNP3
RS-232/-485 serial interface (switchable)
Web Visu, Webserver
WAGO-I/O-PRO V2.3 (based on CODESYS 2.3), e!COCKPIT (based on CODESYS 3)
WAGO-I/O-PRO V2.3 (based on CODESYS 2.3)
Cortex A8, 600 MHz
Real-time Linux (with RT-Preempt patch)
256 MB / 256 MB / 128 kB
16 MB / 64 MB / 128 kB
60 MB* / 60 MB* / 128 kB
250
1000 words
1000 words / 244 bytes / 2000 words
32000 words / 244 bytes / 2000 words
24 VDC (-25 ... +30 %)
1700 mA
0 ... +55 °C
-20 ... +60 °C
112 x 71.9 x 100 mm
CE, Marine, UL 508, ANSI/ISA
ATEX/IECEx
wago.com/750-8206

Item no.	Page
758-879/000-001	44

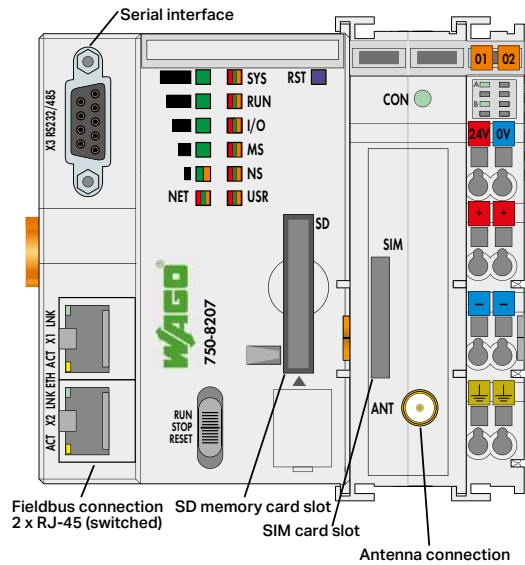
*Program and data memory (dynamically distributed)

Controller PFC200

2 x ETHERNET, RS-232/-485, mobile radio module,
optional: telecontrol, ext. temperature



Figure: 750-8207



Item description	PFC200		
Version	2ETH RS 3G	2ETH RS 3G T	2ETH RS 3G Tele T
Item no.	750-8207	750-8207/025-000	750-8207/025-001
Technical Data			
Fieldbus	MODBUS/TCP		
Protocols	DHCP, DNS, NTP, FTP, FTPS, SNMP, HTTP, HTTPS, SSH, MODBUS (TCP, UDP, RTU)		
		IEC 60870-5-101/-103/-104, IEC 61850-7-4, IEC 61400-25, DNP3	
Communication	RS-232/-485 serial interface (switchable)		
Radio technology	GSM/Edge/UMTS/HSPA+		
Frequency band	GSM quad-band		
Services	SMS (bidirectional), GPRS connection to Internet		
Security encryption	OpenVPN, IPsec, firewall		
Visualization	Web Visu, Webserver		
Programming	WAGO-I/O-PRO V2.3 (based on CODESYS 2.3), e!COCKPIT (based on CODESYS 3)		WAGO-I/O-PRO V2.3 (based on CODESYS 2.3)
CPU	Cortex A8, 600 MHz		
Operating system	Real-time Linux (with RT-Preempt patch)		
Main memory (RAM) / internal memory (flash) / non-volatile memory (hardware)	256 MB / 256 MB / 128 kB		
Program memory / data memory / non-volatile memory (software)	CODESYS 2: 16 MB / 64 MB / 128 kB		
	e!RUNTIME:	60 MB* / 60 MB* / 128 kB	
Number of I/O modules per node max.	250		
Input and output process image (internal) (max.)	1000 words		
Input and output process image (MODBUS) max.	CODESYS 2: 1000 words		
	e!RUNTIME:	32000 words	
System supply voltage	24 VDC (–25 ... +30 %)		
Total current for system supply	700 mA		
Ambient temperature (operation)	0 ... +55 °C	–20 ... +60 °C	
Dimensions W x H x D	102.5 x 71.9 x 100 mm		
Approvals	CE, UL 508**		
Data sheet and further information, see:	wago.com/750-8207		
Accessories	Item no.	Page	
SD memory card, 2 GB	758-879/000-001	44	
Antenna, GSM	see Accessories in Section 9	420	

*Program and data memory (dynamically distributed)

**pending

e!COCKPIT, WAGO-I/O-PRO Software V2.3
see Section 1

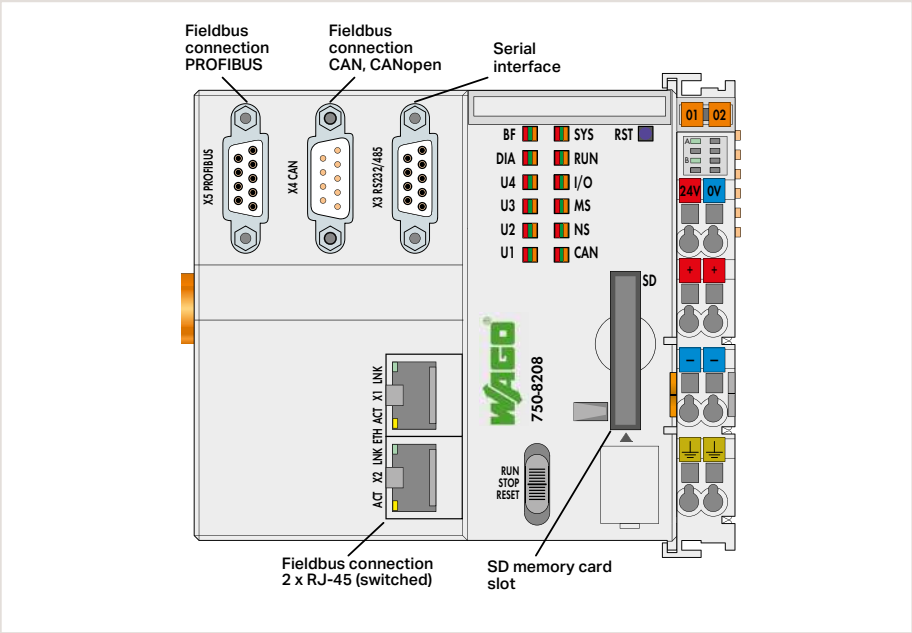
Approvals and corresponding ratings,
see Page 515 or www.wago.com

Controller PFC200

2 x ETHERNET, RS-232/-485, CAN, CANopen, PROFIBUS master, optional: ext. temperature



Figure: 750-8208



Item description	PFC200	
Version	CS 2ETH RS CAN DPM	CS 2ETH RS CAN DPM T
Item no.	750-8208	750-8208/025-000
Technical Data		
Feldbus	PROFIBUS-DP Master, CAN, CANopen, MODBUS/TCP	
Protokolle	DHCP, DNS, NTP, FTP, FTPS, SNMP, HTTP, HTTPS, SSH, MODBUS (TCP, UDP, RTU)	
Communication	RS-232/-485 serial interface (switchable)	
Visualization	Web Visu, Webserver	
Programming	WAGO-I/O-PRO V2.3 (based on CODESYS 2.3)	
CPU	Cortex A8, 600 MHz	
Operating system	Real-time Linux (with RT-Preempt patch)	
Main memory (RAM) / internal memory (flash) / non-volatile memory (hardware)	256 MB / 256 MB / 128 kB	
Program memory / data memory / non-volatile memory (software)	16 MB / 64 MB / 128 kB	
Number of I/O modules per node max.	250	
Input and output process image (internal) (max.)	1000 words	
Input and output process image (MODBUS)/(PROFIBUS)/(CAN) max.	1000 words / 5000 bytes / 2000 words	
System supply voltage	24 VDC (–25 ... +30 %)	
Total current for system supply	1700 mA	
Ambient temperature (operation)	0 ... +55 °C	–20 ... +60 °C
Dimensions (W x H x D) (mm)	112 x 71.9 x 100 mm	
Approvals	CE, UL 508**	
Data sheet and further information, see:	wago.com/750-8208	
Accessories		
SD memory card, 2 GB	Item no.	Page
	758-879/000-001	44

*Input and output process image (PROFIBUS) max.: 5000 bytes (a maximum 125 slaves are supported, because a slave's process image can have up to 244 bytes/244 bytes)
**pending



PFC200 XTR Controllers

PFC100/PFC200 Controller

- Maximum performance in a minimum space
- Also programmable in high-level languages based on Linux®
- Security packages with SSH and SSL/TLS
- Runtime system for CODESYS 2 (only PFC200) and 3

◀ Section 3.1

750 Series Controllers

- Controllers for all prominent fieldbus systems
- Programmable to IEC 61131-3
- Ideal combination with the WAGO 750 I/O-SYSTEM modules

Section 3.3 ▶

PERSPECTO® Control Panels

- Merging of control and visualization
- 8.9–38.1 cm (3.5–15")

◀ ◀ Section 2

PFC200 XTR Controllers

The advantages of the PFC Controller combined with the characteristics for extreme environments:

- High processing speed
- Multiple interfaces
- eXTremely robust and maintenance-free

750 XTR Controllers

For demanding applications in which the following are critical:

- Extreme temperature stability
- Immunity to electromagnetic interference and impulse voltages
- Vibration and shock resistance

Section 3.4 ▶ ▶

PFC200 XTR Controllers

Contents

	Page
General Product Information	62
Versions	62
Interfaces and Types	63
Item Number Key	63
Installation Instructions	64
Standards and Rated Conditions for Railway Applications (EN 50155)	64
Standards and Rated Conditions	65
Approvals	65

	CPU	ETHERNET Modbus TCP	PROFIBUS	CANopen	Modbus RTU	Telecontrol protocols: IEC 60870, IEC 61850/61400, DNP3	Description	Item No.	
	Cortex A8, 600 MHz	x			x		PFC200 2ETH RS XTR	750-8202/040-000	66
	Cortex A8, 600 MHz	x			x	x	PFC200 2ETH RS XTR Tele	750-8202/040-001	66
	Cortex A8, 600 MHz	x	S	M/S	x		PFC200 2ETH RS CAN DPS XTR	750-8206/040-000	67
	Cortex A8, 600 MHz	x	S	M/S	x	x	PFC200 2ETH RS CAN DPS XTR Tele	750-8206/040-001	67

M: Master, S: Slave

3.2
PFC
200
XTR

PFC200 XTR Controllers

General Product Information

PFC200 XTR:

Taking it to the eXTReMe — The Standard for 750 XTR

With the dark gray XTR version of the PFC200 Controller, you profit from the unique added value featured by this fast and highly communicative multi-talent for applications under extreme environmental conditions.

The PFC200 XTR Controller excels with high processing speed and multiple interfaces for parallel communication. All versions feature two ETHERNET ports and — depending on the model — additional interfaces. The CANopen, PROFIBUS DP and MODBUS TCP/UDP/RTU protocols provide a flexible connection to fieldbus systems and external input/output devices. These fieldbus systems can be easily configured directly in WAGO's easy-to-use *e!COCKPIT* development environment. The ETHERNET interfaces with an integrated switch also support all major IT protocols. In addition to multiple interfaces, the PFC200 XTR offers ample memory for your applications, provided by the internal flash memory and an integrated interface for SD/SDHC cards.

The WAGO 750 XTR I/O-SYSTEM features outstanding characteristics: It is extremely temperature-resistant, immune to interference, as well as insensitive to vibrations and impulse voltages. This is what makes it the first choice for demanding applications.

Marine Systems and Onshore/Offshore Industry

International approvals coupled with industry-specific features permit use in shipbuilding and other harsh sectors. Addressing requirements specific to industry and operating environment has enabled use on marine diesels and in the EMC-sensitive area of a vessel's bridge. Because the requirements are significantly greater for immunity to interference or emission of interference and mechanical performance in these sensitive areas, the system can readily meet the needs of other industries.

Link between Process Data and IT Application — Even under eXTReMe Conditions

The PFC200 XTR ideally combines real-time requirements with IT functionality. It supports both MODBUS/TCP and ETHERNET/IP for use in industrial environments. HTTP, SNMP, FTP, BootP, DHCP, DNS and other protocols simplify integration into IT environments. Integrated Web pages and Web-based visualization provide IT applications with real-time process data. Furthermore, the PLC incorporates library functions for email, SOAP, ASP, IP configuration, ETHERNET sockets and file system.

Security on Board

The topics of ETHERNET communication and security are closely linked. To provide PFC Controller users with a high level of security, mechanisms for secure connections such as HTTPS, FTPS, SSH and SSL/TLS are standard.

Worldwide Approvals

International approvals for industrial automation, building technology, shipbuilding and onshore/offshore applications guarantee worldwide use even under harsh operating conditions, e.g., Germanischer Lloyd, Det Norske Veritas, American Bureau of Shipping, Korean Register of Shipping, Nippon Kaiji Kyokai, Registro Italiano Navale and Polski Rejestr Statkow.

Superior Reliability in Extreme Climates

Regardless of freezing cold, extreme heat and high humidity, the WAGO 750 XTR I/O-SYSTEM is engineered for absolute dependability in virtually any weather. The XTR version of the PFC200 is unfazed by both freezing cold down to -40 °C and scorching heat up to +70 °C. And this applies equally to both start-up and continual operation. The maximum approved operating altitude of 5,000 m is another highlight. Even in the thin air of a mountain-top station, the system impressively demonstrates its high performance and availability.

Additional Protection against Interference Pulses

The WAGO 750 XTR I/O-SYSTEM provides greater isolation up to 5 kV of impulse voltage, lower EMC emission of interference and higher insensitivity to EMC interference. These strengths add up to trouble-free operation.

High Mechanical Performance

Automation systems must be particularly vibration-resistant, especially when installed close to vibration-prone and shock-generating system components. Powerful motors and power circuit breakers are just two examples from a wide range of applications. The WAGO 750 XTR I/O-SYSTEM continues to set new standards here. Count on long-lasting, trouble-free operation and industry-topping levels of safety — even in the most severe applications, such as tunnel boring machines.

Modular Expandability

With the WAGO 750 XTR I/O-SYSTEM, the PFC200 can be expanded to almost any input/output interface. Using the same standard platform has given the XTR the same proven advantages.

Open-Source Software

The firmware used in the controllers was created based on open-source software. The software packages used and their licenses are available from the download area under www.wago.com; please observe the rules stated there. The controller firmware itself is available as a Board Support Package (BSP). If you are interested, simply contact our Technical Support AUTOMATION unit.



Advantages:

- Controls for eXTReMe environmental conditions
 - Needs no climate control
 - Application in unshielded areas
 - Application in vibration- or shock-generating system parts
- Programming per IEC 61131-3
- Can be combined with high-level languages
- Linux® real-time operating system
- Robust and maintenance-free
- Integrated IT security standards

PFC200 XTR Controllers
Versions

Telecontrol Technology

The telecontrol technology versions of the PFC200 are distinguished by the integrated, standardized telecontrol technology:

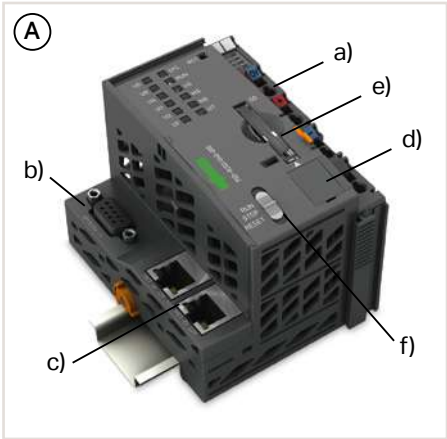
- IEC 60870-5
- IEC 61850
- IEC 61400-25
- DNP3

The increased requirements for dielectric strength and interference immunity according to EN 60870-2-1 are also completely fulfilled.



3.2

Interfaces and Types



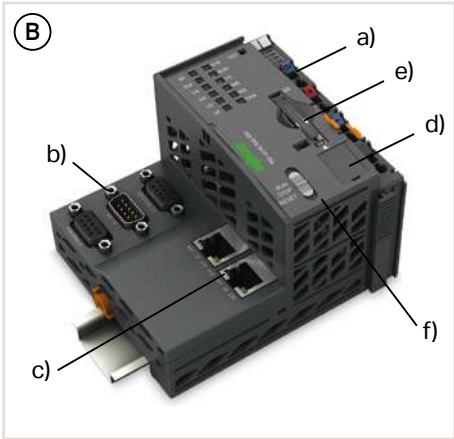
- Includes supply module (a)
- Technical differences on the connection level (b)
- ETHERNET 2 x RJ-45 (c)
- Service interface (d)
- SD card slot for external storage media (e)
- Stop/start switch (f)

Housing Design (A)

- W x H x D (mm) 78.6 x 71.9 x 100

Housing Design (B)

- W x H x D (mm) 112 x 71.9 x 100



Item Number Key

Explanation of the components of an item number key

Item No. : 750-82xx/040-000

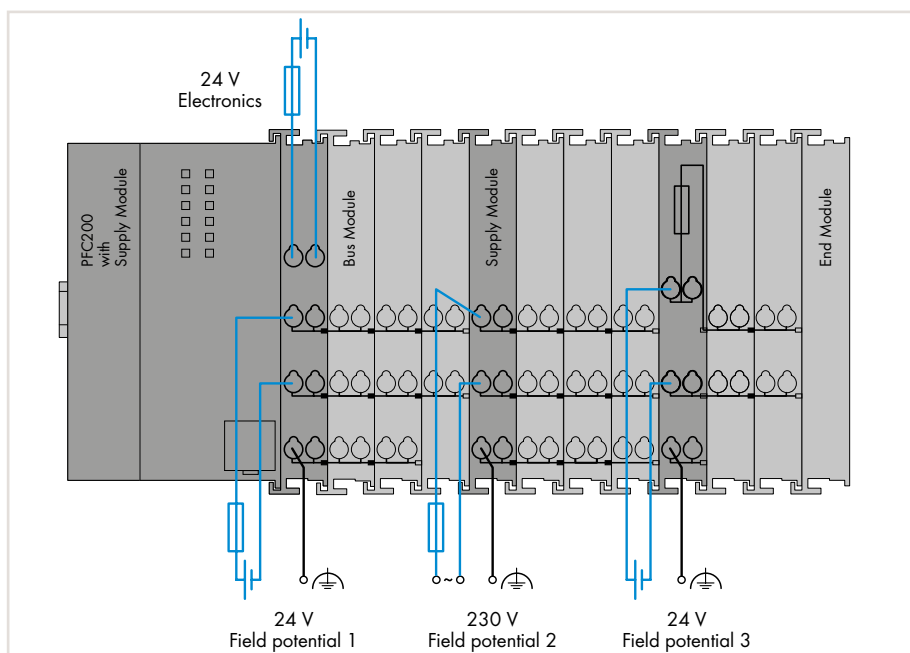
- 02: 2 x ETHERNET, RS-232/-485
- 06: 2 x ETHERNET, RS-232/-485, CAN, PROFIBUS-DP slave

.../040-000: Standard
.../040-001: Telecontrol

PFC200 XTR Controllers Installation Instructions

Supply Modules

Power is always channeled to the internal electronics power supply via the controller. The power supply to the field-side supply is electrically isolated. The division enables a separate supply for sensors and actuators. The I/O modules' connections automatically lead to transferring the supply voltages. Bus supply modules with diagnostics enable additional monitoring of the power supply. This ensures a flexible, user-specific supply design for a station. The current supply to the electronics is limited by a maximum value. If the sum of the internal current demand of all the I/O modules should exceed this value, an additional bus supply module is necessary. Even in this case, power supply to the field-side supply of 10 A may not be exceeded. However, different bus supply modules allow a new power supply, formation of potential groups and the implementation of emergency stop concepts.



Notes

Additional steps must be implemented specifically for the location the I/O-System is installed:

- Specific power and field-side power supply filters (750-624/040-001 or 750-626/040-000) are ready for marine and onshore/offshore applications, as well as in telecontrol and rail technology.

Please refer to the manual for details about the power supply's design.

Mixed Operation

Mixed operation (standard/XTR I/O modules) within a node is possible when groups of modules are electrically isolated on the field side, i.e., electrically isolated power supply. The combination may be useful, for example, when there are only increased requirements for dielectric strength and immunity to interference, but the ambient temperature is not critical.

Standards and Rated Conditions for Railway Applications (EN 50155)

Railway Applications (EN 50155)	complied class/standard
4.1 Rated Operating Conditions	
4.1.1 Altitude above sea level	AX (EN 50125-1)
4.1.2 Ambient operating temperature	TX
4.1.3 Shock and vibration	1A and 1B (EN 61373)
4.1.4 Relative humidity	95% (varnish coated PCBs)
5.1 Power Supply	
5.1.1.1 Power supply fluctuations	
Minimum voltage	0,725 x Un
Maximum voltage	1,3 x Un
5.1.1.2 Power supply interruption	S1
5.4 Surge, ESD, Burst Tests	EN 50121-3-2
5.5 EMC (Interference Emission, Interference Immunity)	EN 50121-3-2, EN 50121-4, -5

WAGO is a company certified according to the quality standard IRIS.

PFC200 XTR Controllers

Standards and Rated Conditions

General Specifications	
System supply voltage	24 VDC (–25 ... +30 %) Specified values for ambient temperature under laboratory conditions +15 °C... +35 °C Derating for –40 ... +55 °C: 24 V (–25 ... +20 %)*. Derating for +55 ... +70 °C: 24 V (–25 ... +10 %)*. *Including 15 % residual ripple (lower limit –27.5 %)
Input current typ. at rated load (24 V)	550 mA
Ambient temperature (operation)	–40 ... +70 °C
Ambient temperature (storage)	–40 ... +85 °C
Relative humidity	Max. 95 %, short-term condensation per Class 3K7 / IEC EN 60721-3-3 and E DIN 40046-721-3 (except wind-driven precipitation, water and ice formation)
Operating altitude	Without temperature derating: 0–2000 m; with temperature derating: 2000–5000 m (0.5 K / 100 m); max.: 5000 m
Pollution degree	2 per IEC 61131-2
Dielectric strength	Per (EN 60870-2-1) • 510 VAC / 775 VDC Isolation: Rated impulse voltage • 1 kV (Class VW1 per EN 60870-2-1) Surge: • 1 kV (L – L) / 2 kV (L – E)
Vibration resistance	Per IEC 60068-2-6 (acceleration: 5 g), EN 60870-2-2, IEC 60721-3-1, -3, EN 50155, EN 61373
Shock resistance	Per IEC 60068-2-27 (15 g/11 ms/half-sine/1,000 shocks; 25 g/6 ms/1,000 shocks), EN 50155, EN 61373
EMC immunity to interference	Per EN 61000-6-1, -2, EN 61131-2, marine applications, EN 50121-3-2, EN 50121-4, -5, EN 60255-26, EN 60870-2-1, EN 61850-3, IEC 61000-6-5, IEEE 1613, VDEW: 1994
EMC emission of interference	Per EN 61000-6-3, -4, EN 61131-2, EN 60255-26, marine applications, EN 60870-2-1, EN 61850-3, EN 50121-3-2, EN 50121-4, -5
Protection type	IP20
Mounting position	Horizontal (standing/lying) or vertical
Mounting type	35 mm DIN rail
Housing material	Polycarbonate, polyamide 6.6
Exposure to pollutants	Per IEC 60068-2-42 and IEC 60068-2-43
Permissible SO ₂ contaminant concentration at a relative humidity < 75 %	25 ppm
Permissible H ₂ S contaminant concentration at a relative humidity < 75 %	10 ppm
Wire connection	CAGE CLAMP®
Conductor sizes strip lengths	0.08 ... 2.5 mm ² / 28 ... 14 AWG 8 ... 9 mm / 0.31 ... 0.35 inch
Current carrying capacity of the power jumper contacts	10 A

3.2

Approvals

Overview of the approvals in the article comparison in Section 12, Technical Appendix, or online under www.wago.com

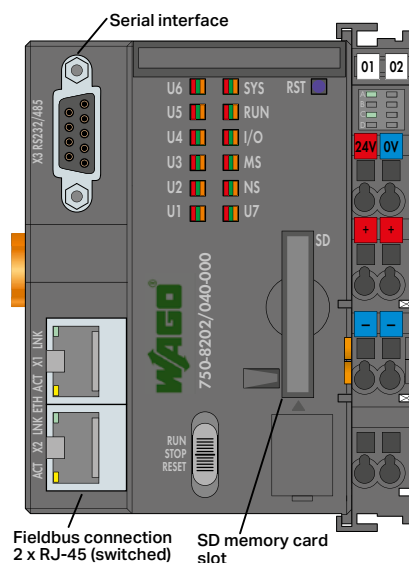


Controller PFC200 XTR

2 x ETHERNET, RS-232/-485, extreme, optional: Telecontrol technology



Figure: 750-8202/040-000



Item description
Version
Item no.

PFC200	
2ETH RS XTR	2ETH RS Tele XTR
750-8202/040-000	750-8202/040-001

Technical Data

Fieldbus
Protocols

MODBUS/TCP
DHCP, DNS, NTP, FTP, FTPS, SNMP, HTTP, HTTPS, SSH, MODBUS (TCP, UDP, RTU)
IEC 60870-5-101/-103/-104, IEC 61850-7-4, IEC 61400-25, DNP3

Communication
Visualization
Programming

RS-232/-485 serial interface (switchable)	
Web Visu, Webserver	
WAGO-I/O-PRO V2.3 (based on CODESYS 2.3),	WAGO-I/O-PRO V2.3 (based on CODESYS 2.3)

CPU
Operating system
Main memory (RAM) / internal memory (flash) / non-volatile memory (hardware)
Program memory / data memory / non-volatile memory (software)
Number of I/O modules per node max.
Input and output process image (internal) max.
Input and output process image (MODBUS) max.

Cortex A8, 600 MHz	
Real-time Linux (with RT-Preempt patch)	
256 MB / 256 MB / 128 KB	
CODESYS 2:	16 MB / 64 MB / 128 KB
e!RUNTIME:	60 MB* / 60 MB* / 128 kB
64	
1000 words	
CODESYS 2:	1000 words

System supply voltage
Current consumption, system supply
Total current for system supply
Ambient temperature (operation)
Dimensions W x H x D

24 VDC (-25 ... +30 %)
Specified values for ambient temperatures under laboratory conditions: +15 ... +35 °C
Derating for -40 ... +55 °C: 24 V (-25 ... +20 %)**
Derating for +55 ... +70 °C: 24 V (-25 ... +10 %)**
510 mA
1700 mA
-40 ... +70 °C
78.6 x 71.9 x 100 mm

Approvals
Data sheet and further information, see:

CE, Marine, UL 508, ANSI/ISA
wago.com/750-8202/040-000

Accessories
SD memory card, 2 GB

Item no.	Page
758-879/000-001	44

e!COCKPIT, WAGO-I/O-PRO Software V2.3 see Section 1

Mini-WSB Quick marking system see Full Line Catalog, Volume 6

Approvals and corresponding ratings, see Page 515 or www.wago.com

*Program and data memory (dynamically distributed)

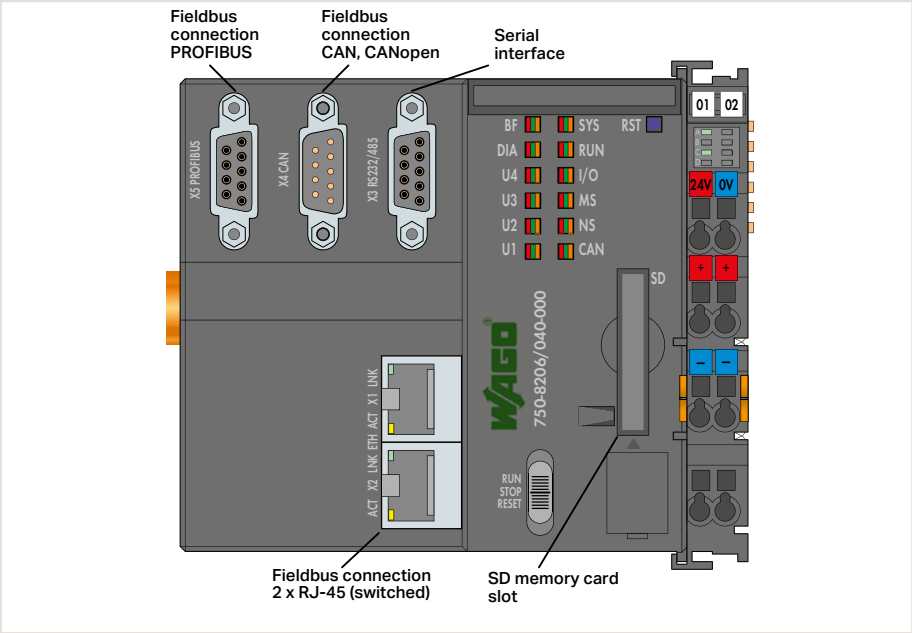
**Including 15 % ripple (lower limit -27.5 %)

Controller PFC200 XTR

2 x ETHERNET, RS-232/-485, CAN, CANopen, PROFIBUS slave, extreme, optional: Telecontrol technology

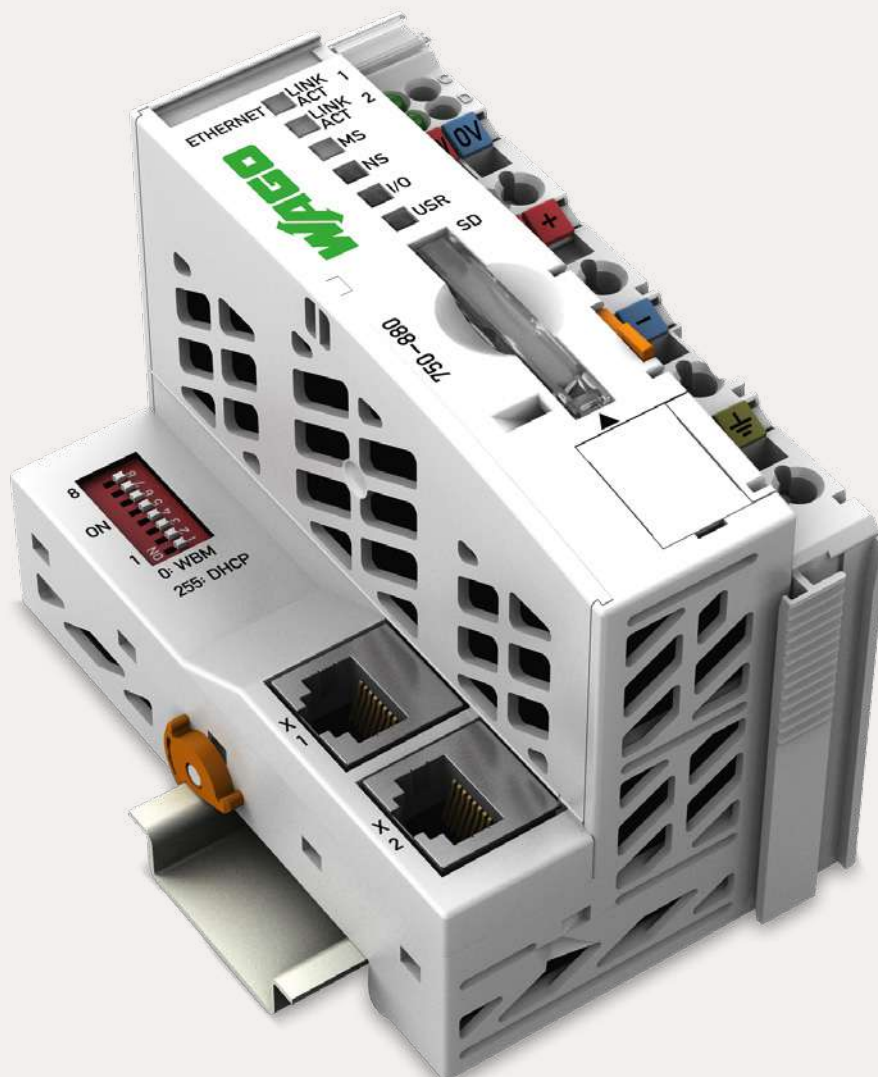


Figure: 750-8206/040-000



Item description	PFC200	
Version	2ETH RS CAN DPS XTR	2ETH RS CAN DPS Tele XTR
Item no.	750-8206/040-000	750-8206/040-001
Technical Data		
Fieldbus	PROFIBUS, CAN, CANopen, MODBUS/TCP	
Protocols	DHCP, DNS, NTP, FTP, FTPS, SNMP, HTTP, HTTPS, SSH, MODBUS (TCP, UDP, RTU)	
	IEC 60870-5-101/-103/-104, IEC 61850-7-4, IEC 61400-25, DNP3	
Communication	RS-232/-485 serial interface (switchable)	
Visualization	Web Visu, Webserver	
Programming	WAGO-I/O-PRO V2.3 (based on CODESYS 2.3), e!COCKPIT (based on CODESYS 3)	WAGO-I/O-PRO V2.3 (based on CODESYS 2.3)
CPU	Cortex A8, 600 MHz	
Operating system	Real-time Linux (with RT-Preempt patch)	
Main memory (RAM) / internal memory (flash) / non-volatile memory (hardware)	256 MB / 256 MB / 128 KB	
Program memory / data memory / non-volatile memory (software)	CODESYS 2:	16 MB / 64 MB / 128 KB
	e!RUNTIME:	60 MB* / 60 MB* / 128 kB
Number of I/O modules per node max.	64	
Input and output process image (internal) max.	1000 words	
Input and output process image (MODBUS)/(PROFIBUS)/(CAN) max.	CODESYS 2:	1000 words / 244 bytes / 2000 words
	e!RUNTIME:	32000 words / 244 bytes / 2000 words
System supply voltage	24 VDC (–25 ... +30 %)	
	Specified values for ambient temperatures under laboratory conditions: +15 ... +35 °C	
	Derating for –40 ... +55 °C: 24 V (–25 ... +20 %)**	
	Derating for +55 ... +70 °C: 24 V (–25 ... +10 %)**	
Current consumption, system supply	600 mA	
Total current for system supply	1700 mA	
Ambient temperature (operation)	–40 ... +70 °C	
Dimensions W x H x D	112 x 71.9 x 100 mm	
Approvals	CE, Marine, UL 508, ANSI/ISA	
Data sheet and further information, see:	wago.com/750-8206/040-000	
Accessories	Item no.	Page
SD memory card, 2 GB	758-879/000-001	44

*Program and data memory (dynamically distributed)
**Including 15 % ripple (lower limit –27.5 %)



750 Series Controllers

PFC100/PFC200 Controller

- Maximum performance in a minimum space
- Also programmable in high-level languages based on Linux®
- Security packages with SSH and SSL/TLS
- Runtime system for CODESYS 2 (only PFC200) and 3

◀ ◀ Section 3.1

750 Series Controllers

- Controllers for all prominent fieldbus systems
- Programmable to IEC 61131-3
- Ideal combination with the WAGO 750 I/O-SYSTEM modules

PERSPECTO® Control Panels

- Merging of control and visualization
- 8.9–38.1 cm (3.5–15")

◀ ◀ ◀ Section 2

PFC200 XTR Controllers

- The advantages of the PFC Controller combined with the characteristics for extreme environments:
- High processing speed
 - Multiple interfaces
 - eXTremely robust and maintenance-free

◀ Section 3.2

750 XTR Controllers

- For demanding applications in which the following are critical:
- Extreme temperature stability
 - Immunity to electromagnetic interference and impulse voltages
 - Vibration and shock resistance

Section 3.4 ▶

750 Series Controllers

Contents

	Page
General Product Information	70
Versions	71
Interfaces and Types	71
Item Number Key	71
Installation Instructions	72
Standards and Rated Conditions	73
Approvals	73

CPU	ETHERNET										Description	Item No.		
	Modbus TCP	EtherNet/IP	BACnet/IP	KNX IP	Modbus RTU	Telecontrol protocols: IEC 60870, IEC 61850/61400, DNP3	BACnet MS/TP	DeviceNet	PROFIBUS	CANopen	INTERBUS	Standard	T ext. temperature	
	x	x									Controller ETHERNET G3 SD	750-880	750-880/025-000	74
	x	x				x					Controller ETHERNET G3 SD Tele T		750-880/025-001	74
	x	x				x					Controller ETHERNET G3 SD Tele T ECO		750-880/025-002	74
	x	x									Controller ETHERNET G3	750-881		75
	x	x									Controller ETHERNET G3 SD MR	750-885	750-885/025-000	75
	x	x									Controller ETHERNET G3 MR	750-882		75
	x	x									Controller ETHERNET G3 ECO	750-852		76
	x			x							Controller KNX/IP	750-889		77
	x		x								Controller BACnet/IP	750-831		78
	x		x								Controller BACnet/IP ECO	750-831/000-002		78
	x						x				Controller BACnet MS/TP	750-829		79
	x										Controller ETHERNET G1	750-842		80
	x										Controller ETHERNET G1 ECO	750-843		80
								x			Controller DeviceNet	750-806		81
					x						Controller MODBUS RS485 115.2kBd	750-815/300-000	750-815/325-000	82
					x						Controller MODBUS RS232 115.2kBd	750-816/300-000		82
									S		Controller PROFIBUS Slave	750-833	750-833/025-000	83
										M/S	Controller CANopen M1 MCS	750-837		84
										M/S	Controller CANopen M2 MCS	750-837/020-000		84
										M/S	Controller CANopen M3 MCS	750-837/021-000		84
										M/S	Controller CANopen M1 DSub	750-838		84
										M/S	Controller CANopen M2 DSub	750-838/020-000		84
										M/S	Controller CANopen M3 DSub	750-838/021-000		84
										x	Controller INTERBUS	750-804		85

M: Master, S: Slave

750 Series Controllers

General Product Information

750 Series Controllers: Open — Flexible — Compact

WAGO controllers are suitable for various tasks in industry or process and building automation, e.g., measurement and production data acquisition. Based on the fieldbus couplers for all standard fieldbus systems, they are programmable to IEC 61131-3. Direct connection to a wide range of I/O modules from the WAGO 750 I/O-SYSTEM Series optimizes adaptation to the application.

Building Automation

Thanks to specific characteristics, the controllers for the BACnet/IP and KNX IP bus systems are optimized for building automation. The diverse portfolio of stackable I/O modules allows the integration of external systems such as lighting control (DALI), sun protection (SMI), wireless switches (EnOcean) and much more.

Marine Systems and Onshore/Off-shore Industry

International approvals coupled with industry-specific features permit use in shipbuilding and other harsh sectors. Addressing requirements specific to industry and operating environment has enabled use on marine diesels and in the EMC-sensitive area of a vessel's bridge. Because the requirements are significantly greater for immunity to interference or emission of interference in these sensitive areas, the system can readily meet the needs of other industries.

Telecontrol Technology

Standardized telecontrol protocols according to IEC 60870-5, IEC 61850 or IEC 61400-25 and DNP3 ensure use of the 750 Series Controller in telecontrol technology.

Link between Process Data and IT Application

The controllers ideally combine real-time requirements with IT functionality. They support both MODBUS/TCP and ETHERNET/IP for use in industrial environments. HTTP, HTTPS, SNMP, FTP, BootP, DHCP, DNS and other protocols simplify integration into IT environments. Integrated Web pages and Web-based visualization provide IT applications with real-time process data. Furthermore, the PLC incorporates library functions for email, SOAP, ASP, IP configuration, ETHERNET sockets and file system.

Worldwide Approvals

International approvals for building and industrial automation, as well as the process and marine industries, guarantee worldwide use — even under harsh operating conditions, including ATEX, BR-Ex, IECEx, UL508, UL ANSI/ISA and ship construction.

Modular Expandability

With the WAGO 750 XTR I/O-SYSTEM, the 750 Series Controllers can be expanded to almost any input/output interface. A modular, DIN-rail-mount design permits easy installation, expansion and modification of the I/O module without tools.

The straightforward design prevents installation errors. Field-side connection with the proven CAGE CLAMP® technology offers fast, vibration-proof and maintenance-free connections that are independent of operator skill. Depending on the I/O module's granularity, field peripherals can be directly wired using 1-, 2-, 3- or 4-wire technology.

Maximum Reliability and Ruggedness

The WAGO-I/O-SYSTEM is engineered and tested for use in the most demanding environments (e.g., temperature cycling, shock/vibration loading and ESD, etc.) according to the highest standards. Spring pressure connection technology guarantees continuous operation. Integrated QA measures in the production process and 100 % function testing ensure consistent quality.



Advantages:

- Controllers for all prominent fieldbus systems
- Include industry-specific features
- Programmable via CODESYS per IEC 61131-3
- Expandable with the comprehensive WAGO 750 I/O-SYSTEM product range
- Extensive IT integration possibilities
- Tested and approved worldwide
- Maintenance-free

750 Series Controllers Versions

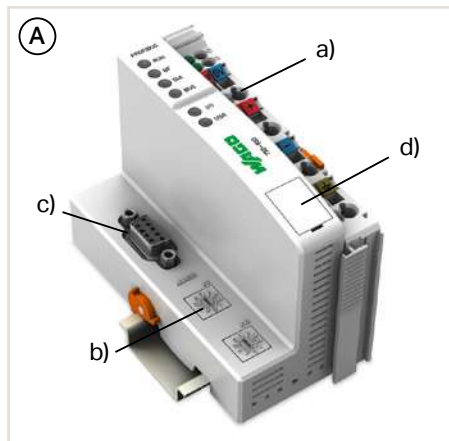
Extended Temperature Range

Industrial automation technology is typically operated in temperatures ranging from 0 ... 55 °C. However, there are applications that require an extended temperature range. Select fieldbus controllers are available in an extended temperature range of -20 ... +60 °C.



For extreme cases — when even the extended temperature range is not sufficient — the WAGO 750 XTR I/O-SYSTEM is available.

Interfaces and Types



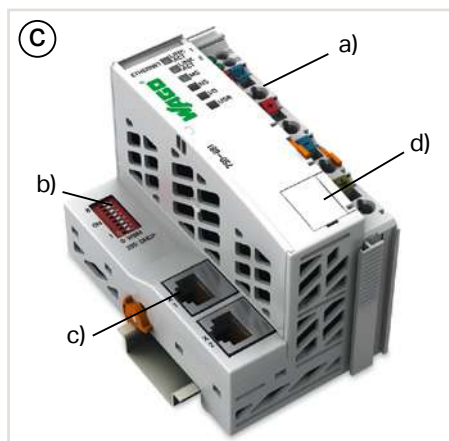
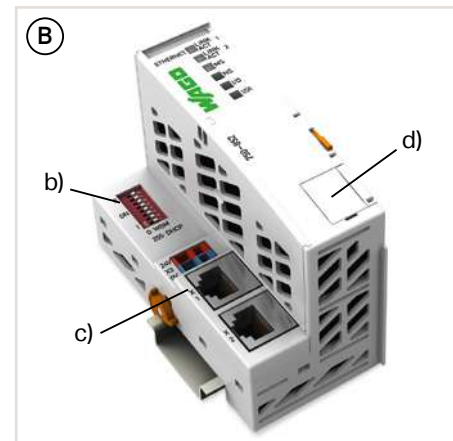
- Technical differences on the connection level; optional addressing switch (b) and fieldbus interface (c)
- Service interface (d)

Housing Design (A)

- Includes supply module (a)
- W x H x D (mm) 50.5 x 71.1 x 100

Housing Design ECO (B)

- W x H x D (mm) 49.5 x 71.9 x 96.8

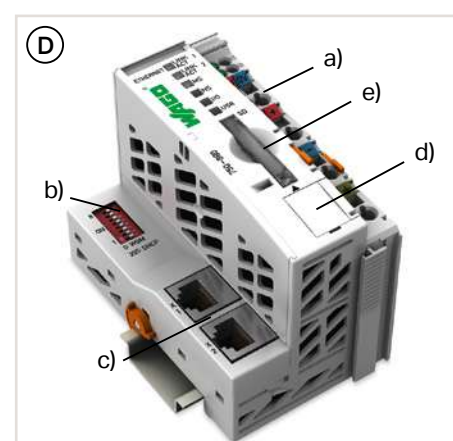


Housing Design (C)

- Includes supply module (a)
- W x H x D (mm) 61.5 x 71.9 x 100

Housing Design (D)

- Includes supply module (a)
- SD card slot for external storage media (e)
- W x H x D (mm) 61.5 x 71.9 x 100



Item Number Key

Explanation of the components of an item number key

Item No. : 750-8xx

0x, 1x: 16-bit CPU

2x, 3x:

4x:

5x: 32 Bit

7x, 8x: 32-bit multitasking

INTERBUS, DeviceNet, MODBUS

BACnet, PROFIBUS, CANopen

ETHERNET

ETHERNET ECO

ETHERNET, telecontrol protocols, media redundancy, KNX IP

.../025-000: Extended temperature range of -20 ... +60 °C

750 Series Controllers Installation Instructions

Supply Modules

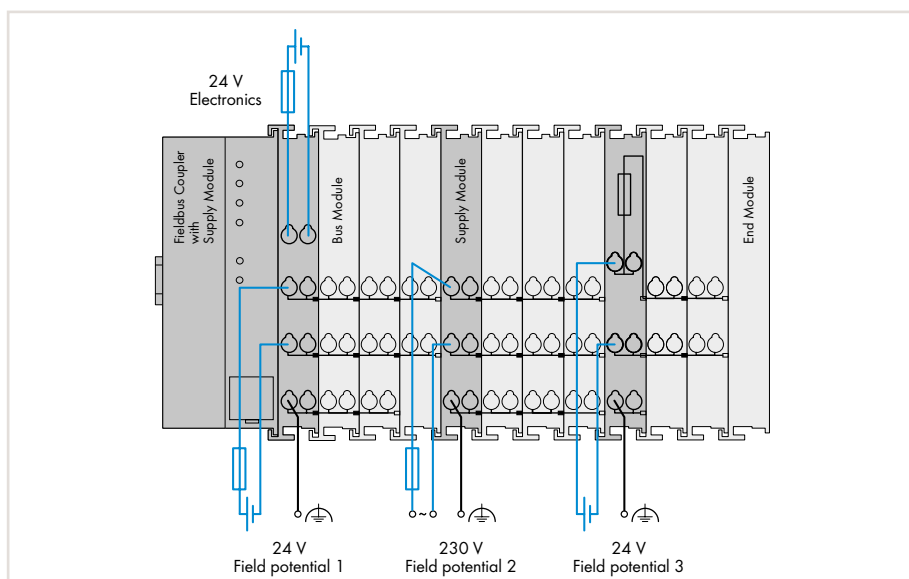
Power is always channeled to the internal electronics power supply via the controller. The field-side power supply is electrically isolated via the bus supply module on the controller or a separate internal system supply module. The division enables a separate supply for sensors and actuators. Snapping the I/O modules together automatically routes the supply voltages (system power supply 5 VDC via the data contacts and field supply via the optional power jumper contacts). Bus supply modules with diagnostics enable additional monitoring of the power supply. This ensures a flexible, user-specific supply design for a station.

The current supply to the electronics is limited by a maximum value. This value is dependent on the controller used. If the sum of the internal current demand of all the I/O modules should exceed this value, an additional bus supply module is necessary. Even in this case, power supply to the field-side supply of 10 A may not be exceeded. However, different bus supply modules allow a new power supply, formation of potential groups and realization of emergency stop concepts.

Interference-Free in Safety-Related Applications

To safely and easily perform cost-effective, centralized deactivation of complete actuator groups safely, the actuator's power supply can be switched off using a safety switching device. This can either be performed for each individual actuator or by turning off the power supply to a group of control outputs. In the event of failure, ensure that no interference from other current or power circuits occurs — even when the control voltage is switched off — so the defined safety function properties (logic and time response) remain unchanged.

Some modules are designed to provide interference-free safety functionality. These modules comply with safety requirements up to Category 4 of DIN EN ISO 13849-1:2007. Safety category and performance level depend solely on the safety components and their wiring.



Notice:

Interference-free WAGO I/O modules are not a component of the safety function and do not replace the safety switching device! When using the components in safety functions, the corresponding notes must be observed in the relevant manual.

Notes

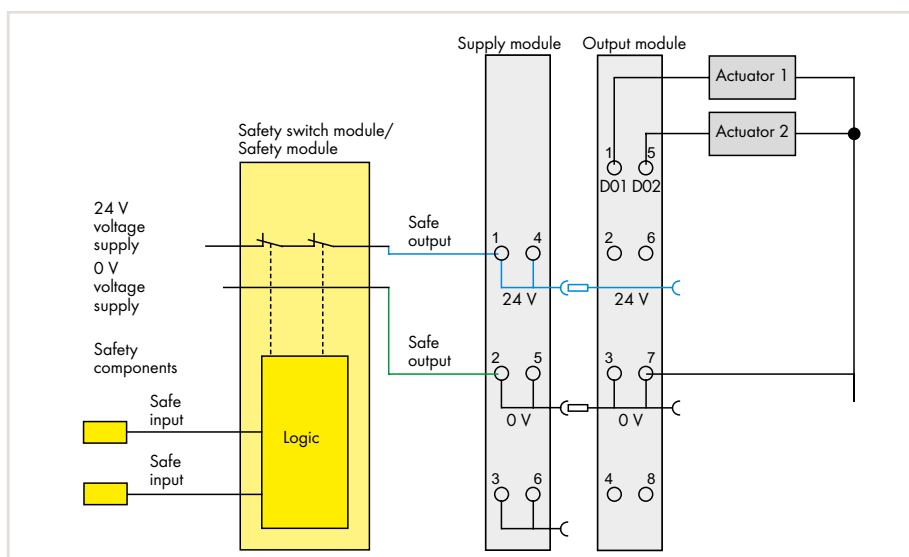
Additional steps must be implemented specifically for the location the I/O-System is installed:

- Specific power and field-side power supply filters (750-624 or 750-626) are required for marine and onshore/off-shore applications.
- A specific supply module (750-606) is required to operate intrinsically safe Ex i modules.
- Additionally, both a bus supply module and a field-side power supply filter are

recommended when operating intrinsically safe Ex i modules for marine and onshore/offshore applications.

- As part of operating safety-related I/O modules, PELV/SELV power supply units must be used for 24 VDC supply of electronics and field. In addition, specific power and field-side power supply filters must be provided (750-626).

Please refer to the manual for details about the power supply's design.



Example: 2-channel, double-pole power supply disconnection

750 Series Controllers

Standards and Rated Conditions

General Specifications

System supply voltage	24 VDC (–25 ... +30 %)*; *For all shipbuilding certified couplers
Isolation	500 V system/supply
Ambient temperature (operation)	0 ... +55 °C
Ambient temperature (operation) for versions with an extended temperature range	–20 ... +60 °C
Ambient temperature (storage)	–25 ... +85 °C
Ambient temperature (storage) for versions with an extended temperature range	–40 ... +85 °C
Relative humidity	95 % non-condensing
Relative humidity for versions with an extended temperature range	Max. 95 %, short-term condensation per Class 3K6 / IEC EN 60721-3-3 and E DIN 40046-721-3, taking a temperature range of –20 ... +60 °C into consideration (except wind-driven precipitation, water and ice formation)
Operating altitude	Without temperature derating: 0–2000 m; with temperature derating: 2000–5000 m (0.5 K / 100 m); max.: 5000 m
Pollution degree	2 per IEC 61131-2
Vibration resistance	0.5 g (4 g for all shipbuilding certified controllers) per IEC 60068-2-6
Shock resistance	15 g per IEC 60068-2-27
EMC immunity to interference	Per EN 61000-6-2 / shipbuilding applications
EMC emission of interference	Per EN 61000-6-3, EN 61000-6-4, marine applications
Protection type	IP20
Mounting position	Any
Mounting type	On 35 mm DIN rail
Housing material	Polycarbonate, polyamide 6.6
Exposure to pollutants	Per IEC 60068-2-42 and IEC 60068-2-43
Permissible SO ₂ contaminant concentration at a relative humidity < 75 %	25 ppm
Permissible H ₂ S contaminant concentration at a relative humidity < 75 %	10 ppm
Wire connection	CAGE CLAMP®
Conductor sizes; strip lengths for standard controllers: ECO controllers:	0.08–2.5 mm ² /28–14 AWG; 8–9 mm / 0.31–0.35 inch 0.08–1.5 mm ² / 28–16 AWG; 5–6 mm / 0.2–0.24 inch
Current carrying capacity of the power jumper contacts	10 A

3.3

Approvals

Overview of the approvals in the article comparison in Section 12, Technical Appendix, or online under www.wago.com

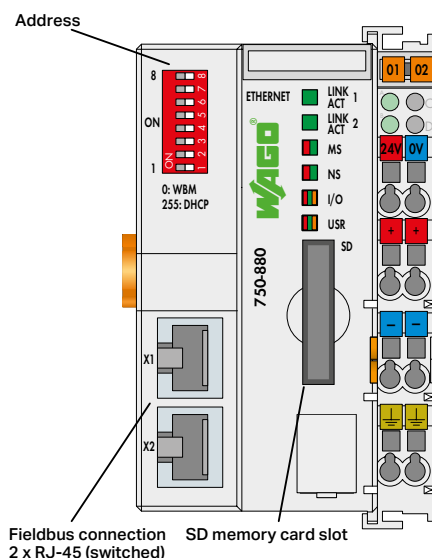


Controller ETHERNET

3rd Generation, SD card slot, optional: telecontrol, ext. temperature, ECO



Figure: 750-880



Item description

Version

Item no.

Technical Data

Fieldbus

Protocols

Connection technology: Fieldbus input/output

Baud rate

Redundancy function

Visualization

Programming

Type of memory card

Program memory / data memory / non-volatile memory (software)

Number of I/O modules per node max.

Input and output process image (internal) max.

System supply voltage

Input current typ. at rated load (24 V)

Current consumption, system supply

Total current for system supply

Ambient temperature (operation)

Dimensions W x H x D

Approvals

Data sheet and further information, see:

Accessories

SD memory card, 2 GB

Controller ETHERNET

G3 SD	G3 SD T	G3 SD Tele T	G3 SD Tele T ECO
750-880	750-880/025-000	750-880/025-001	750-880/025-002

EtherNet/IP, MODBUS/TCP

EtherNet/IP, MODBUS/TCP (UDP), HTTP, BootP, DHCP, DNS, SNTP, FTP, SNMP

IEC 60870-5-101/-103/-104, IEC 61850-7-4,
IEC 61400-25, DNP3

2 x RJ-45

10/100 Mbit/s

Web Visu, Webserver

WAGO-I/O-PRO V2.3 (based on CODESYS 2.3)

SD and SDHC to 8 GB*

1024 KB / 1024 KB / 32 KB

250

4

1020 words

24 VDC (-25 ... +30 %)

500 mA

450 mA

1700 mA

0 ... +55 °C

-20 ... +60 °C

61.5 x 71.9 x 100 mm

CE, Marine, UL 508, ANSI/ISA, ATEX/IECEx



wago.com/750-880

Item no.	Page
758-879/000-001	44

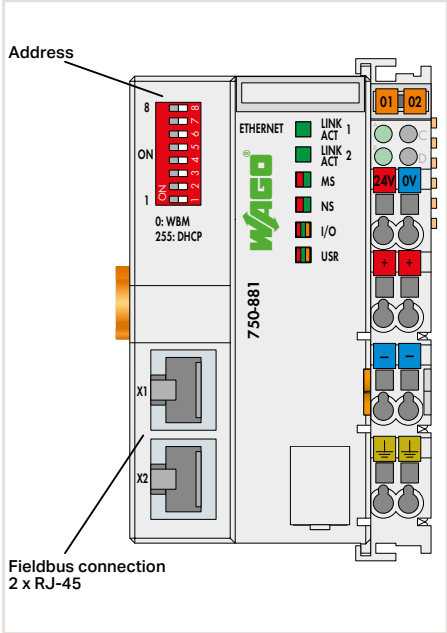
*All guaranteed properties only valid with the WAGO memory card listed as an accessory.

WAGO-I/O-PRO Software V2.3
see Section 1

Mini-WSB Quick marking system
see Full Line Catalog, Volume 6

Approvals and corresponding ratings,
see Page 515 or www.wago.com

3rd Generation



Controller ETHERNET
G3
750-881

EtherNet/IP, MODBUS/TCP
EtherNet/IP, MODBUS/TCP (UDP), HTTP, BootP, DHCP, DNS, SNTP, FTP, SNMP

2 x RJ-45
10/100 Mbit/s

Web Visu, Webserver
WAGO-I/O-PRO V2.3 (based on CODESYS 2.3)

1024 KB / 512 KB / 32 KB

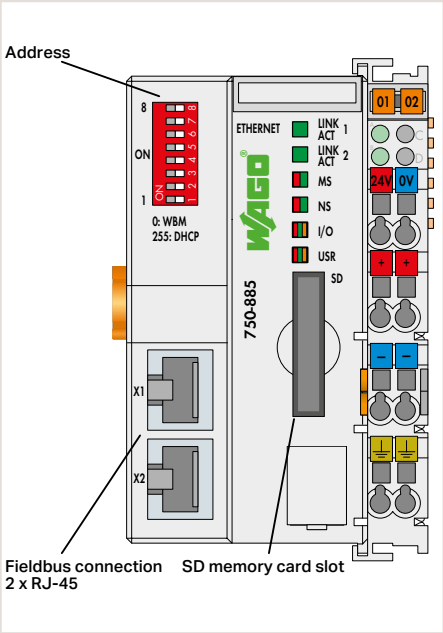
250
1020 words
24 VDC (–25 ... +30 %)
500 mA
450 mA
1700 mA

0 ... +55 °C
61.5 x 71.9 x 100 mm
CE, UL 508, ANSI/ISA, ATEX/IECEX

wago.com/750-881

Item no.	Page
758-879/000-001	44

3rd Generation, SD card slot, media redundancy, optional: ext. temperature



Controller ETHERNET	
G3 SD MR	G3 SD MR T
750-885	750-885/025-000

EtherNet/IP, MODBUS/TCP
EtherNet/IP, MODBUS/TCP (UDP), HTTP, BootP, DHCP, DNS, SNTP, FTP, SNMP

2 x RJ-45
10/100 Mbit/s

Application-based communication redundancy
Web Visu, Webserver
WAGO-I/O-PRO V2.3 (based on CODESYS 2.3)

SD and SDHC to 8 GB*
1024 KB / 1024 KB / 32 KB

250
1020 words
24 VDC (–25 ... +30 %)
500 mA
450 mA
1700 mA

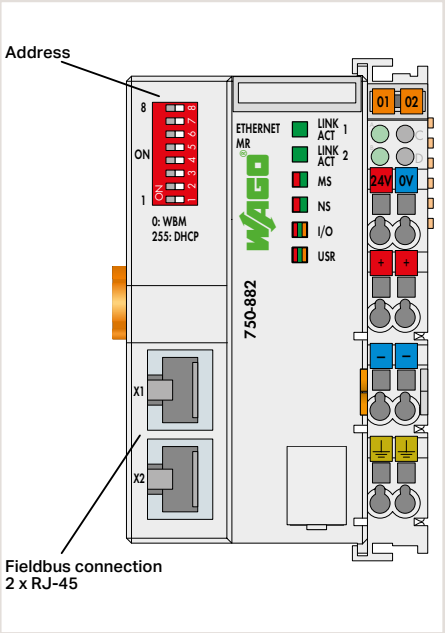
0 ... +55 °C	-20 ... +60 °C
61.5 x 71.9 x 100 mm	
CE,  Marine,  UL 508, ANSI/ISA,  ATEX/ IECEX	

wago.com/750-885

Item no.	Page
758-879/000-001	44

*All guaranteed properties only valid with the WAGO memory card listed as an accessory.

3rd Generation, media redundancy



Controller ETHERNET
G3 MR
750-882

EtherNet/IP, MODBUS/TCP
EtherNet/IP, MODBUS/TCP (UDP), HTTP, BootP, DHCP, DNS, SNTP, FTP, SNMP

2 x RJ-45
10/100 Mbit/s

Application-based communication redundancy
Web Visu, Webserver
WAGO-I/O-PRO V2.3 (based on CODESYS 2.3)

1024 KB / 512 KB / 32 KB

250
1020 words
24 VDC (–25 ... +30 %)
500 mA
450 mA
1700 mA

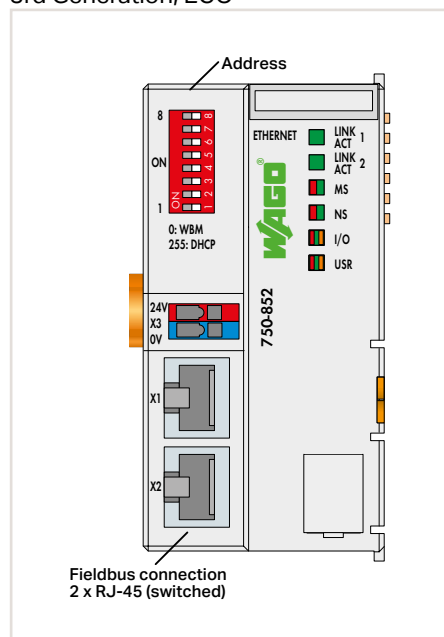
0 ... +55 °C
61.5 x 71.9 x 100 mm
CE, UL 508, ANSI/ISA, ATEX/IECEX

wago.com/750-882

Item no.	Page
758-879/000-001	44

Controller ETHERNET

3rd Generation, ECO



Item description

Version

Item no.

Controller ETHERNET

G3 ECO

750-852

Technical Data

Fieldbus

Protocols

Connection technology: Fieldbus input/output

Baud rate

Visualization

Programming

Program memory / data memory / non-volatile memory (software)

Number of I/O modules per node max.

Input and output process image (internal) max.

System supply voltage

Input current typ. at rated load (24 V)

Current consumption, system supply

Total current for system supply

Ambient temperature (operation)

Dimensions W x H x D

Approvals

Data sheet and further information, see:

EtherNet/IP, MODBUS/TCP

EtherNet/IP, MODBUS/TCP (UDP), HTTP, BootP, DHCP, DNS, SNMP, FTP

2 x RJ-45

10/100 Mbit/s

Webserver

WAGO-I/O-PRO V2.3 (based on CODESYS 2.3)

512 KB / 256 KB / 8 KB

250

1020 words

24 VDC (-25 ... +30 %)

300 mA

400 mA

700 mA

0 ... +55 °C

49.5 x 71.9 x 96.8 mm

CE, Marine, UL 508, ANSI/ISA, ATEX/IECEx

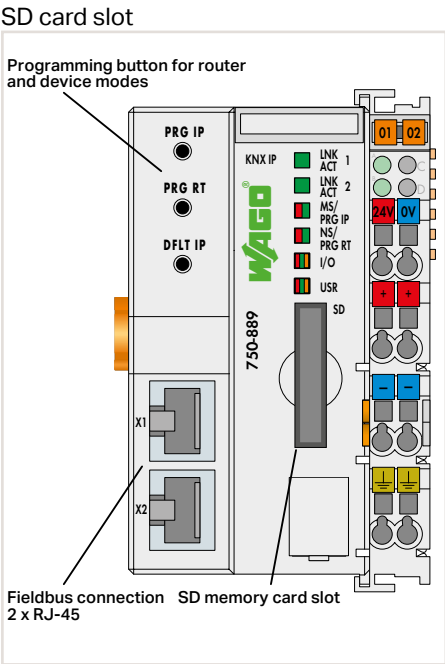
wago.com/750-852

WAGO-I/O-PRO Software V2.3
see Section 1

Mini-WSB Quick marking system
see Full Line Catalog, Volume 6

Approvals and corresponding ratings,
see Page 515 or www.wago.com

Controller KNX/IP



Item description
Version
Item no.

Controller KNX/IP
SD
750-889

Max. number of KNX logic devices, simultaneous:
2 (1st device, 2nd router with 1st KNX/EIB/TP1 module)

Commissioning (KNX-side):
With ETS3 plug-in, 2 programming buttons

Technical Data	
Fieldbus	
Protocols	
Connection technology: Fieldbus input/output	
Bus segment length max.	
Baud rate	
Visualization	
Programming	
Type of memory card	
KNX/TP1 bus specification	
Number of group addresses	
Number of communication objects	
Program memory / data memory / non-volatile memory (software)	
Number of I/O modules per node max.	
Input and output process image (internal) max.	
Memory for fieldbus input and output variables max.	
System supply voltage	
Input current typ. at rated load (24 V)	
Current consumption, system supply	
Total current for system supply	
Ambient temperature (operation)	
Dimensions W x H x D	
Approvals	
KNX certified	
Data sheet and further information, see:	
Accessories	
SD memory card, 2 GB	
WAGO-ETS 3/4-plug-in	

KNX/IP, MODBUS/TCP
KNXnet/IP, MODBUS/TCP (UDP), HTTP, BootP, DHCP, DNS, AutoIP, SNTP, FTP, SNMP V3, SMTP
2 x RJ-45
100 m
10/100 Mbit/s
Web Visu, Webserver
WAGO-I/O-PRO V2.3 (based on CODESYS 2.3)
SD and SDHC to 8 GB*
1.0
254
253
1024 KB / 1024 KB / 32 KB
250
2 kB
512 bytes
24 VDC (–25 ... +30 %)
500 mA
450 mA
1700 mA
0 ... +55 °C
61.5 x 71.9 x 100 mm
CE, Marine, UL 508**, ANSI/ISA**
IP controller: 61/8316/08, IP router: 61/8317/08
wago.com/750-889

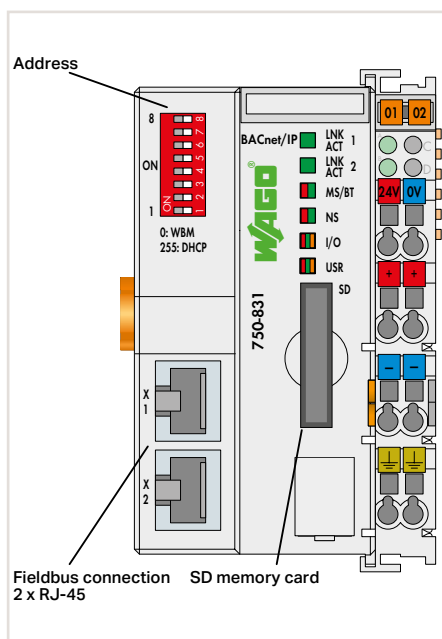
Item no.	Page
758-879/000-001	44
see Section 1	21

*All guaranteed properties only valid with the WAGO memory card listed as an accessory.
**pending

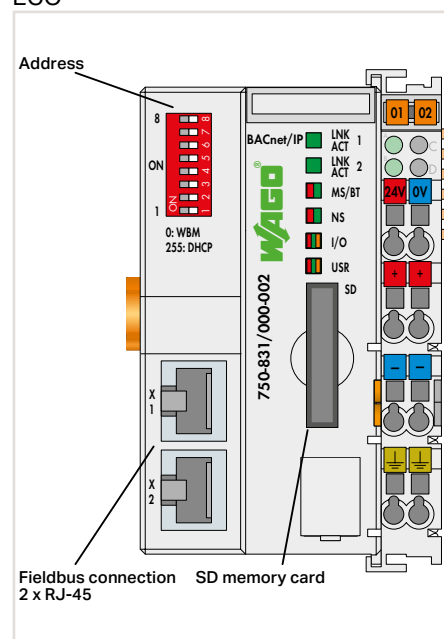
Controller BACnet/IP



Figure: 750-831



ECO



Item description
Version
Item no.

Controller BACnet/IP
750-831

Controller BACnet/IP
ECO
750-831/000-002

Technical Data

Fieldbus
Protocols
Connection technology: Fieldbus input/output
Baud rate
Visualization
Programming
Type of memory card
BACnet device profile
BACnet revision
Program memory / data memory / non-volatile memory (software)
Number of I/O modules per node max.
Input and output process image (internal) max.
System supply voltage
Input current typ. at rated load (24 V)
Current consumption, system supply
Total current for system supply
Ambient temperature (operation)
Dimensions W x H x D
Approvals
BACnet approvals
Data sheet and further information, see:

BACnet/IP, MODBUS/TCP
BACnet/IP, MODBUS/TCP (UDP), HTTP, BootP, DHCP, DNS, SNTP, FTP, SNMP
2 x RJ-45
10/100 Mbit/s
Web Visu, Webserver
WAGO-I/O-PRO V2.3 (based on CODESYS 2.3)
SD and SDHC to 8 GB*
B-BC (BACnet Building Controller)
1.7
1024 KB / 1024 KB / 28 KB
99
1020 words
24 VDC (-25 ... +30 %)
500 mA
450 mA
1700 mA
0 ... +55 °C
61.5 x 71.9 x 100 mm
CE, Marine, UL 508
WSPCert-Zertifizierung: ISO 16484-5:2012 BTL-Listing: BTL (BACnet® Testing Labs Product Listing) AMEV-Testat: AMEV-Profil AS-A
wago.com/750-831

Type 750-831/000-002 controllers support a maximum 256 BACnet objects

BACnet/IP, MODBUS/TCP
BACnet/IP, MODBUS/TCP (UDP), HTTP, BootP, DHCP, DNS, SNTP, FTP, SNMP
2 x RJ-45
10/100 Mbit/s
Web Visu, Webserver
WAGO-I/O-PRO V2.3 (based on CODESYS 2.3)
SD and SDHC to 8 GB*
B-BC (BACnet Building Controller)
1.7
1024 KB / 1024 KB / 28 KB
99
1020 words
24 VDC (-25 ... +30 %)
500 mA
450 mA
1700 mA
0 ... +55 °C
61.5 x 71.9 x 100 mm
CE, Marine, UL 508
wago.com/750-831/000-002

Accessories
SD memory card, 2 GB
BACnet Configurator

Item no.	Page
758-879/000-001	44
see Section 1	18

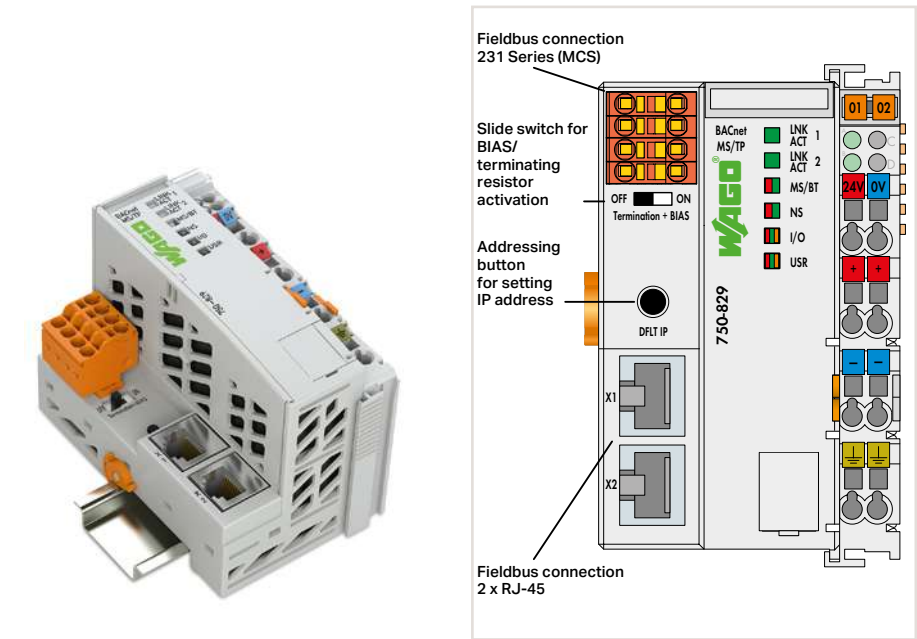
Item no.	Page
758-879/000-001	44
see Section 1	18

WAGO-I/O-PRO Software V2.3 see Section 1
Mini-WSB Quick marking system see Full Line Catalog, Volume 6
Approvals and corresponding ratings, see Page 515 or www.wago.com

*All guaranteed properties only valid with the WAGO memory card listed as an accessory.

*All guaranteed properties only valid with the WAGO memory card listed as an accessory.

Controller BACnet MS/TP



Item description	Controller BACnet MS/TP	
Item no.	750-829	
Technical Data		
Fieldbus	BACnet MS/TP, MODBUS/TCP	
Protocols	BACnet MS/TP, MODBUS/TCP (UDP), HTTP, BootP, DHCP, DNS, SNTP, FTP, SNMP, SMTP	
Connection technology: Fieldbus input/output	4-pole male connector	
Baud rate	9600, 19200, 38400*, 57600, 76800, 115200 Bd (per BACnet standard), *Factory setting	
Connection technology: Fieldbus input/output (2)	2 x RJ-45	
Baud rate (2)	10/100 Mbit/s	
Visualization	Web Visu, Webserver	
Programming	WAGO-I/O-PRO V2.3 (based on CODESYS 2.3)	
BACnet device profile	B-BC (BACnet Building Controller)	
BACnet revision	1.7	
Program memory / data memory / non-volatile memory (software)	1024 KB / 1024 KB / 32 KB	
Number of I/O modules per node max.	99	
Input and output process image (internal) max.	2 kB	
Memory for fieldbus input and output variables max.	512 bytes	
System supply voltage	24 VDC (–25 ... +30 %)	
Input current typ. at rated load (24 V)	500 mA	
Current consumption, system supply	450 mA	
Total current for system supply	1700 mA	
Ambient temperature (operation)	0 ... +55 °C	
Dimensions W x H x D	61.5 x 71.9 x 100 mm	
Approvals	CE, UL 508*, ANSI/ISA*	
BACnet approvals	WSPCert-Zertifizierung: Pending BTL-Listing: Pending	
Data sheet and further information, see:	wago.com/750-829	
Accessories		
BACnet Configurator		
Item no.	see Section 1	Page 18

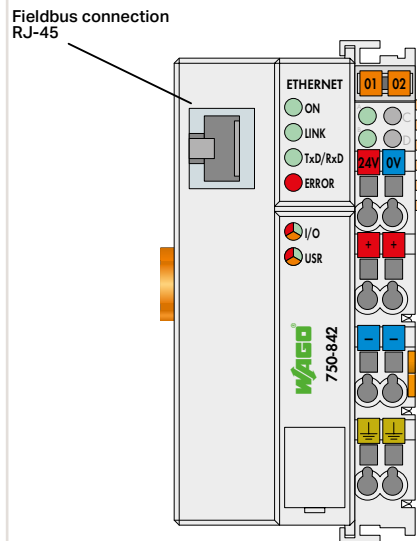
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Controller ETHERNET

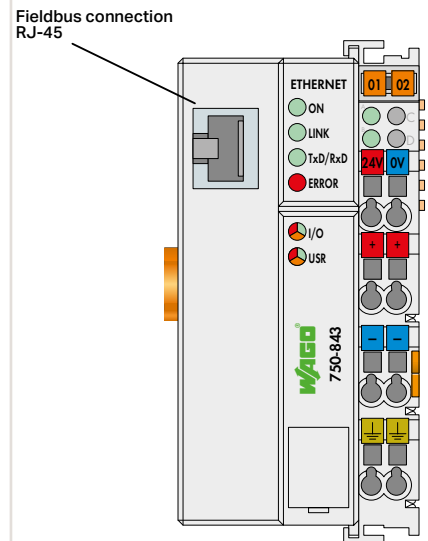


Figure: 750-842

1st Generation



1st Generation, ECO



Item description

Controller ETHERNET

Controller ETHERNET

Item no.

G1

G1 ECO

750-842

750-843

Technical Data

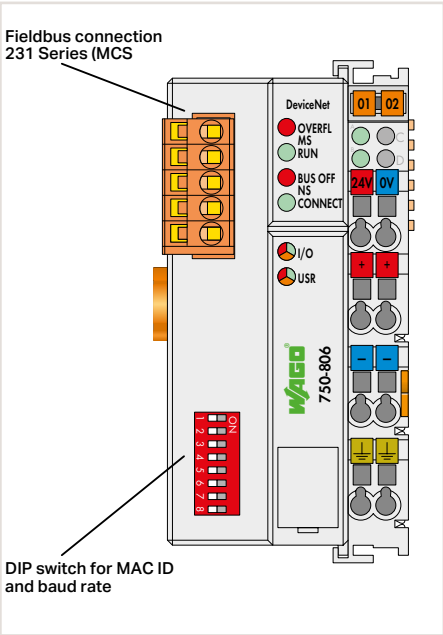
Fieldbus	MODBUS/TCP	MODBUS/TCP
Protocols	MODBUS/TCP, HTTP, BootP, MODBUS/UDP	MODBUS/TCP, HTTP, BootP, MODBUS/UDP
Connection technology: Fieldbus input/output	RJ-45	RJ-45
Baud rate	10 Mbit/s	10 Mbit/s
Visualization	Without	Without
Programming	WAGO-I/O-PRO V2.3 (based on CODESYS 2.3)	WAGO-I/O-PRO V2.3 (based on CODESYS 2.3)
Program memory / data memory / non-volatile memory (software)	128 KB / 64 KB / 8 KB	64 KB / 64 KB / 8 KB
Number of I/O modules per node max.	64	64
Input and output process image (internal) max.	512 bytes	512 bytes
Memory for fieldbus input and output variables max.	512 bytes	512 bytes
System supply voltage	24 VDC (-25 ... +30 %)	24 VDC (-25 ... +30 %)
Input current typ. at rated load (24 V)	500 mA	500 mA
Current consumption, system supply	200 mA	200 mA
Total current for system supply	1800 mA	1800 mA
Ambient temperature (operation)	0 ... +55 °C	0 ... +55 °C
Dimensions W x H x D	50.5 x 71.1 x 100 mm	50.5 x 71.1 x 100 mm
Approvals	CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX	CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX
Data sheet and further information, see:	wago.com/750-842	wago.com/750-843

WAGO-I/O-PRO Software V2.3
see Section 1

Mini-WSB Quick marking system
see Full Line Catalog, Volume 6

Approvals and corresponding ratings,
see Page 515 or www.wago.com

Controller DeviceNet



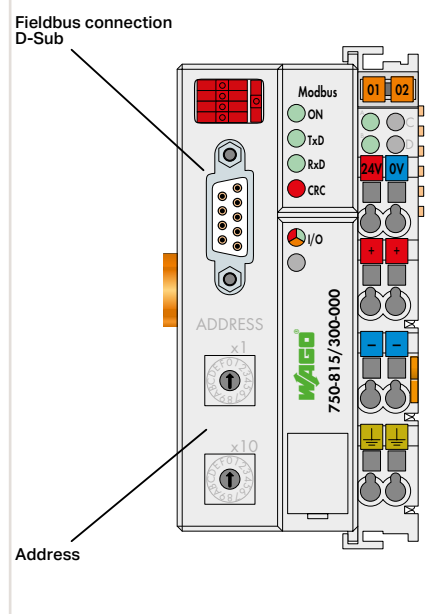
Item description	Controller DeviceNet
Item no.	750-806
Technical Data	
Fieldbus	DeviceNet
Connection technology: Fieldbus input/output	5-pole male connector
Baud rate	125 kBd, 250 kBd, 500 kBd
Number of fieldbus nodes on master max.	64
Visualization	Without
Programming	WAGO-I/O-PRO V2.3 (based on CODESYS 2.3)
Program memory / data memory / non-volatile memory (software)	128 KB / 64 KB / 8 KB
Number of I/O modules per node max.	64
Input and output process image (internal) max.	1024 bytes
Memory for fieldbus input and output variables max.	512 bytes
System supply voltage	24 VDC (–25 ... +30 %)
Input current typ. at rated load (24 V)	500 mA
Input current via DeviceNet interface at 11 V	120 mA
Current consumption, system supply	350 mA
Total current for system supply	1650 mA
Ambient temperature (operation)	0 ... +55 °C
Dimensions W x H x D	50.5 x 71.1 x 100 mm
Approvals	CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX
Data sheet and further information, see:	wago.com/750-806

Controller MODBUS

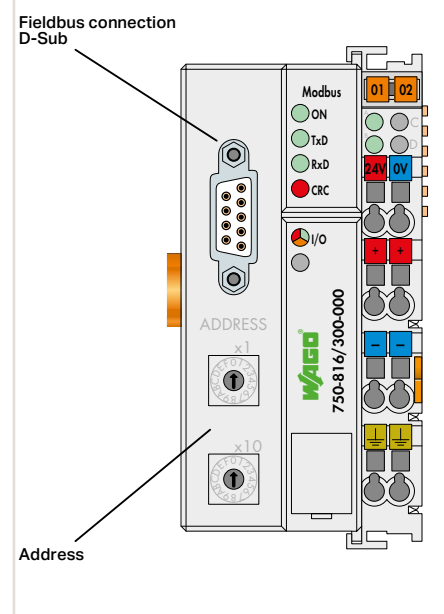


Figure: 750-815/300-000

RS-485, 115.2 kBd,
optional: ext. temperature



RS-232, 115.2 kBd



Item description

Version

Item no.

Controller MODBUS

RS-485 115.2 kBd

750-815/300-000

RS-485 115.2 kBd T

750-815/325-000

Controller MODBUS

RS-232 115.2 kBd

750-816/300-000

Technical Data

Fieldbus

Connection technology: Fieldbus input/output

Bus segment length max.

Baud rate

Number of fieldbus nodes on master max.

Visualization

Programming

Program memory / data memory / non-volatile memory (software)

Number of I/O modules per node max.

Input and output process image (internal) max.

Memory for fieldbus input and output variables max.

System supply voltage

Input current typ. at rated load (24 V)

Current consumption, system supply

Total current for system supply

Ambient temperature (operation)

Dimensions W x H x D

MODBUS

D-Sub 9 socket

1200 m

150 Bd ... 115.2 kBd

247

Without

WAGO-I/O-PRO V2.3 (based on CODESYS 2.3)

32 KB / 32 KB / 8 KB

64

1024 bytes

512 bytes

24 VDC (-25 ... +30 %)

500 mA

350 mA

1650 mA

0 ... +55 °C

-20 ... +60 °C

50.5 x 71.1 x 100 mm

CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX

wago.com/750-815/300-000

MODBUS

D-Sub 9 socket

1200 m

150 Bd ... 115.2 kBd

247

Without

WAGO-I/O-PRO V2.3 (based on CODESYS 2.3)

32 KB / 32 KB / 8 KB

64

1024 bytes

512 bytes

24 VDC (-25 ... +30 %)

500 mA

350 mA

1650 mA

0 ... +55 °C

50.5 x 71.1 x 100 mm

CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX

wago.com/750-816/300-000

Data sheet and further information, see:

WAGO-I/O-PRO Software V2.3
see Section 1

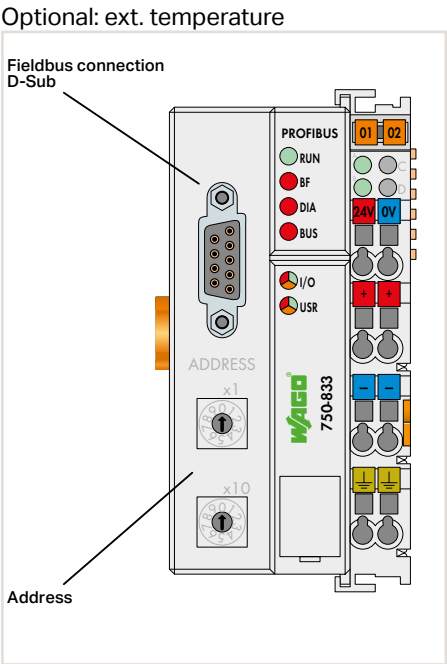
Mini-WSB Quick marking system
see Full Line Catalog, Volume 6

Approvals and corresponding ratings,
see Page 515 or www.wago.com

Controller PROFIBUS Slave



Figure: 750-833



Item description		Controller PROFIBUS Slave	
Version		T	
Item no.		750-833	750-833/025-000
Technical Data			
Fieldbus		PROFIBUS	
Connection technology: Fieldbus input/output		D-Sub 9 socket	
Bus segment length max.		1200 m	
Baud rate		9.6 kBd ... 12 MBd	
Number of fieldbus nodes on master max.		99	
Visualization		Without	
Programming		WAGO-I/O-PRO V2.3 (based on CODESYS 2.3)	
Program memory / data memory / non-volatile memory (software)		128 KB / 64 KB / 8 KB	
Number of I/O modules per node max.		63	
Input and output process image (internal) max.		244 bytes	
Memory for fieldbus input and output variables max.		244 bytes	
System supply voltage		24 VDC (–25 ... +30 %)	
Input current typ. at rated load (24 V)		500 mA	
Current consumption, system supply		200 mA	
Total current for system supply		1800 mA	
Ambient temperature (operation)		0 ... +55 °C	–20 ... +60 °C
Dimensions W x H x D		50.5 x 71.1 x 100 mm	
Approvals		CE, Marine, UL 508, ANSI/ISA, ATEX / IECEx	
Data sheet and further information, see:		wago.com/750-833	

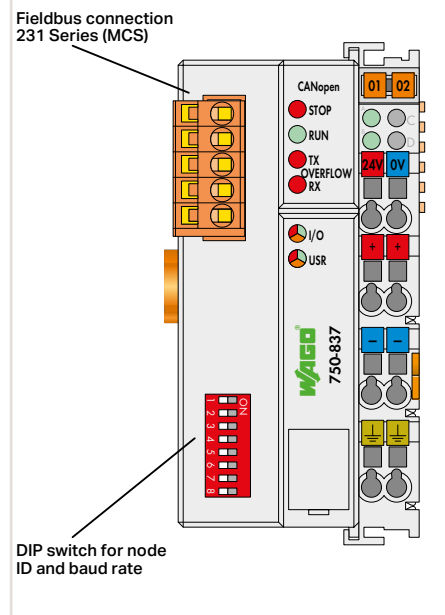
Controller CANopen



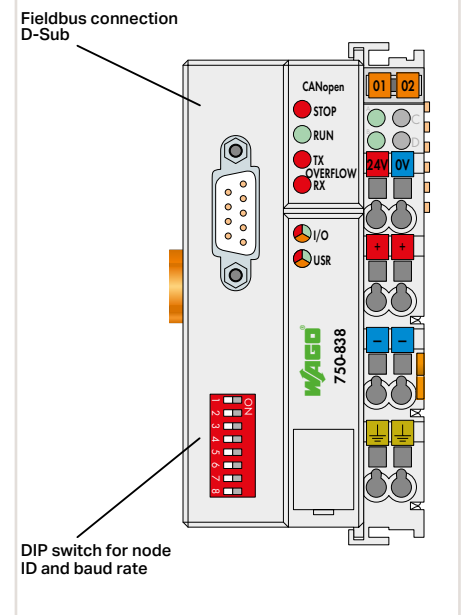
Figure: 750-837

Figure: 750-838

128/64 kB program / RAM, MCS,
optional: 256/192 kB or 640/832 kB



128/64 kB program / RAM, D-Sub,
optional: 256/192 kB or 640/832 kB



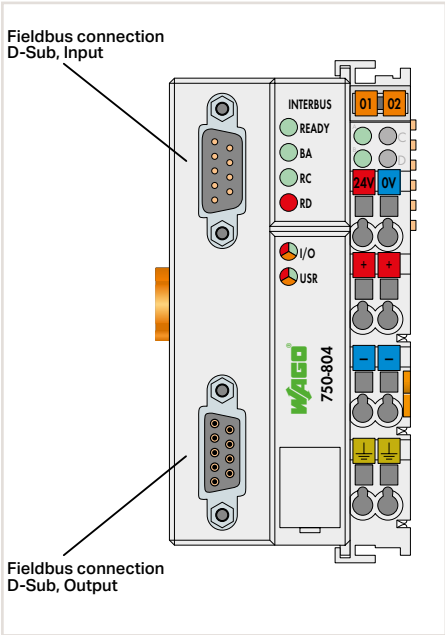
Item description	Controller CANopen			Controller CANopen		
	M1 MCS	M2 MCS	M3 MCS	M1 D-Sub	M2 D-Sub	M3 D-Sub
	Item no.	Item no.	Item no.	Item no.	Item no.	Item no.
Version	750-837	750-837/020-000	750-837/021-000	750-838	750-838/020-000	750-838/021-000
Technical Data						
Fieldbus	CANopen			CANopen		
Connection technology: Fieldbus input/output	5-pole male connector			D-Sub 9 connector		
Bus segment length max.	1000 m			1000 m		
Baud rate	10 kBd ... 1 MBd			10 kBd ... 1 MBd		
Number of fieldbus nodes on master max.	110			110		
Visualization	Without			Without		
Programming	WAGO-I/O-PRO V2.3 (based on CODESYS 2.3)			WAGO-I/O-PRO V2.3 (based on CODESYS 2.3)		
Program memory	128 kB	256 kB	640 kB	128 kB	256 kB	640 kB
Data memory	64 kB	192 kB	832 kB	64 kB	192 kB	832 kB
Non-volatile memory (software)	8 kB			8 kB		
Number of I/O modules per node max.	64			64		
Input and output process image (internal) max.	512 bytes			512 bytes		
Memory for fieldbus input and output variables max.	512 bytes			512 bytes		
Communication profile	DS-301 V4.01			DS-301 V4.01		
Device profile	DS-401 V2.0			DS-401 V2.0		
Number of PDOs	32 Tx / 32 Rx			32 Tx / 32 Rx		
Number of SDOs	2 servers SDO / 16 clients SDO			2 servers SDO / 16 clients SDO		
System supply voltage	24 VDC (-25 ... +30 %)			24 VDC (-25 ... +30 %)		
Input current typ. at rated load (24 V)	500 mA			500 mA		
Current consumption, system supply	350 mA			350 mA		
Total current for system supply	1650 mA			1650 mA		
Ambient temperature (operation)	0 ... +55 °C			0 ... +55 °C		
Dimensions W x H x D	50.5 x 71.1 x 100 mm			50.5 x 71.1 x 100 mm		
Approvals	CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX			CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX		
Data sheet and further information, see:	wago.com/750-837			wago.com/750-838		

WAGO-I/O-PRO Software V2.3
see Section 1

Mini-WSB Quick marking system
see Full Line Catalog, Volume 6

Approvals and corresponding ratings,
see Page 515 or www.wago.com

Controller INTERBUS



Item description	Controller INTERBUS
Item no.	750-804
	Product discontinuation Last call: 1.3.2018
Technical Data	
Fieldbus	INTERBUS
Connection technology: Fieldbus input/output	D-Sub 9 plug / D-Sub 9 socket
Bus segment length max.	400 m
Baud rate	500 kBd
Number of fieldbus nodes on master max.	256
Visualization	Without
Programming	WAGO-I/O-PRO V2.3 (based on CODESYS 2.3)
Program memory / data memory / non-volatile memory (software)	128 KB / 64 KB / 8 KB
Number of I/O modules per node max.	64
Input and output process image (internal) max.	64 bytes
Memory for fieldbus input and output variables max.	64 bytes
System supply voltage	24 VDC (–25 ... +30 %)
Input current typ. at rated load (24 V)	500 mA
Current consumption, system supply	400 mA
Total current for system supply	1600 mA
Ambient temperature (operation)	0 ... +55 °C
Dimensions W x H x D	50.5 x 71.1 x 100 mm
Approvals	CE, UL 508, ANSI/ISA, ATEX/IECEX
Data sheet and further information, see:	wago.com/750-804

3.3



750 XTR Controllers

PERSPECTO® Control Panels

- Merging of control and visualization
- 8.9–38.1 cm (3.5–15")

◀◀◀ Section 2

PFC100/PFC200 Controller

- Maximum performance in a minimum space
- Also programmable in high-level languages based on Linux®
- Security packages with SSH and SSL/TLS
- Runtime system for CODESYS 2 (only PFC200) and 3

◀◀◀ Section 3.1

PFC200 XTR Controllers

- The advantages of the PFC Controller combined with the characteristics for extreme environments:
- High processing speed
 - Multiple interfaces
 - eXTRemely robust and maintenance-free

◀◀ Section 3.2

750 Series Controllers

- Controllers for all prominent fieldbus systems
- Programmable to IEC 61131-3
- Ideal combination with the WAGO 750 I/O-SYSTEM modules

◀ Section 3.3

750 XTR Controllers

- For demanding applications in which the following are critical:
- Extreme temperature stability
 - Immunity to electromagnetic interference and impulse voltages
 - Vibration and shock resistance

750 XTR Controllers

Contents

	Page
General Product Information	88
Interfaces and Types	89
Item Number Key	89
Standards and Rated Conditions for Railway Applications (EN 50155)	89
Installation Instructions	90
Standards and Rated Conditions	91
Approvals	91



CPU	ETHERNET		PROFIBUS	CANopen	Telecontrol protocols: IEC 60870, IEC 61850/61400, DNP3	Description	Item No.	
	Modbus TCP	EtherNet/IP						
32 Bit	x	x				Controller ETHERNET G3 SD XTR	750-880/040-000	92
32 Bit	x	x			x	Controller ETHERNET G3 SD Tele XTR	750-880/040-001	92
32 Bit				M/S		Controller CANopen M3 DSub XTR	750-838/040-000	93

M: Master, S: Slave

750 XTR Controllers

General Product Information

750 XTR Controllers:

From Standard to eXTReMe — Standard for 750 XTR

The 750 XTR Controllers are easily recognized by their dark gray housings. Profit from the unique added value this system brings to extreme environments or applications.

The WAGO 750 XTR I/O-SYSTEM features outstanding characteristics: It is extremely temperature-resistant, immune to interference, as well as insensitive to vibrations and impulse voltages.

This is what makes it the first choice for demanding applications including:

- Marine systems and onshore/offshore industry
- Renewable energy systems (wind turbines, solar systems and biogas plants)
- Transformer stations and power distribution systems
- Petrochemical industry
- Water and wastewater industry
- Custom machines
- Railway applications

Marine Systems and Onshore/Offshore Industry

International approvals coupled with industry-specific features permit use in shipbuilding and other harsh sectors. Addressing requirements specific to industry and operating environment has enabled use on marine diesels and in the EMC-sensitive area of a vessel's bridge. Because the requirements are significantly greater for immunity to interference or emission of interference and mechanical performance in these sensitive areas, the system can readily meet the needs of other industries.

Telecontrol Technology

Standardized telecontrol protocols according to IEC 60870-5, IEC 61850 or IEC 61400-25 and DNP3 ensure use of the 750 XTR Controller in telecontrol technology. In addition, increased requirements for dielectric strength according to EN 60870-2-1 are met. The result is a tailor-made solution for demanding telecontrol applications that readily meets all requirements.

Link between Process Data and IT Application — Even under eXTReMe Conditions

The controllers ideally combine real-time requirements with IT functionality. They support both MODBUS/TCP and ETHERNET/IP for use in industrial environments. HTTP, SNMP, FTP, BootP, DHCP, DNS and other protocols simplify integration into IT environments. Integrated Web pages and Web-based visualization provide IT applications with real-time process data. Furthermore, the PLC incorporates library functions for email, SOAP, ASP, IP configuration, ETHERNET sockets and file system.

Modular Expandability

With the WAGO 750 XTR I/O-SYSTEM, the controllers can be expanded to almost any input/output interface. Using the same standard platform has given the XTR the same proven advantages.

Worldwide Approvals

International approvals for industrial automation, building technology, shipbuilding and onshore/offshore applications guarantee worldwide use even under harsh operating conditions, e.g., Germanischer Lloyd, Det Norske Veritas, American Bureau of Shipping, Korean Register of Shipping, Nippon Kaiji Kyokai, Registro Italiano Navale and Polski Rejestr Statkow.



Superior Reliability in Extreme Climates

Regardless of freezing cold, extreme heat and high humidity, the WAGO 750 XTR I/O-SYSTEM is engineered for absolute dependability in virtually any weather. The XTR version of the 750 Series Controller is unfazed by both freezing cold down to -40 °C and scorching heat up to +70 °C. And this applies equally to both start-up and continual operation. The maximum approved operating altitude of 5,000 m is another highlight. Even in the thin air of a mountain-top station, the system impressively demonstrates its high performance and availability.

Additional Protection against Interference Pulses

The WAGO 750 XTR I/O-SYSTEM provides greater isolation up to 5 kV of impulse voltage, lower EMC emission of interference and higher insensitivity to EMC interference.

These strengths add up to trouble-free operation.

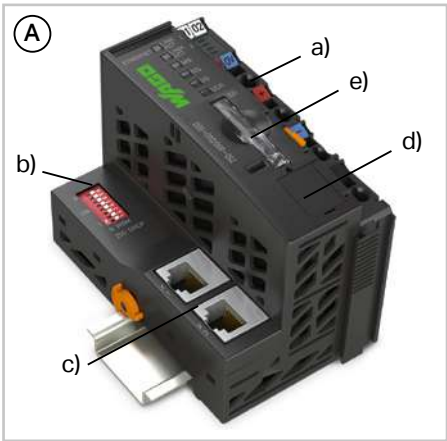
High Mechanical Performance

Automation systems must be particularly vibration-resistant, especially when installed close to vibration-prone and shock-generating system components. Powerful motors and power circuit breakers are just two examples from a wide range of applications. The WAGO 750 XTR I/O-SYSTEM continues to set new standards here. Count on long-lasting, trouble-free operation and industry-topping levels of safety — even in the most severe applications, such as tunnel boring machines.

Advantages:

- Controls for eXTReMe environmental conditions
 - Needs no climate control
 - Application in unshielded areas
 - Application in vibration- or shock-generating system part
- Extensive IT integration possibilities
- Expandable with the comprehensive WAGO 750 XTR I/O-SYSTEM product range
- Maintenance-free
- Vibration-proof, fast and maintenance-free CAGE CLAMP® spring connections

750 XTR Controllers Interfaces and Types



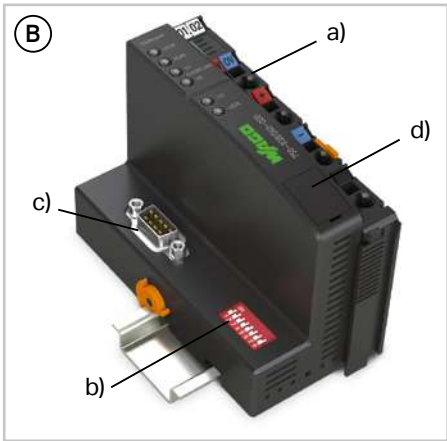
- Includes supply module (a)
- Technical differences on the connection level; addressing switch (b) and fieldbus interface (c)
- Service interface (d)

Housing design (A)

- SD card slot for external storage media (e)
- W x H x D (mm) 61.5 x 71.9 x 100

Housing design ECO (B)

- W x H x D (mm) 50.5 x 71.1 x 100



Item Number Key

Explanation of the components of an item number key

Item No. : 750-8xx/040-00y		
3x: 16-bit		CANopen
8x: 32-bit multitasking		ETHERNET
001:		Telecontrol technology

3.4

Standards and Rated Conditions for Railway Applications (EN 50155)

Railway Applications (EN 50155)	complied class/standard
4.1 Rated Operating Conditions	
4.1.1 Altitude above sea level	AX (EN 50125-1)
4.1.2 Ambient operating temperature	TX
4.1.3 Shock and vibration	1A and 1B (EN 61373)
4.1.4 Relative humidity	95% (varnish coated PCBs)
5.1 Power Supply	
5.1.1.1 Power supply fluctuations	
Minimum voltage	0,725 x Un
Maximum voltage	1,3 x Un
5.1.1.2 Power supply interruption	S1
5.4 Surge, ESD, Burst Tests	EN 50121-3-2
5.5 EMC (Interference Emission, Interference Immunity)	EN 50121-3-2, EN 50121-4, -5

WAGO is a company certified according to the quality standard IRIS.

750 XTR Controllers

Installation Instructions

Supply Modules

Power is always channeled to the internal electronics power supply via the controller. The power supply to the field-side supply is electrically isolated. The division enables a separate supply for sensors and actuators. The I/O modules' connections automatically lead to transferring the supply voltages. Bus supply modules with diagnostics enable additional monitoring of the power supply. This ensures a flexible, user-specific supply design for a station.

The current supply to the electronics is limited by a maximum value. This value is dependent on the controller used. If the sum of the internal current demand of all the I/O modules should exceed this value, an additional bus supply module is necessary. Even in this case, power supply to the field-side supply of 10 A may not be exceeded. However, different bus supply modules allow a new power supply, formation of potential groups and the implementation of emergency stop concepts.

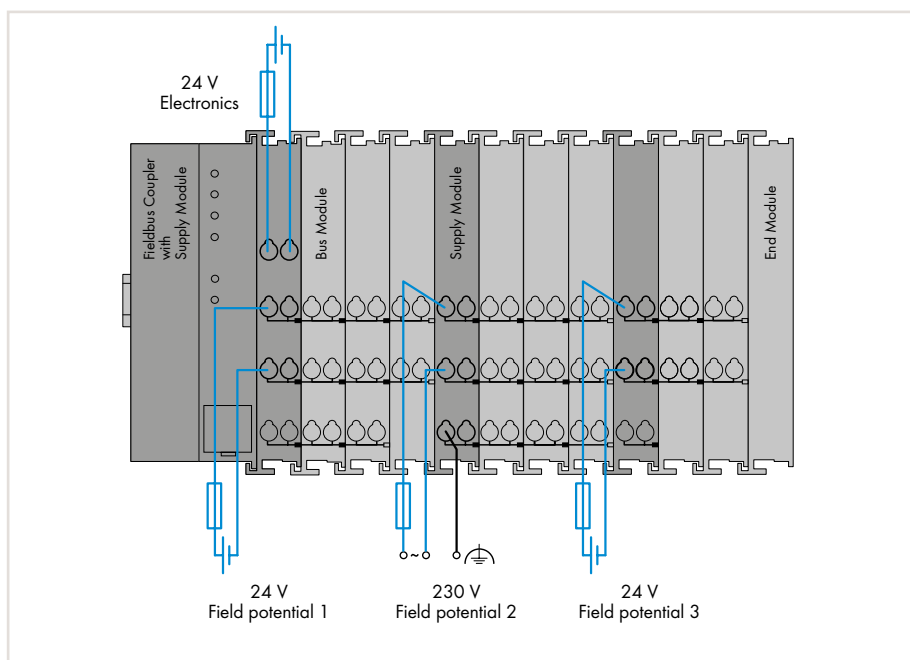
Interference-Free in Safety-Related Applications

To safely and easily perform cost-effective, centralized deactivation of complete actuator groups safely, the actuator's power supply can be switched off using a safety switching device. This can either be performed for each individual actuator or by turning off the power supply to a group of control outputs. In the event of failure, ensure that no interference from other current or power circuits occurs — even when the control voltage is switched off — so the defined safety function properties (logic and time response) remain unchanged.

All modules are designed to provide interference-free safety functionality. These modules comply with safety requirements up to Category 4 of DIN EN ISO 13849-1:2007. Safety category and performance level depend solely on the safety components and their wiring.

Notice:

Interference-free WAGO I/O modules have no active influence on the safety function, they are not an active part of the safety application and are not a substitute for the safety switching device! When using the components in safety functions, the corresponding notes must be observed in the relevant manual.



Notes

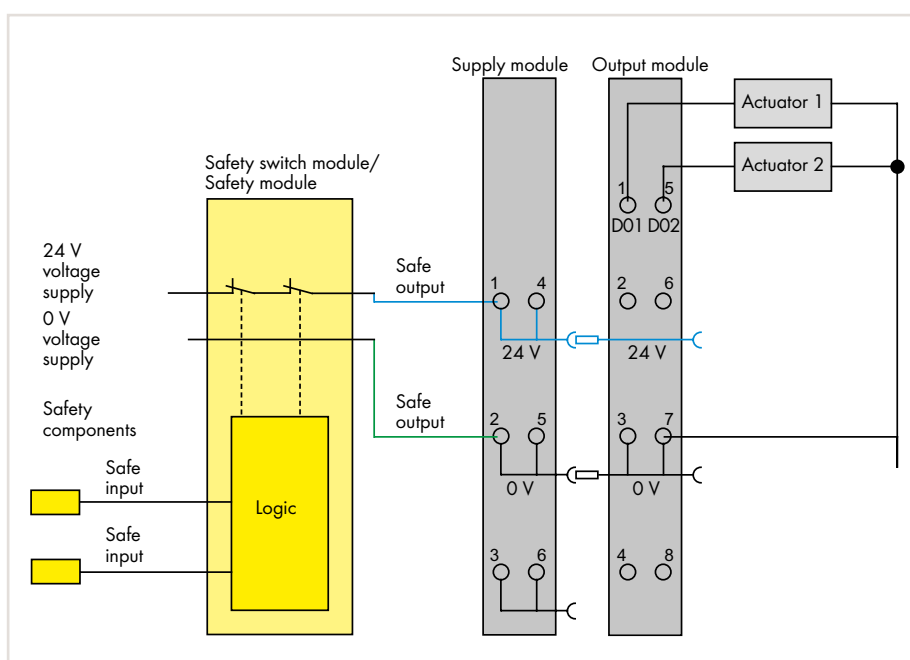
Additional steps must be implemented specifically for the location the I/O-System is installed:

- Specific power and field-side power supply filters (750-624/040-001 or 750-626/040-000) are required for marine and onshore/offshore applications, as well as in telecontrol and rail technology.

Please refer to the manual for details about the power supply's design.

Mixed Operation

Mixed operation (standard/XTR I/O modules) within a node is possible when groups of modules are electrically isolated on the field side, i.e., electrically isolated power supply. The combination may be useful, for example, when there are only increased requirements for dielectric strength and immunity to interference, but the ambient temperature is not critical.



750 XTR Controllers

Standards and Rated Conditions

General Specifications	
System supply voltage	24 VDC (–25 ... +30 %) Specified values for ambient temperature under laboratory conditions +15 °C... +35 °C. Derating for –40 ... +55 °C: 24 V (–25 ... +20 %)*. Derating for +55 ... +70 °C: 24 V (–25 ... +10 %)*. *Including 15 % residual ripple (lower limit –27.5 %)
Ambient temperature (operation)	–40 ... +70 °C
Ambient temperature (storage)	–40 ... +85 °C
Relative humidity	Max. 95 %, short-term condensation per Class 3K7 / IEC EN 60721-3-3 and E DIN 40046-721-3 (except wind-driven precipitation, water and ice formation)
Operating altitude	Without temperature derating: 0–2000 m; with temperature derating: 2000–5000 m (0.5 K / 100 m); max.: 5000 m
Pollution degree	2 per IEC 61131-2
Dielectric strength	Per (EN 60870-2-1) • 510 VAC / 775 VDC Isolation: Rated impulse voltage • 1 kV (Class VW1 per EN 60870-2-1) Surge: • 1 kV (L – L) / 2 kV (L – E)
Vibration resistance	Per IEC 60068-2-6 (acceleration: 5 g), EN 60870-2-2, IEC 60721-3-1, -3, EN 50155, EN 61373
Shock resistance	Per IEC 60068-2-27 (15 g/11 ms/half-sine/1,000 shocks; 25 g/6 ms/1,000 shocks), EN 50155, EN 61373
EMC immunity to interference	EN 61000-6-1, -2, EN 61131-2 Marine applications, EN 50121-3-2, EN 50121-4, -5, EN 60255-26, EN 60870-2-1 EN 61850-3, IEC 61000-6-5, IEEE 1613, VDEW: 1994
EMC emission of interference	EN 61000-6-3, -4, EN 61131-2 EN 60255-26, marine applications EN 60870-2-1 (industrial and residential areas) EN 61850-3 (industrial and residential areas) EN 50121-3-2, EN 50121-4, -5
Protection type	IP20
Mounting position	Horizontal (standing/lying) or vertical
Mounting type	On 35 mm DIN rail
Housing material	Polycarbonate, polyamide 6.6
Exposure to pollutants	Per IEC 60068-2-42 and IEC 60068-2-43
Permissible SO ₂ contaminant concentration at a relative humidity < 75 %	25 ppm
Permissible H ₂ S contaminant concentration at a relative humidity < 75 %	10 ppm
Wire connection	CAGE CLAMP®
Conductor sizes; strip lengths	0.25 ... 2.5 mm ² / AWG 24 ... 14; 8 ... 9 mm / 0.31 ... 0.35 inch
Current carrying capacity of the power jumper contacts	10 A

3.4

Approvals

Overview of the approvals in the article comparison in Section 12, Technical Appendix, or online under www.wago.com

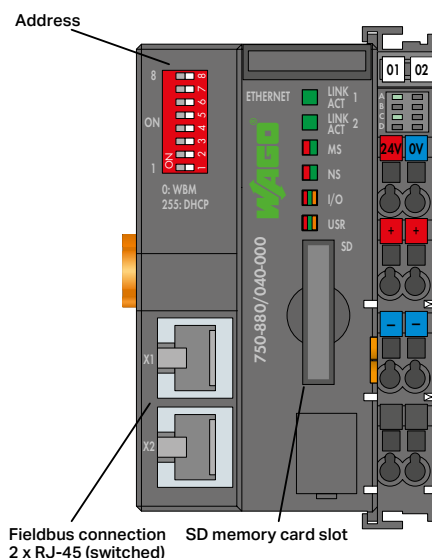


Controller ETHERNET

3rd Generation, SD card slot, extreme, optional: telecontrol



Figure: 750-880/040-000



Item description		Controller ETHERNET	
Version		G3 SD XTR	G3 SD Tele XTR
Item No.		750-880/040-000	750-880/040-001
Technical Data			
Fieldbus		EtherNet/IP, MODBUS/TCP	
Protocols		EtherNet/IP, MODBUS/TCP (UDP), HTTP, BootP, DHCP, DNS, SNTP, FTP, SNMP	
Connection technology: Fieldbus input/output		2 x RJ-45	
Baud rate		10/100 Mbit/s	
Visualization		Web Visu, Webserver	
Programming		WAGO-I/O-PRO V2.3 (based on CODESYS 2.3)	
Type of memory card		SD and SDHC to 8 GB*	
Program memory / data memory / non-volatile memory (software)		1024 KB / 1024 KB / 32 KB	
Number of I/O modules per node max.		64	
Input and output process image (internal) max.		1020 words	
System supply voltage		24 VDC (–25 ... +30 %) Specified values for ambient temperatures under laboratory conditions +15 ... +35 °C. Derating for –40 ... +55 °C: 24 V (–25 ... +20 %)*. Derating for +55 ... +70 °C: 24 V (–25 ... +10 %)*.	
Input current typ. at rated load (24 V)		500 mA	
Current consumption, system supply		450 mA	
Total current for system supply		1700 mA (ambient temperature (operation) < 60 °C), 1500 mA (ambient temperature (operation) 60–70 °C)	
Ambient temperature (operation)		–40 ... +70 °C	
Dimensions W x H x D		61.5 x 71.9 x 100 mm	
Approvals		CE, Marine, UL 508, ANSI/ISA	
Data sheet and further information, see:		wago.com/750-880/040-000	wago.com/750-880/040-001
Accessories		Item No.	Page
SD memory card, 2 GB		758-879/000-001	44

*All guaranteed properties only valid with the WAGO memory card listed as an accessory.

**Including 15 % residual ripple (lower limit –27.5 %)

WAGO-I/O-PRO Software V2.3
see Section 1

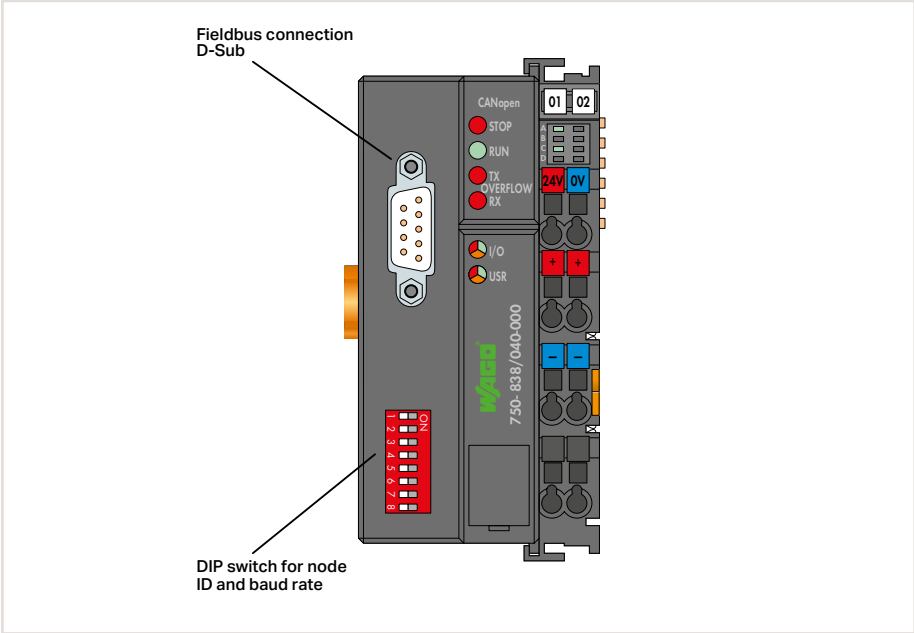
Mini-WSB Quick marking system
see Full Line Catalog, Volume 6

Approvals and corresponding ratings,
see Page 515 or www.wago.com

Controller CANopen

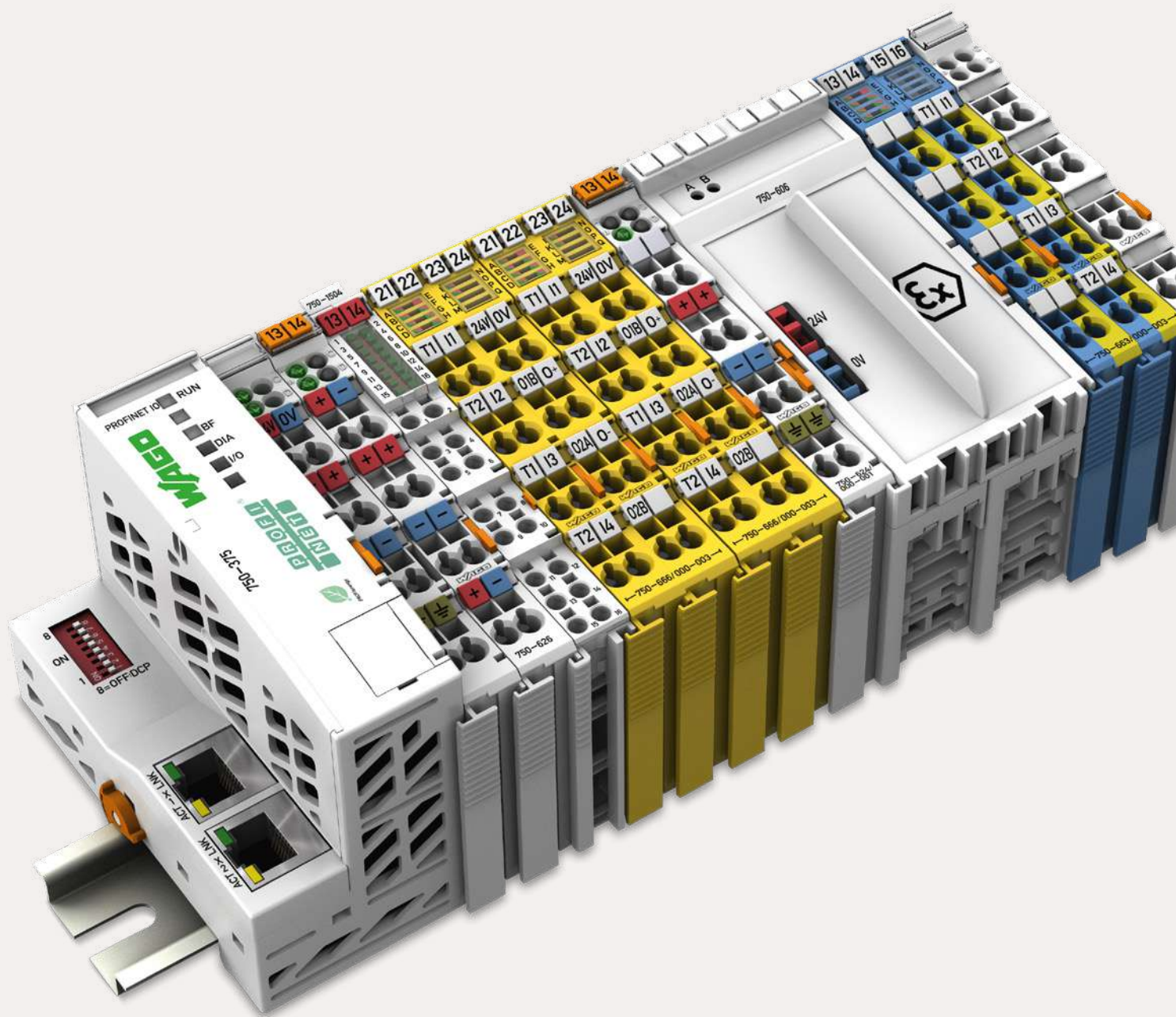


640/832 KB program/RAM, D-Sub, extreme



Item description	Controller CANopen
Version	M3 DSub XTR
Item No.	750-838/040-000
Technical Data	
Fieldbus	CANopen
Connection technology: Fieldbus input/output	D-Sub 9 connector
Bus segment length max	1000 m
Baud rate	10 kBd ... 1 MBd
Number of fieldbus nodes on master max.	110
Visualization	Without
Programming	WAGO-I/O-PRO V2.3 (based on CODESYS 2.3)
Program memory / data memory / non-volatile memory (software)	640 KB / 832 KB / 8 KB
Number of I/O modules per node max.	64
Input and output process image (internal) max.	512 bytes
Memory for fieldbus input and output variables max.	512 bytes
Communication profile	DS-301 V4.01
Device profile	DS-401 V2.0
Number of PDOs	32 Tx / 32 Rx
Number of SDOs	2 servers SDO / 16 clients SDO
System supply voltage	24 VDC (–25 ... +30 %) Specified values for ambient temperatures under laboratory conditions +15 ... +35 °C. Derating for –40 ... +55 °C: 24 V (–25 ... +20 %)*. Derating for +55 ... +70 °C: 24 V (–25 ... +10 %)*.
Input current (typ.) at rated load (24 V)	500 mA
Current consumption, system supply	350 mA
Total current for system supply	1650 mA (ambient temperature (operation) < 60 °C), 1250 mA (ambient temperature (operation) 60–70 °C)
Ambient temperature (operation)	–40 ... +70 °C
Dimensions W x H x D	50.5 x 71.1 x 100 mm
Approvals	CE, Marine, UL 508, ANSI/ISA
Data sheet and further information, see:	wago.com/750-838/040-000

*Including 15 % residual ripple (lower limit –27.5 %)



750 and 753 I/O-System

750 and 753 I/O-System

- Highly versatile
- More than 500 modules available
- Functional safety
- Ex i

I/O-System – 750 XTR Series

For demanding applications in which the following are critical:

- Extreme temperature stability
- Immunity to electromagnetic interference and impulse voltages
- Vibration and shock resistance

SPEEDWAY I/O-System

- Uncompromising protection, even in the harshest environments outside the switch cabinet
- Degree of protection: IP67
- Fully encapsulated

Section 5 ►

Section 6 ►►

750 and 753 I/O-System

Contents

			Page
	General Product Information		96
	Versions		97
	Interfaces and Types		98
	Markings and Mounting Accessories		99
	Application and Installation Instructions		100
	Item Number Key		102
	Standards and Rated Conditions		103
	Approvals		103
	Fieldbus Couplers (FC)	PROFINET IO, PROFIBUS, ETHERNET TCP/IP, EtherCAT, MODBUS/TCP, DeviceNet, CANopen, sercos, MODBUS, INTERBUS, CC-Link	4.1104
	I/O Modules	Digital Input Modules (DI)	4.2120
		Digital Output Modules (DO)	4.3150
		Analog Input Modules (AI)	4.4170
		Analog Output Modules (AO)	4.5200
		Function and Technology Modules	4.6210
		Communication Modules	4.7230
		Functional Safety	4.8248
		Intrinsically Safe Modules	4.9256
		Supply and Segment Modules	4.10270
	Accessories		Section 11
	Marking and Mounting Accessories		

I/O-System — 750 and 753 Series — One System for Every Application

General Product Information

One System for Every Application

The WAGO 750/753 I/O-SYSTEM is characterized by its universal application scope and extensive product portfolio. With more than 500 different modules, the versatility and flexibility is so great that virtually every requirement in a wide range of industries is covered.

Industrial Automation

The wide selection of I/O modules for various potential and signal types, as well as special functions, makes it possible to economically wire sensors/actuators — even in safety-related applications.

Building automation

The broad portfolio allows for flexible, cellar-to-ceiling solutions with conventional I/O modules, standardized industry-specific fieldbus protocols and subsystems for typical applications in lighting, shading, heating, ventilating and air conditioning (HVAC) and much more.

Marine and Onshore/Offshore Automation

International approvals coupled with industry-specific features permit use in shipbuilding and other harsh sectors. Addressing requirements specific to industry and operating environment has enabled use on marine diesels and in the EMC-sensitive area of a vessel's bridge. Because the requirements are significantly greater for immunity to interference or emission of interference and mechanical performance in these sensitive areas, the system can readily meet the needs of other industries.

Process automation

Even under the harshest environmental conditions, use is possible with special approvals. Potential hazardous area applications include oil and gas production, the chemical industry and power generation. The I/O-System can be installed in Zone 2/22 with its intrinsically safe I/O modules, making it possible to connect sensors/actuators in Zones 1/21 and 0/20.

Maximum Fieldbus Independence

The system's modularity is also reflected in its support for numerous fieldbus systems and ETHERNET standards. Depending on the application, it is possible to choose between fieldbus couplers and communication modules for different protocols.

Easy to Use

A modular, DIN-rail-mount design permits easy installation, expansion and modification of the I/O module without tools. The streamlined design prevents installation errors. In addition, proven CAGE CLAMP® technology offers fast, vibration-proof and maintenance-free connections that are independent of operator skill. Depending on the I/O module's granularity, field peripherals can be directly wired using 1-, 2-, 3- or 4-wire technology.

Worldwide Approvals

International approvals for building and industrial automation, as well as the process and marine industries, guarantee worldwide use, even under more rigorous operating conditions including ATEX, BR-Ex, IECEx, UL508, UL ANSI/ISA and ship construction.



Extremely Compact

WAGO's patented mechanical design leads to extremely compact I/O nodes. In fact, select I/O modules can accommodate up to 16 channels in a 12 mm (1/2") wide housing.

- Finely granular I/O modules for node customization.
- Space-saving design permits high integration density and direct connection.

Maximum Reliability and Ruggedness

The WAGO-I/O-SYSTEM is engineered and tested for use in the most demanding environments in accordance with the highest standards, e.g., those required in marine applications. The system is distinguished from other products that are solely intended for industrial use because of:

- Greatly increased vibration rating.
- Significantly greater immunity to interference (ESD).
- Lower emission of interference.
- Larger voltage fluctuation range.
- Greater strength for continuous operation in upper temperature ranges.

In addition, CAGE CLAMP® spring pressure connections ensure superior reliability.

Integrated QA measures in the production process and 100 % function testing ensure consistent quality.

Clear Identification

I/O module functionality is identified via marker carriers (integrated or as option). Terminal assignment and technical data are printed onto the side of the I/O module. The WAGO WSB marker system also allows module- and channel-related identification.

Advantages:

- Fieldbus-independent — Support all standard fieldbus protocols & ETHERNET standards
- Flexible platform adapts to diverse applications and environments
- Tested and approved worldwide
- Wide range of accessories for marking system and connection technology
- Vibration-proof, fast and maintenance-free CAGE CLAMP® connections

750 and 753 I/O-System Versions

Pluggable Connector



The pluggable connections of the WAGO 753 I/O-SYSTEM allow quick and safe replacement. Optional coding pins prevent inserting the pluggable connector in the wrong I/O module. Replacing and connecting the I/O module requires no further action and eliminates possible errors — permanent wiring.

Alternatively, field wiring is possible via interface modules that can be connected to the I/O-System using a ribbon cable (see "Types").

Functional Safety



In the European Union, the machinery directive defines the requirements for machine and system safety. This ensures a uniform standard for the protection of "life and limb" for people within a machine's operating area.

The required risk assessment is based on harmonized standards (e.g., EN 13849) that identify existing risks and required risk reduction (SIL or PL quality). Based on the risk assessment, safety functionality can be implemented, e.g., by presence detection or protection zone violations using secure switches or light arrays to immediately shutdown the "risk". For this purpose, the safety signals are detected by the "yellow" safety modules and transmitted via "PROFIsafe" to the fail-safe PLC for further processing. The result is then executed via a safe actuator (output module, controller, etc.).

The unique safety characteristic values of the WAGO modules facilitate calculation of the final safety function up to Cat. 4/PLe according to EN 13849, or SIL3 according to EN 62061 or IEC 61511.

The mixed operation of safe and conventional I/O modules streamlines system configuration. For increased EMC immunity required according to the standard, WAGO offers compact filter modules for the power supply. Specific power supply features must be considered, which are described in detail in the corresponding manuals.

Use in Hazardous Areas



In many plants across the chemical and petrochemical industries, as well as in the production and process automation sectors, installations are operated that process explosive gas- or dust-air mixtures. For this reason, electrical equipment must be explosion-proof in order to avoid injuries to personnel and equipment damages.

The modules within the WAGO 750 I/O-SYSTEM are designed for use in both non-hazardous and hazardous areas. The direct application of fieldbus technology in hazardous areas is typically resource-intensive. When used in hazardous areas of Zone 2/22, the WAGO I/O-SYSTEM 750 offers a safe, easy and economical connection to the sensors and actuators of Zones 0/20 and 1/21. The "blue" Ex i I/O modules were specially developed for this purpose. They form an intrinsically safe section that can be integrated into a standard fieldbus node, offering all the advantages of a state-of-the-art fieldbus technology. The WAGO 750 I/O-SYSTEM is also approved for mining applications.

Extended Temperature Range

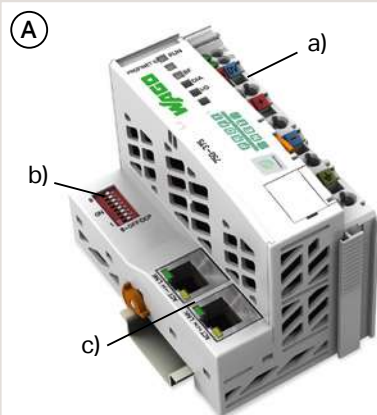


Industrial automation technology is typically operated in temperatures ranging from 0 ... 55 °C. However, there are applications that require an extended temperature range.

For these applications, WAGO offers a line of WAGO 750 I/O-SYSTEM products for temperatures ranging from -20 ... +60 °C.

For extreme applications, where even this extended temperature range is not sufficient, the WAGO 750 XTR I/O-SYSTEM is available.

750 and 753 I/O-System Interfaces and Types

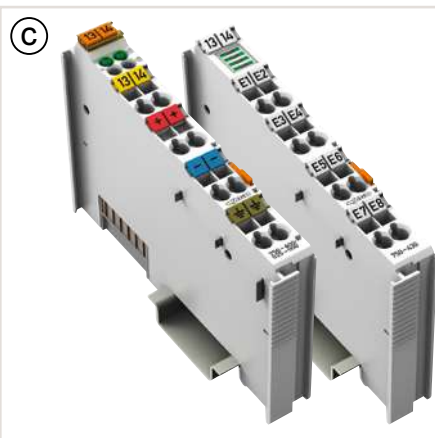
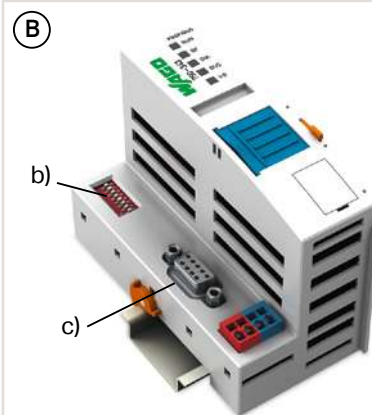


Housing Design Fieldbus Coupler (A)

- Including supply module (a) to power downstream I/O modules
- Technical differences on the connection level.
- Optional address switch (b) and fieldbus interface (c)
- W x H x D (mm) 50.5 x 71.1 x 100 or
- W x H x D (mm) 61.5 x 71.9 x 100

Housing Design Fieldbus Coupler ECO (B)

- Restriction on power supply and data width
- W x H x D (mm) 49.5 x 71.9 x 96.8

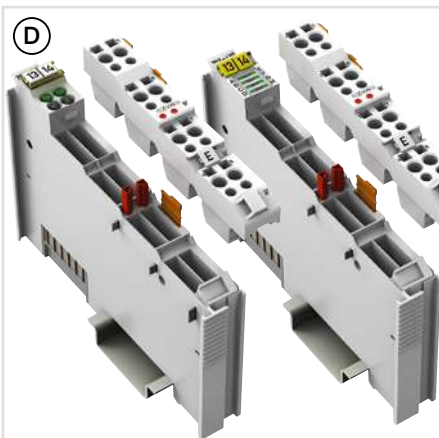


Housing Design 750 (C)

- 8 connection points (CAGE CLAMP®)
- W x H x D (mm) 12 x 69.8 x 100 (4 LEDs)
- W x H x D (mm) 12 x 67.8 x 100 (8 LEDs)

Housing Design 753 (D)

- Pluggable connector
- 8 connection points (CAGE CLAMP®)
- W x H x D (mm) 12 x 69.8 x 100 (4 LEDs)
- W x H x D (mm) 12 x 69 x 100 (8 LEDs)

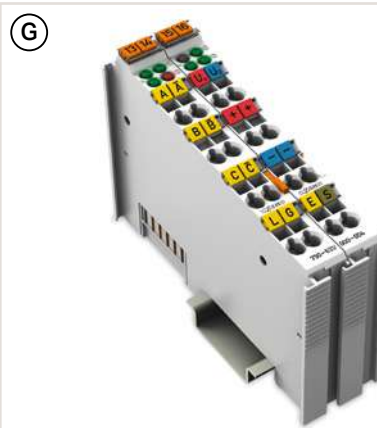
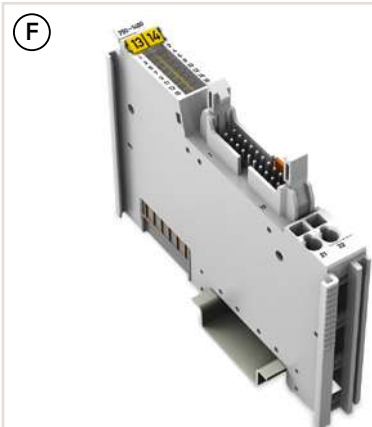


Housing Design 750 (E)

- 16 connection points (push-in CAGE CLAMP®)
- W x H x D (mm) 12 x 69 x 100

Housing Design (F)

- For time-saving wiring between I/O-System and interface modules
- Ribbon cable connector for connection to 289 Series Interface Modules and JUMPFLEX® Interface Adapter
- W x H x D (mm) 12 x 74.1 x 100

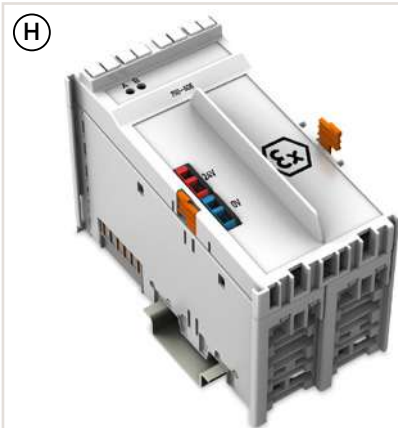


Housing Design Double Width (G)

- Some modules are integrated into a double housing to address specific technological needs. Despite utilizing the same standardized housing, these modules are twice as wide.
- W x H x D (mm) 24 x 69.8 x 100

Special Housing Design (H)

- Some modules are integrated into a specialized housing with a specific width and pluggable connectors. The dimensions are specified on the respective catalog page.



750 and 753 I/O-System

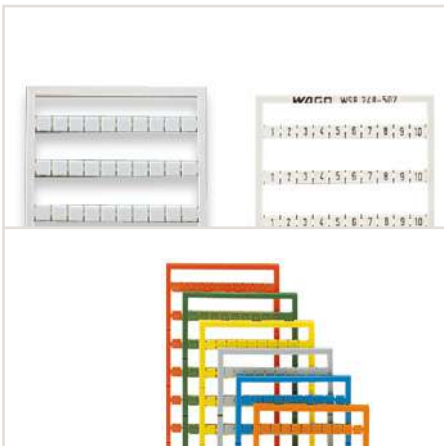
Markings and Mounting Accessories



Transparent group marker carriers indicate module type by color.



Removable group marker carriers are available for all 750 and 753 I/O modules with a maximum of four LEDs, as well as all fieldbus couplers with a supply module.



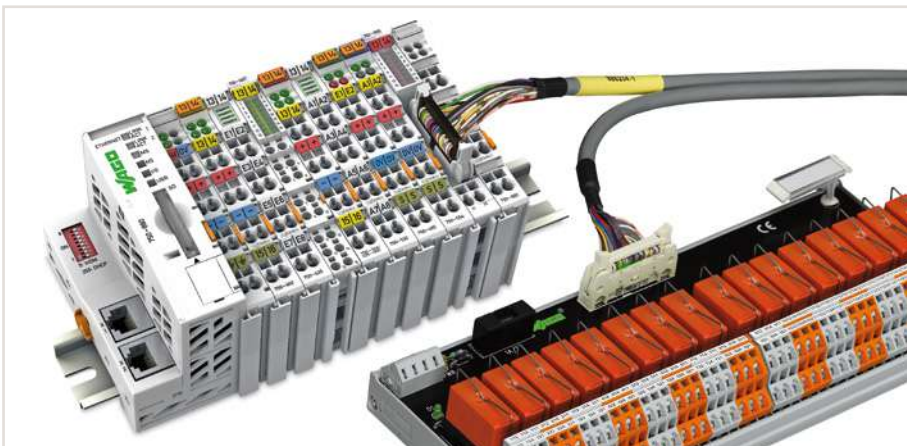
Mini-WSB quick marking system, blank, pre-marked and colored; suitable for all 750 and 753 I/O modules.



Marker carrier for one single I/O module, suitable for all 750 and 753 I/O modules; the marker carrier can be placed in the upper, Mini-WSB carrier plate.



Marker carrier for one I/O node; both versions (750-106 and 750-107) permit continuous marking regardless of the I/O module housing used.



Interface modules for system wiring



Interface cables

750 and 753 I/O-System

Application and Installation Instructions

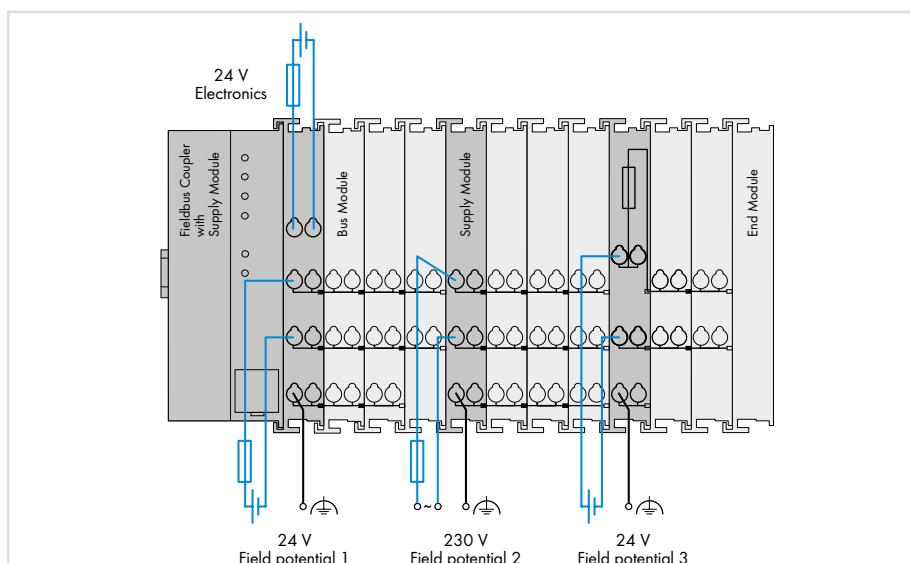
Supply Modules

Power is normally channeled to the internal electronics power supply by the fieldbus coupler. The field-side power supply is electrically isolated via the bus supply module on the fieldbus coupler or a separate internal system supply module. The division enables a separate supply for sensors and actuators. Snapping the I/O modules together automatically routes the supply voltages (system power supply 5 VDC via the data contacts and field supply via the optional power jumper contacts). Bus supply modules with diagnostics enable additional monitoring of the power supply. This ensures a flexible, user-specific supply design for a station. The current supply to the electronics is limited by a maximum value. This value depends on the fieldbus coupler used. If the sum of the internal current demand of all the I/O modules should exceed this value, an additional bus supply module is necessary. Even in this case, power supply to the field-side supply of 10 A may not be exceeded. However, different bus supply modules allow a new power supply, formation of potential groups and realization of emergency stop concepts.

Interference-Free in Safety-Related Applications

To easily and safely perform cost-effective, centralized deactivation of complete actuator groups safely, the actuator's power supply can be switched off using a safety switching device. This can either be performed for each individual actuator or by turning off the power supply to a group of control outputs. In the event of failure, ensure that no interference from other current or power circuits occurs — even when the control voltage is switched off — so the defined safety function properties (logic and time response) remain unchanged.

Some modules are designed to provide interference-free safety functionality. These modules comply with safety requirements up to Category 4 of DIN EN ISO 13849-1:2007. Safety category and performance level depend solely on the safety components and their wiring.



Notice:

Interference-free WAGO I/O modules are not a component of the safety function and do not replace the safety switching device! When using the components in safety functions, the corresponding notes must be observed in the relevant manual.

Notes

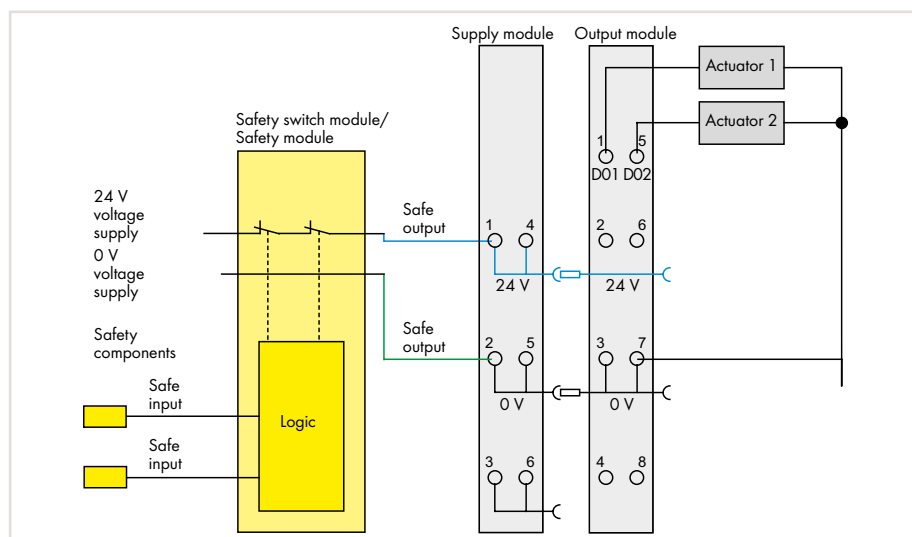
Additional steps must be implemented specifically for the location the I/O-System is installed:

- Specific power and field-side power supply filters (750-624 or 750-626) are required for marine and onshore/offshore applications.
- A specific bus supply module (750-606) is required to operate intrinsically safe Ex i modules.
- Additionally, both a bus supply module and a field-side power supply filter are

recommended when operating intrinsically safe Ex i modules for marine and onshore/offshore applications.

- For the 24 VDC power supply of electronics and field, PELV/SELV power supply units are recommended. As part of safety-related applications, they are mandatory. The mixed operation of safe and conventional I/O modules streamlines system configuration. For increased EMC immunity required according to the standard, WAGO offers compact filter modules for the power supply.

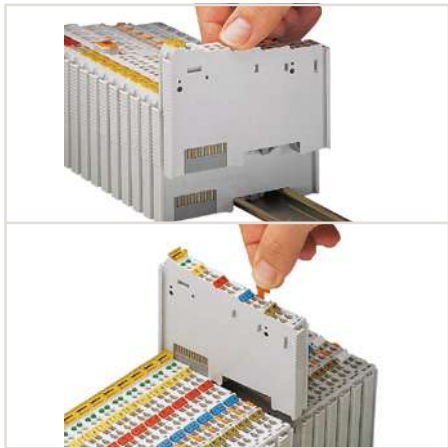
Please refer to the manual for details about the power supply's design.



Example: Two-channel, double-pole power supply disconnection

750 and 753 I/O-System

Application and Installation Instructions



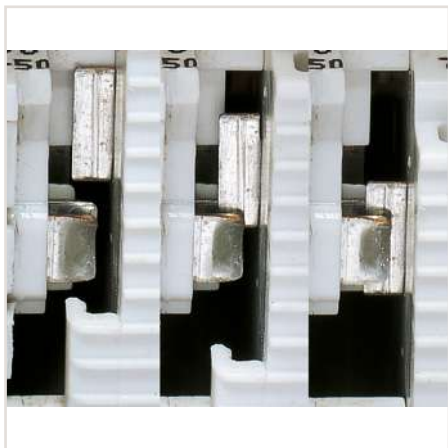
Attachment/release on the mounting rail



Releasing the pluggable connector



Optional protection against mismatching pluggable connectors via coding elements

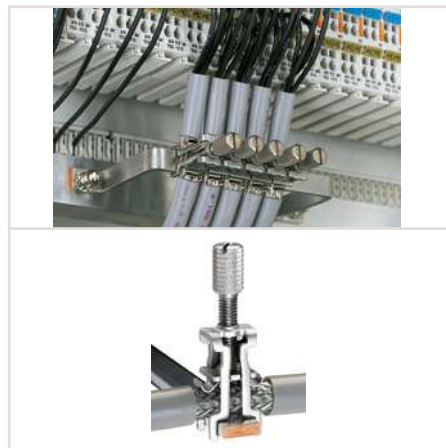


Secure, automatic connection of the power supply by self-cleaning power jumper contacts

Notice:

For some I/O modules, not all power jumper contacts are made! An I/O module with three power jumper contacts (e.g., 2-channel digital input) cannot be snapped into place behind an I/O module in which not every contact is made.

To increase electromagnetic compatibility (EMC), some components are connected to the DIN-rail by a discharge contact. The DIN-rail must always have a low-resistance connection to the ground potential.



Wide range of accessories available for EMC-compliant installation, including shield connection



Secure, automatic connection of the data and electronics power supply by gold-plated pressure contacts



Securing the cable to the connector

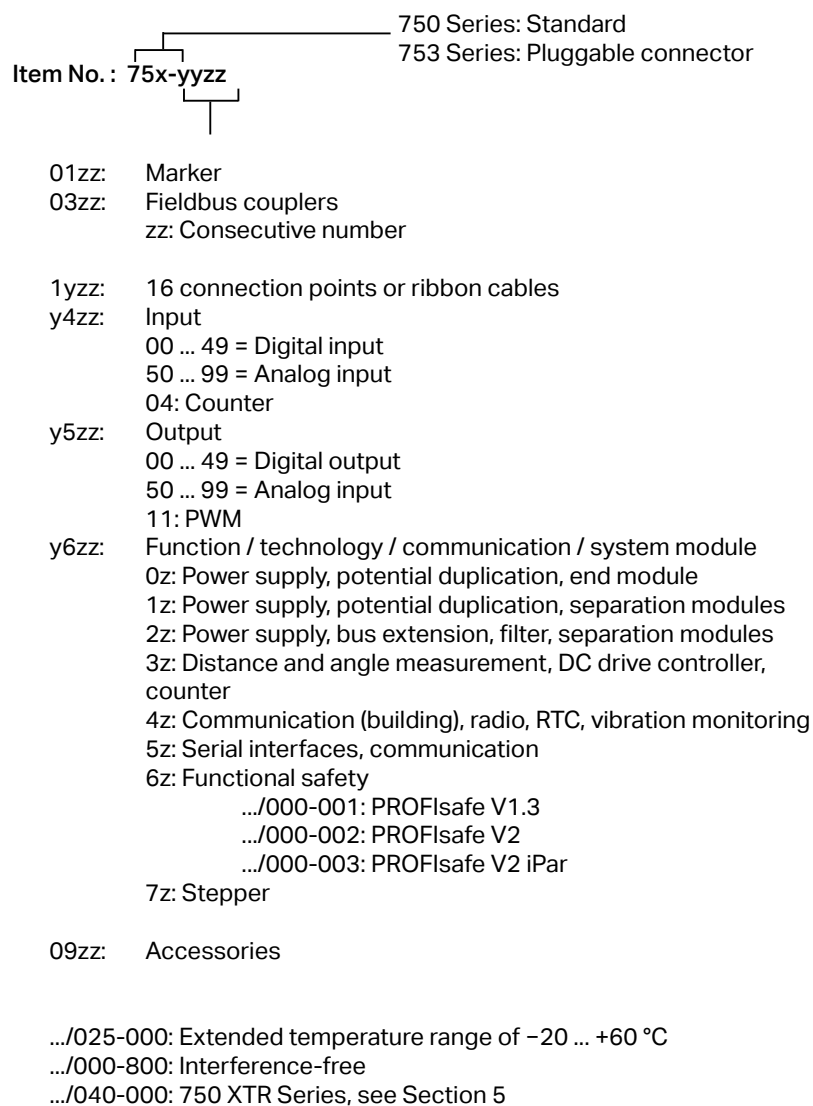


Service interface for configuring the fieldbus coupler; connectivity via configuration cable or radio adapter

750 and 753 I/O-System

Item Number Key

Explanation of the components of an item number key



750 and 753 I/O-System

Standards and Rated Conditions

General Specifications	
System supply voltage	24 VDC (–25 ... +30 %)*; * For all marine-certified fieldbus couplers and I/O modules
Isolation	500 V system/supply
Ambient temperature (operation)	0 ... +55 °C
Ambient temperature (operation) for versions with an extended temperature range	–20 ... +60 °C
Ambient temperature (storage)	–25 ... +85 °C
Ambient temperature (storage) for versions with an extended temperature range	–40 ... +85 °C
Relative humidity	95 % non-condensing
Relative humidity for versions with an extended temperature range	Max. 95 %, short-term condensation per Class 3K6 / IEC EN 60721-3-3 and E DIN 40046-721-3, taking a temperature range of –20 ... +60 °C into consideration (except wind-driven precipitation, water and ice formation) %
Operating altitude	Without temperature derating: 0 ... 2000 m; with temperature derating: 2000 ... 5000 m (0.5 K/100 m); max.: 5000 m
Pollution degree	2 per IEC 61131-2
Vibration resistance	0.5 g (4 g for all shipbuilding-certified fieldbus couplers and I/O modules) per IEC 60068-2-6
Shock resistance	15 g per IEC 60068-2-27
EMC immunity to interference	Per EN 61000-6-2 / shipbuilding applications
EMC emission of interference	Per EN 61000-6-3, EN 61000-6-4, marine applications
Protection type	IP20
Mounting position	Any
Mounting type	On 35 mm DIN-rail
Housing material	Polycarbonate, polyamide 6.6
Exposure to pollutants	Per IEC 60068-2-42 and IEC 60068-2-43
Permissible SO ₂ contaminant concentration at a relative humidity < 75 %	25 ppm
Permissible H ₂ S contaminant concentration at a relative humidity < 75 %	10 ppm
Wire connection	CAGE CLAMP® Termination
Conductor size; strip length for standard I/O modules and couplers	0.08–2.5 mm ² / 28–14 AWG; 8–9 mm / 0.31–0.35 inch
753 I/O modules:	0.08–2.5 mm ² / 28–14 AWG; 9–10 mm / 0.35–0.39 inch
ECO Fieldbus Couplers:	0.08–1.5 mm ² / 28–16 AWG; 5–6 mm / 0.2–0.24 inch
Wire connection	Push-in CAGE CLAMP®
Conductor size; strip length for I/O modules with 16 connection points:	Solid: 0.08–1.5 mm ² / 28–16 AWG, Fine-stranded: 0.25–1.5 mm ² / 22–16 AWG; 8–9 mm / 0.31–0.35 inch
Current carrying capacity of the power jumper contacts	10 A

4

Approvals

Overview of the approvals in the article comparison in Section 12, Technical Appendix, or online under www.wago.com



Fieldbus Couplers

Housing design I with field suppl

Dimensions W x H x D	50.5 x 71.1 x 100 mm
Height from upper edge of DIN rail	63.9 mm
Connection technology: System supply and field supply	CAGE CLAMP®
Conductor size	0.08 ... 2.5 mm² / 28 ... 14 AWG
Strip length	8 ... 9 mm / 0.33 in



Housing design II with field supply

Dimensions W x H x D	6,5 x 71.9 x 100 mm
Height from upper edge of DIN rail	64.7 mm
Connection technology: System supply and field supply	CAGE CLAMP®
Conductor size	0.08 ... 2.5 mm² / 28 ... 14 AWG
Strip length	8 ... 9 mm / 0.33 in



Housing design without field supply

Dimensions W x H x D	49.5 x 71.9 x 96.8 mm
Height from upper edge of DIN rail	64.7 mm
Connection technology: System supply	CAGE CLAMP®
Conductor size	0.08 ... 1.5 mm² / 28 ... 16 AWG
Strip length	5 ... 6 mm / 0.22 in



ECO housing design (without field supply)

Dimensions W x H x D	49.5 x 71.9 x 96.8 mm
Height from upper edge of DIN rail	64.7 mm
Connection technology: System supply	CAGE CLAMP®
Conductor size	0.08 ... 1.5 mm² / 28 ... 14 AWG
Strip length	5 ... 6 mm / 0.22 in



750 and 753 I/O-System, Fieldbus Couplers

Contents

Fieldbus system	Housing design				Description	Item no.	Page
	With field supply		Without field supply	ECO			
							
		☐			PROFINET IO, 3rd Generation	750-375	106
		☐			PROFINET IO, 3rd Generation, ext. Temperature	750-375/025-000	106
			☐		PROFINET IO, 3rd Generation, ECO	750-377	106
			☐		PROFINET IO, 3rd Generation, ECO, ext. Temperature	750-377/025-000	106
	☐				PROFIBUS DP, 12 MBd	750-303	107
	☐				PROFIBUS DP, 12 MBd	750-333	107
	☐				PROFIBUS DP, ext. Temperature	750-333/025-000	107
				☐	PROFIBUS DP, 12 MBd, ECO	750-343	108
	☐				PROFIBUS DP, fiber-optic connection, 1.5 MBd	750-331	108
			☐		ETHERNET, 3rd Generation	750-352	109
			☐		ETHERNET, 3rd Generation	750-352/000-001	109
MODBUS/TCP	☐				ETHERNET, 1st Generation	750-342	109
			☐		EtherCAT	750-354	110
			☐		EtherCAT, ID Switch	750-354/000-001	110
	☐				DeviceNet	750-306	111
				☐	DeviceNet, ECO	750-346	111
	☐				CANopen	750-307	112
	☐				CANopen, MCS	750-337	112
	☐				CANopen, MCS, ext. Temperature	750-337/025-000	112
	☐				CANopen, D-Sub	750-338	113
				☐	CANopen, MCS, ECO	750-347	113
				☐	CANopen, D-Sub, ECO	750-348	113
	☐				sercos	750-351	114
MODBUS	☐				MODBUS, RS-485, 115.2 kBd	750-315/300-000	115
	☐				MODBUS, RS-232, 115.2 kBd	750-316/300-000	115
	☐				INTERBUS	750-304	116
				☐	INTERBUS, 500 kBit/s, ECO	750-344	116
				☐	INTERBUS, 2 Mbit/s, ECO	750-345	117
	☐				INTERBUS, fiber-optic connection	750-334	117
	☐				CC-Link	750-310	118

Fieldbus Coupler PROFINET IO

3rd Generation,
optional: ext. Temperature

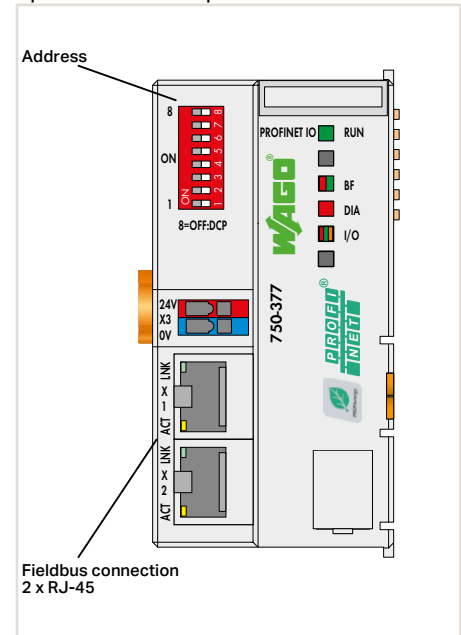
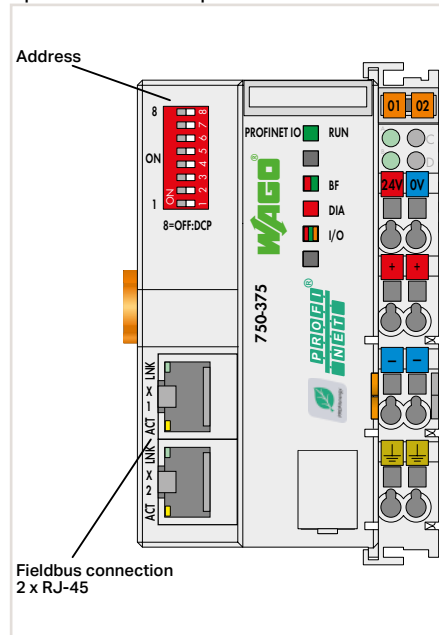
3rd Generation, ECO,
optional: ext. Temperature



Figure: 750-375



Figure: 750-377



Item Description		FC PROFINET		FC PROFINET	
Version		G3	G3 T	G3 ECO	G3 ECO T
Item No.		750-375	750-375/025-000	750-377	750-377/025-000
Technical Data					
Fieldbus		PROFINET IO		PROFINET IO	
Protocols		PROFINET IO V2.2 (conformity class C), topology detection / LLDP, network diagnostics / SNMP / MIB-2, media redundancy / MRP (pending), Webserver / HTTP shared device		PROFINET IO V2.2 (conformity class C), topology detection / LLDP, network diagnostics / SNMP / MIB-2, media redundancy / MRP (pending), Webserver / HTTP	
Profiles supported		PROFIsafe V2, PROFIenergy V1.0		PROFIsafe V2, PROFIenergy V1.0	
PROFINET IO features		Integrated 2-port switch; auto-negotiation, auto-MDIX; isochronous real-time communication, transmission clock: 1 ms (RT), 1, 2, 4 ms (IRT), device replacement without programming tool		Integrated 2-port switch; auto-negotiation, auto-MDIX; isochronous real-time communication, transmission clock: 1 ms (RT), 1, 2, 4 ms (IRT), device replacement without programming tool	
Connection technology: Fieldbus input/output		2 x RJ-45		2 x RJ-45	
Transmission medium		Twisted Pair S-UTP 100 Ω Cat. 5		Twisted Pair S-UTP 100 Ω Cat. 5	
Baud rate		10 Mbit/s (ETHERNET protocols), 100 Mbit/s full duplex (PROFINET IO)		10 Mbit/s (ETHERNET protocols), 100 Mbit/s full duplex (PROFINET IO)	
Number of I/O modules per node max.		250		64	
Input and output process image (internal) max.		512 bytes		256 bytes	
System supply voltage		24 VDC (–25 ... +30 %)		24 VDC (–25 ... +30 %)	
Input current typ. at rated load (24 V)		500 mA		280 mA	
Current consumption, system supply		450 mA		450 mA	
Total current for system supply		1700 mA		700 mA	
Ambient temperature (operation)		0 ... +55 °C		0 ... +55 °C	
Dimensions W x H x D		61.5 x 71.9 x 100 mm		49.5 x 71.9 x 96.8 mm	
Approvals		CE, Marine, UL 508, ANSI/ISA, ATEX/IECEx		CE, Marine, UL 508, ANSI/ISA, ATEX/IECEx	
Data sheet and further information, see:		wago.com/750-375		wago.com/750-377	

Mini-WSB Quick marking system
see Full Line Catalog, Volume 6

DIN rails and tool
see Section 11

Approvals and corresponding ratings,
see Page 516 or www.wago.com

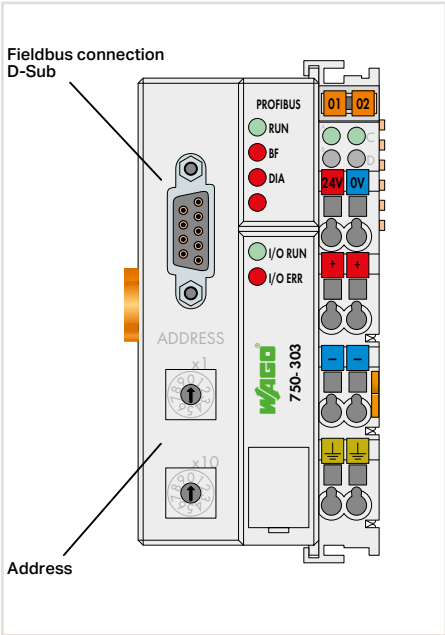
Fieldbus Coupler PROFIBUS DP



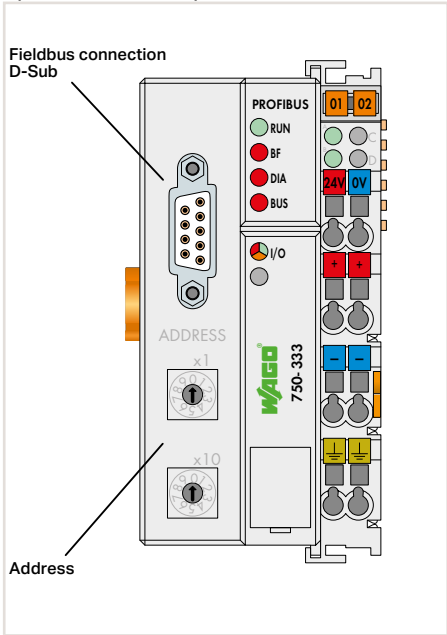
Figure: 750-303

Figure: 750-333

1st Generation, 12 MBd



2. Generation, 12 MBd,
optional: ext. Temperature



Item Description
Version
Item No.

FC PROFIBUS
G1 12MBd
750-303

FC PROFIBUS	
G2 12MBd	G2 12MBd T
750-333	750-333/025-000

Technical Data	
Fieldbus	PROFIBUS
Protocols	PROFIBUS DP/FMS
Connection technology: Fieldbus input/output	D-Sub 9 socket
Number of fieldbus nodes on master max.	96 with repeater
Transmission medium	Cu cable acc. to EN 50170
Baud rate	9.6 kBd ... 12 MBd
Number of I/O modules per node max.	64
Input and output process image (internal) max.	128 bytes
System supply voltage	24 VDC (–25 ... +30 %)
Input current typ. at rated load (24 V)	500 mA
Current consumption, system supply	350 mA
Total current for system supply	1650 mA
Ambient temperature (operation)	0 ... +55 °C
Dimensions W x H x D	50.5 x 71.1 x 100 mm
Approvals	
Data sheet and further information, see:	
Accessories	
GSD files	

FC PROFIBUS	
G1 12MBd	
750-303	
PROFIBUS	
PROFIBUS DP/FMS	
D-Sub 9 socket	
96 with repeater	
Cu cable acc. to EN 50170	
9.6 kBd ... 12 MBd	
64	
128 bytes	
24 VDC (–25 ... +30 %)	
500 mA	
350 mA	
1650 mA	
0 ... +55 °C	
50.5 x 71.1 x 100 mm	
CE, Marine, UL 508, ANSI/ISA, ATEX/IECEx	
wago.com/750-303	
Item No.	
Download: www.wago.com	

FC PROFIBUS	
G2 12MBd	
750-333	
PROFIBUS	
PROFIBUS DP/V1	
D-Sub 9 socket	
96 with repeater	
Cu cable acc. to EN 50170	
9.6 kBd ... 12 MBd	
63	
244 bytes	
24 VDC (–25 ... +30 %)	
500 mA	
200 mA	
1800 mA	
0 ... +55 °C	–20 ... +60 °C
50.5 x 71.1 x 100 mm	
CE, Marine, UL 508, ANSI/ISA, ATEX/IECEx	
wago.com/750-333	
Item No.	
Download: www.wago.com	

Fieldbus Coupler PROFIBUS DP



Figure: 750-343

12 MBd, ECO

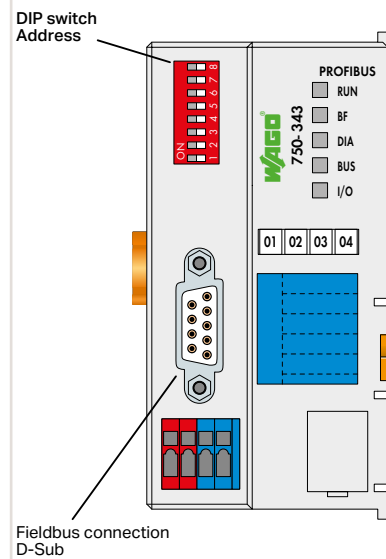
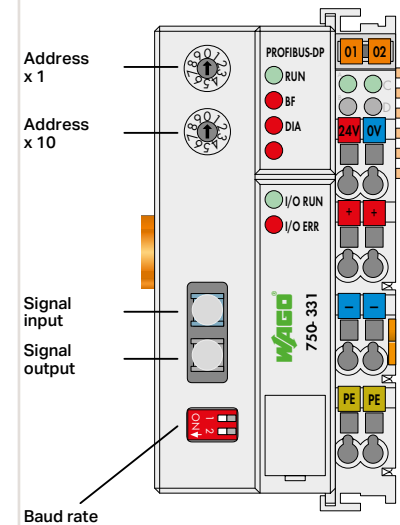


Figure: 750-331

fiber-optic connection, 1.5 MBd



Item Description	FC PROFIBUS	FC PROFIBUS
Version	12MBd ECO	FOC 1.5MBd
Item No.	750-343	750-331
Technical Data		
Fieldbus	PROFIBUS	PROFIBUS
Protocols	PROFIBUS DP	PROFIBUS DP
Connection technology: Fieldbus input/output	D-Sub 9 socket	HP Simplex, FOC plug included with delivery
Number of fieldbus nodes on master max.	125 with repeater	10 in subring
Transmission medium	Copper cable per EN 50170	Fiber optic cable (APF fiber)
Baud rate	9.6 kBd ... 12 MBd	93.75–1500 kBd
Number of I/O modules per node max.	63	64
Input and output process image (internal) max.	32 bytes	128 bytes
System supply voltage	24 VDC (–25 ... +30 %)	24 VDC (–15 ... +20 %)
Input current typ. at rated load (24 V)	260 mA	500 mA
Current consumption, system supply	350 mA	350 mA
Total current for system supply	650 mA	1650 mA
Ambient temperature (operation)	0 ... +55 °C	0 ... +55 °C
Dimensions W x H x D	49.5 x 71.9 x 96.8 mm	50.5 x 71.1 x 100 mm
Approvals		
Data sheet and further information, see:	CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX	CE, UL 508
	wago.com/750-343	wago.com/750-331
Accessories		
GSD files	Item No. Download: www.wago.com	Item No. Download: www.wago.com

Mini-WSB Quick marking system
see Full Line Catalog, Volume 6

DIN rails and tool
see Section 11

Approvals and corresponding ratings,
see Page 516 or www.wago.com

Fieldbus Coupler ETHERNET



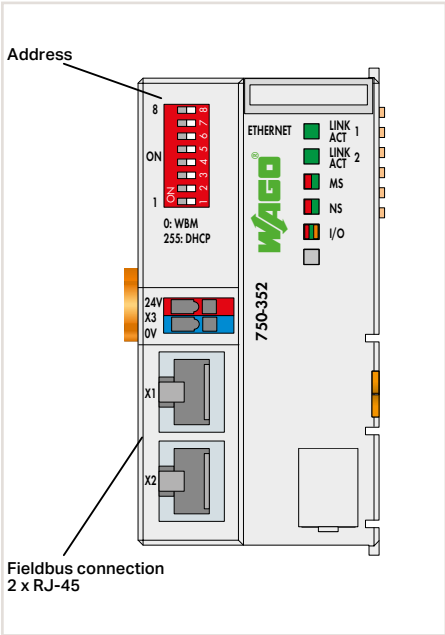
Figure: 750-352

Figure: 750-342

Item Description
Version
Item No.

Technical Data	
Fieldbus	
Protocols	
Connection technology: Fieldbus input/output	
Bus segment length max.	
Transmission medium	
Baud rate	
Number of I/O modules per node max.	
Input and output process image (internal) max.	
System supply voltage	
Input current typ. at rated load (24 V)	
Current consumption, system supply	
Total current for system supply	
Ambient temperature (operation)	
Dimensions W x H x D	
Approvals	
Data sheet and further information, see:	

3rd Generation

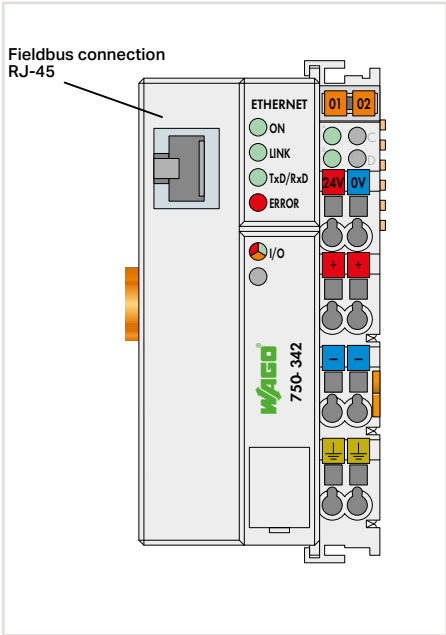


FC ETHERNET	
G3	G3
750-352	750-352/000-001

EtherNet/IP, MODBUS/TCP
EtherNet/IP*, MODBUS/TCP (UDP), HTTP, BootP, DHCP, DNS, FTP, SNMP
2 x RJ-45
100 m
Twisted Pair S-UTP 100 Ω, Cat. 5
10/100 Mbit/s
250
1020 words
24 VDC (–25 ... +30 %)
280 mA
450 mA
700 mA
0 ... +55 °C
49.5 x 71.9 x 96.8 mm
CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX
wago.com/750-352

*On variants 750-352/000-001, ETHERNET/IP is activated as standard protocol.

1st Generation



FC ETHERNET	
G1	G1
750-342	

MODBUS/TCP
MODBUS/TCP, HTTP, BootP, MODBUS/UDP
RJ-45
100 m
Twisted Pair S-UTP 100 Ω, Cat. 5
10 Mbit/s
64
512 bytes
24 VDC (–25 ... +30 %)
500 mA
200 mA
1800 mA
0 ... +55 °C
50.5 x 71.1 x 100 mm
CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX
wago.com/750-342

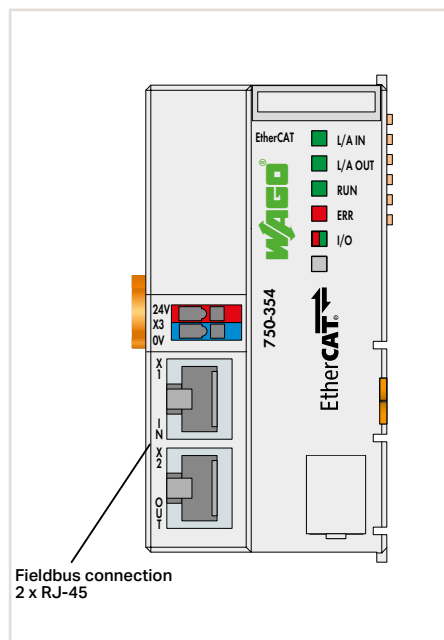
Fieldbus Coupler EtherCAT



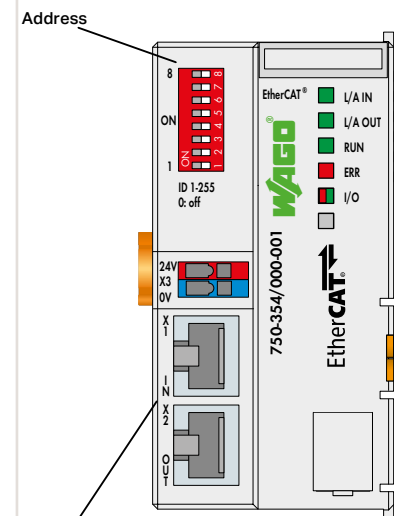
Figure: 750-354



Figure: 750-354/000-001

Fieldbus connection
2 x RJ-45

ID Switch

Fieldbus connection
2 x RJ-45

Item Description	FC EtherCAT	FC EtherCAT
Version		ID-Switch
Item No.	750-354	750-354/000-001
Technical Data		
Fieldbus	EtherCAT	EtherCAT
Protocols	EtherCAT (direct mode)	EtherCAT (direct mode)
Connection technology: Fieldbus input/output	2 x RJ-45	2 x RJ-45
Transmission medium	Shielded twisted pair S/FTP, F/FTP or SF/FTP; 100 Ω, Cat. 6	Shielded twisted pair S/FTP, F/FTP or SF/FTP; 100 Ω, Cat. 6
Baud rate	100 Mbit/s	100 Mbit/s
Number of I/O modules per node max.	64	64
Input and output process image (internal) max.	1024 bytes	1024 bytes
System supply voltage	24 VDC (–25 ... +30 %)	24 VDC (–25 ... +30 %)
Input current typ. at rated load (24 V)	250 mA	250 mA
Current consumption, system supply	300 mA	300 mA
Total current for system supply	700 mA	700 mA
Ambient temperature (operation)	0 ... +55 °C	0 ... +55 °C
Dimensions W x H x D	49.5 x 71.9 x 96.8 mm	49.5 x 71.9 x 96.8 mm
Approvals	CE, UL 508, ANSI/ISA, ATEX/IECEx	CE, UL 508, ANSI/ISA, ATEX/IECEx
Data sheet and further information, see:	wago.com/750-354	wago.com/750-354/000-001

EtherCAT® is a registered trademark and patented technology of Beckhoff Automation GmbH.

Mini-WSB Quick marking system
see Full Line Catalog, Volume 6

DIN rails and tool
see Section 11

Approvals and corresponding ratings,
see Page 516 or www.wago.com

Fieldbus Coupler DeviceNet



Figure: 750-306

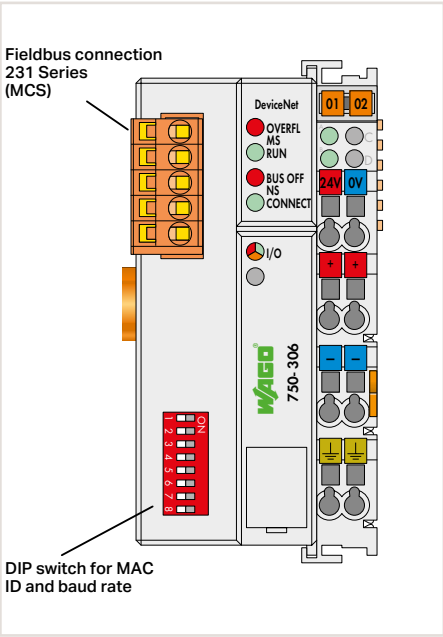
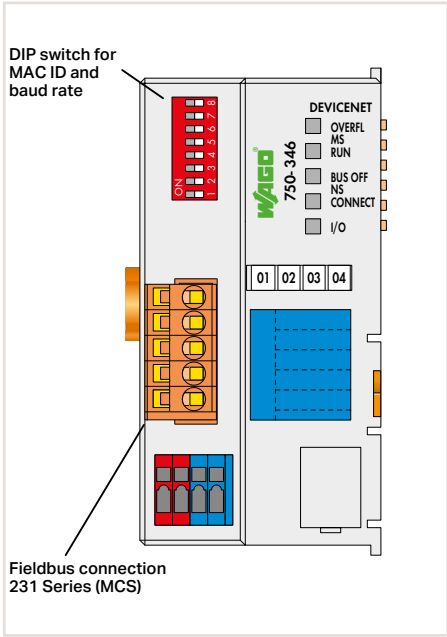


Figure: 750-346

ECO



Item Description
Version
Item No.

FC DeviceNet
750-306

FC DeviceNet
ECO
750-346

Technical Data	
Fieldbus	DeviceNet™
Connection technology: Fieldbus input/output	5-pole male connector
Number of fieldbus nodes on master max.	64 with scanner
Number of I/O points	Approx. 6000 (dependent on master)
Transmission medium	Shielded Cu cable Trunk line: 2 x 0.82 mm² + 2 x 1.7 mm² Drop line: 2 x 0.2 mm² + 2 x 0.32 mm²
Baud rate	125 kBd, 250 kBd, 500 kBd
Number of I/O modules per node max.	64
Input and output process image (internal) max.	512 bytes
System supply voltage	24 VDC (–25 ... +30 %)
Input current typ. at rated load (24 V)	500 mA
Input current via DeviceNet interface at 11 V	120 mA
Current consumption, system supply	350 mA
Total current for system supply	1650 mA
Ambient temperature (operation)	0 ... +55 °C
Dimensions W x H x D	50.5 x 71.1 x 100 mm
Approvals	CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX
Certification	ODVA
Data sheet and further information, see:	wago.com/750-306
Accessories	
EDS files	

FC DeviceNet	DeviceNet™
750-306	5-pole male connector
	64 with scanner
	Approx. 6000 (dependent on master)
	Shielded Cu cable
	Trunk line: 2 x 0.82 mm² + 2 x 1.7 mm²
	Drop line: 2 x 0.2 mm² + 2 x 0.32 mm²
	125 kBd, 250 kBd, 500 kBd
	64
	512 bytes
	24 VDC (–25 ... +30 %)
	500 mA
	120 mA
	350 mA
	1650 mA
	0 ... +55 °C
	50.5 x 71.1 x 100 mm
	CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX
	ODVA
	wago.com/750-306
Item No.	
Download: www.wago.com	

FC DeviceNet	DeviceNet™
ECO	5-pole male connector
750-346	64 with scanner
	Approx. 6000 (dependent on master)
	Shielded Cu cable
	Trunk line: 2 x 0.82 mm² + 2 x 1.7 mm²
	Drop line: 2 x 0.2 mm² + 2 x 0.32 mm²
	125 kBd, 250 kBd, 500 kBd
	64
	32 bytes
	24 VDC (–15 ... +20 %)
	260 mA
	120 mA
	350 mA
	650 mA
	0 ... +55 °C
	49.5 x 71.9 x 96.8 mm
	CE, UL 508, ANSI/ISA, ATEX/IECEX
	wago.com/750-346
Item No.	
Download: www.wago.com	

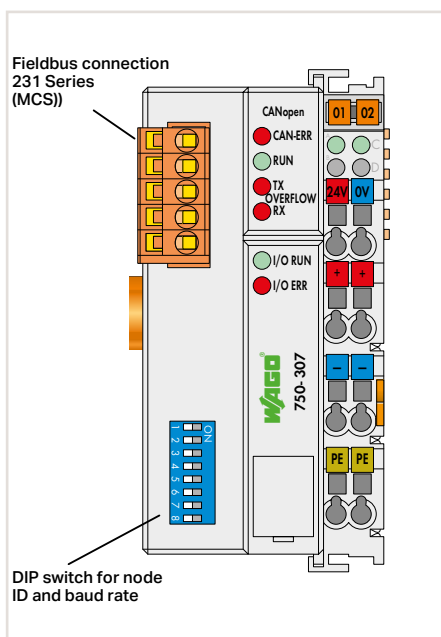
Fieldbus Coupler CANopen



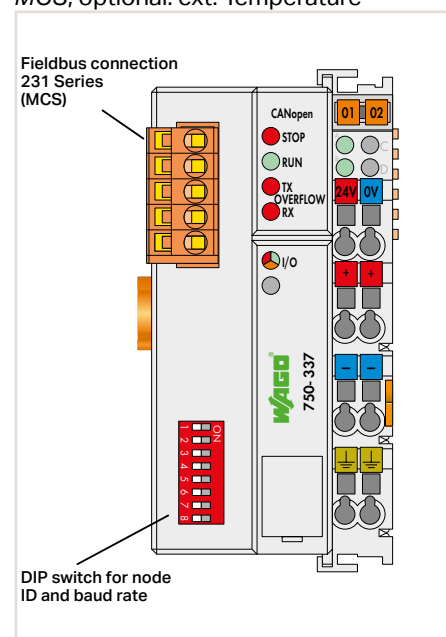
Figure: 750-337



Figure: 750-347



MCS, optional: ext. Temperature



Item Description
Version
Item No.

FC CANopen
750-307

Technical Data

Fieldbus
Connection technology: Fieldbus input/output
Number of fieldbus nodes on master max.
Bus segment length max.
Transmission medium
Baud rate
Number of I/O modules per node max.
Input and output process image (internal) max.
Number of PDOs
Number of SDOs
Communication profile
Device profile

CANopen
5-pole male connector
110
30–1000 m (depending on baud rate / cable)
Shielded Cu cable 3 x 0.25 mm ²
10 kBd ... 1 MBd
64
512 bytes
5 Tx / 5 Rx
2 SDO servers
DS-301 V3.0
DS-401 V1.4

System supply voltage
Input current typ. at rated load (24 V)
Current consumption, system supply
Total current for system supply
Ambient temperature (operation)
Dimensions W x H x D

24 VDC (–15 ... +20 %)
500 mA
350 mA
1650 mA
0 ... +55 °C
50.5 x 71.1 x 100 mm

Approvals
Data sheet and further information, see:

CE, UL 508, ANSI/ISA, ATEX/IECEX
wago.com/750-307

Accessories
EDS files

Item No.
Download: www.wago.com

FC CANopen
MCS
MCS T
750-337
750-337/025-000

CANopen
5-pole male connector
110
30–1000 m (depending on baud rate / cable)
Shielded Cu cable 3 x 0.25 mm ²
10 kBd ... 1 MBd
64
512 bytes
32 Tx / 32 Rx
2 SDO servers
DS-301 V4.01
DS-401 V2.0, Additional functions: Limit monitoring, flank-triggered PDOs, configurable response in the event of an error

24 VDC (–25 ... +30 %)
500 mA
350 mA
1650 mA
0 ... +55 °C
–20 ... +60 °C
50.5 x 71.1 x 100 mm

CE, UL 508, ANSI/ISA, ATEX/IECEX
wago.com/750-337

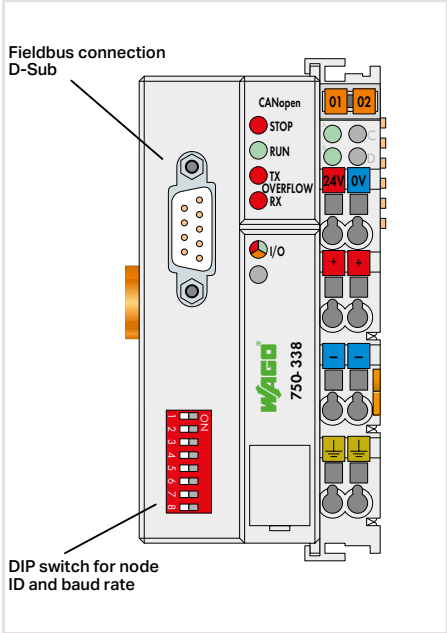
Item No.
Download: www.wago.com

Mini-WSB Quick marking system
see Full Line Catalog, Volume 6

DIN rails and tool
see Section 11

Approvals and corresponding ratings,
see Page 516 or www.wago.com

D-Sub

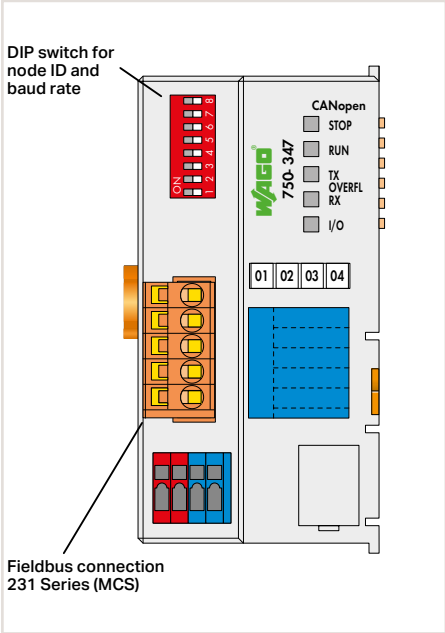


FC CANopen
DSub
750-338

CANopen
D-Sub 9 connector
110
30–1000 m (depending on baud rate / cable)
Shielded Cu cable 3 x 0.25 mm²
10 kBd ... 1 MBd
64
512 bytes
32 Tx / 32 Rx
2 SDO servers
DS-301 V4.01
DS-401 V2.0, Additional functions: Limit monitoring, flank-triggered PDOs, configurable response in the event of an error
24 VDC (–25 ... +30 %)
500 mA
350 mA
1650 mA
0 ... +55 °C
50.5 x 71.1 x 100 mm
CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX
wago.com/750-338

Item No.
Download: www.wago.com

MCS, ECO

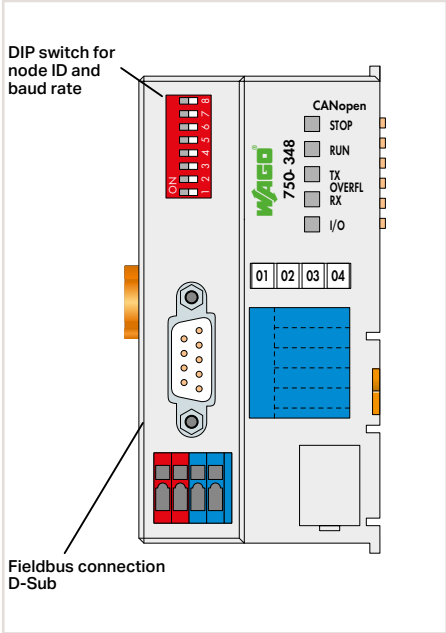


FC CANopen
MCS ECO
750-347

CANopen
5-pole male connector
110
30–1000 m (depending on baud rate / cable)
Shielded Cu cable 3 x 0.25 mm²
10 kBd ... 1 MBd
64
32 bytes
5 Tx / 5 Rx
1 SDO servers
DS-301 V4.01
DS-401 V2.0, Additional functions: configurable response in the event of an error
24 VDC (–25 ... +30 %)
260 mA
350 mA
650 mA
0 ... +55 °C
49.5 x 71.9 x 96.8 mm
CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX
wago.com/750-347

Item No.
Download: www.wago.com

D-Sub, ECO



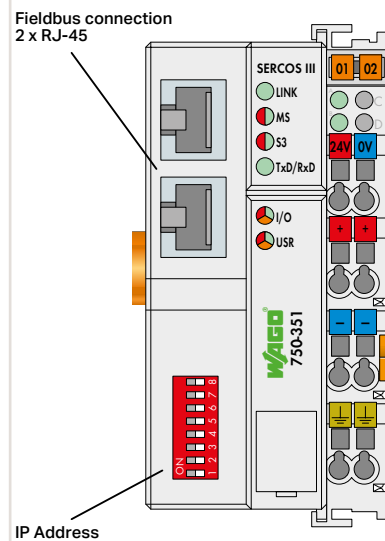
FC CANopen
DSub ECO
750-348

CANopen
D-Sub 9 connector
110
30–1000 m (depending on baud rate / cable)
Shielded Cu cable 3 x 0.25 mm²
10 kBd ... 1 MBd
64
32 bytes
5 Tx / 5 Rx
1 SDO servers
DS-301 V4.01
DS-401 V2.0, Additional functions: configurable response in the event of an error
24 VDC (–25 ... +30 %)
260 mA
350 mA
650 mA
0 ... +55 °C
49.5 x 71.9 x 96.8 mm
CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX
wago.com/750-348

Item No.
Download: www.wago.com

4.1

Fieldbus Coupler sercos



Item Description

Bestellnr.

Technical Data

Fieldbus

Protocols

Supported services

Connection technology: Fieldbus input/output

SERCOS version

IO profile

Number of couplers (slaves) in sercos ring

Transmission medium

Baud rate

Number of I/O modules per node max.

Input and output process image (internal) max.

System supply voltage

Input current typ. at rated load (24 V)

Current consumption, system supply

Total current for system supply

Ambient temperature (operation)

Dimensions W x H x D

Approvals

Data sheet and further information, see:

FC sercos

750-351

sercos

sercos, FSP-IQ, TCP/IP, FTP, HTTP, BootP, DHCP, SNMP

SVC, RTC, CC, IP, Ring break (GDP_Basic, SCP_VarCFG, SCP_Sync)

2 x RJ-45

V1.1.1

V1.1.1

512

Twisted Pair S-UTP 100 Ω Cat. 5

100 Mbit/s, full duplex

250

2 KB (RTC and SVC)

24 VDC (–25 ... +30 %)

500 mA

300 mA

1700 mA

0 ... +55 °C

50,5 x 71,1 x 100 mm

CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX

wago.com/750-351

Mini-WSB Quick marking system
see Full Line Catalog, Volume 6

DIN rails and tool
see Section 11

Approvals and corresponding ratings,
see Page 516 or www.wago.com

Fieldbus Coupler MODBUS



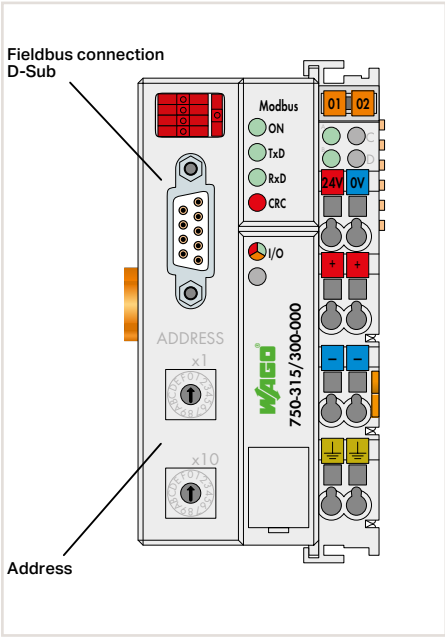
Figure: 750-315/300-000

Figure: 750-316/300-000

Item Description
Version
Item No.

Technical Data	
Fieldbus	
Connection technology: Fieldbus input/output	
Number of fieldbus nodes on master max.	
Interface standard	
Transmission medium	
Baud rate	
Number of I/O modules per node max.	
Input and output process image (internal) max.	
System supply voltage	
Input current typ. at rated load (24 V)	
Current consumption, system supply	
Total current for system supply	
Ambient temperature (operation)	
Dimensions W x H x D	
Approvals	
Data sheet and further information, see:	

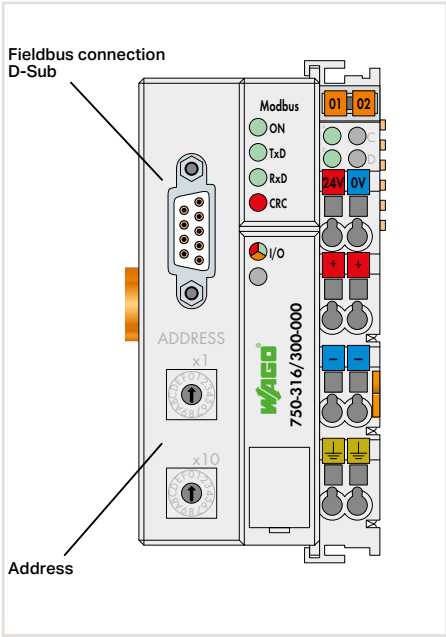
RS-485, 115.2 kBd



FC MODBUS
RS485 115.2kBd
750-315/300-000

MODBUS
D-Sub 9 socket
247 with repeater
RS-485
Shielded Cu cable 2 (4) x 0.25 mm²
150 Bd ... 115.2 kBd
64
512 bytes
24 VDC (–25 ... +30 %)
500 mA
350 mA
1650 mA
0 ... +55 °C
50.5 x 71.1 x 100 mm
CE, Marine, UL 508, ANSI/ISA, ATEX/IECEx
wago.com/750-315/300-000

RS-232, 115.2 kBd



FC MODBUS
RS232 115.2kBd
750-316/300-000

MODBUS
D-Sub 9 socket
247 with repeater
RS-232
Shielded Cu cable 2 (4) x 0.25 mm²
150 Bd ... 115.2 kBd
64
512 bytes
24 VDC (–25 ... +30 %)
500 mA
350 mA
1650 mA
0 ... +55 °C
50.5 x 71.1 x 100 mm
CE, Marine, UL 508, ANSI/ISA, ATEX/IECEx
wago.com/750-316/300-000

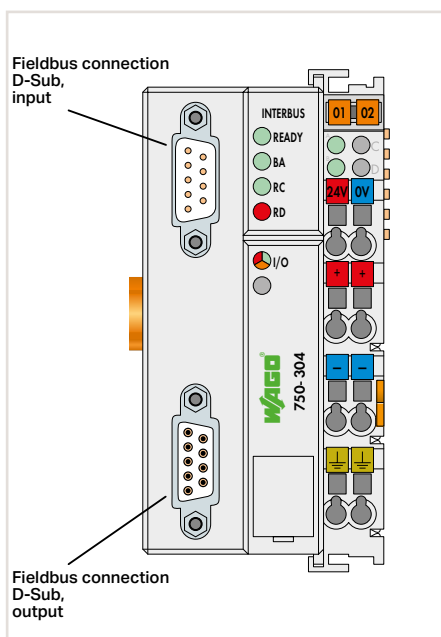
Fieldbus Coupler INTERBUS



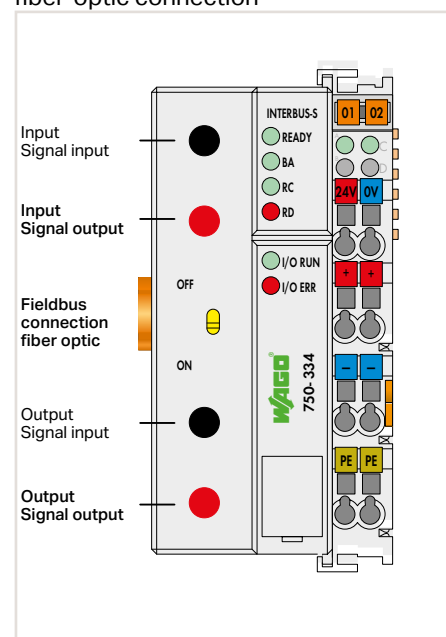
Figure: 750-304



Figure: 750-334



fiber-optic connection



Item Description
Version
Item No.

FC INTERBUS
750-304

Technical Data

Fieldbus
Connection technology: Fieldbus input/output
Number of fieldbus nodes on master max.
Bus segment length max.
Transmission medium
Baud rate
Number of I/O modules per node max.
Input and output process image (internal) max.
System supply voltage
Input current typ. at rated load (24 V)
Current consumption, system supply
Total current for system supply
Ambient temperature (operation)
Dimensions W x H x D
Approvals
Standard
Certification
Data sheet and further information, see:

INTERBUS
D-Sub 9 plug / D-Sub 9 socket
256
400 m
Copper cables
500 kBd
64
64 bytes
24 VDC (–15 ... +20 %)
500 mA
300 mA
1700 mA
0 ... +55 °C
50.5 x 71.1 x 100 mm
CE, UL 508, ANSI/ISA, ATEX/IECEX
EN 50254
INTERBUS CLUB
wago.com/750-304

Accessories
INTERBUS Files

Item No.
Download: www.wago.com

FC INTERBUS
FOC
750-334

Product discontinuation
Last call: 1.3.2018

INTERBUS
F-SMA
256
1–40 m
Fiber optic cable (API fiber)
500 kBd
64
64 bytes
24 VDC (–15 ... +20 %)
500 mA
350 mA
1650 mA
0 ... +55 °C
50.5 x 71.1 x 100 mm
CE, UL 508, ANSI/ISA
EN 50254
INTERBUS CLUB
wago.com/750-334

Item No.
Download: www.wago.com

Mini-WSB Quick marking system
see Full Line Catalog, Volume 6

DIN rails and tool
see Section 11

Approvals and corresponding ratings,
see Page 516 or www.wago.com

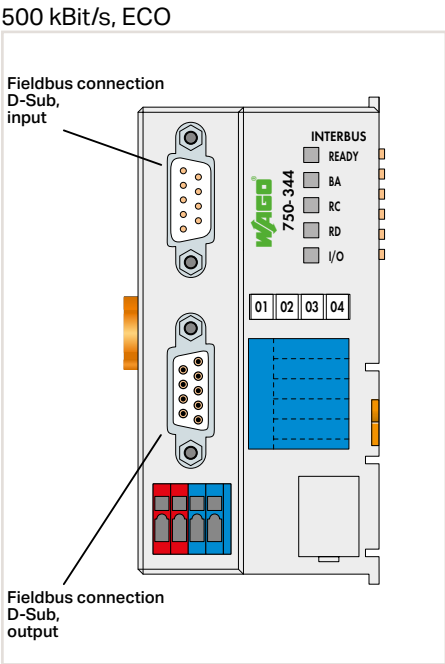
Fieldbus Coupler INTERBUS



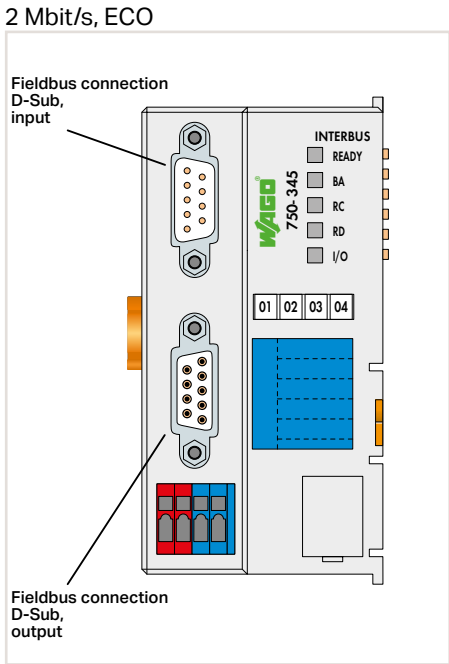
Figure: 750-344

Figure: 750-345

Item Description	FC INTERBUS
Version	500kbit/s ECO
Item No.	750-344
Product discontinuation Last call: 1.3.2018	
Technical Data	
Fieldbus	INTERBUS
Connection technology: Fieldbus input/output	D-Sub 9 plug / D-Sub 9 socket
Number of fieldbus nodes on master max.	256
Bus segment length max.	400 m
Transmission medium	Copper cables
Baud rate	500 kBd
Number of I/O modules per node max.	64
Input and output process image (internal) max.	20 bytes
System supply voltage	24 VDC (–15 ... +20 %)
Input current typ. at rated load (24 V)	260 mA
Current consumption, system supply	350 mA
Total current for system supply	650 mA
Ambient temperature (operation)	0 ... +55 °C
Dimensions W x H x D	49.5 x 71.9 x 96.8 mm
Approvals	CE, UL 508, ANSI/ISA, ATEX/IECEX
Standard	EN 50254
Data sheet and further information, see:	wago.com/750-344
Accessories	
INTERBUS Files	

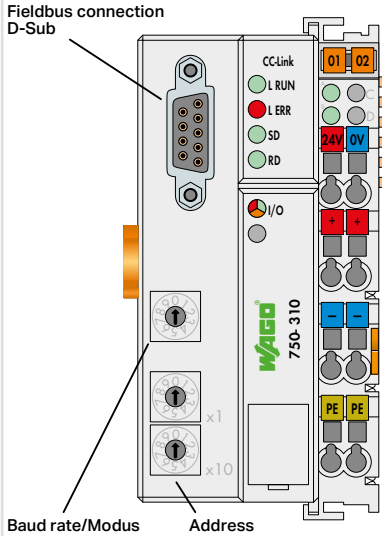


Item No.	Item No.
Download: www.wago.com	Download: www.wago.com



Item No.	Item No.
Download: www.wago.com	Download: www.wago.com

Fieldbus Coupler CC-Link



Item Description	
Item No.	FC CC-Link 750-310
Technical Data	
Fieldbus	CC-Link
Connection technology: Fieldbus input/output	D-Sub 9 socket
Number of fieldbus nodes on master max.	64
Transmission medium	Shielded Cu cable 2/3 x 0.5 mm²
Baud rate	156 kBd ... 10 MBd
Number of I/O modules per node max.	64
Station addresses	4/1–4
Input and output process image (internal) max.	14 bytes digital, 2 bytes system, 32 bytes analog
System supply voltage	24 VDC (–25 ... +30 %)
Input current typ. at rated load (24 V)	500 mA
Current consumption, system supply	300 mA
Total current for system supply	1700 mA
Ambient temperature (operation)	0 ... +55 °C
Dimensions W x H x D	50.5 x 71.1 x 100 mm
Approvals	CE, UL 508, ANSI/ISA, ATEX/IECEX
Data sheet and further information, see:	wago.com/750-310

4.1

- Mini-WSB Quick marking system
see Full Line Catalog, Volume 6
- DIN rails and tool
see Section 11
- Approvals and corresponding ratings,
see Page 516 or www.wago.com

Digital Input Modules

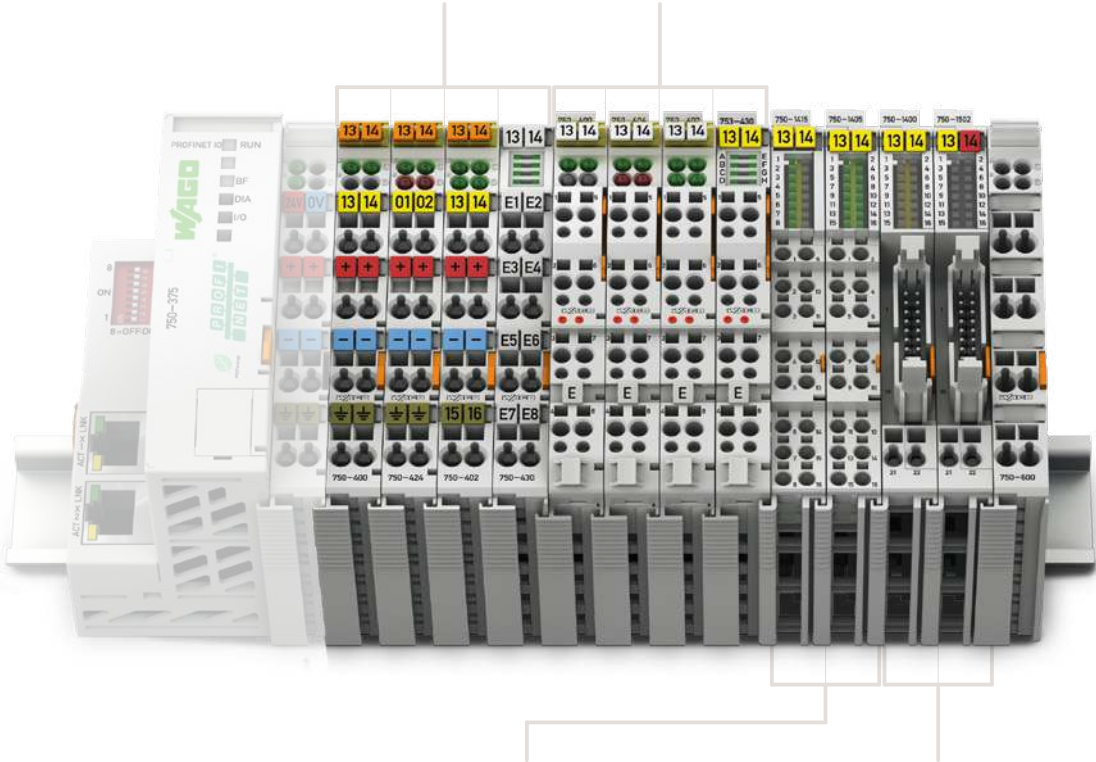


750 Series housing design

Dimensions W x H x D	Housing with 4 LEDs: 12 x 69.8 x 100 mm Housing with 8 LEDs: 12 x 67.8 x 100 mm
Height from upper edge of DIN rail	Housing with 4 LEDs: 62.6 mm Housing with 8 LEDs: 60.6 mm
Connection technology	CAGE CLAMP®
Conductor size	0.08 ... 2.5 mm² / 28 ... 14 AWG
Strip length	8 ... 9 mm / 0.33 inch

753 Series housing design

Dimensions W x H x D	Housing with 4 LEDs: 12 x 69.8 x 100 mm Housing with 8 LEDs: 12 x 69 x 100 mm
Height from upper edge of DIN rail	Housing with 4 LEDs: 62.6 mm Housing with 8 LEDs: 61.8 mm
Connection technology	CAGE CLAMP®
Conductor size	0.08 ... 2.5 mm² / 28 ... 14 AWG
Strip length	9 ... 10 mm / 0.37 inch



750 Series housing design with push-in CAGE CLAMP® connectors (up to 16 connector points)

Dimensions W x H x D	12 x 69 x 100 mm
Height from upper edge of DIN rail	61.8 mm
Connection technology	Push-in CAGE CLAMP®
Conductor size	Solid: 0.08 ... 1.5 mm² / 28 ... 16 AWG Fine-stranded: 0.25 ... 1.5 mm² / 22 ... 16 AWG
Strip length	8 ... 9 mm / 0.33 inch

750 Series housing design, with ribbon cable connector

Dimensions W x H x D	12 x 74.1 x 100 mm
Height from upper edge of DIN rail	66.9 mm
Connection technology	20-pole male connector + 2 x CAGE CLAMP®
Conductor size	0.08 ... 2.5 mm² / 28 ... 14 AWG
Strip length	8 ... 9 mm / 0.33 inch



750 and 753 Series I/O-System, Digital Input Modules

Contents

Function	2-channel DI	4-channel DI	8-channel DI	16-channel DI	8-channel DIO	Description	Item number			Page
							Standard	T ext. Temperature	Pluggable	
5 VDC		■				0.2 ms, high-side switching	750-414			122
5/12 VDC			■			(5 ... 14 VDC) 0.2 ms, high-side switching			753-434	122
24 VDC	■					3.0 ms, high-side switching	750-400	750-400/025-000	753-400	123
	■					3.0 ms, high-side switching, acknowledgement, diagn.	750-418		753-418	123
	■					3.0 ms, high-side switching, diagnostics	750-421		753-421	124
		■				3.0 ms, high-side switching	750-402	750-402/025-000	753-402	124
		■				3.0 ms, high-side switching, 2-conductor connection	750-432		753-432	125
		■				3.0 ms, high-side switching, 3-conductor connection	750-1420			125
			■			3.0 ms, high-side switching	750-430	750-430/025-000	753-430	126
			■			3.0 ms, high-side switching, 2-conductor connection	750-1415			126
				■		3.0 ms, high-side switching, ribbon cable	750-1400			127
				■		3.0 ms, high-side switching	750-1405			127
					■	3.0 ms, 0.5 A, high-side switching, ribbon cable	750-1502			128
					■	3.0 ms, 0.5 A, high-side switching	750-1506			128
	■					0.2 ms, high-side switching	750-401		753-401	129
		■				0.2 ms, high-side switching	750-403		753-403	129
		■				0.2 ms, high-side switching	750-433		753-433	130
		■				0.2 ms, high-side switching, 3-conductor connection	750-1421			130
			■			0.2 ms, high-side switching	750-431		753-431	131
			■			0.2 ms, high-side switching, 2-conductor connection	750-1416			131
				■		0.2 ms, high-side switching	750-1406			131
		■				3.0 ms, low-side switching	750-408	750-408/025-000	753-408	132
		■				3.0 ms, low-side switching, 3-conductor connection	750-1422			132
			■			3.0 ms, low-side switching	750-436		753-436	133
			■			3.0 ms, low-side switching, 2-conductor connection	750-1417			133
				■		3.0 ms, low-side switching, ribbon cable	750-1402			134
				■		3.0 ms, low-side switching	750-1407			134
		■				0.2 ms, low-side switching	750-409		753-409	135
		■				0.2 ms, low-side switching, 3-conductor connection	750-1423			135
			■			0.2 ms, low-side switching	750-437		753-437	136
			■			0.2 ms, low-side switching, 2-conductor connection	750-1418			136
	■					3.0 ms, proximity switch	750-410		753-410	137
	■					0.2 ms, proximity switch	750-411		753-411	137
	■					NAMUR, proximity switch per DIN EN 60947-5-6	750-425		753-425	138
	■					Intruder detection	750-424		753-424	139
		■				Pulse extension, 10 ms	750-422		753-422	140
24 VAC/DC		■				20 ms	750-415		753-415	141
		■				50 ms, power jumper contacts	750-423		753-423	141
42 VAC/DC		■				20 ms	750-428		753-428	142
48 VDC	■					3.0 ms, high-side switching	750-412		753-412	143
60 VDC	■					3.0 ms, high-side switching			753-429	144
110 VDC	■					3.0 ms, configurable, low-side switching	750-427		753-427	145
220 VDC	■					3.0 ms, high-side switching	750-407			145
120 VAC	■					10 ms, high-side switching	750-406		753-406	146
120/230 VAC		■				(120 ... 230 VAC) 10 ms, high-side switching			753-440	147
230 VAC	■					10 ms, high-side switching	750-405		753-405	146
PTC			■			Connection to PTC thermistors per DIN 44081/44082	750-1425			148
Functional Safety							see Section 4.8			
Ex i							see Section 4.9			

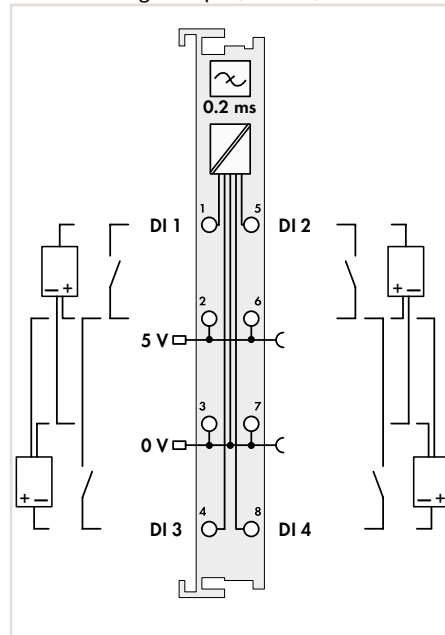
Digital Input, 5 (12) VDC, 0.2 ms



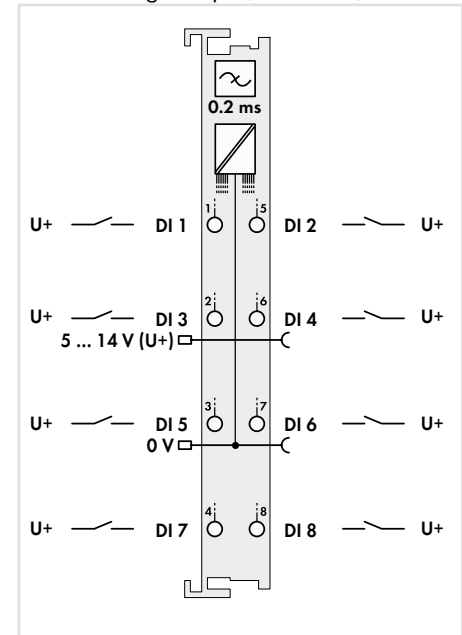
Figure: 750-414

Figure: 753-434

4-channel digital input; 5 VDC; 0.2 ms



8-channel digital input; 5/12 VDC; 0.2 ms



Item description	4DI
Version	5 VDC 0.2ms
Item no.	750-414

Technical Data

Pluggable connector	
Number of digital inputs	4
Type of signal	5 VDC
Voltage range for signal (0)	0 ... 0.8 VDC
Voltage range for signal (1)	2.4 ... 5 VDC
Sensor connection	2 x (2-conductor, 3-conductor)*
Input characteristic	High-side switching
Input filter (digital)	0.2 ms
Input current per channel for signal (1) typ.	0.05 mA
Sensor supply voltage	5 VDC
Field supply voltage	5 VDC via power jumper contacts
Current consumption, system supply	5 mA
Internal data width	4 bits
Isolation	500 V system/field
Ambient temperature (operation)	0 ... +55 °C
Dimensions W x H x D	12 x 69.8 x 100 mm
Approvals	CE, UL 508, ANSI/ISA
Data sheet and further information, see:	wago.com/750-414

Accessories

Plug
753 Series coding elements

8DI
5/12 VDC 0.2ms
753-434

	•
	8
	5 ... 14 VDC
	-3 VDC ... 0.2 x U _V
	0.5 DC U _V ... 1.1 U _V
	1-conductor
	High-side switching
	0.2 ms
	0.06 mA
	5 ... 14 VDC (-15 ... +20 %), via power jumper contacts
	4 mA
	8 bits
	500 V system/field
	0 ... +55 °C
	12 x 69 x 100 mm
	CE, Marine, UL 508, ANSI/ISA, ATEX/IECEx
	wago.com/753-434

Item no.

753-110
753-150

Notice:

An additional bus supply module must be added for operation with 5 VDC!

*To connect other sensors, a suitable field side connection module (e.g., 750-614) must also be used.

Notice:

An additional bus supply module must be added for 5 ... 14 VDC supply!

Mini-WSB Quick Marking System
see Full Line Catalog, Volume 6

DIN rails and tool
see Section 11

Approvals and corresponding ratings,
see Page 517 or www.wago.com

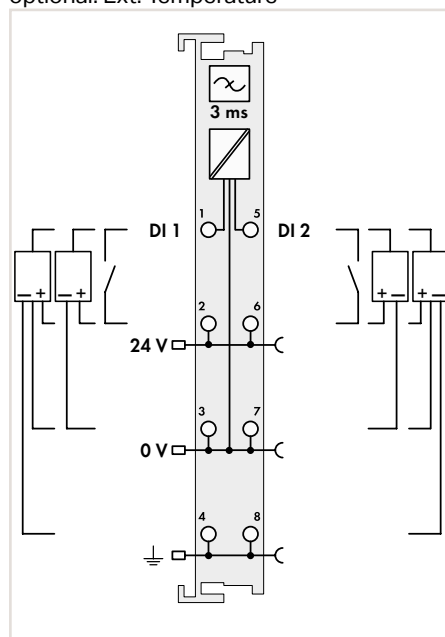
Digital Input, 24 VDC, 3 ms



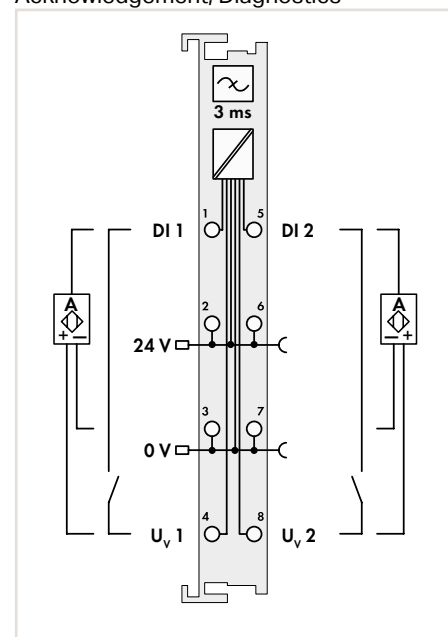
Figure: 750-400

Figure: 753-400

2-channel digital input; 24 VDC; 3 ms;
optional: Ext. Temperature



2-channel digital input; 24 VDC; 3 ms;
Acknowledgement; Diagnostics



Item description
Version
Item no.

2DI		
24 VDC 3ms	24 VDC 3ms T	24 VDC 3ms
750-400	750-400/025-000	753-400

2DI	
24 VDC 3ms Acknol Diagn	24 VDC 3ms Acknol Diagn
750-418	753-418

Technical Data

Pluggable connector
Number of digital inputs
Type of signal
Voltage range for signal (0)
Voltage range for signal (1)
Sensor connection
Input characteristic
Input filter (digital)
Input current per channel for signal (1) typ.
Sensor supply voltage
Field supply voltage
Current consumption, system supply
Internal data width
Diagnostics
Isolation
Ambient temperature (operation)
Dimensions W x H x D
Approvals
Data sheet and further information, see:
Accessories
Plug
753 Series coding elements

		●
2		
24 VDC		
-3 ... +5 VDC		
15 ... 30 VDC		
2-conductor, 3-conductor, 4-conductor		
High-side switching		
3 ms		
4.5 mA		
24 VDC		
24 VDC (-25 ... +30 %), via power jumper contacts		
3,7 mA		
2 bits		
500 V system/field		
0 ... +55 °C	-20 ... +60 °C	0 ... +55 °C
12 x 69.8 x 100 mm		
CE,  Marine,  UL 508, ANSI/ISA,  ATEX/IECEX		
wago.com/750-400		wago.com/753-400
		Item no.
		753-110
		753-150

2	●
24 VDC	
-3 ... +5 VDC	
15 ... 30 VDC	
2-conductor, 3-conductor	
High-side switching	
3 ms	
3.7 mA	
24 VDC, short-circuit-protected, isolated channels	
24 VDC (-25 ... +30 %), via power jumper contacts	
12 mA	
4 bits	
Short circuit, active acknowledgement after error rectified	
500 V system/field	
0 ... +55 °C	
12 x 69.8 x 100 mm	
CE,  Marine,  UL 508, ANSI/ISA,  ATEX/IECEX	
wago.com/750-418	wago.com/753-418
	Item no.
	753-110
	753-150

Digital Input, 24 VDC, 3 ms



Figure: 750-421

2-channel digital input; 24 VDC; 3 ms;
Diagnostics

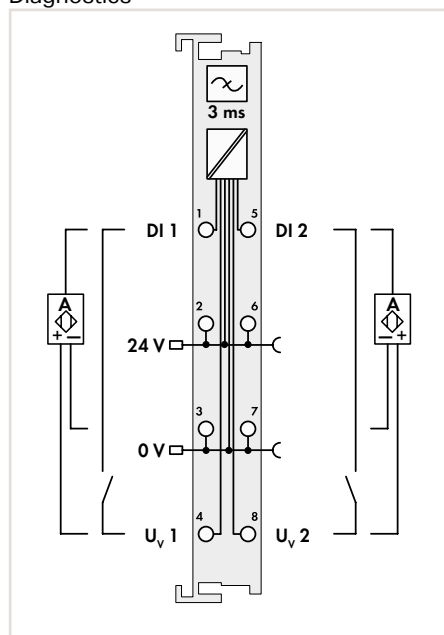
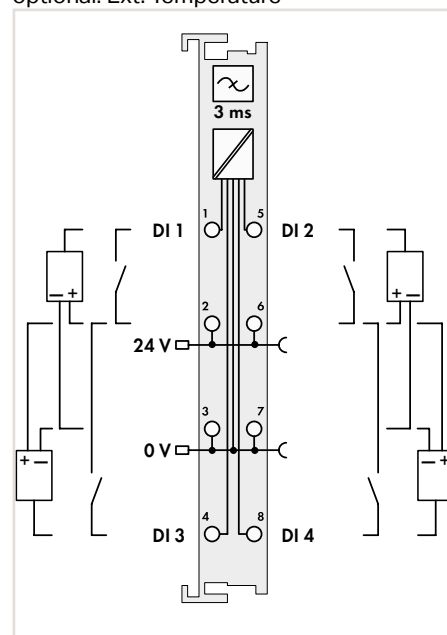


Figure: 750-402

4-channel digital input; 24 VDC; 3 ms;
optional: Ext. Temperature



Item description	2DI	
Version	24 VDC 3ms Diagn	24 VDC 3ms Diagn
Item no.	750-421	753-421

Technical Data

Pluggable connector		•
Number of digital inputs	2	
Type of signal	24 VDC	
Voltage range for signal (0)	-3 ... +5 VDC	
Voltage range for signal (1)	15 ... 30 VDC	
Sensor connection	2-conductor, 3-conductor	
Input characteristic	High-side switching	
Input filter (digital)	3 ms	
Input current per channel for signal (1) typ.	3.7 mA	
Sensor supply voltage	24 VDC, short-circuit-protected, isolated channels	
Field supply voltage	24 VDC (-25 ... +30 %), via power jumper contacts	
Current consumption, system supply	12 mA	
Internal data width	4 bits	
Diagnostics	Short circuit, automatic acknowledgement after error rectified	

Isolation	500 V system/field	
Ambient temperature (operation)	0 ... +55 °C	
Dimensions W x H x D	12 x 69.8 x 100 mm	
Approvals	CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX	
Data sheet and further information, see:	wago.com/750-421	wago.com/753-421

Accessories	Item no.
Plug	753-110
753 Series coding elements	753-150

Item description	4DI		
Version	24 VDC 3ms	24 VDC 3ms T	24 VDC 3ms
Item no.	750-402	750-402/025-000	753-402

		●
4		
24 VDC		
-3 ... +5 VDC		
15 ... 30 VDC		
2 x (2-conductor, 3-conductor)*		
High-side switching		
3 ms		
4.5 mA		
24 VDC		
24 VDC (-25 ... +30 %), via power jumper contacts		
7.5 mA		
4 bits		

Isolation	500 V system/field		
Ambient temperature (operation)	0 ... +55 °C	-20 ... +60 °C	0 ... +55 °C
Dimensions W x H x D	12 x 69.8 x 100 mm		
Approvals	CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX		
Data sheet and further information, see:	wago.com/750-402	wago.com/753-402	

Accessories	Item no.
Plug	753-110
753 Series coding elements	753-150

*To connect other sensors, a suitable field side connection module (e.g., 750-614) must also be used.

Mini-WSB Quick Marking System
see Full Line Catalog, Volume 6

DIN rails and tool
see Section 11

Approvals and corresponding ratings,
see Page 517 or www.wago.com

Digital Input, 24 VDC, 3 ms



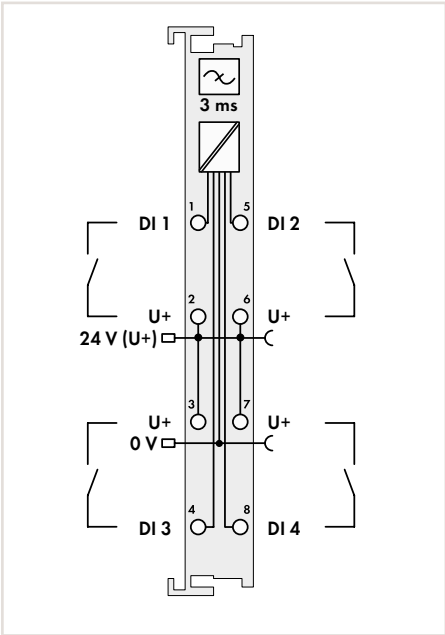
Figure: 750-432

Figure: 750-1420

Item description	4DI	
Version	24 VDC 3ms 2-wire	24 VDC 3ms 2-wire
Item no.	750-432	753-432

Technical Data	
Pluggable connector	
Number of digital inputs	4
Type of signal	24 VDC
Voltage range for signal (0)	-3 ... +5 VDC
Voltage range for signal (1)	15 ... 30 VDC
Sensor connection	2-conductor
Input characteristic	High-side switching
Input filter (digital)	3 ms
Input current per channel for signal (1) typ.	4.5 mA
Sensor supply voltage	24 VDC
Field supply voltage	24 VDC (-25 ... +30 %), via power jumper contacts
Current consumption, system supply	5,5 mA
Internal data width	4 bits
Isolation	500 V system/field
Ambient temperature (operation)	0 ... +55 °C
Dimensions W x H x D	12 x 69,8 x 100 mm
Approvals	
Data sheet and further information, see:	
Accessories	
Plug	
753 Series coding elements	

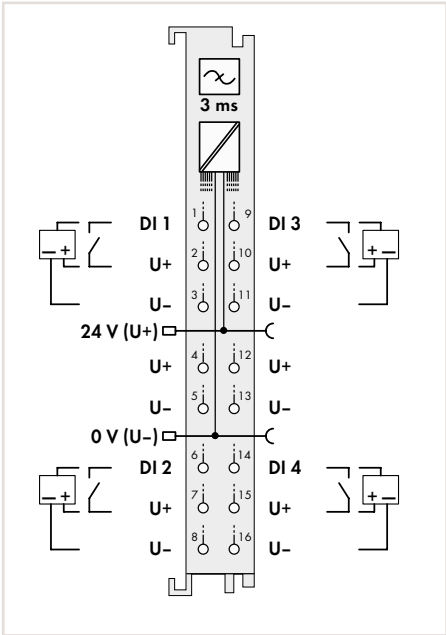
4-channel digital input; 24 VDC; 3 ms;
2-conductor connection



4DI	
24 VDC 3ms 2-wire	24 VDC 3ms 2-wire
750-432	753-432

Technical Data	
Pluggable connector	
Number of digital inputs	4
Type of signal	24 VDC
Voltage range for signal (0)	-3 ... +5 VDC
Voltage range for signal (1)	15 ... 30 VDC
Sensor connection	2-conductor
Input characteristic	High-side switching
Input filter (digital)	3 ms
Input current per channel for signal (1) typ.	4.5 mA
Sensor supply voltage	24 VDC
Field supply voltage	24 VDC (-25 ... +30 %), via power jumper contacts
Current consumption, system supply	5,5 mA
Internal data width	4 bits
Isolation	500 V system/field
Ambient temperature (operation)	0 ... +55 °C
Dimensions W x H x D	12 x 69,8 x 100 mm
Approvals	
Data sheet and further information, see:	
Accessories	
Plug	
753 Series coding elements	

4-channel digital input; 24 VDC; 3 ms;
3-conductor connection



4DI	
24 VDC 3ms 3-wire	
750-1420	

Technical Data	
Pluggable connector	
Number of digital inputs	4
Type of signal	24 VDC
Voltage range for signal (0)	-3 ... +5 VDC
Voltage range for signal (1)	11 ... 30 VDC
Sensor connection	3-conductor
Input characteristic	High-side switching
Input filter (digital)	3 ms
Input current per channel for signal (1) typ.	4.5 mA
Sensor supply voltage	24 VDC
Field supply voltage	24 VDC (-25 ... +30 %), via power jumper contacts
Current consumption, system supply	4 mA
Internal data width	4 bits
Isolation	500 V system/field
Ambient temperature (operation)	0 ... +55 °C
Dimensions W x H x D	12 x 69 x 100 mm
Approvals	
Data sheet and further information, see:	
Accessories	
Plug	
753 Series coding elements	

Digital Input, 24 VDC, 3 ms

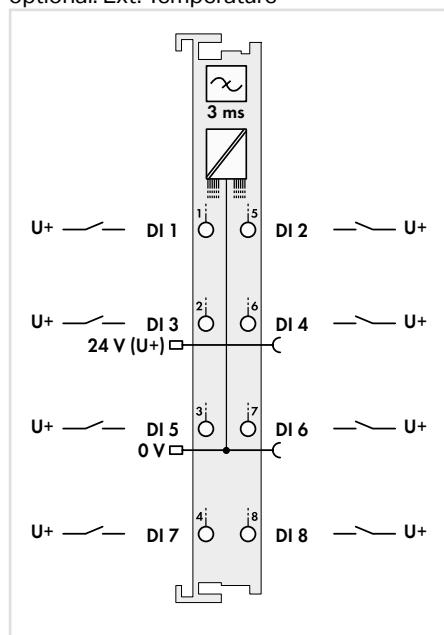


Figure: 750-430

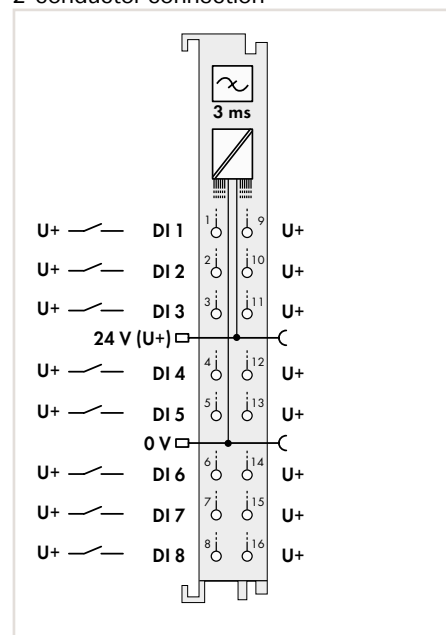


Figure: 750-1415

8-channel digital input; 24 VDC; 3 ms;
optional: Ext. Temperature



8-channel digital input; 24 VDC; 3 ms;
2-conductor connection



Item description	8DI		
Version	24 VDC 3ms	24 VDC 3ms T	24 VDC 3ms
Item no.	750-430	750-430/025-000	753-430

Technical Data

Pluggable connector			•
Number of digital inputs	8		
Type of signal	24 VDC		
Voltage range for signal (0)	-3 ... +5 VDC		
Voltage range for signal (1)	15 ... 30 VDC		
Sensor connection	1-conductor		
Input characteristic	High-side switching		
Input filter (digital)	3 ms		
Input current per channel for signal (1) typ.	2.8 mA		
Sensor supply voltage			
Field supply voltage	24 VDC (-25 ... +30 %), via power jumper contacts		
Current consumption, system supply	17 mA		
Internal data width	8 bits		
Isolation	500 V system/field		
Ambient temperature (operation)	0 ... +55 °C	-20 ... +60 °C	0 ... +55 °C
Dimensions W x H x D	12 x 67.8 x 100 mm		12 x 69 x 100 mm
Approvals	CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX		
Data sheet and further information, see:	wago.com/750-430		wago.com/753-430
Accessories			
Plug	Item no. 753-110		
753 Series coding elements	Item no. 753-150		

Item description	8DI
Version	24 VDC 3ms 2-wire
Item no.	750-1415

Pluggable connector	
Number of digital inputs	8
Type of signal	24 VDC
Voltage range for signal (0)	-3 ... +5 VDC
Voltage range for signal (1)	11 ... 30 VDC
Sensor connection	2-conductor
Input characteristic	High-side switching
Input filter (digital)	3 ms
Input current per channel for signal (1) typ.	4.5 mA
Sensor supply voltage	24 VDC
Field supply voltage	24 VDC (-25 ... +30 %), via power jumper contacts
Current consumption, system supply	6 mA
Internal data width	8 bits
Isolation	500 V system/field
Ambient temperature (operation)	0 ... +55 °C
Dimensions W x H x D	12 x 69 x 100 mm
Approvals	CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX
Data sheet and further information, see:	wago.com/750-1415
Accessories	
Plug	
753 Series coding elements	

Mini-WSB Quick Marking System
see Full Line Catalog, Volume 6

DIN rails and tool
see Section 11

Approvals and corresponding ratings,
see Page 517 or www.wago.com

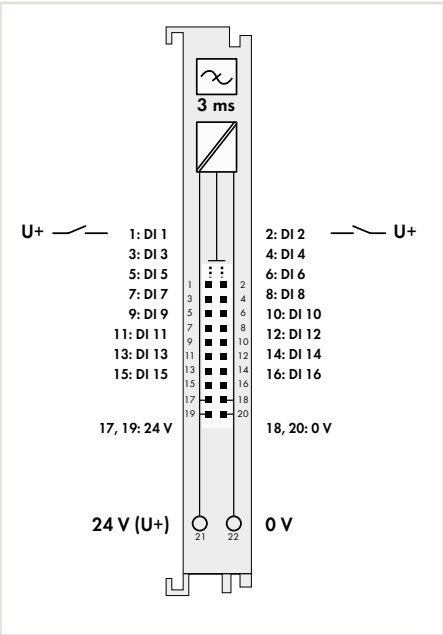
Digital Input, 24 VDC, 3 ms



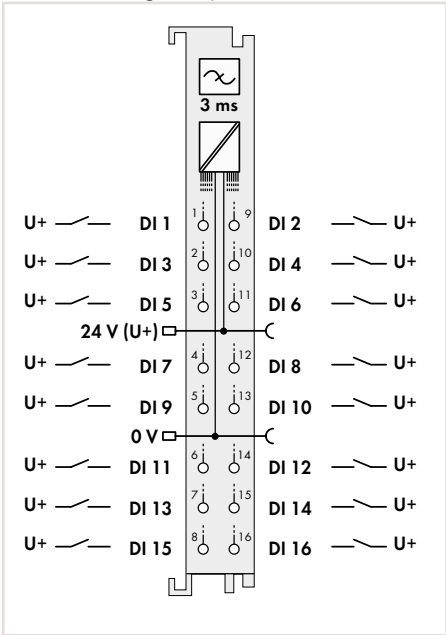
Figure: 750-1400

Figure: 750-1405

16-channel digital input; 24 VDC; 3 ms;
Ribbon cable



16-channel digital input; 24 VDC; 3 ms



Item description	16DI
Version	24 VDC 3ms Ribbon Cable
Item no.	750-1400

16DI
24 VDC 3ms Ribbon Cable
750-1400

16DI
24 VDC 3ms
750-1405

Technical Data	
Number of digital inputs	16
Type of signal	24 VDC
Voltage range for signal (0)	-3 ... +5 VDC
Voltage range for signal (1)	15 ... 30 VDC
Sensor connection	1-conductor
Input characteristic	High-side switching
Input filter (digital)	3 ms
Input current per channel for signal (1) typ.	2.3 mA
Sensor supply voltage	24 VDC
Field supply voltage	24 VDC (-25 ... +30 %), via wiring level (CAGE CLAMP® connection)
Current consumption, system supply	25 mA
Internal data width	16 bits
Isolation	500 V system/field
Ambient temperature (operation)	0 ... +55 °C
Dimensions W x H x D	12 x 74,1 x 100 mm
Approvals	
Data sheet and further information, see:	
Accessories	
Interface modules for system wiring and interface cable	

16
24 VDC
-3 ... +5 VDC
15 ... 30 VDC
1-conductor
High-side switching
3 ms
2.3 mA
24 VDC
24 VDC (-25 ... +30 %), via wiring level (CAGE CLAMP® connection)
25 mA
16 bits
500 V system/field
0 ... +55 °C
12 x 74,1 x 100 mm
CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX
wago.com/750-1400
Item no.
see Section 11

16
24 VDC
-3 ... +5 VDC
15 ... 30 VDC
1-conductor
High-side switching
3 ms
2.3 mA
24 VDC (-25 ... +30 %), via power jumper contacts
25 mA
16 bits
500 V system/field
0 ... +55 °C
12 x 69 x 100 mm
CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX
wago.com/750-1405

Digital Input/Output, 24 VDC

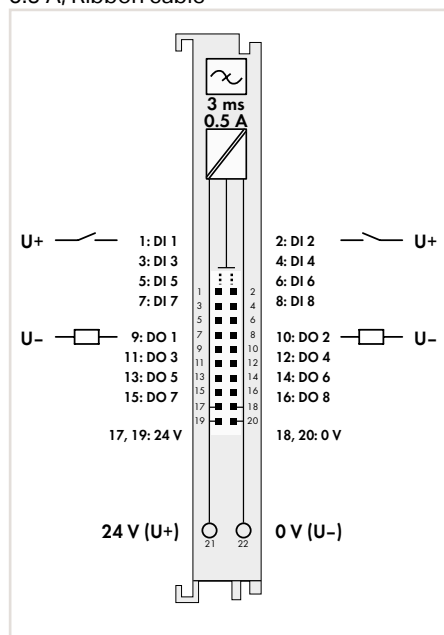


Figure: 750-1502

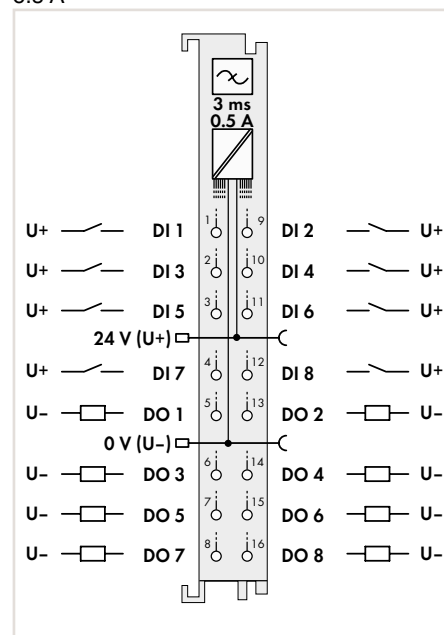


Figure: 750-1506

8-channel digital input/output; 24 VDC;
0.5 A; Ribbon cable



8-channel digital input/output; 24 VDC;
0.5 A



Item description	8DIO
Version	24 VDC 0.5A Ribbon Cable
Item no.	750-1502

Technical Data

Number of digital inputs	8
Type of signal	24 VDC
Voltage range for signal (0)	-3 ... +5 VDC
Voltage range for signal (1)	15 ... 30 VDC
Sensor connection	1-conductor
Input characteristic	High-side switching
Input filter (digital)	3 ms
Input current per channel for signal (1) typ.	2.4 mA
Number of digital outputs	8
Output characteristic	High-side switching
Output current per channel	0.5 A, short-circuit-protected
Load type	Resistive, inductive, lamps
Actuator connection	1-conductor
Switching frequency max.	1 kHz
Current consumption, field supply (module with no external load)	16 mA
Field supply voltage	24 VDC (-25 ... +30 %), via wiring level (CAGE CLAMP® connection)

Current consumption, system supply	30 mA
Internal data width	8 bits In and 8 bits Out
Isolation	500 V system/field
Ambient temperature (operation)	0 ... +55 °C
Dimensions W x H x D	12 x 74.1 x 100 mm

Approvals

Data sheet and further information, see:

Accessories

Interface modules for system wiring and interface cable

Item description	8DIO
Version	24 VDC 0.5A Ribbon Cable
Item no.	750-1502

Number of digital inputs	8
Type of signal	24 VDC
Voltage range for signal (0)	-3 ... +5 VDC
Voltage range for signal (1)	15 ... 30 VDC
Sensor connection	1-conductor
Input characteristic	High-side switching
Input filter (digital)	3 ms
Input current per channel for signal (1) typ.	2.4 mA
Number of digital outputs	8
Output characteristic	High-side switching
Output current per channel	0.5 A, short-circuit-protected
Load type	Resistive, inductive, lamps
Actuator connection	1-conductor
Switching frequency max.	1 kHz
Current consumption, field supply (module with no external load)	16 mA
Field supply voltage	24 VDC (-25 ... +30 %), via wiring level (CAGE CLAMP® connection)

Current consumption, system supply	30 mA
Internal data width	8 bits In and 8 bits Out
Isolation	500 V system/field
Ambient temperature (operation)	0 ... +55 °C
Dimensions W x H x D	12 x 74.1 x 100 mm

CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX

Data sheet and further information, see: wago.com/750-1502

Item no.

see Section 11

Item description	8DIO
Version	24 VDC 0.5A
Item no.	750-1506

Number of digital inputs	8
Type of signal	24 VDC
Voltage range for signal (0)	-3 ... +5 VDC
Voltage range for signal (1)	15 ... 30 VDC
Sensor connection	1-conductor
Input characteristic	High-side switching
Input filter (digital)	3 ms
Input current per channel for signal (1) typ.	2.4 mA
Number of digital outputs	8
Output characteristic	High-side switching
Output current per channel	0.5 A, short-circuit-protected
Load type	Resistive, inductive, lamps
Actuator connection	1-conductor
Switching frequency max.	1 kHz
Current consumption, field supply (module with no external load)	16 mA
Field supply voltage	24 VDC (-25 ... +30 %), via power jumper contacts

Current consumption, system supply	30 mA
Internal data width	8 bits In and 8 bits Out
Isolation	500 V system/field
Ambient temperature (operation)	0 ... +55 °C
Dimensions W x H x D	12 x 69 x 100 mm

CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX

Data sheet and further information, see: wago.com/750-1506

Mini-WSB Quick Marking System
see Full Line Catalog, Volume 6

DIN rails and tool
see Section 11

Approvals and corresponding ratings,
see Page 517 or www.wago.com

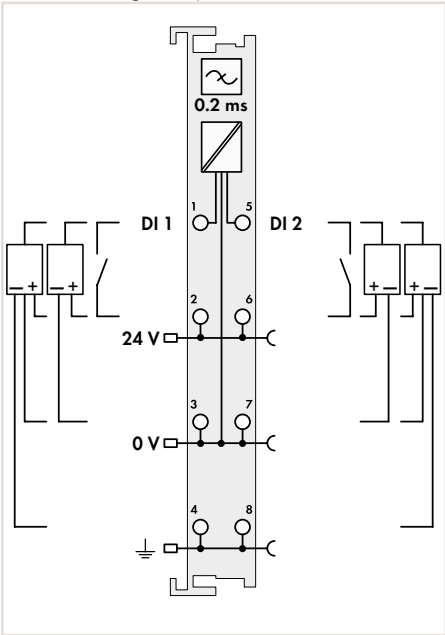
Digital Input, 24 VDC, 0.2 ms



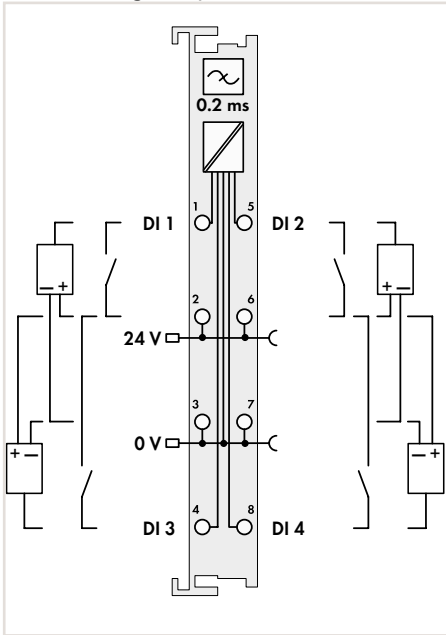
Figure: 750-401

Figure: 753-401

2-channel digital input; 24 VDC; 0.2 ms



4-channel digital input; 24 VDC; 0.2 ms



Item description
Version
Item no.

2DI	
24 VDC 0.2ms	24 VDC 0.2ms
750-401	753-401

4DI	
24 VDC 0.2ms	24VDC 0.2ms
750-403	753-403

Technical Data	
Pluggable connector	
Number of digital inputs	2
Type of signal	24 VDC
Voltage range for signal (0)	-3 ... +5 VDC
Voltage range for signal (1)	15 ... 30 VDC
Sensor connection	2-conductor, 3-conductor, 4-conductor
Input characteristic	High-side switching
Input filter (digital)	0.2 ms
Input current per channel for signal (1) typ.	4.5 mA
Sensor supply voltage	24 VDC
Field supply voltage	24 VDC (-25 ... +30 %), via power jumper contacts
Current consumption, system supply	3,7 mA
Internal data width	2 bits
Isolation	500 V system/field
Ambient temperature (operation)	0 ... +55 °C
Dimensions W x H x D	12 x 69.8 x 100 mm
Approvals	
Data sheet and further information, see:	
Accessories	
Plug	
753 Series coding elements	

	●
	2
	24 VDC
	-3 ... +5 VDC
	15 ... 30 VDC
	2-conductor, 3-conductor, 4-conductor
	High-side switching
	0.2 ms
	4.5 mA
	24 VDC
	24 VDC (-25 ... +30 %), via power jumper contacts
	3,7 mA
	2 bits
	500 V system/field
	0 ... +55 °C
	12 x 69.8 x 100 mm
CE,  Marine,  UL 508, ANSI/ISA,  ATEX/IECEx	
wago.com/750-401	
wago.com/753-401	
	Item no.
	753-110
	753-150

	●
4	
24 VDC	
-3 ... +5 VDC	
15 ... 30 VDC	
2 x (2-conductor, 3-conductor)*	
High-side switching	
0.2 ms	
4.5 mA	
24 VDC	
24 VDC (-25 ... +30 %), via power jumper contacts	
7,5 mA	
4 bits	
500 V system/field	
0 ... +55 °C	
12 x 69.8 x 100 mm	
CE,  Marine,  UL 508, ANSI/ISA,  ATEX/IECEx	
wago.com/750-403	wago.com/753-403
	Item no.
	753-110
	753-150

*To connect other sensors, a suitable field side connection module (e.g., 750-614) must also be used.

Digital Input, 24 VDC, 0.2 ms

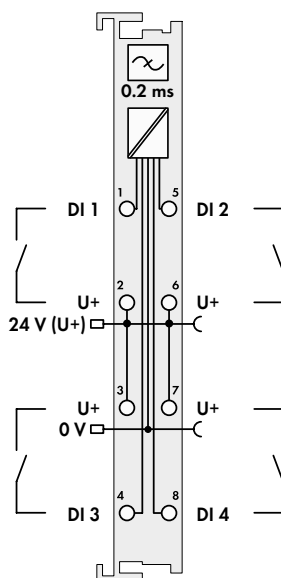


Figure: 750-433

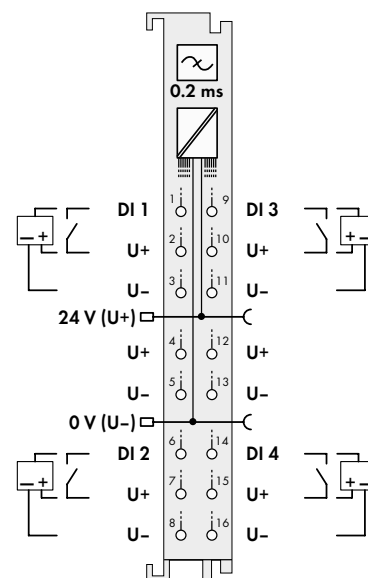


Figure: 750-1421

4-channel digital input; 24 VDC; 0.2 ms;
2-conductor connection



4-channel digital input; 24 VDC; 0.2 ms;
3-conductor connection



Item description	4DI	
Version	24 VDC 0.2ms 2-wire	24 VDC 0.2ms 2-wire
Item no.	750-433	753-433

Technical Data

Pluggable connector		•
Number of digital inputs	4	
Type of signal	24 VDC	
Voltage range for signal (0)	-3 ... +5 VDC	
Voltage range for signal (1)	15 ... 30 VDC	
Sensor connection	2-conductor	
Input characteristic	High-side switching	
Input filter (digital)	0.2 ms	
Input current per channel for signal (1) typ.	4.5 mA	
Sensor supply voltage	24 VDC	
Field supply voltage	24 VDC (-25 ... +30 %), via power jumper contacts	
Current consumption, system supply	5.5 mA	
Internal data width	4 bits	
Isolation	500 V system/field	
Ambient temperature (operation)	0 ... +55 °C	
Dimensions W x H x D	12 x 69.8 x 100 mm	
Approvals	CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX	
Data sheet and further information, see:	wago.com/750-433	wago.com/753-433
Accessories		Item no.
Plug		753-110
753 Series coding elements		753-150

4DI
24 VDC 0.2ms 3-wire
750-1421

Pluggable connector	
Number of digital inputs	4
Type of signal	24 VDC
Voltage range for signal (0)	-3 ... +5 VDC
Voltage range for signal (1)	11 ... 30 VDC
Sensor connection	3-conductor
Input characteristic	High-side switching
Input filter (digital)	0.2 ms
Input current per channel for signal (1) typ.	4.5 mA
Sensor supply voltage	24 VDC
Field supply voltage	24 VDC (-25 ... +30 %), via power jumper contacts
Current consumption, system supply	4 mA
Internal data width	4 bits
Isolation	500 V system/field
Ambient temperature (operation)	0 ... +55 °C
Dimensions W x H x D	12 x 69 x 100 mm
Approvals	CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX
Data sheet and further information, see:	wago.com/750-1421
Accessories	
Plug	
753 Series coding elements	

Mini-WSB Quick Marking System
see Full Line Catalog, Volume 6

DIN rails and tool
see Section 11

Approvals and corresponding ratings,
see Page 517 or www.wago.com

8-channel digital input; 24 VDC; 0.2 ms		8-channel digital input; 24 VDC; 0.2 ms; 2-conductor connection		16-channel digital input; 24 VDC; 0.2 ms	
8DI		8DI		16DI	
24 VDC 0.2ms		24 VDC 0.2ms 2-wire		24 VDC 0.2ms	
750-431		750-1416		750-1406	
8		8		16	
24 VDC		24 VDC		24 VDC	
-3 ... +5 VDC		-3 ... +5 VDC		-3 ... +5 VDC	
15 ... 30 VDC		11 ... 30 VDC		15 ... 30 VDC	
1-conductor		2-conductor		1-conductor	
High-side switching		High-side switching		High-side switching	
0.2 ms		0.2 ms		0.2 ms	
2.8 mA		4.5 mA		2.3 mA	
24 VDC		24 VDC		24 VDC	
24 VDC (-25 ... +30 %), via power jumper contacts		24 VDC (-25 ... +30 %), via power jumper contacts		24 VDC (-25 ... +30 %), via power jumper contacts	
17 mA		6 mA		25 mA	
8 bits		8 bits		16 bits	
500 V system/field		500 V system/field		500 V system/field	
0 ... +55 °C		0 ... +55 °C		0 ... +55 °C	
12 x 67.8 x 100 mm		12 x 69 x 100 mm		12 x 69 x 100 mm	
CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX		CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX		CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX	
wago.com/750-431		wago.com/750-1416		wago.com/750-1406	
Item no.					
753-110					
753-150					

Digital Input, 24 VDC 3 ms, Low-Side Switching

4-channel digital input; 24 VDC; 3 ms; Low-side switching; optional: Ext. Temperature

4-channel digital input; 24 VDC; 3 ms; Low-side switching; 3-conductor connection



Figure: 750-408

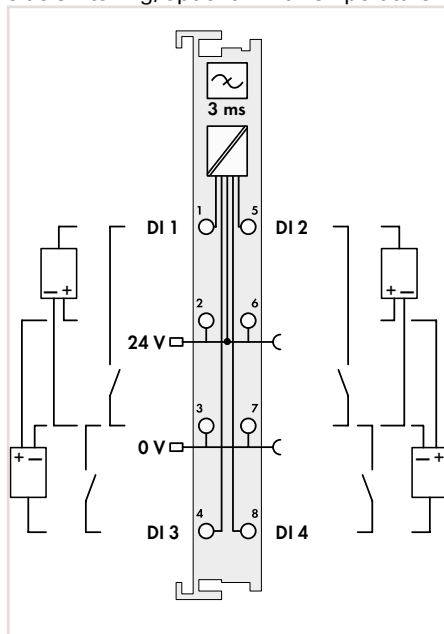
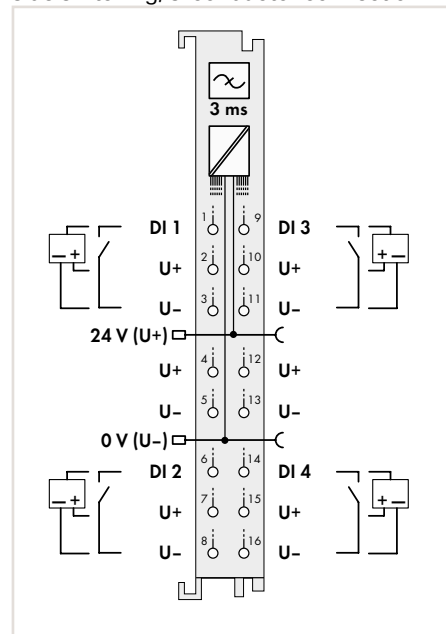


Figure: 750-1422



Item description	4DI		
Version	24 VDC 3ms LSS	24 VDC 3ms LSS T	24 VDC 3ms LSS
Item no.	750-408	750-408/025-000	753-408

Item description	4DI
Version	24 VDC 3ms LSS 3-wire
Item no.	750-1422

Technical Data

Pluggable connector			•
Number of digital inputs	4		
Type of signal	24 VDC		
Voltage range for signal (0)	DC ($U_V - 5\text{ V}$) ... U_V		
Voltage range for signal (1)	DC -3 V ... ($U_V - 15\text{ V}$)		
Sensor connection	2 x (2-conductor, 3-conductor)*		
Input characteristic	Low-side switching		
Input filter (digital)	3 ms		
Input current per channel for signal (1) typ.	7 mA		
Sensor supply voltage	24 VDC		
Field supply voltage	24 VDC (-15 ... +20 %), via power jumper contacts		
Current consumption, system supply	5 mA		
Internal data width	4 bits		
Isolation	500 V system/field		
Ambient temperature (operation)	0 ... +55 °C	-20 ... +60 °C	0 ... +55 °C
Dimensions W x H x D	12 x 69.8 x 100 mm		
Approvals	CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX		
Data sheet and further information, see:	wago.com/750-408		wago.com/753-408
Accessories			
Plug			Item no. 753-110
753 Series coding elements			753-150

Pluggable connector	
Number of digital inputs	4
Type of signal	24 VDC
Voltage range for signal (0)	DC ($U_V - 5\text{ V}$) ... U_V
Voltage range for signal (1)	DC -3 V ... ($U_V - 15\text{ V}$)
Sensor connection	3-conductor
Input characteristic	Low-side switching
Input filter (digital)	3 ms
Input current per channel for signal (1) typ.	2.5 mA
Sensor supply voltage	24 VDC
Field supply voltage	24 VDC (-25 ... +30 %), via power jumper contacts
Current consumption, system supply	7 mA
Internal data width	4 bits
Isolation	500 V system/field
Ambient temperature (operation)	0 ... +55 °C
Dimensions W x H x D	12 x 69 x 100 mm
Approvals	CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX
Data sheet and further information, see:	wago.com/750-1422
Accessories	
Plug	
753 Series coding elements	

*To connect other sensors, a suitable field side connection module (e.g., 750-614) must also be used.

Mini-WSB Quick Marking System
see Full Line Catalog, Volume 6

DIN rails and tool
see Section 11

Approvals and corresponding ratings,
see Page 517 or www.wago.com

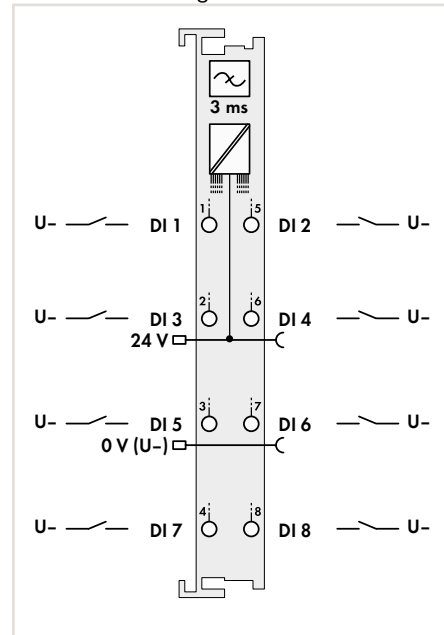
Digital Input, 24 VDC 3 ms, Low-Side Switching



Figure: 750-436

Figure: 750-1417

8-channel digital input; 24 VDC; 3 ms;
Low-side switching

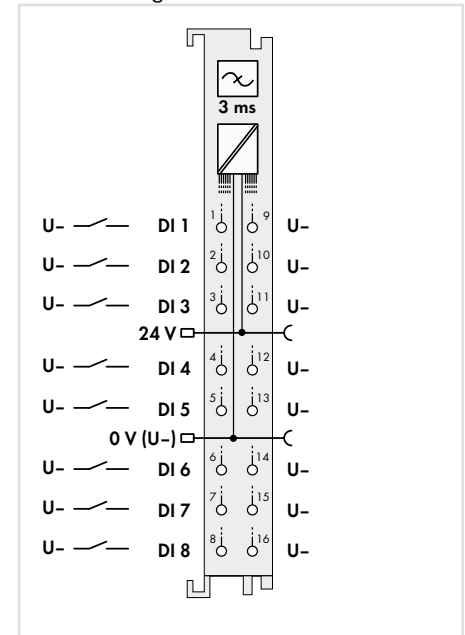


Item description	8DI	
Version	24 VDC 3ms LSS	24 VDC 3ms LSS
Item no.	750-436	753-436

Technical Data

Pluggable connector	●	
Number of digital inputs	8	
Type of signal	24 VDC	
Voltage range for signal (0)	15 ... 30 VDC	
Voltage range for signal (1)	-3 ... +5 VDC	
Sensor connection	1-conductor	
Input characteristic	Low-side switching	
Input filter (digital)	3 ms	
Input current per channel for signal (1) typ.	2.8 mA	
Sensor supply voltage		
Field supply voltage	24 VDC (-25 ... +30 %), via power jumper contacts	
Current consumption, system supply	13 mA	
Internal data width	8 bits	
Isolation	500 V system/field	
Ambient temperature (operation)	0 ... +55 °C	
Dimensions W x H x D	12 x 67.8 x 100 mm	12 x 69 x 100 mm
Approvals	CE,  Marine,  UL 508, ANSI/ISA,  ATEX/IECEX	
Data sheet and further information, see:	wago.com/750-436	wago.com/753-436
Accessories		
Plug	753-110	
753 Series coding elements	753-150	

8-channel digital input; 24 VDC; 3 ms; Low-side switching; 2-conductor connection



8DI
24 VDC 3ms LSS 2-wire
750-1417

8
24 VDC
DC ($U_V - 5\text{ V}$) ... U_V
DC -3 V ... ($U_V - 15\text{ V}$)
2-conductor
Low-side switching
3 ms
2.4 mA
24 VDC
24 VDC (-25 ... +30 %), via power jumper contacts
12 mA
8 bits
500 V system/field
0 ... +55 °C
12 x 69 x 100 mm
CE,  Marine,  UL 508, ANSI/ISA,  ATEX/ IECEx
wago.com/750-1417

Digital Input, 24 VDC 3 ms, Low-Side Switching



Figure: 750-1402

16-channel digital input; 24 VDC; 3 ms;
Low-side switching; Ribbon cable

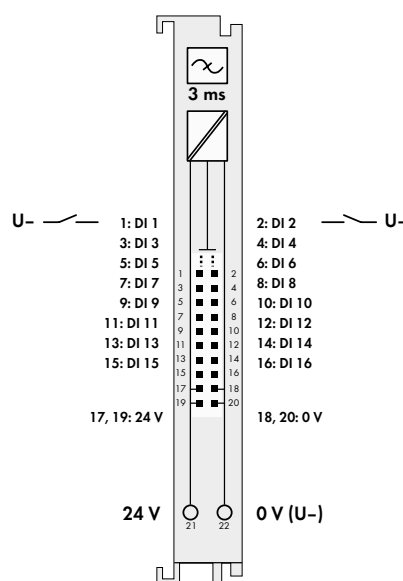
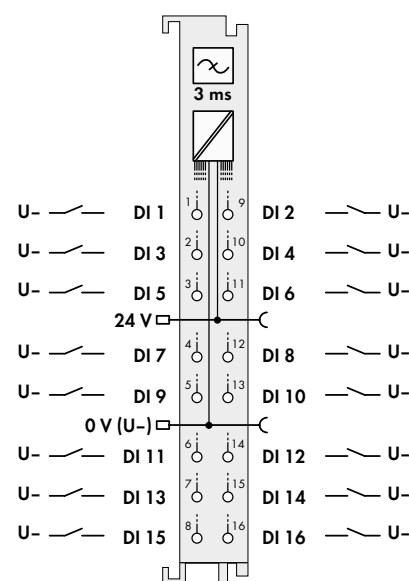


Figure: 750-1407

16-channel digital input; 24 VDC; 3 ms;
Low-side switching



Item description	16DI
Version	24 VDC 3ms LSS Ribbon Cable
Item no.	750-1402
Technical Data	
Number of digital inputs	16
Type of signal	24 VDC
Voltage range for signal (0)	DC ($U_V - 5 V$) ... U_V
Voltage range for signal (1)	DC -3 V ... ($U_V - 15 V$)
Sensor connection	1-conductor
Input characteristic	Low-side switching
Input filter (digital)	3 ms
Input current per channel for signal (1) typ.	2.3 mA
Sensor supply voltage	24 VDC
Field supply voltage	24 VDC (-25 ... +30 %), via wiring level (CAGE CLAMP® connection)
Current consumption, system supply	25 mA
Internal data width	16 bits
Isolation	500 V system/field
Ambient temperature (operation)	0 ... +55 °C
Dimensions W x H x D	12 x 74,1 x 100 mm
Approvals	CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX
Data sheet and further information, see:	wago.com/750-1402
Accessories	
Interface modules for system wiring and interface cable	see Section 11

Item description	16DI
Version	24 VDC 3ms LSS
Item no.	750-1407
Technical Data	
Number of digital inputs	16
Type of signal	24 VDC
Voltage range for signal (0)	DC ($U_V - 5 V$) ... U_V
Voltage range for signal (1)	DC -3 V ... ($U_V - 15 V$)
Sensor connection	1-conductor
Input characteristic	Low-side switching
Input filter (digital)	3 ms
Input current per channel for signal (1) typ.	2.3 mA
Sensor supply voltage	24 VDC
Field supply voltage	24 VDC (-25 ... +30 %), via power jumper contacts
Current consumption, system supply	25 mA
Internal data width	16 bits
Isolation	500 V system/field
Ambient temperature (operation)	0 ... +55 °C
Dimensions W x H x D	12 x 69 x 100 mm
Approvals	CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX
Data sheet and further information, see:	wago.com/750-1407
Accessories	
Interface modules for system wiring and interface cable	

Mini-WSB Quick Marking System
see Full Line Catalog, Volume 6

DIN rails and tool
see Section 11

Approvals and corresponding ratings,
see Page 517 or www.wago.com

Digital Input, 24 VDC, 0.2 ms, Low-Side Switching



Figure: 750-409

4-channel digital input; 24 VDC; 0.2 ms; Low-side switching

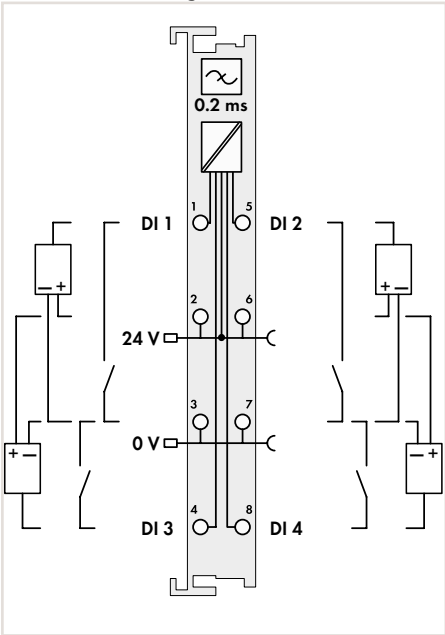
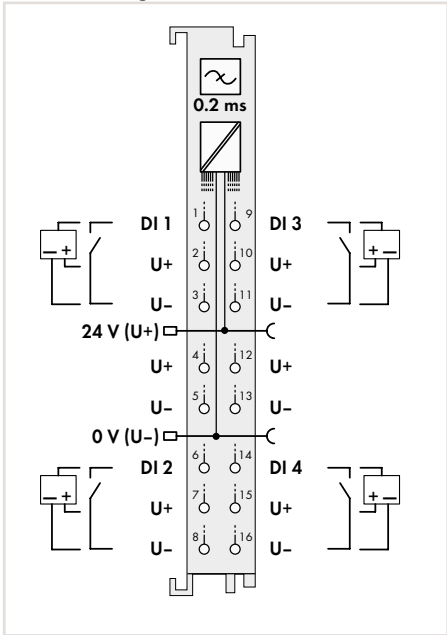


Figure: 750-1423

4-channel digital input; 24 VDC; 0.2 ms; Low-side switching; 3-conductor connection



Item description	4DI	
Version	24 VDC 0.2ms LSS	24 VDC 0.2ms LSS
Item no.	750-409	753-409

Technical Data	
Pluggable connector	
Number of digital inputs	4
Type of signal	DC 24 V
Voltage range for signal (0)	DC (U _V - 5 V) ... U _V
Voltage range for signal (1)	DC -3 V ... (U _V - 15 V)
Sensor connection	2 x (2-conductor, 3-conductor)*
Input characteristic	Low-side switching
Input filter (digital)	0.2 ms
Input current per channel for signal (1) typ.	7 mA
Sensor supply voltage	24 VDC
Field supply voltage	24 VDC (-25 ... +30 %), via power jumper contacts
Current consumption, system supply	5 mA
Internal data width	4 bits
Isolation	500 V system/field
Ambient temperature (operation)	0 ... +55 °C
Dimensions W x H x D	12 x 69.8 x 100 mm
Approvals	
Data sheet and further information, see:	
Accessories	
Plug	
753 Series coding elements	

4DI	
24 VDC 0.2ms LSS	24 VDC 0.2ms LSS
750-409	753-409

	4	
	DC 24 V	
	DC (U _V - 5 V) ... U _V	
	DC -3 V ... (U _V - 15 V)	
	2 x (2-conductor, 3-conductor)*	
	Low-side switching	
	0.2 ms	
	7 mA	
	24 VDC	
	24 VDC (-25 ... +30 %), via power jumper contacts	
	5 mA	
	4 bits	
	500 V system/field	
	0 ... +55 °C	
	12 x 69.8 x 100 mm	
	CE, UL 508, ANSI/ISA, ATEX/IECEX	
	wago.com/750-409	wago.com/753-409
	Item no.	
	753-110	
	753-150	

8DI	
24 VDC 0.2ms LSS 3-wire	
750-1423	

	4	
	DC 24 V	
	DC (U _V - 5 V) ... U _V	
	DC -3 V ... (U _V - 15 V)	
	3-conductor	
	Low-side switching	
	0.2 ms	
	2.5 mA	
	24 VDC	
	24 VDC (-25 ... +30 %), via power jumper contacts	
	7 mA	
	4 bits	
	500 V system/field	
	0 ... +55 °C	
	12 x 69 x 100 mm	
	CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX	
	wago.com/750-1423	

*To connect other sensors, a suitable field side connection module (e.g., 750-614) must also be used.

Digital Input, 24 VDC, 0.2 ms, Low-Side Switching

8-channel digital input; 24 VDC; 0.2 ms;
Low-side switching

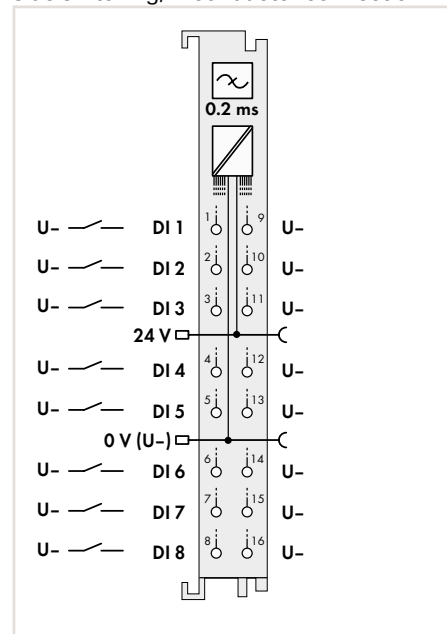
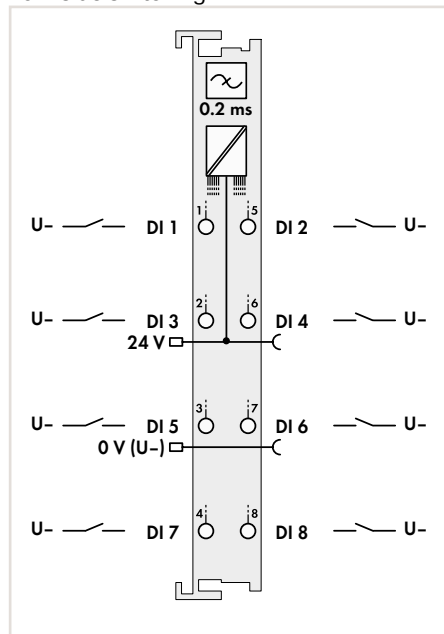
8-channel digital input; 24 VDC; 0.2 ms; Low-
side switching; 2-conductor connection



Figure: 750-437



Figure: 750-1418



Item description	8DI	
Version	24 VDC 0.2ms LSS	24 VDC 0.2ms LSS
Item no.	750-437	753-437

Technical Data

Pluggable connector		
Number of digital inputs	8	
Type of signal	24 VDC	
Voltage range for signal (0)	DC 15 ... 30 V	
Voltage range for signal (1)	DC -3 ... +5 V	
Sensor connection	1-conductor	
Input characteristic	Low-side switching	
Input filter (digital)	0.2 ms	
Input current per channel for signal (1) typ.	2.8 mA	
Sensor supply voltage		
Field supply voltage	24 VDC (-25 ... +30 %), via power jumper contacts	
Current consumption, system supply	13 mA	
Internal data width	8 bits	
Isolation	500 V system/field	
Ambient temperature (operation)	0 ... +55 °C	
Dimensions W x H x D	12 x 67,8 x 100 mm	12 x 69 x 100 mm
Approvals	CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX	
Data sheet and further information, see:	wago.com/750-437	wago.com/753-437
Accessories		
Plug	753-110	
753 Series coding elements	753-150	

Item description	8DI
Version	24 VDC 0.2ms LSS 2-wire
Item no.	750-1418

Pluggable connector	
Number of digital inputs	8
Type of signal	24 VDC
Voltage range for signal (0)	DC (U _v - 5 V) ... U _v
Voltage range for signal (1)	DC -3 V ... (U _v - 15 V)
Sensor connection	2-conductor
Input characteristic	Low-side switching
Input filter (digital)	0.2 ms
Input current per channel for signal (1) typ.	2.4 mA
Sensor supply voltage	24 VDC
Field supply voltage	24 VDC (-25 ... +30 %), via power jumper contacts
Current consumption, system supply	12 mA
Internal data width	8 bits
Isolation	500 V system/field
Ambient temperature (operation)	0 ... +55 °C
Dimensions W x H x D	12 x 69 x 100 mm
Approvals	CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX
Data sheet and further information, see:	wago.com/750-1418
Accessories	
Plug	
753 Series coding elements	

Mini-WSB Quick Marking System
see Full Line Catalog, Volume 6

DIN rails and tool
see Section 11

Approvals and corresponding ratings,
see Page 517 or www.wago.com

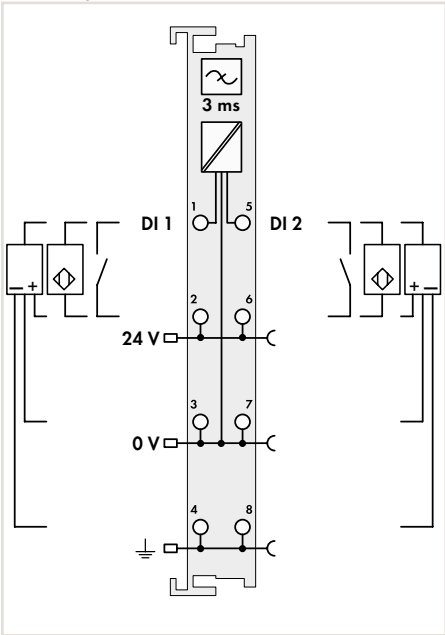
Digital Input, 24 VDC, Proximity Switch



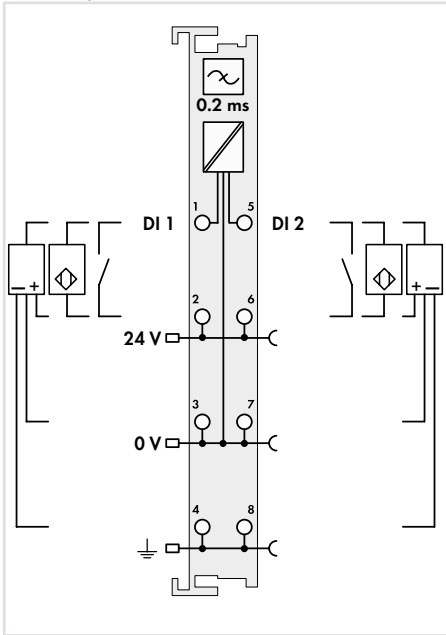
Figure: 750-410

Figure: 753-410

2-channel digital input; 24 VDC; 3 ms;
Proximity switch



2-channel digital input; 24 VDC; 0.2 ms;
Proximity switch



Item description
Version
Item no.

2DI	
24 VDC 3ms Proxi Sensor	24 VDC 3ms Proxi Sensor
750-410	753-410

2DI	
24 VDC 0.2ms Proxi Sensor	24 VDC 0.2ms Proxi Sensor
750-411	753-411

Technical Data
Pluggable connector
Number of digital inputs
Type of signal
Voltage range for signal (0)
Voltage range for signal (1)
Sensor connection
Input characteristic
Input filter (digital)
Input current per channel for signal (1) typ.
Sensor supply voltage
Field supply voltage
Current consumption, system supply
Internal data width
Isolation
Ambient temperature (operation)
Dimensions W x H x D
Approvals
Data sheet and further information, see:
Accessories
Plug
753 Series coding elements

	•
2	
24 VDC	
-3 ... +5 VDC	
15 ... 30 VDC	
2-conductor, 3-conductor, 4-conductor	
High-side switching	
3 ms	
8 mA	
24 VDC	
24 VDC (-25 ... +30 %), via power jumper contacts	
2,5 mA	
2 bits	
500 V system/field	
0 ... +55 °C	
12 x 69.8 x 100 mm	
CE,  Marine,  UL 508, ANSI/ISA,  ATEX/ IECEx	
wago.com/750-410	wago.com/753-410
	Item no.
	753-110
	753-150

	•
2	
24 VDC	
-3 ... +5 VDC	
15 ... 30 VDC	
2-conductor, 3-conductor, 4-conductor	
High-side switching	
0.2 ms	
8 mA	
24 VDC	
24 VDC (-25 ... +30 %), via power jumper contacts	
2,5 mA	
2 bits	
500 V system/field	
0 ... +55 °C	
12 x 69.8 x 100 mm	
CE,  Marine,  UL 508, ANSI/ISA,  ATEX/IECEx	
wago.com/750-411	wago.com/753-411
	Item no.
	753-110
	753-150

Digital Input, NAMUR

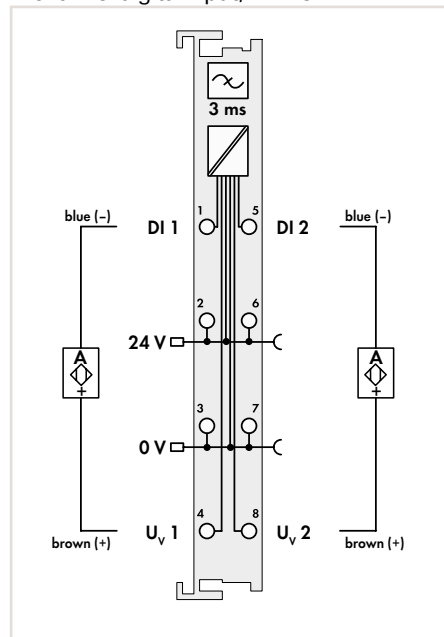


Figure: 750-425



Figure: 753-425

2-channel digital input; NAMUR



Item description	2DI	
Version	NAMUR	NAMUR
Item no.	750-425	753-425
Technical Data		
Pluggable connector		•
Number of digital inputs	2	
Type of signal	NAMUR	
Signal current (0) NAMUR	≤ 1.2 mA	
Signal current (1) NAMUR	≥ 2.1 mA	
Sensor connection	2-conductor	
Input characteristic	High-side switching	
Input filter (digital)	3 ms	
Open-circuit voltage	8.2 VDC	
Diagnostics	Short circuit, wire break	
Sensor supply voltage	8.2 VDC, short-circuit-protected, isolated channels	
Field supply voltage	24 VDC (–25 ... +30 %), via power jumper contacts	
Current consumption, system supply	5 mA	
Internal data width	4 bits	
Isolation	500 V system/field	
Ambient temperature (operation)	0 ... +55 °C	
Dimensions W x H x D	12 x 69,8 x 100 mm	
Approvals	CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX	
Data sheet and further information, see:	wago.com/750-425	wago.com/753-425
Accessories		
Plug		Item no. 753-110
753 Series coding elements		753-150

The digital input module receives control signals from NAMUR proximity switches (per DIN EN 60947-5-6) from the field side. Each channel of the sensors is supplied with a short-circuit-protected voltage of 8.2 V. A short circuit or a wire break is indicated by an error message via 1 bit in the processor image and a red LED.

The green LED indicates the input status:

- Signal current (0) LED off
- Signal current (1) LED on

Electrically isolated field and system levels

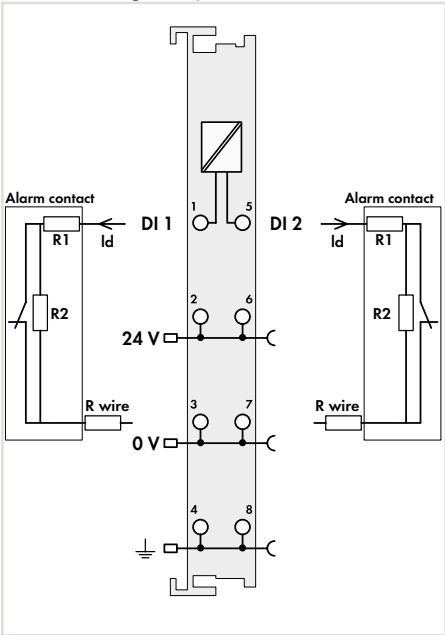
Digital Input, Intruder Detection



Figure: 750-424

Figure: 753-424

2-channel digital input; Intruder detection



Item description		2DI	
Version		Intruder Detection	Intruder Detection
Item no.		750-424	753-424
Technical Data			
Pluggable connector			
Number of digital inputs		2	
Type of signal		Current loop (intruder detection)	
Sensor connection		2-conductor	
Specific properties of the sensor		Alarm contact: R1 = 1.5 kΩ (±5 %); R2 = 2.2 kΩ (±5 %), Conductor resistance (R wire) max. 200 Ω	
Sensor supply voltage		24 VDC	
Field supply voltage		24 VDC (–25 ... +30 %), via power jumper contacts	
Current consumption, field supply (module with no external load)		16 mA	
Current consumption, system supply		6 mA	
Internal data width		4 bits	
Isolation		500 V system/field	
Ambient temperature (operation)		0 ... +55 °C	
Dimensions W x H x D		12 x 69,8 x 100 mm	
Approvals		CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX	
Data sheet and further information, see:		wago.com/750-424	wago.com/753-424
Accessories		Item no.	
Plug		753-110	
753 Series coding elements		753-150	

This I/O module incorporates a current loop, which makes it possible to monitor alarm contacts (window contacts) with a fixed resistance ratio (R1, R2), for intruder detection.

The I/O module indicates the status of the connected contact via LEDs and status bits in the processor image.

Digital Input, 24 VDC, Pulse Extension

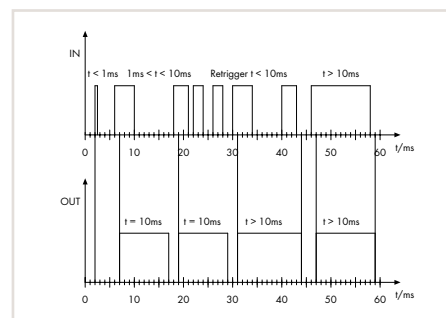
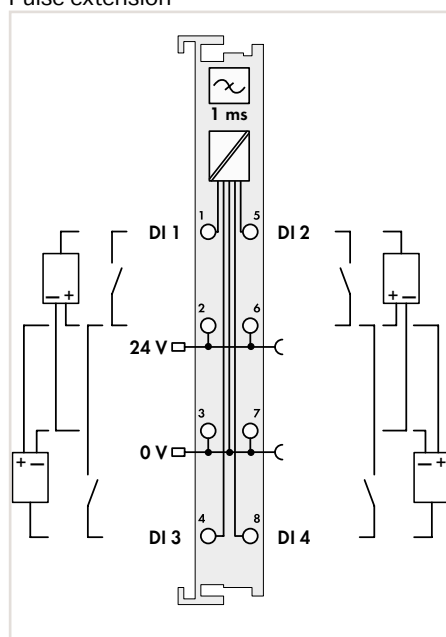
4-channel digital input; 24 VDC;
Pulse extension



Figure: 750-422



Figure: 753-422



This I/O module extends input signals to at least 10 ms. Only signals ≥ 1 ms will be acquired. Input signals with a pulse duration > 10 ms are not extended (without droff delay).
Electrically isolated field and system levels

Item description	4DI	
Version	24 VDC Pulse Extension	24 VDC Pulse Extension
Item no.	750-422	753-422

Technical Data

Pluggable connector		•
Number of digital inputs	4	
Type of signal	24 VDC	
Voltage range for signal (0)	-3 ... +5 VDC	
Voltage range for signal (1)	15 ... 30 VDC	
Sensor connection	2 x (2-conductor, 3-conductor)*	
Input characteristic	High-side switching	
Input filter (digital)	1 ms	
Input current per channel for signal (1) typ.	4 mA	
Signal frequency max.	80 Hz	
Sensor supply voltage	24 VDC	
Field supply voltage	24 VDC (-15 ... +20 %), via power jumper contacts	
Current consumption, system supply	9 mA	
Internal data width	4 bits	
Isolation	500 V system/field	
Ambient temperature (operation)	0 ... +55 °C	
Dimensions W x H x D	12 x 69.8 x 100 mm	

Approvals

Data sheet and further information, see:	CE, UL 508, ANSI/ISA, ATEX/IECEx	
	wago.com/750-422	wago.com/753-422

Accessories

	Item no.
Plug	753-110
753 Series coding elements	753-150

*To connect other sensors, a suitable field side connection module (e.g., 750-614) must also be used.

Mini-WSB Quick Marking System
see Full Line Catalog, Volume 6

DIN rails and tool
see Section 11

Approvals and corresponding ratings,
see Page 517 or www.wago.com

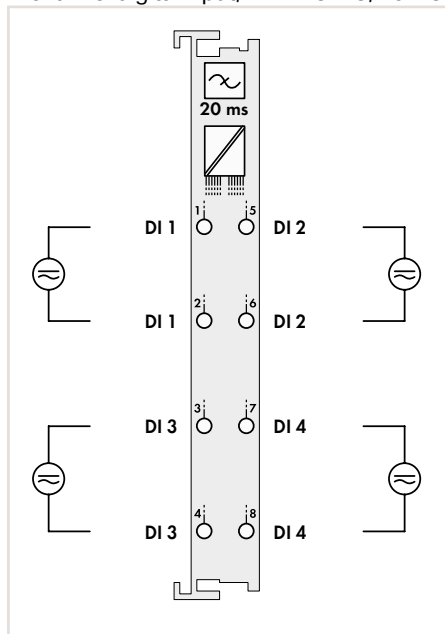
Digital Input, 24 V AC/DC



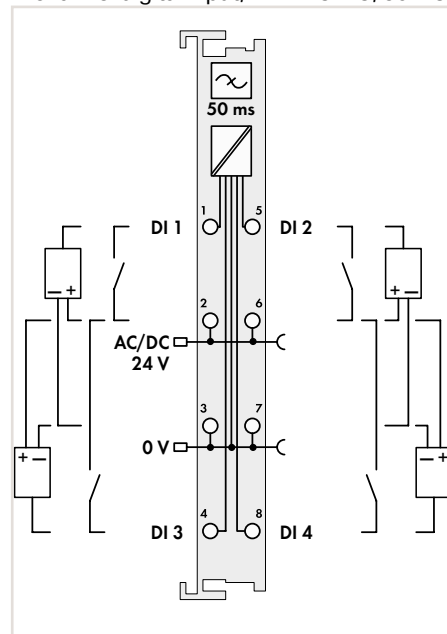
Figure: 750-415

Figure: 753-415

4-channel digital input; 24 V AC/DC; 20 ms



4-channel digital input; 24 V AC/DC; 50 ms



Item description	4DI		4DI	
Version	24 VAC/VDC 20ms	24 VAC/VDC 20ms	24 VAC/VDC 50ms	24 VAC/VDC 50ms
Item no.	750-415	753-415	750-423	753-423
Technical Data				
Pluggable connector				
Number of digital inputs	4		4	
Type of signal	24 VAC/DC		24 VAC/DC	
Voltage range for signal (0)	-3 ... +5 VDC; 0 ... 5 VAC		-3 ... +5 VDC; 0 ... 5 VAC	
Voltage range for signal (1)	11 ... 30 VDC; 10 ... 27 VAC		11 ... 30 VDC; 10 ... 27 VAC	
Sensor connection	2-conductor		2 x (2-conductor, 3-conductor)*	
Input characteristic	High-side switching		High-side switching	
Input filter (digital)	20 ms		50 ms	
Current supply, typ. for 24 VDC	7.5 mA		7.5 mA	
Current supply, typ. for 24 VAC	9.5 mA		9.5 mA	
Sensor supply voltage			24 VAC/DC	
Field supply voltage			24 VAC/VDC (-15 ... +20 %), via power jumper contacts	
Current consumption, system supply	10 mA		10 mA	
Internal data width	4 bits		4 bits	
Isolation	500 V system/field, 50 V channel/channel		500 V system/field	
Ambient temperature (operation)	0 ... +55 °C		0 ... +55 °C	
Dimensions W x H x D	12 x 69,8 x 100 mm		12 x 69,8 x 100 mm	
Approvals	CE,  Marine,  UL 508, ANSI/ISA,  ATEX/IECEx		CE,  Marine,  UL 508, ANSI/ISA,  ATEX/IECEx	
Data sheet and further information, see:	wago.com/750-415	wago.com/753-415	wago.com/750-423	wago.com/753-423
Accessories	Item no.		Item no.	
Plug	753-110		753-110	
753 Series coding elements	753-150		753-150	

Notice:
An additional bus supply module must be added
for operation with 24 VAC!

*To connect other sensors, a suitable field side connection module (e.g., 750-614) must also be used.

Digital Input, 42 V AC/DC

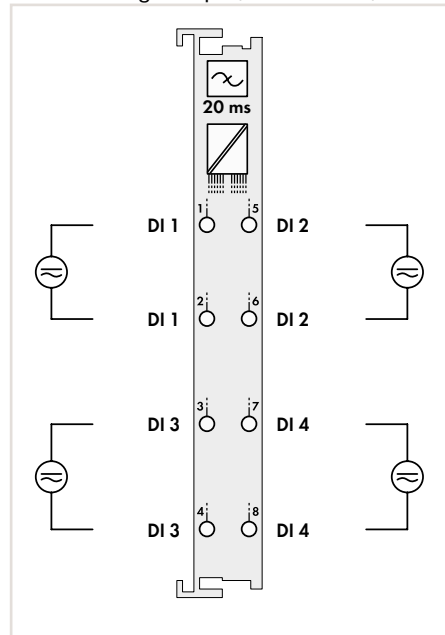


Figure: 750-428



Figure: 753-428

4-channel digital input; 42 V AC/DC; 20 ms



Item description	4DI	
Version	42 VAC/VDC 20ms	42 VAC/VDC 20ms
Item no.	750-428	753-428

Technical Data

Pluggable connector	
Number of digital inputs	4
Type of signal	42 VAC/DC
Voltage range for signal (0)	-3 ... +10 VDC; 0 ... 10 VAC
Voltage range for signal (1)	30 ... 53 VDC; 30 ... 53 VAC
Sensor connection	2-conductor
Input characteristic	High-side switching
Input filter (digital)	20 ms
Current supply, typ. for 42 VDC	3.6 mA
Current supply, typ. for 42 VAC	6 mA
Current consumption, system supply	5 mA
Internal data width	4 bits
Isolation	500 V system/field; 500 V channel/channel
Ambient temperature (operation)	0 ... +55 °C
Dimensions W x H x D	12 x 69.8 x 100 mm

Approvals

Data sheet and further information, see:	wago.com/750-428	wago.com/753-428

Accessories

	Item no.
Plug	753-110
753 Series coding elements	753-150

Mini-WSB Quick Marking System
see Full Line Catalog, Volume 6

DIN rails and tool
see Section 11

Approvals and corresponding ratings,
see Page 517 or www.wago.com

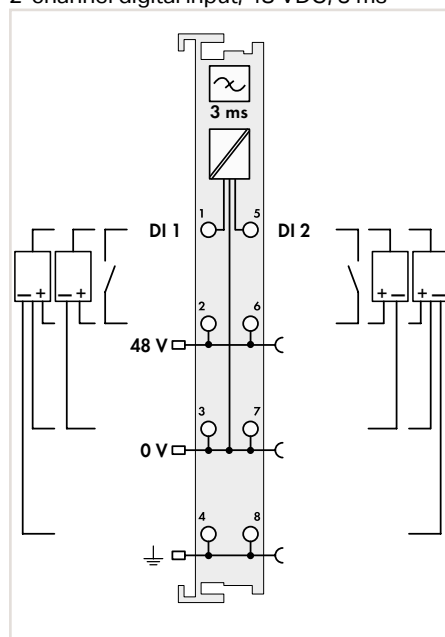
Digital Input, 48 VDC



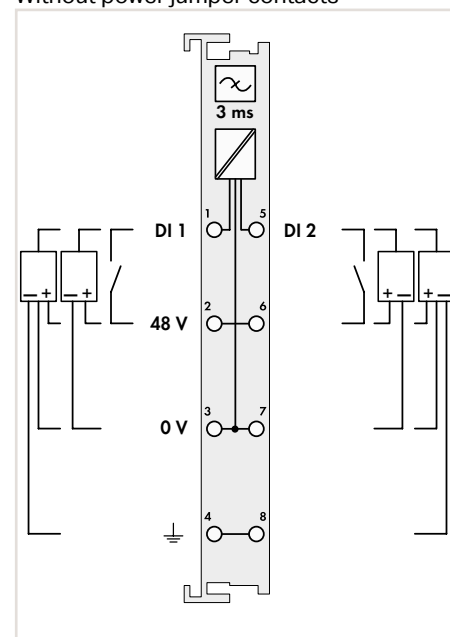
Figure: 750-412

Figure: 753-412

2-channel digital input; 48 VDC; 3 ms



2-channel digital input; 48 VDC; 3 ms;
Without power jumper contacts



Item description	2DI	
Version	48 VDC 3ms	48 VDC 3ms
Item no.	750-412	753-412

2DI
48 VDC 3ms NC
750-412/000-001

Product discontinuation
Last call: 31.5.2017

Technical Data

Pluggable connector		•
Number of digital inputs	2	
Type of signal	48 VDC	
Voltage range for signal (0)	-6 ... +10 VDC	
Voltage range for signal (1)	34 ... 60 VDC	
Sensor connection	2-conductor, 3-conductor, 4-conductor	
Input characteristic	High-side switching	
Input filter (digital)	3 ms	
Input current per channel for signal (1) typ.	3.8 mA	
Sensor supply voltage	48 VDC	
Field supply voltage	48 VDC (-15 ... +20 %), via power jumper contacts	
Current consumption, system supply	2,5 mA	
Internal data width	2 bits	
Isolation	500 V system/field	
Ambient temperature (operation)	0 ... +55 °C	
Dimensions W x H x D	12 x 69,8 x 100 mm	
Approvals	   UL 508, ANSI/ISA,  ATEX/IECEX	
Data sheet and further information, see:	wago.com/750-412	wago.com/753-412
Accessories		
Plug	753-110	
753 Series coding elements	753-150	

2
48 VDC
-6 ... +10 VDC
34 ... 60 VDC
2-conductor, 3-conductor, 4-conductor
High-side switching
3 ms
3.8 mA
48 VDC
2,5 mA
2 bits
500 V system/field
0 ... +55 °C
12 x 69,8 x 100 mm
CE,  UL 508, ANSI/ISA,  ATEX/IECEX
wago.com/750-412/000-001

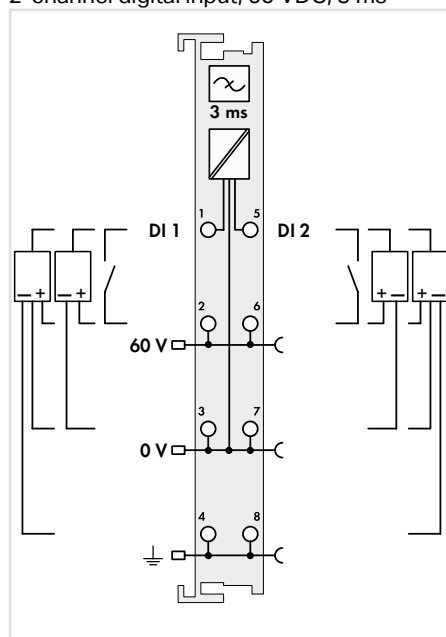
Notice:
An additional supply module must be added for operation with 48 VDC!

4.2

Digital Input, 60 VDC



2-channel digital input; 60 VDC; 3 ms



Item description	2DI
Version	60 VDC 3ms
Item no.	753-429

Technical Data

Pluggable connector	•
Number of digital inputs	2
Type of signal	60 VDC
Voltage range for signal (0)	-7.5 ... +12 VDC
Voltage range for signal (1)	44 ... 75 VDC
Sensor connection	2-conductor, 3-conductor, 4-conductor
Input characteristic	High-side switching
Input filter (digital)	3 ms
Input current per channel for signal (1) typ.	2.9 mA
Sensor supply voltage	60 VDC
Field supply voltage	60 VDC (-20 ... +25 %), via power jumper contacts
Current consumption, system supply	2,5 mA
Internal data width	2 bits
Isolation	500 V system/field
Ambient temperature (operation)	0 ... +55 °C
Dimensions W x H x D	12 x 69,8 x 100 mm
Approvals	CE, UL 508, ANSI/ISA, ATEX/IECEX
Data sheet and further information, see:	wago.com/753-429

Accessories

Plug	753-110
753 Series coding elements	753-150

Notice:
An additional supply module must be added for operation with 60 VDC!

Mini-WSB Quick Marking System
see Full Line Catalog, Volume 6

DIN rails and tool
see Section 11

Approvals and corresponding ratings,
see Page 517 or www.wago.com

Digital Input, 110 or 220 VDC

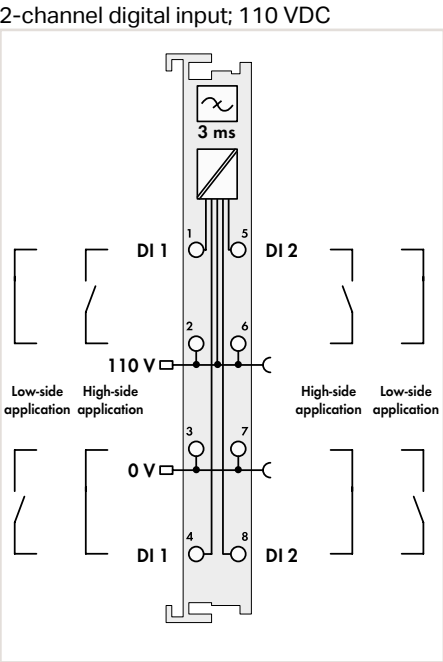


Figure: 750-427

Figure: 750-407

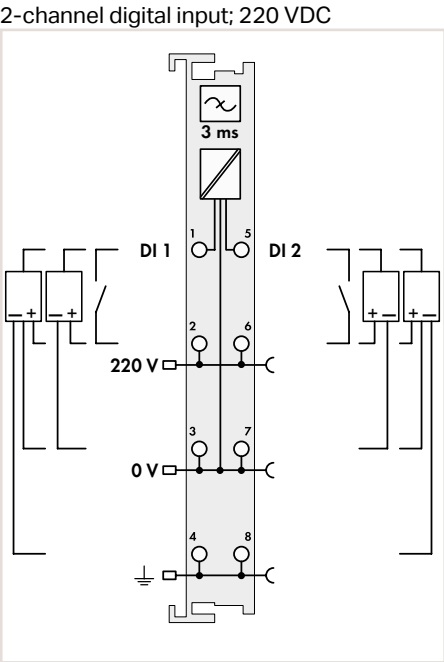
Item description	2DI	
Version	110 VDC	110 VDC
Item no.	750-427	753-427

Technical Data	
Pluggable connector	
Number of digital inputs	2
Type of signal	110 VDC
Voltage range for signal (0)	-14 ... +50 VDC
Voltage range for signal (1)	70 ... +143 VDC
Sensor connection	2-conductor
Input characteristic	High-side/low-side switching, configurable
Input filter (digital)	3 ms
Input current per channel for signal (1) typ.	2.5 mA
Sensor supply voltage	110 VDC
Field supply voltage	110 VDC (-20 ... +25 %), via power jumper contacts
Current consumption, system supply	2,5 mA
Internal data width	2 bits
Isolation	1500 V system/field
Ambient temperature (operation)	0 ... +55 °C
Dimensions W x H x D	12 x 69.8 x 100 mm
Approvals	
Data sheet and further information, see:	
Accessories	
Plug	
753 Series coding elements	



2DI		
110 VDC	110 VDC	
750-427	753-427	

Notice:
An additional bus supply module must be added for operation with 110 VDC!



2DI		
220 VDC	220 VDC	
750-407		

	2	
	220 VDC	
	-3 ... +100 VDC	
	160 ... 286 VDC	
	2-conductor, 3-conductor, 4-conductor	
	High-side switching	
	3 ms	
	1.2 mA	
	220 VDC	
	220 VDC (-20 ... +25 %), via power jumper contacts	
	5 mA	
	2 bits	
	2500 V system/field	
	0 ... +55 °C	
	12 x 69.8 x 100 mm	
	CE, UL 508	
	wago.com/750-407	

Notice:
An additional supply module must be added for operation with 220 VDC!

Digital Input, 120 or 230 VAC

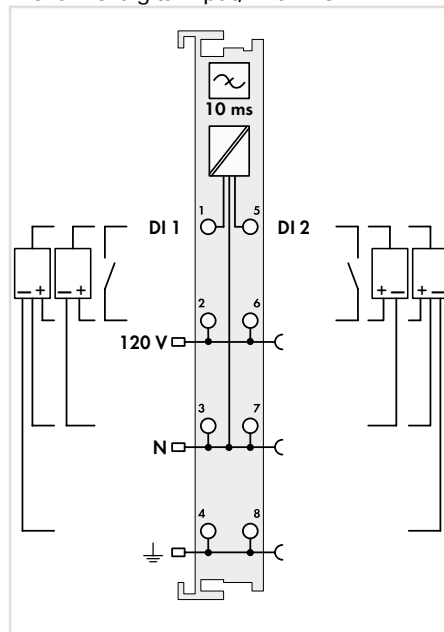


Figure: 750-406

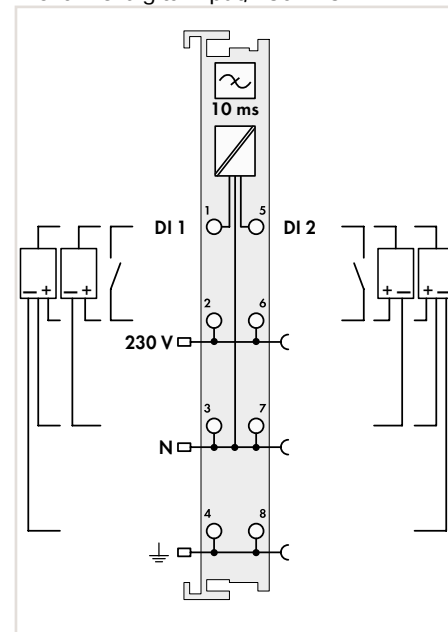


Figure: 753-406

2-channel digital input; 120 VAC



2-channel digital input; 230 VAC



Item description	2DI	
Version	120 VAC	120 VAC
Item no.	750-406	753-406

Technical Data

Pluggable connector		•
Number of digital inputs	2	
Type of signal	120 VAC	
Voltage range for signal (0)	0 ... 20 V	
Voltage range for signal (1)	79 ... 1.1 UN	
Sensor connection	2-conductor, 3-conductor, 4-conductor	
Input characteristic	High-side switching	
Input filter (digital)	10 ms	
Signal frequency min./max.	45 Hz/65 Hz	
Input current per channel for signal (1) typ.	4.5 mA	
Sensor supply voltage	120 VAC	
Field supply voltage	120 VAC (-15 ... +20 %); via power jumper contacts	
Current consumption, system supply	2 mA	
Internal data width	2 bits	
Isolation	1500 V system/field	
Ambient temperature (operation)	0 ... +55 °C	
Dimensions W x H x D	12 x 69.8 x 100 mm	

Approvals

Data sheet and further information, see:	wago.com/750-406	wago.com/753-406

Accessories	Item no.
Plug	753-110
753 Series coding elements	753-150

Notice:
An additional supply module must be added for operation with 120 VAC!

Item description	2DI	
Version	230 VAC	230 VAC
Item no.	750-405	753-405

Pluggable connector		•
Number of digital inputs	2	
Type of signal	230 VAC	
Voltage range for signal (0)	0 ... 40 VAC	
Voltage range for signal (1)	164 VAC ... 1.1 UN	
Sensor connection	2-conductor, 3-conductor, 4-conductor	
Input characteristic	High-side switching	
Input filter (digital)	10 ms	
Signal frequency min./max.	45 Hz/65 Hz	
Input current per channel for signal (1) typ.	6.5 mA	
Sensor supply voltage	230 VAC	
Field supply voltage	230 VAC (-15 ... +20 %); via power jumper contacts	
Current consumption, system supply	2 mA	
Internal data width	2 bits	
Isolation	1500 V system/field	
Ambient temperature (operation)	0 ... +55 °C	
Dimensions W x H x D	12 x 69.8 x 100 mm	

CE, Marine, UL 508, ANSI/ISA, ATEX/IECEx

Data sheet and further information, see:	wago.com/750-405	wago.com/753-405

Accessories	Item no.
Plug	753-110
753 Series coding elements	753-150

Notice:
An additional bus supply module must be added for operation with 230 VAC!

Mini-WSB Quick Marking System
see Full Line Catalog, Volume 6

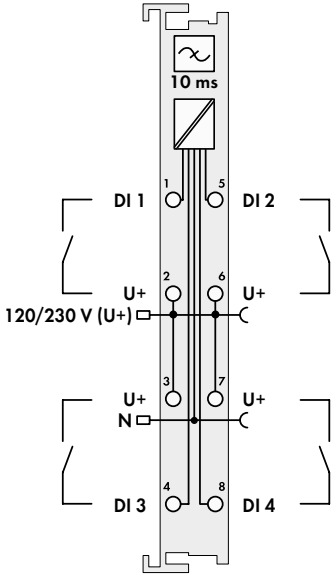
DIN rails and tool
see Section 11

Approvals and corresponding ratings,
see Page 517 or www.wago.com

Digital Input, 120/230 VAC



4-channel digital input; 120/230 VAC



Item description	4DI
Version	120/230 VAC
Item no.	753-440

Technical Data

Pluggable connector	•
Number of digital inputs	4
Type of signal	120 (230) VAC
Voltage range for signal (0)	0 ... 40 VAC
Voltage range for signal (1)	79 ... 230 VAC (–15 ... +10 %)
Sensor connection	2-conductor
Input characteristic	High-side switching
Input filter (digital)	10 ms
Signal frequency min./max.	45 Hz/65 Hz
Overvoltage protection	275 VAC (varistor)
Current supply, typ. for 120 VAC	2.3 mA
Current supply, typ. for 230 VAC	4.7 mA
Sensor supply voltage	230 VAC
Field supply voltage	90 ... 230 VAC (–15 ... +10 %); via power jumper contacts
Current consumption, system supply	15 mA
Internal data width	4 bits
Isolation	1500 V system/field
Ambient temperature (operation)	0 ... +55 °C
Dimensions W x H x D	12 x 69.8 x 100 mm
Approvals	CE, UL 508, ANSI/ISA, ATEX/IECEX
Data sheet and further information, see:	wago.com/753-440

Accessories

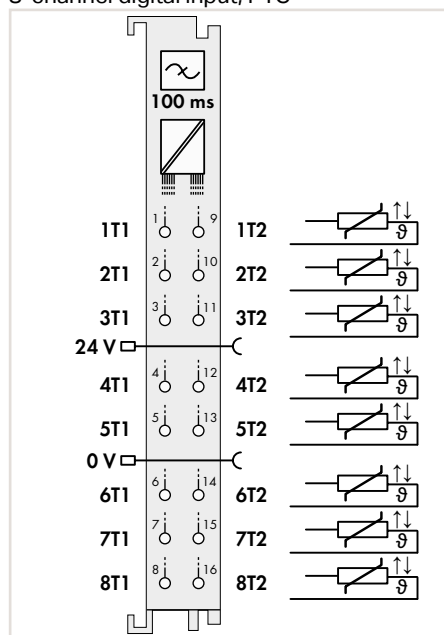
Plug	753-110
753 Series coding elements	753-150

Notice:
An additional bus supply module must be added for operation with 120/230 VAC!

Digital Input, PTC



8-channel digital input; PTC



Item description	8DI
Version	PTC
Item no.	750-1425
Technical Data	
Number of digital inputs	8
Type of signal	PTC, thermistor per DIN 44081/44082
Sensor	Sensor voltage: $\leq 2.5 \text{ V} / \leq 7.5 \text{ V}$ (dependent on resistance value); Number of PTCs per channel: Max. 6 in a series; Operating value (status bit "1" to "0"): $R \geq 3 \text{ k}\Omega$; Return value (status bit "0" to "1"): $\leq 1.5 \text{ k}\Omega$; Hysteresis: $R = 1.5 \text{ k}\Omega$; Wire break value: $R \geq 8 \text{ k}\Omega$; Short circuit value: $R \leq 20 \Omega$
Input filter (digital)	100 ms
Output current max.	0.001 A
Field supply voltage	24 VDC ($-25 \dots +30 \%$), via power jumper contacts
Current consumption, system supply	52 mA
Internal data width	16 bits
Isolation	500 V system/field
Ambient temperature (operation)	$0 \dots +55 \text{ }^{\circ}\text{C}$
Dimensions W x H x D	12 x 69 x 100 mm
Approvals	CE, Marine, UL 508*, ANSI/ISA*, ATEX/IECEX
Data sheet and further information, see:	wago.com/750-1425

*pending

The PTC module is used to connect PTC thermistors according to DIN 44081 and DIN 44082 for thermal monitoring (overload protection) of motors, machinery, bearings, etc. Up to six PTC thermistors can be connected in series per channel. If the nominal response temperature (ϑ_{nat}) is exceeded, a bit in the input processor image of the I/O module is set. In addition, wire breaks and short circuits are monitored for each channel; if an error occurs, a bit is also set in the input processor image. The I/O module is equipped with one green and one red status LED per channel to indicate excessive temperature or wiring errors.

Mini-WSB Quick Marking System
see Full Line Catalog, Volume 6

DIN rails and tool
see Section 11

Approvals and corresponding ratings,
see Page 517 or www.wago.com

Digital Output Modules



750 Series housing design

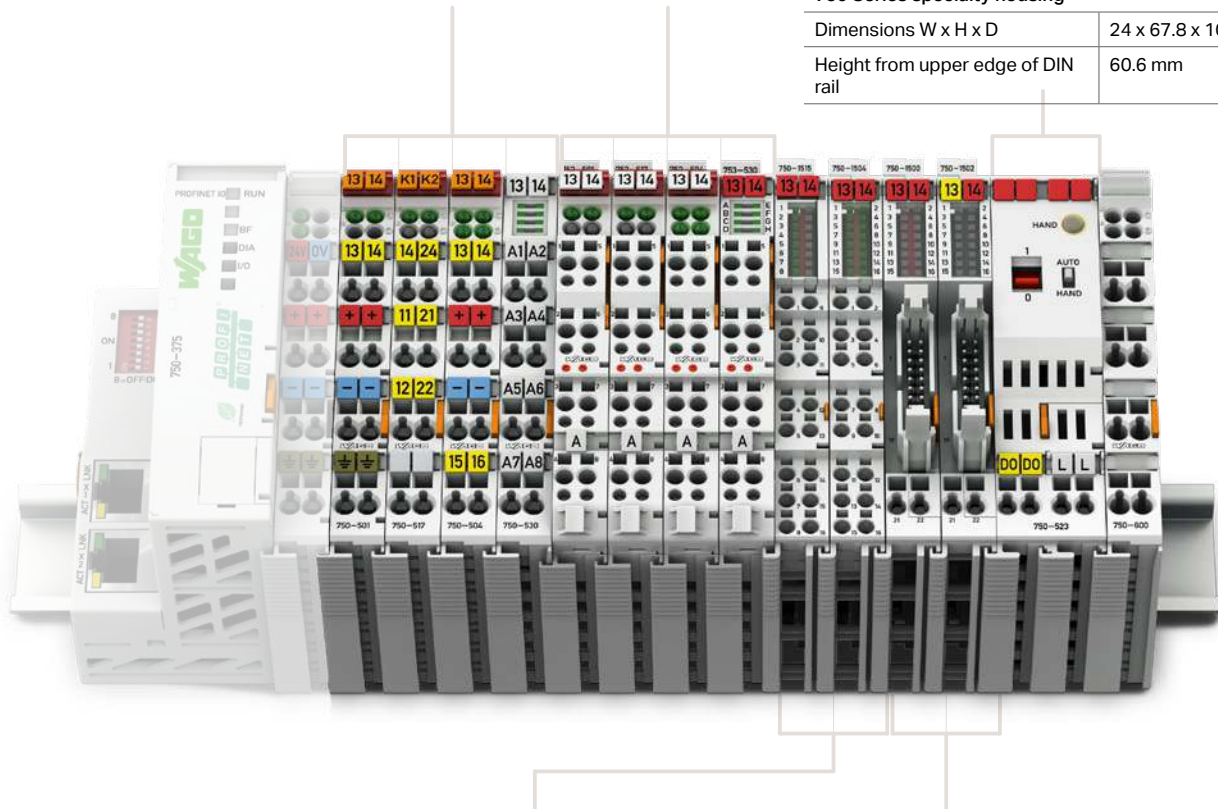
Dimensions W x H x D	Housing with 4 LEDs: 12 x 69.8 x 100 mm Housing with 8 LEDs: 12 x 67.8 x 100 mm
Height from upper edge of DIN rail	Housing with 4 LEDs: 62.6 mm Housing with 8 LEDs: 60.6 mm
Connection technology	CAGE CLAMP®
Conductor size	0.08 ... 2.5 mm² / 28 ... 14 AWG
Strip length	8 ... 9 mm / 0.33 inch

753 Series housing design

Dimensions W x H x D	Housing with 4 LEDs: 12 x 69.8 x 100 mm Housing with 8 LEDs: 12 x 69 x 100 mm
Height from upper edge of DIN rail	Housing with 4 LEDs: 62.6 mm Housing with 8 LEDs: 61.8 mm
Connection technology	CAGE CLAMP®
Conductor size	0.08 ... 2.5 mm² / 28 ... 14 AWG
Strip length	9 ... 10 mm / 0.37 inch

750 Series specialty housing

Dimensions W x H x D	24 x 67.8 x 100 mm
Height from upper edge of DIN rail	60.6 mm



750 Series housing design with push-in CAGE CLAMP® connectors (up to 16 connector points)

Dimensions W x H x D	12 x 69 x 100 mm
Height from upper edge of DIN rail	61.8 mm
Connection technology	Push-in CAGE CLAMP®
Conductor size	Solid: 0.08 ... 1.5 mm² / 28 ... 16 AWG Fine-stranded: 0.25 ... 1.5 mm² / 22 ... 16 AWG
Strip length	8 ... 9 mm / 0.33 inch

750 Series housing design, with ribbon cable connector

Dimensions W x H x D	12 x 74.1 x 100 mm
Height from upper edge of DIN rail	66.9 mm
Connection technology	20-pole male connector + 2 x CAGE CLAMP®
Conductor size	0.08 ... 2.5 mm² / 28 ... 14 AWG
Strip length	8 ... 9 mm / 0.33 inch



750 and 753 I/O-System, Digital Output Modules

Contents

Function	1-channel DO	2-channel DO	4-channel DO	8-channel DO	8-channel DIO	16-channel DO	Description	Item number			Page
								Standard	T ext. Temperature	Pluggable	
5 VDC			■				20 mA, high-side switching	750-519			152
5/12 VDC				■			(5– 14 VDC) 1 A, high-side switching	750-534		753-534	152
24 VDC		■					0.5 A, high-side switching	750-501		753-501	153
		■					0.5 A, high-side switching, interference-free	750-501/000-800		753-501/000-800	153
		■					2.0 A, high-side switching	750-502		753-502	154
		■					2.0 A, high-side switching, interference-free	750-502/000-800		753-502/000-800	154
		■					0.5 A, diagnostics, high-side switching	750-506		753-506	155
		■					0.5 A, diagnostics, high-side switching, interference-free	750-506/000-800			155
		■					2.0 A, diagnostics, high-side switching	750-508		753-508	155
		■					2.0 A, diagnostics, high-side switching, interference-free	750-508/000-800			155
			■				0.5 A, high-side switching	750-504	750-504/025-000	753-504	156
			■				0.5 A, high-side switching, interference-free	750-504/000-800	750-504/025-800		156
			■				0.5 A, high-side switching, 2-conductor connection	750-531		753-531	157
			■				0.5 A, high-side switching, 2-conductor connection	750-531/000-800		753-531/000-800	157
			■				0.5 A, low-side switching	750-516		753-516	158
			■				0.5 A, diagnostics, high-side switching, 2-conductor connection	750-532			158
				■			0.5 A, high-side switching	750-530	750-530/025-000	753-530	159
				■			0.5 A, low-side switching	750-536		753-536	159
				■			0.5 A, diagnostics, high-side switching	750-537		753-537	159
				■			0.5 A, high-side switching, 2-conductor connection	750-1515			160
				■			0.5 A, low-side switching, 2-conductor	750-1516			160
					■		3.0 ms, 0.5 A, high-side switching, ribbon cable	750-1502			161
					■		3.0 ms, 0.5 A, high-side switching	750-1506			161
						■	0.5 A, high-side switching, ribbon cable	750-1500			162
						■	0.5 A, high-side switching	750-1504			162
						■	0.5 A, low-side switching, ribbon cable	750-1501			163
						■	0.5 A, low-side switching	750-1505			163
120/230 VAC			■				(120– 230 VAC) 0.25 A, high-side switching			753-540	164
230 VAC/DC		■					0.3 A, solid state	750-509		753-509	164
230 VAC		■					0.5 A, solid state	750-522			165
Relays		■					125 VAC, 0.5 A; potential-free; relay with 2 make contacts	750-514		753-514	166
		■					250 VAC, 1 A; potential-free; relay with 2 changeover contacts	750-517		753-517	166
		■					250 VAC, 2.0 A; relay with 2 make contacts	750-512		753-512	167
		■					250 VAC, 2.0 A; potential-free; relay with 2 make contacts	750-513		753-513	167
		■					250 VAC; 2.0 A; potential-free, relay with 2 make contacts, without power jumper contacts	750-513/000-001		753-513/000-001	167
			■				250 VAC, 2.0 A; potential-free; relay with 4 make contacts	750-515			168
	■						230 VAC, 16 A; potential-free; relay with 1 make contact	750-523			169
Functional safety								see Section 4.8			
Ex i								see Section 4.9			

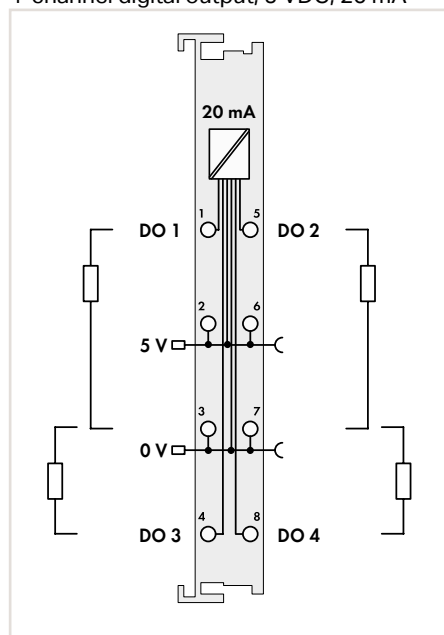
Digital Output, 5 or 12 VDC



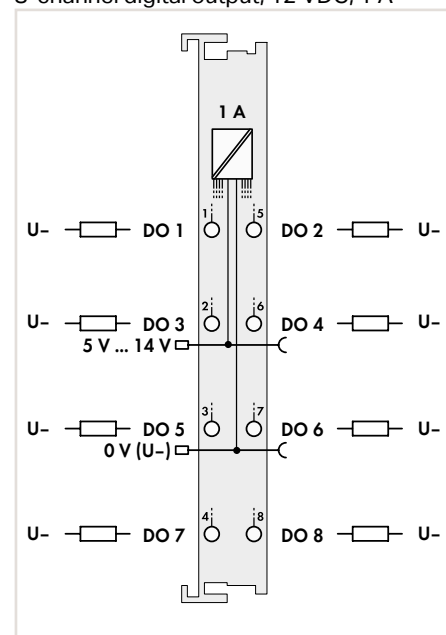
Figure: 750-519

Figure: 753-534

4-channel digital output; 5 VDC; 20 mA



8-channel digital output; 12 VDC; 1 A



Item description	4DO
Version	5 VDC 20mA
Item no.	750-519

Technical Data

Pluggable connector	
Number of digital outputs	4
Type of signal	5 VDC
Output characteristic	high-side switching
Output current per channel	20 mA, short-circuit-protected
Load type	Resistive, inductive, lamps
Actuator connection	2 x (2-conductor)*
Switching frequency max.	5 kHz
Field supply voltage	5 VDC, via power jumper contacts
Current consumption, system supply	10 mA
Internal data width	4 bits
Isolation	500 V system/field
Ambient temperature (operation)	0 ... +55 °C
Dimensions W x H x D	12 x 69.8 x 100 mm

Approvals

Data sheet and further information, see:

wago.com/750-519

Accessories

Plug
753 Series coding elements

8DO
12 VDC 1A
750-534

12 VDC 1A
753-534

8
5 ... 14 VDC
high-side switching
1 A, short-circuit-protected
Resistive, inductive
1-conductor
2 kHz
5 ... 14 VDC (-15 ... +20 %), via power jumper contacts
20 mA
8 bits
500 V system/field
0 ... +55 °C
12 x 67.8 x 100 mm
12 x 69 x 100 mm

CE, Marine, UL 508, ANSI/ISA, ATEX/IECEx

wago.com/750-534wago.com/753-534

Item no.
753-110
753-150

Notice:

An additional bus supply module must be added for operation with 5 VDC!

*A suitable field side connection module (e.g., 750-614) must be also be used to connect other actuators.

Notice:

An additional bus supply module must be added for 5–14 VDC supply!

Mini-WSB Quick Marking System
see Full Line Catalog, Volume 6

DIN rails and tool
see Section 11

Approvals and corresponding ratings,
see Page 518 or www.wago.com

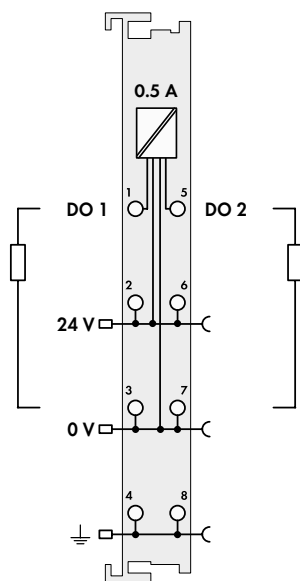
Digital Output, 24 VDC



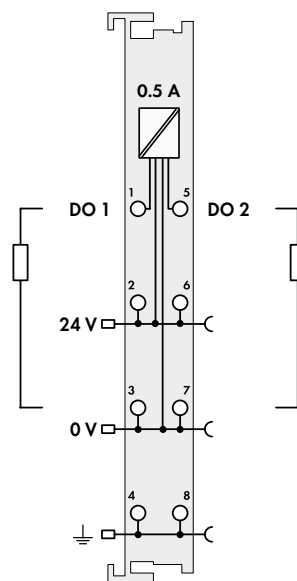
Figure: 750-501

Figure: 753-501

2-channel digital output; 24 VDC; 0.5 A;
optional: Interference-free



2-channel digital output; 24 VDC; 0.5 A;
optional: Interference-free



Item description
Version
Item no.

2DO	
24 VDC 0.5A	24 VDC 0.5A IF
750-501	750-501/000-800

2DO	
24 VDC 0.5A	24 VDC 0.5A IF
753-501	753-501/000-800

Technical Data

Pluggable connector
Interference-free for safety function applications
Number of digital outputs
Type of signal
Output characteristic
Output current per channel
Load type
Actuator connection
Switching frequency max.
Field supply voltage
Current consumption, system supply
Internal data width
Isolation
Ambient temperature (operation)
Dimensions W x H x D

	●
2	
24 VDC	
high-side switching	
0.5 A, short-circuit-protected	
Resistive, inductive, lamps	
2-conductor, 3-conductor, 4-conductor	
5 kHz	
24 VDC (-25 ... +30 %), via power jumper contacts	
3.5 mA	
2 bits	
500 V system/field	
0 ... +55 °C	
12 x 69.8 x 100 mm	

●	●
	●
2	
24 VDC	
high-side switching	
0.5 A, short-circuit-protected	
Resistive, inductive, lamps	
2-conductor, 3-conductor, 4-conductor	
5 kHz	
24 VDC (-25 ... +30 %), via power jumper contacts	
3.5 mA	
2 bits	
500 V system/field	
0 ... +55 °C	
12 x 69.8 x 100 mm	

Approvals

Data sheet and further information, see:

IECEX
wago.com/750-501

IECEX
wago.com/753-501

Accessories

Plug
753 Series coding elements

Item no.
753-110
753-150

Digital Output, 24 VDC



Figure: 750-502

2-channel digital output; 24 VDC; 2.0 A;
optional: Interference-free

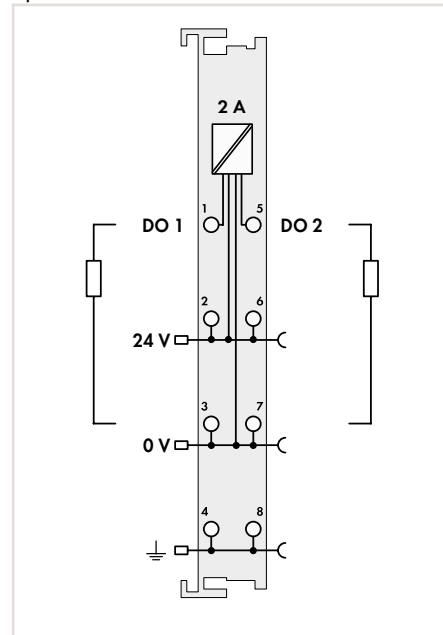
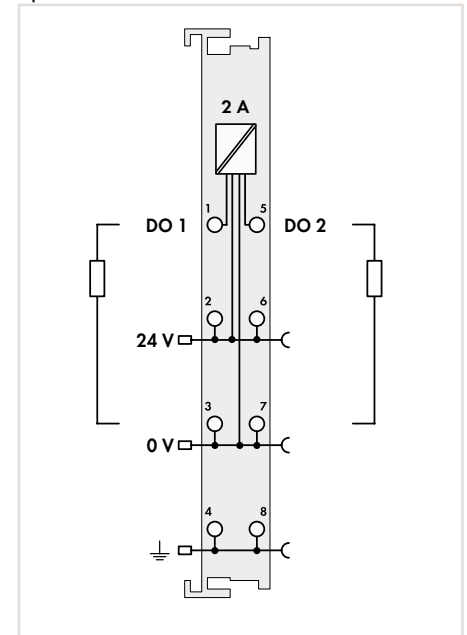


Figure: 753-502

2-channel digital output; 24 VDC; 2.0 A;
optional: Interference-free



Item description	2DO		2DO	
Version	24 VDC 2A	24 VDC 2A IF	24 VDC 2A	24 VDC 2A IF
Item no.	750-502	750-502/000-800	753-502	753-502/000-800
Technical Data				
Pluggable connector			•	•
Interference-free for safety function applications		•		•
Number of digital outputs	2		2	
Type of signal	24 VDC		24 VDC	
Output characteristic	high-side switching		high-side switching	
Output current per channel	2 A, short-circuit-protected		2 A, short-circuit-protected	
Load type	Resistive, inductive, lamps		Resistive, inductive, lamps	
Actuator connection	2-conductor, 3-conductor, 4-conductor		2-conductor, 3-conductor, 4-conductor	
Switching frequency max.	2.5 kHz		2.5 kHz	
Field supply voltage	24 VDC (-25 ... +30 %), via power jumper contacts		24 VDC (-25 ... +30 %), via power jumper contacts	
Current consumption, system supply	3.5 mA		3.5 mA	
Internal data width	2 bits		2 bits	
Isolation	500 V system/field		500 V system/field	
Ambient temperature (operation)	0 ... +55 °C		0 ... +55 °C	
Dimensions W x H x D	12 x 69.8 x 100 mm		12 x 69.8 x 100 mm	
Approvals	CE,  Marine,  UL 508, ANSI/ISA,  ATEX/IECEX		CE,  Marine,  UL 508, ANSI/ISA,  ATEX/IECEX	
Data sheet and further information, see:	wago.com/750-502		wago.com/753-502	
Accessories				
Plug			Item no.	
753 Series coding elements			753-110	
			753-150	

Mini-WSB Quick Marking System
see Full Line Catalog, Volume 6

DIN rails and tool
see Section 11

Approvals and corresponding ratings,
see Page 518 or www.wago.com

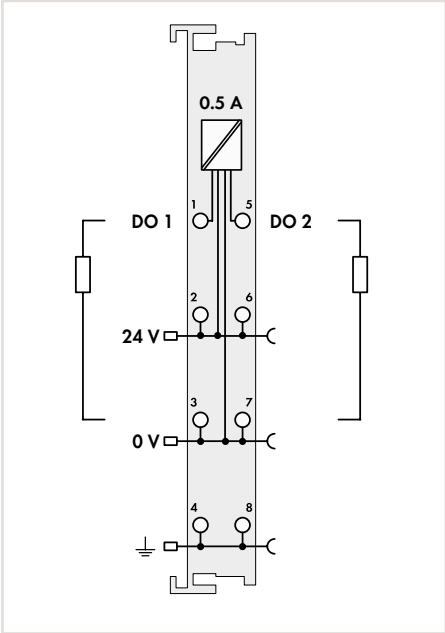
Digital Output, 24 VDC



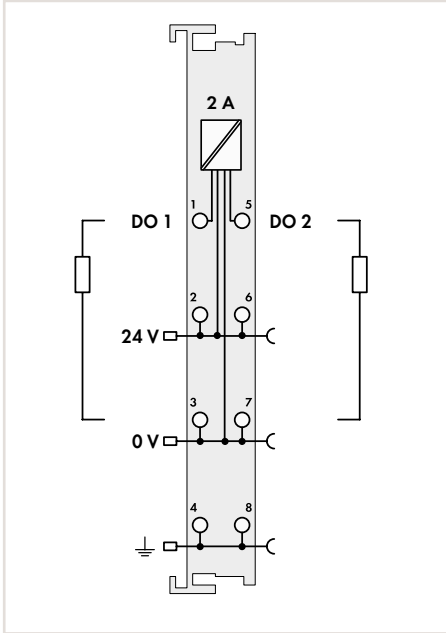
Figure: 750-506

Figure: 753-506

2-channel digital output; 24 VDC; 0.5 A;
Diagnostics; optional: Interference-free



2-channel digital output; 24 VDC; 2.0 A;
Diagnostics; optional: Interference-free



Item description
Version
Item no.

2DO		
24 VDC 0.5A Diagn	24 VDC 0.5A IF Diagn	24 VDC 0.5A Diagn
750-506	750-506/000-800	753-506

2DO		
24 VDC 2A Diagn	24 VDC 2A IF Diagn	24 VDC 2A Diagn
750-508	750-508/000-800	753-508

Technical Data	
Pluggable connector	
Interference-free for safety function applications	
Number of digital outputs	2
Type of signal	24 VDC
Output characteristic	high-side switching
Output current per channel	0.5 A, short-circuit-protected
Load type	Resistive, inductive, lamps
Actuator connection	2-conductor, 3-conductor, 4-conductor
Switching frequency max.	5 kHz
Diagnostics	Open circuit, overload and short circuit
Field supply voltage	24 VDC (-15 ... +20 %), via power jumper contacts
Current consumption, system supply	15 mA
Internal data width	2 bits In, 2 bits Out
Isolation	500 V system/field
Ambient temperature (operation)	0 ... +55 °C
Dimensions W x H x D	12 x 69.8 x 100 mm
Approvals	
Data sheet and further information, see:	
Accessories	
Plug	
753 Series coding elements	

		•
	•	
2		
24 VDC		
high-side switching		
0.5 A, short-circuit-protected		
Resistive, inductive, lamps		
2-conductor, 3-conductor, 4-conductor		
5 kHz		
Open circuit, overload and short circuit		
24 VDC (-15 ... +20 %), via power jumper contacts		
15 mA		
2 bits In, 2 bits Out		
500 V system/field		
0 ... +55 °C		
12 x 69.8 x 100 mm		
CE, UL 508, ANSI/ISA, ATEX/IECEX		
wago.com/750-506		wago.com/753-506
		Item no.
		753-110
		753-150

		•
	•	
2		
24 VDC		
high-side switching		
2 A, short-circuit-protected		
Resistive, inductive, lamps		
2-conductor, 3-conductor, 4-conductor		
1 kHz		
Open circuit, overload and short circuit		
24 VDC (-25 ... +30 %), via power jumper contacts		
14 mA		
2 bits In, 2 bits Out		
500 V system/field		
0 ... +55 °C		
12 x 69.8 x 100 mm		
CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX		
wago.com/750-508		wago.com/753-508
		Item no.
		753-110
		753-150

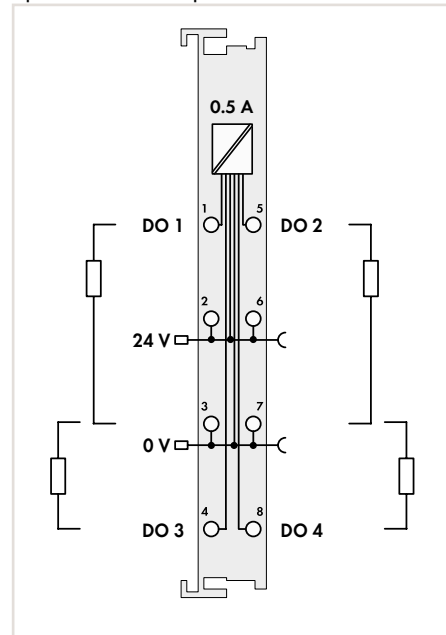
Digital Output, 24 VDC



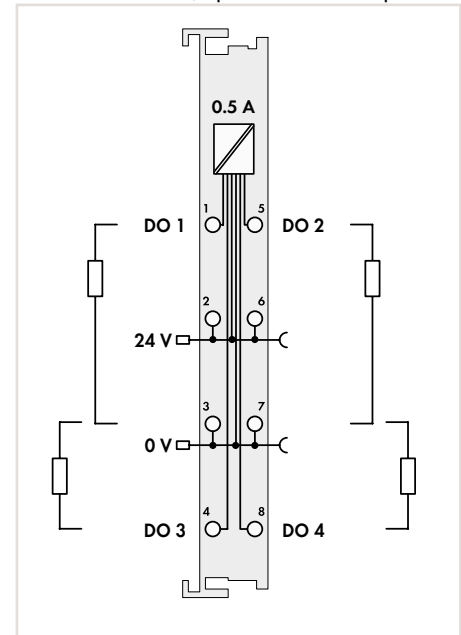
Figure: 750-504

Figure: 753-504

4-channel digital output; 24 VDC; 0.5 A;
optional: Ext. Temperature



4-channel digital output; 24 VDC; 0.5 A;
Interference-free; optional: Ext. Temperature



Item description	4DO			4DO	
Version	24 VDC 0.5A	24 VDC 0.5A T	24 VDC 0.5A	24 VDC 0.5A IF	24 VDC 0.5A IF T
Item no.	750-504	750-504/025-000	753-504	750-504/000-800	750-504/025-800
Technical Data					
Pluggable connector				●	
Interference-free for safety function applications				●	
Number of digital outputs	4			4	
Type of signal	24 VDC			24 VDC	
Output characteristic	high-side switching			high-side switching	
Output current per channel	0.5 A, short-circuit-protected			0.5 A, short-circuit-protected	
Load type	Resistive, inductive, lamps			Resistive, inductive, lamps	
Actuator connection	2 x (2-conductor, 3-conductor)*			2 x (2-conductor, 3-conductor)*	
Switching frequency max.	1 kHz			1 kHz	
Field supply voltage	24 VDC (-25 ... +30 %), via power jumper contacts			24 VDC (-25 ... +30 %), via power jumper contacts	
Current consumption, system supply	10 mA			10 mA	
Internal data width	4 bits			4 bits	
Isolation	500 V system/field			500 V system/field	
Ambient temperature (operation)	0 ... +55 °C	-20 ... +60 °C	0 ... +55 °C	0 ... +55 °C	-20 ... +60 °C
Dimensions W x H x D	12 x 69.8 x 100 mm			12 x 69.8 x 100 mm	
Approvals	CE,  Marine,  UL 508, ANSI/ISA,  ATEX/IECEX			CE,  Marine,  UL 508, ANSI/ISA,  ATEX/IECEX	
Data sheet and further information, see:	wago.com/750-504		wago.com/753-504	wago.com/750-504	
Accessories			Item no.		
Plug			753-110		
753 Series coding elements			753-150		

*A suitable field side connection module (e.g., 750-614) must be also be used to connect other actuators.

*A suitable field side connection module (e.g., 750-614) must be also be used to connect other actuators.

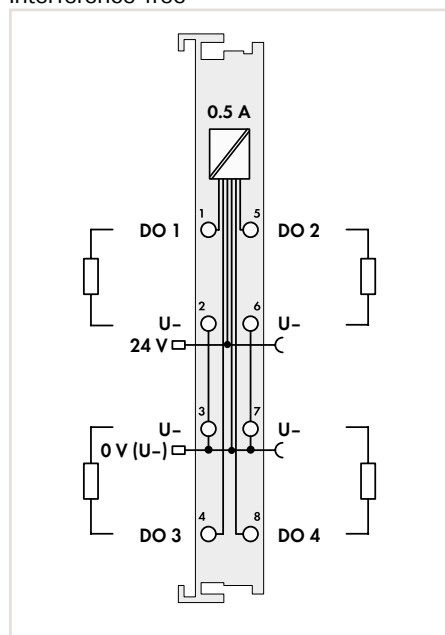
Digital Output, 24 VDC



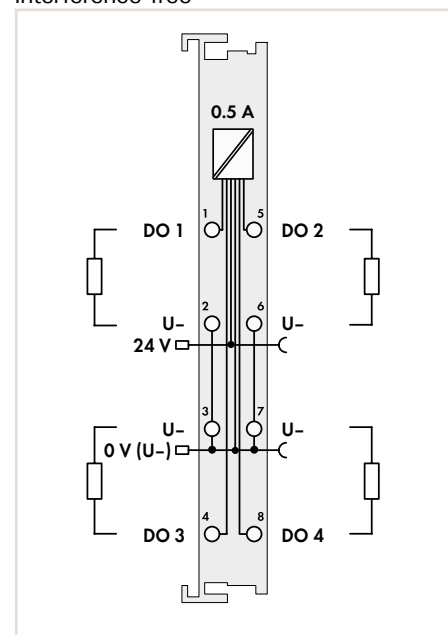
Figure: 750-531

Figure: 753-531

4-channel digital output; 24 VDC;
0.5 A; 2-conductor connection; optional:
Interference-free



4-channel digital output; 24 VDC;
0.5 A; 2-conductor connection; optional:
Interference-free



Item description
Version
Item no.

Technical Data

Pluggable connector
Interference-free for safety function applications
Number of digital outputs
Type of signal
Output characteristic
Output current per channel
Load type
Actuator connection
Switching frequency max.
Field supply voltage
Current consumption, system supply
Internal data width
Isolation
Ambient temperature (operation)
Dimensions W x H x D

Approvals

Data sheet and further information, see:

Accessories

Plug
753 Series coding elements

4DO	
24 VDC 0.5A 2-wire	24 VDC 0.5A IF 2-wire
750-531	750-531/000-800

4DO	
24 VDC 0.5A 2-wire	24 VDC 0.5A IF 2-wire
753-531	753-531/000-800

•	•
4	
24 VDC	
high-side switching	
0.5 A, short-circuit-protected	
Resistive, inductive, lamps	
2-conductor	
1 kHz	
24 VDC (-25 ... +30 %), via power jumper contacts	
10 mA	
4 bits	
500 V system/field	
0 ... +55 °C	
12 x 69.8 x 100 mm	
CE,  Marine,  UL 508, ANSI/ISA,  ATEX / IECEx	
wago.com/75-531	

Item no.
753-110
753-150

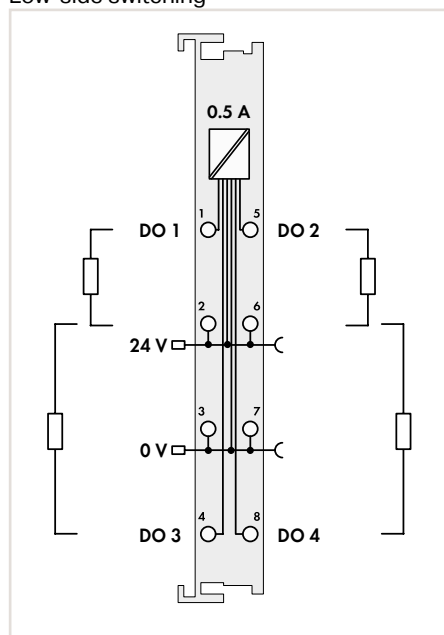
Digital Output, 24 VDC



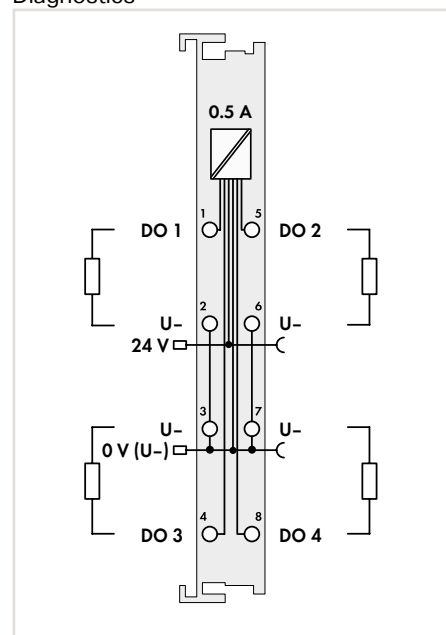
Figure: 750-516

Figure: 750-532

4-channel digital output; 24 VDC; 0.5 A;
Low-side switching



4-channel digital output; 24 VDC; 0.5 A;
Diagnostics



Item description	4DO	
Version	24 VDC 0.5A LSS	24 VDC 0.5A LSS
Item no.	750-516	753-516

Technical Data

Pluggable connector		•
Number of digital outputs	4	
Type of signal	24 VDC	
Output characteristic	Low-side switching	
Output current per channel	0.5 A, short-circuit-protected	
Load type	Resistive, inductive, lamps	
Actuator connection	2 x (2-conductor)*	
Switching frequency max.	5 kHz	
Diagnostics		
Field supply voltage	24 VDC (-25 ... +30 %), via power jumper contacts	
Current consumption, system supply	7 mA	
Internal data width	4 bits	
Isolation	500 V system/field	
Ambient temperature (operation)	0 ... +55 °C	
Dimensions W x H x D	12 x 69.8 x 100 mm	

Approvals

CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX

Data sheet and further information, see:

wago.com/750-516 wago.com/753-516

Accessories

	Item no.
Plug	753-110
753 Series coding elements	753-150

*A suitable field side connection module (e.g., 750-614) must be also be used to connect other actuators.

Item description	4DO	
Version	24 VDC 0.5A Diagn	
Item no.	750-532	

Pluggable connector		•
Number of digital outputs	4	
Type of signal	24 VDC	
Output characteristic	high-side switching	
Output current per channel	0.5 A, short-circuit-protected	
Load type	Resistive, inductive, lamps	
Actuator connection	2-conductor	
Switching frequency max.	2 kHz	
Diagnostics	Open circuit, overload and short circuit	
Field supply voltage	24 VDC (-25 ... +30 %), via power jumper contacts	
Current consumption, system supply	10 mA	
Internal data width	4 bits In 4 bits Out	
Isolation	500 V system/field	
Ambient temperature (operation)	0 ... +55 °C	
Dimensions W x H x D	12 x 67.8 x 100 mm	

CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX

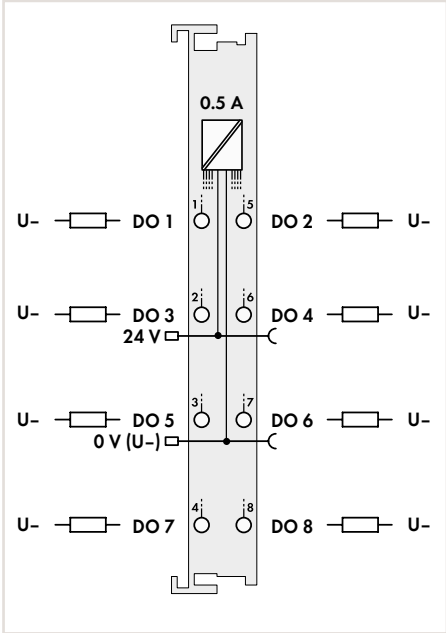
wago.com/750-532

Mini-WSB Quick Marking System
see Full Line Catalog, Volume 6

DIN rails and tool
see Section 11

Approvals and corresponding ratings,
see Page 518 or www.wago.com

8-channel digital output; 24 VDC; 0.5 A;
optional: Ext. Temperature

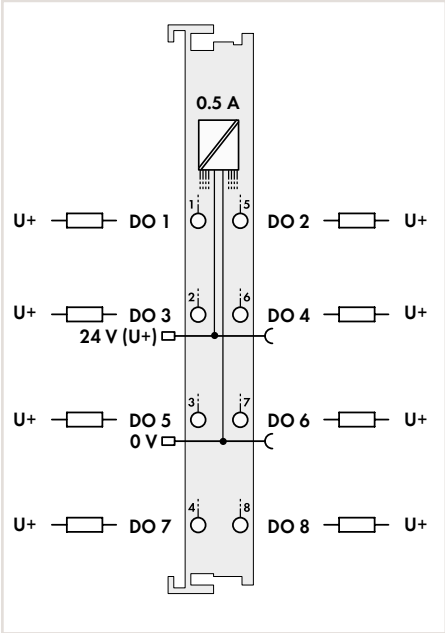


8DO		
24 VDC 0.5A	24 VDC 0.5A T	24 VDC 0.5A
750-530	750-530/025-000	753-530

8		
24 VDC		
high-side switching		
0.5 A, short-circuit-protected		
Resistive, inductive, lamps		
1-conductor		
2 kHz		
24 VDC (-25 ... +30 %), via power jumper contacts		
25 mA		
8 bits		
500 V system/field		
0 ... +55 °C	-20 ... +60 °C	0 ... +55 °C
12 x 67.8 x 100 mm	12 x 69 x 100 mm	
CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX		
wago.com/750-530	wago.com/753-530	

	Item no.
	753-110
	753-150

8-channel digital output; 24 VDC; 0.5 A;
Low-side switching

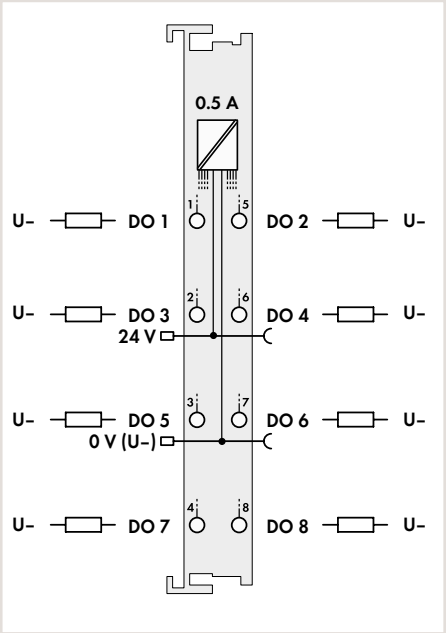


8DO	
24 VDC 0.5A LSS	24 VDC 0.5A LSS
750-536	753-536

8	
24 VDC	
Low-side switching	
0.5 A, short-circuit-protected	
Resistive, inductive, lamps	
1-conductor	
2 kHz	
24 VDC (-25 ... +30 %), via power jumper contacts	
25 mA	
8 bits	
500 V system/field	
0 ... +55 °C	
12 x 67.8 x 100 mm	12 x 69 x 100 mm
CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX	
wago.com/750-536	wago.com/753-536

	Item no.
	753-110
	753-150

8-channel digital output; 24 VDC; 0.5 A;
Diagnostics



8DO	
24 VDC 0.5A Diagn	24 VDC 0.5A Diagn
750-537	753-537

8	
24 VDC	
high-side switching	
0.5 A, short-circuit-protected	
Resistive, inductive, lamps	
1-conductor	
1 kHz	
Open circuit, overload and short circuit	
24 VDC (-25 ... +30 %), via power jumper contacts	
50 mA	
8 bits out, 8 bits in	
500 V system/field	
0 ... +55 °C	
12 x 67.8 x 100 mm	12 x 69 x 100 mm
CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX	
wago.com/750-537	wago.com/753-537

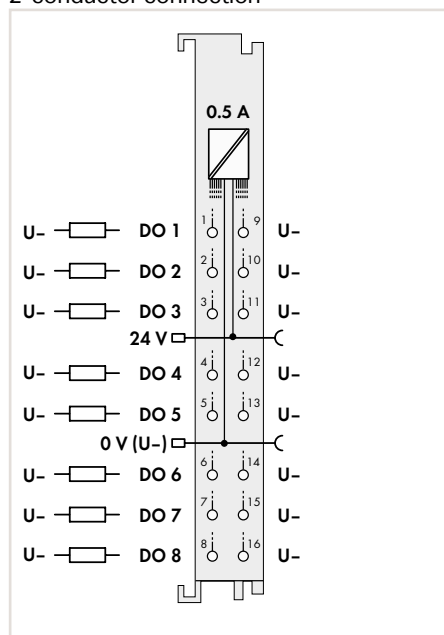
	Item no.
	753-110
	753-150

Digital Output, 24 VDC

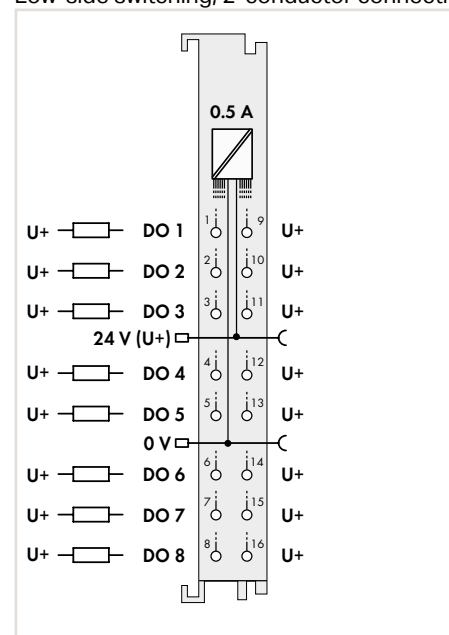


Figure: 750-1515

8-channel digital output; 24 VDC; 0.5 A;
2-conductor connection



8-channel digital output; 24 VDC; 0.5 A;
Low-side switching; 2-conductor connection



Item description	8DO
Version	24 VDC 0.5A 2-wire
Item no.	750-1515

Technical Data

Number of digital outputs	8
Type of signal	24 VDC
Output characteristic	high-side switching
Output current per channel	0.5 A, short-circuit-protected
Load type	Resistive, inductive, lamps
Actuator connection	2-conductor
Switching frequency max.	1 kHz
Field supply voltage	24 VDC (-25 ... +30 %), via power jumper contacts
Current consumption, system supply	20 mA
Internal data width	8 bits
Isolation	500 V system/field
Ambient temperature (operation)	0 ... +55 °C
Dimensions W x H x D	12 x 69 x 100 mm
Approvals	CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX
Data sheet and further information, see:	wago.com/750-1515

8DO
24 VDC 0.5A LSS 2-wire
750-1516

8
24 VDC
Low-side switching
0.5 A, short-circuit-protected
Resistive, inductive, lamps
2-conductor
1 kHz
24 VDC (-25 ... +30 %), via power jumper contacts
20 mA
8 bits
500 V system/field
0 ... +55 °C
12 x 69 x 100 mm
CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX
wago.com/750-1516

Digital Input/Output, 24 VDC



Figure: 750-1502

8-channel digital input/output; 24 VDC;
0.5 A; Ribbon cable

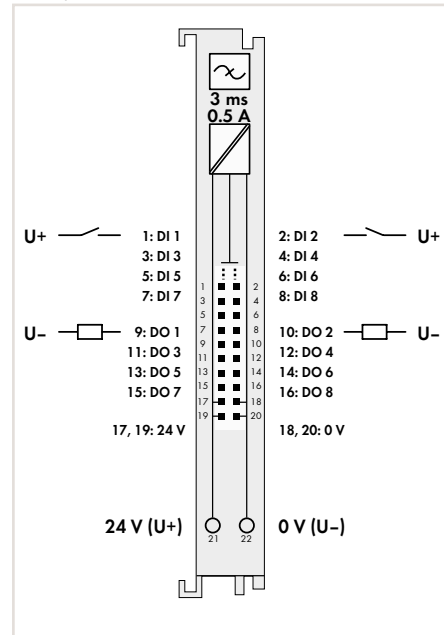
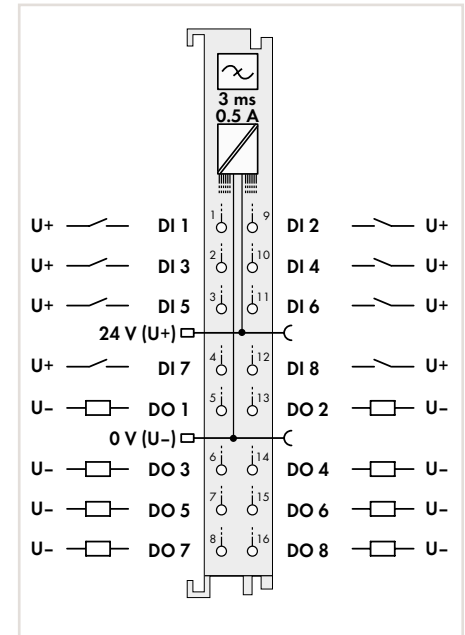


Figure: 750-1506

8-channel digital input/output; 24 VDC;
0.5 A



Item description	8DIO	8DIO
Version	24 VDC 0.5A Ribbon Cable	24 VDC 0.5A
Item no.	750-1502	750-1506
Technical Data		
Number of digital inputs	8	8
Type of signal	24 VDC	24 VDC
Voltage range for signal (0)	-3 ... +5 VDC	-3 ... +5 VDC
Voltage range for signal (1)	15 ... 30 VDC	15 ... 30 VDC
Sensor connection	1-conductor	1-conductor
Input characteristic	High-side switching	High-side switching
Input filter (digital)	3 ms	3 ms
Input current per channel for signal (1) typ.	2.4 mA	2.4 mA
Number of digital outputs	8	8
Output characteristic	High-side switching	High-side switching
Output current per channel	0.5 A, short-circuit-protected	0.5 A, short-circuit-protected
Load type	Resistive, inductive, lamps	Resistive, inductive, lamps
Actuator connection	1-conductor	1-conductor
Switching frequency max.	1 kHz	1 kHz
Current consumption, field supply (module with no external load)	16 mA	16 mA
Field supply voltage	24 VDC (-25 ... +30 %), via wiring level (CAGE CLAMP® connection)	24 VDC (-25 ... +30 %), via power jumper contacts
Current consumption, system supply	30 mA	30 mA
Internal data width	8 bits In and 8 bits Out	8 bits In and 8 bits Out
Isolation	500 V system/field	500 V system/field
Ambient temperature (operation)	0 ... +55 °C	0 ... +55 °C
Dimensions W x H x D	12 x 74.1 x 100 mm	12 x 69 x 100 mm
Approvals	CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX	CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX
Data sheet and further information, see:	wago.com/750-1502	wago.com/750-1506
Accessories		
Interface modules for system wiring and interface cable	see Section 11	

Digital Output, 24 VDC

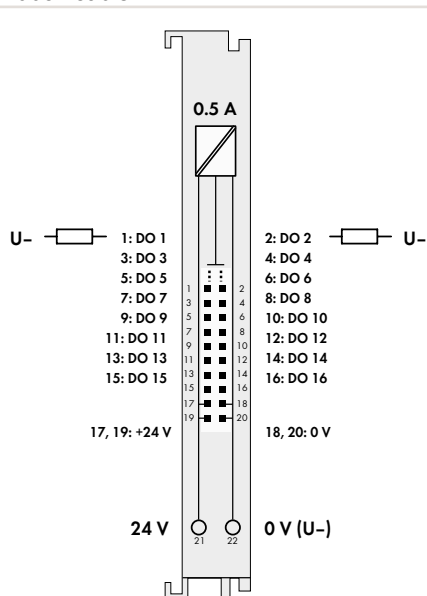


Figure: 750-1500

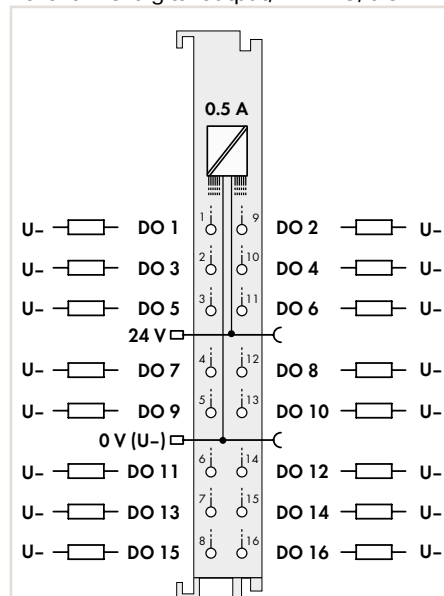


Figure: 750-1504

16-channel digital output; 24 VDC; 0.5 A;
Ribbon cable



16-channel digital output; 24 VDC; 0.5 A



Item description	16DO
Version	24 VDC 0.5A Ribbon Cable
Item no.	750-1500

Technical Data

Number of digital outputs	16
Type of signal	24 VDC
Output characteristic	high-side switching
Output current per channel	0.5 A, short-circuit-protected
Load type	Resistive, inductive, lamps
Actuator connection	1-conductor
Switching frequency max.	1 kHz
Field supply voltage	24 VDC (-25 ... +30 %), via wiring level (CAGE CLAMP® connection)

Current consumption, system supply	40 mA
Internal data width	16 bits
Isolation	500 V system/field
Ambient temperature (operation)	0 ... +55 °C
Dimensions W x H x D	12 x 74.1 x 100 mm

Approvals

Data sheet and further information, see:	CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX wago.com/750-1500

Accessories

Interface modules for system wiring and interface cable	Item no. see Section 11

Item description	16DO
Version	24 VDC 0.5A
Item no.	750-1504

Number of digital outputs	16
Type of signal	24 VDC
Output characteristic	high-side switching
Output current per channel	0.5 A, short-circuit-protected
Load type	Resistive, inductive, lamps
Actuator connection	1-conductor
Switching frequency max.	1 kHz
Field supply voltage	24 VDC (-25 ... +30 %), via power jumper contacts

Current consumption, system supply	40 mA
Internal data width	16 bits
Isolation	500 V system/field
Ambient temperature (operation)	0 ... +55 °C
Dimensions W x H x D	12 x 69 x 100 mm

Data sheet and further information, see:	CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX wago.com/750-1504

Mini-WSB Quick Marking System
see Full Line Catalog, Volume 6

DIN rails and tool
see Section 11

Approvals and corresponding ratings,
see Page 518 or www.wago.com

Digital Output, 24 VDC



Figure: 750-1501

16-channel digital output; 24 VDC; 0.5 A;
Low-side switching; Ribbon cable

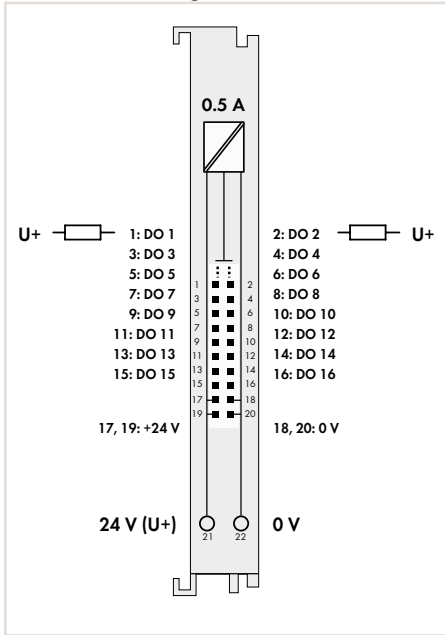
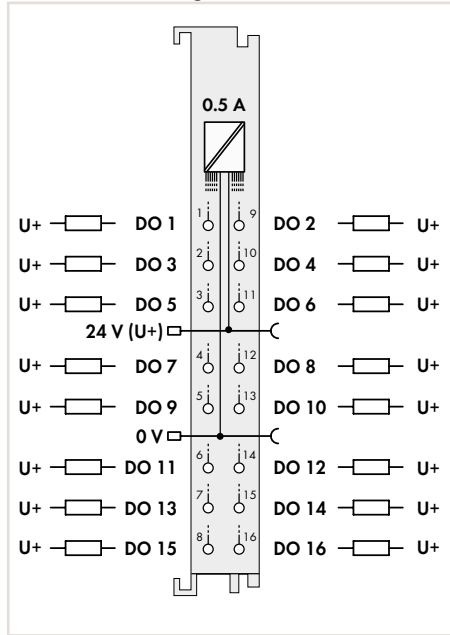


Figure: 750-1505

16-channel digital output; 24 VDC; 0.5 A;
Low-side switching



Item description	16DO
Version	24 VDC 0.5A LSS Ribbon Cable
Item no.	750-1501

Technical Data	
Number of digital outputs	16
Type of signal	24 VDC
Output characteristic	Low-side switching
Output current per channel	0.5 A, short-circuit-protected
Load type	Resistive, inductive, lamps
Actuator connection	1-conductor
Switching frequency max.	1 kHz
Field supply voltage	24 VDC (-25 ... +30 %), via wiring level (CAGE CLAMP® connection)
Current consumption, system supply	40 mA
Internal data width	16 bits
Isolation	500 V system/field
Ambient temperature (operation)	0 ... +55 °C
Dimensions W x H x D	12 x 74.1 x 100 mm

Approvals	CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX
Data sheet and further information, see:	wago.com/750-1501

Accessories	Item no.
Interface modules for system wiring and interface cable	see Section 11

Item description	16DO
Version	24 VDC 0.5A LSS
Item no.	750-1505

Technical Data	
Number of digital outputs	16
Type of signal	24 VDC
Output characteristic	Low-side switching
Output current per channel	0.5 A, short-circuit-protected
Load type	Resistive, inductive, lamps
Actuator connection	1-conductor
Switching frequency max.	1 kHz
Field supply voltage	24 VDC (-25 ... +30 %), via power jumper contacts
Current consumption, system supply	40 mA
Internal data width	16 bits
Isolation	500 V system/field
Ambient temperature (operation)	0 ... +55 °C
Dimensions W x H x D	12 x 69 x 100 mm

Approvals	CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX
Data sheet and further information, see:	wago.com/750-1505

Accessories	Item no.
Interface modules for system wiring and interface cable	see Section 11

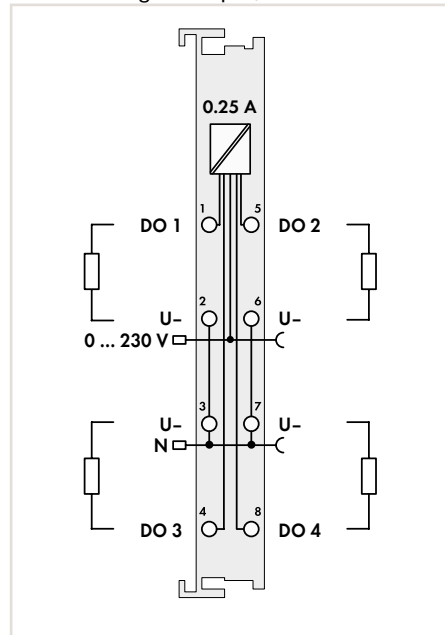
Digital Output, 230 VAC



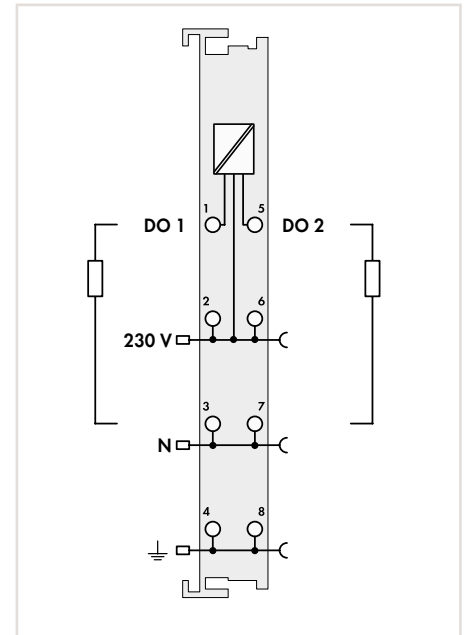
Figure: 753-540

Figure: 750-509

4-channel digital output; 230 VAC



2-channel digital output; 230 VAC; 0.3 A; Solid-state



Item description	4DO		2DO	
Version	230 VAC		230 VAC 0.3A SSR	230 VAC 0.3A SSR
Item no.	753-540		750-509	753-509
Technical Data				
Pluggable connector	●		●	
Number of digital outputs	4		2	
Type of signal	0 ... 250 VAC		0 ... 230 VAC/DC	
Output switching design	high-side switching		solid-state load relay	
Output characteristic	0.25 A, short-circuit-protected		0.3 A	
Output current per channel	Resistive, inductive		Resistive, inductive	
Load type	2-conductor		2-conductor, 3-conductor, 4-conductor	
Actuator connection	275 V AC varistor		275 V AC varistor	
Overvoltage protection	max. 10 A (16 ms)		5 Hz (24 V 0.3 A DF = 50 %); 0.5 Hz (230 V 0.3 A DF = 50 %)	
Short-circuit current	0 ... 250 VAC; via power jumper contacts		0 ... 230 VAC/DC, via power jumper contacts	
Switching frequency max.	18 mA		10 mA	
Field supply voltage	4 bits		2 bits	
Current consumption, system supply	1500 V system/field		1500 V system/field	
Internal data width	0 ... +55 °C		0 ... +55 °C	
Isolation	12 x 69.8 x 100 mm		12 x 69.8 x 100 mm	
Ambient temperature (operation)	CE,  UL 508, ANSI/ISA,  ATEX/IECEX		  Marine,  UL 508, ANSI/ISA,  ATEX/IECEX	
Dimensions W x H x D	wago.com/753-540		wago.com/750-509	wago.com/753-509
Approvals				
Data sheet and further information, see:	wago.com/753-540		wago.com/750-509	wago.com/753-509
Accessories				
Plug	Item no.		Item no.	
753 Series coding elements	753-110		753-110	
	753-150		753-150	

Notice:
An additional bus supply module must be added
for operation with 0 ... 250 VAC!

Notice:
An additional bus supply module must be added
for operation with 0 ... 230 VAC/DC!

Mini-WSB Quick Marking System
see Full Line Catalog, Volume 6

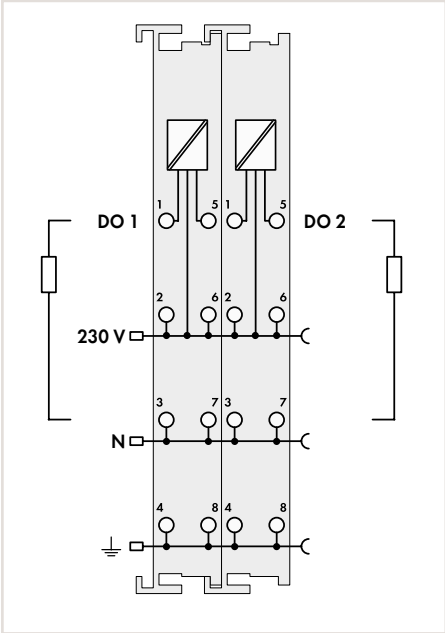
DIN rails and tool
see Section 11

Approvals and corresponding ratings,
see Page 518 or www.wago.com

Digital Output, 230 VAC



2-channel digital output; 230 VAC;
Solid-state



Item description	2DO
Version	230 VAC SSR
Item no.	750-522
Technical Data	
Number of digital outputs	2
Type of signal	35 ... 230 VAC
Output switching design	2 make contacts, solid-state load relay
Output current per channel	0,5 A
Actuator connection	2-conductor, 3-conductor, 4-conductor
Diagnostics	Overload
Overvoltage protection	275 V AC varistor
Switching frequency max.	50 Hz
Switching current max.	3 A (< 30 s operating time) each channel for a turn-on cycle of 1 hour
Peak current	18 A (100 ms); 30 A (10 ms)
Field supply voltage	35 ... 230 VAC, via power jumper contacts
Current consumption, system supply	40 mA
Internal data width	2 bits in , 2 bits out
Isolation	3000 V system/field
Ambient temperature (operation)	0 ... +55 °C
Dimensions W x H x D	24 x 69.8 x 100 mm
Approvals	CE, UL 508, ANSI/ISA, ATEX/IECEX
Data sheet and further information, see:	wago.com/750-522

Notice:
An additional bus supply module must be added
for operation with 35 ... 230 VAC!

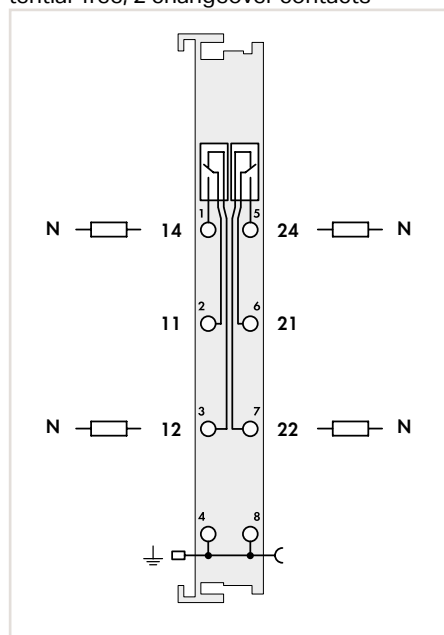
Relay Output, 125 VAC or 250 VAC



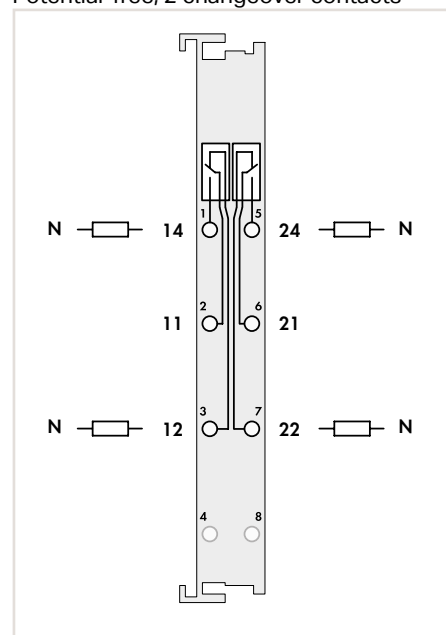
Figure: 750-514

Figure: 753-514

2-channel relay output; 125 VAC; 0.5 A; Potential-free; 2 changeover contacts



2-channel relay output; 250 VAC; 1.0 A; Potential-free; 2 changeover contacts



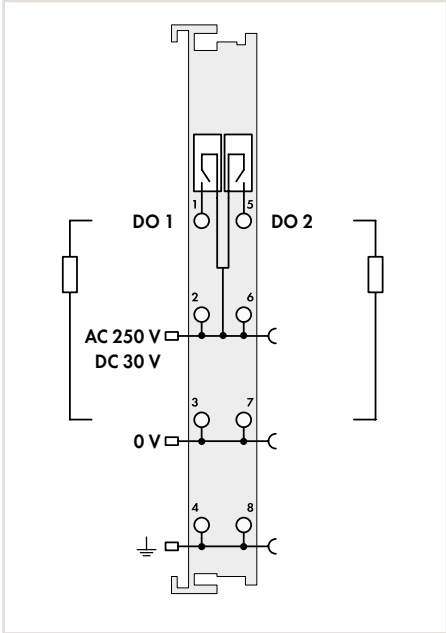
Item description		2RO	
Version		125 VAC 0.5A Pot-free Relay2CO	125 VAC 0.5A Pot-free Relay2CO
Item no.		750-514	753-514
Technical Data			
Pluggable connector			•
Number of digital outputs		2	2
Switching power max.		125 VAC, 30 VDC	250 VAC, 300 VDC
Output switching design		2 changeover contacts, relay	2 changeover contacts, relay
Output characteristic		Potential-free	Potential-free
Switching current max.		0.5 A at AC; 1 A at DC	1 A at 250 VAC / 40 VDC; 0.15 A at 300 VDC
Switching current min.		0.01 mA at 10 mV DC	100 mA at 12 VDC
Actuator connection		1-conductor	1-conductor
Switching frequency max.		0,33 Hz	0,1 Hz
Mechanical life min.		100 x 10 ⁶	5 x 10 ⁶
Electrical life min.		1 x 10 ⁵	10 x 10 ⁵
Field supply voltage			
Current consumption, system supply		70 mA	90 mA
Internal data width		2 bits	2 bits
Isolation		1500 V system/field	1500 V system/field
Ambient temperature (operation)		0 ... +55 °C	0 ... +55 °C
Dimensions W x H x D		12 x 69.8 x 100 mm	12 x 69.8 x 100 mm
Approvals		CE, Marine, UL 508	CE, Marine, UL 508, ANSI/ISA, ATEX/IECEx
Data sheet and further information, see:		wago.com/750-514	wago.com/753-514
Accessories			
Plug		753-110	753-110
753 Series coding elements		753-150	753-150

Mini-WSB Quick Marking System
see Full Line Catalog, Volume 6

DIN rails and tool
see Section 11

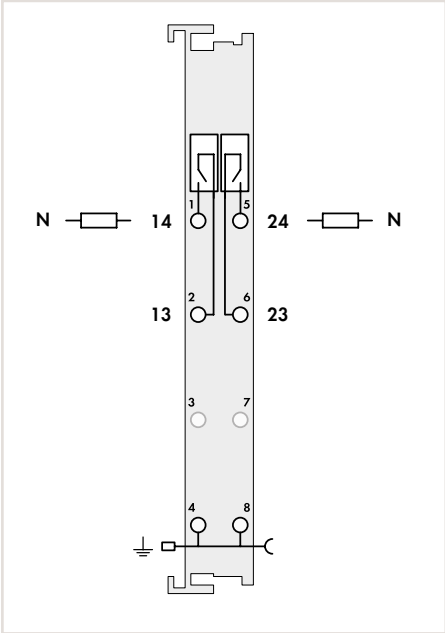
Approvals and corresponding ratings,
see Page 518 or www.wago.com

2-channel relay output; 250 VAC; 2.0 A;
2 make contacts



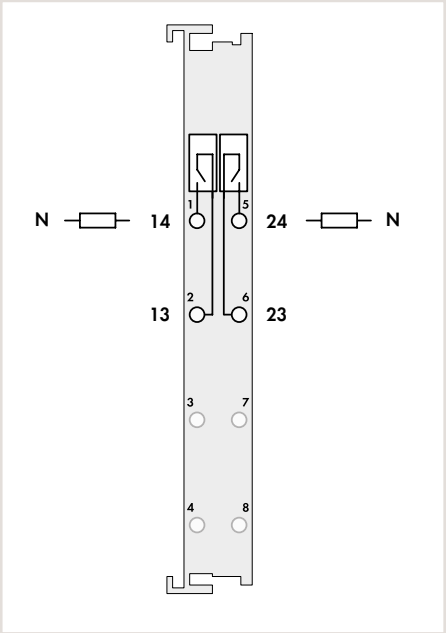
2RO	
250 VAC 2A Relay2NO	250 VAC 2A Relay2NO
750-512	753-512

2-channel relay output; 250 VAC; 2.0 A;
Potential-free; 2 make contacts



2RO	
250 VAC 2A Pot-free Relay2NO	250 VAC 2A Pot-free Relay2NO
750-513	753-513

2-channel relay output; 250 VAC; 2.0 A;
Potential-free; 2 make contacts, without
power jumper contacts



2RO	
250 VAC 2A Pot-free NC Relay2NO	250 VAC 2A Pot-free NC Relay2NO
750-513/000-001	753-513/000-001

2	
250 VAC, 30 VDC	
2 make contact, relay	
Non-floating	
2 A	
10 mA at 5 VDC	
2-conductor, 3-conductor	
0.5 Hz	
20 x 10 ⁶	
3 x 10 ⁵	
250 VAC, 30 VDC, via power jumper contacts	
100 mA	
2 bits	
1500 V system/field	
0 ... +55 °C	
12 x 69.8 x 100 mm	
CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX	
wago.com/750-512	wago.com/753-512

Item no.	
753-110	
753-150	

2	
250 VAC, 30 VDC	
2 make contact, relay	
Potential-free	
2 A	
10 mA at 5 VDC	
1-conductor	
0.5 Hz	
20 x 10 ⁶	
3 x 10 ⁵	
100 mA	
2 bits	
1500 V system/field	
0 ... +55 °C	
12 x 69.8 x 100 mm	
CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX	
wago.com/750-513	wago.com/753-513

Item no.	
753-110	
753-150	

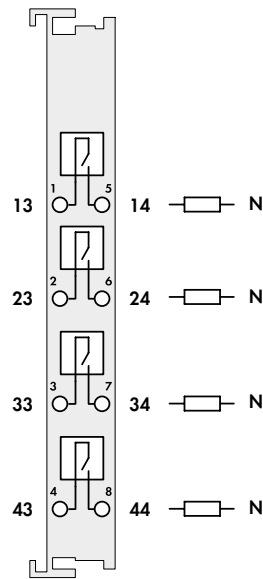
2	
250 VAC, 30 VDC	
2 make contact, relay	
Potential-free	
2 A	
10 mA at 5 VDC	
1-conductor	
0.5 Hz	
20 x 10 ⁶	
3 x 10 ⁵	
100 mA	
2 bits	
1500 V system/field	
0 ... +55 °C	
12 x 69.8 x 100 mm	
CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX	
wago.com/750-513/000-001	wago.com/753-513/000-001

Item no.	
753-110	
753-150	

Notice:
An additional bus supply module must be added
for operation with 0 ... 250 VAC/0 ... 30 VDC!

Relay Output, 250 VAC

4-channel relay output; 250 VAC; 2.0 A;
Potential-free; 4 make contacts



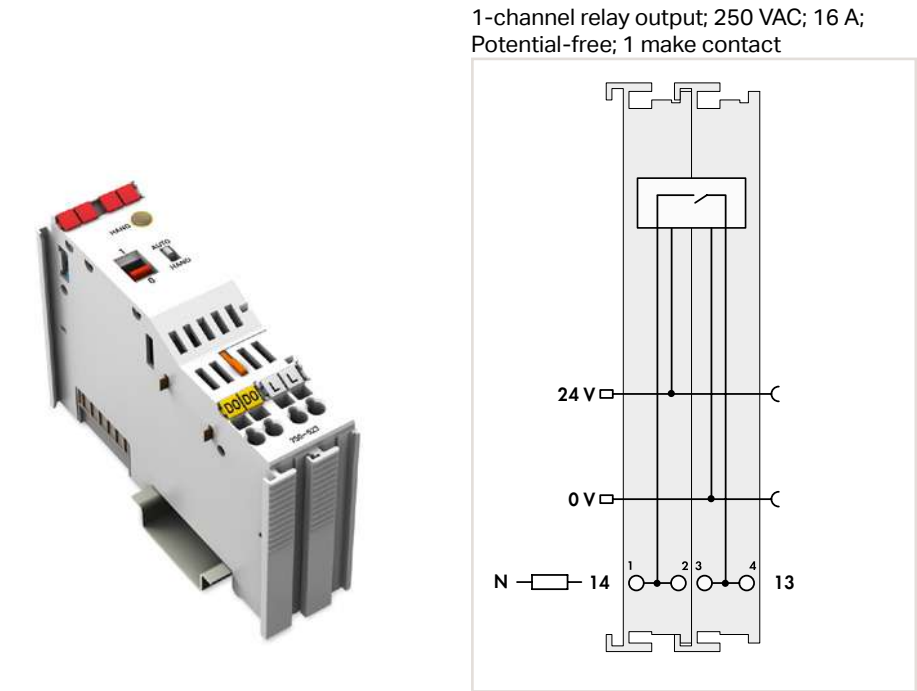
Item description	4RO
Version	250 VAC 2A Pot-free Relay4NO
Item no.	750-515
Technical Data	
Number of digital outputs	4
Switching power max.	250 VAC, 30 VDC; 110 VDC at 0.4 A
Output switching design	4 make contact, relay
Output characteristic	Potential-free
Switching current max.	2 A (5 A at 1-channel operation)
Switching current min.	1 mA at 5 VDC
Actuator connection	1-conductor
Switching frequency max.	0.33 Hz; 0.1 Hz at 5 A
Mechanical life min.	20 x 10 ⁶
Electrical life min.	1 x 10 ⁵
Current consumption, system supply	95 mA
Internal data width	4 bits
Isolation	1500 V system/field
Ambient temperature (operation)	0 ... +55 °C
Dimensions W x H x D	12 x 67.8 x 100 mm
Approvals	CE
Data sheet and further information, see:	wago.com/750-515

 Mini-WSB Quick Marking System
see Full Line Catalog, Volume 6

 DIN rails and tool
see Section 11

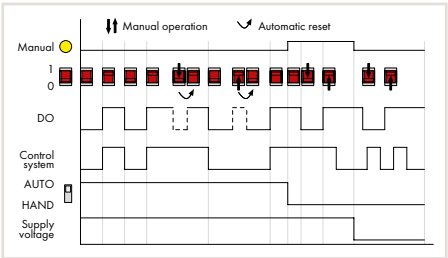
 Approvals and corresponding ratings,
see Page 518 or www.wago.com

Relay Output, 250 VAC



Item description	1RO
Version	250 VAC 16A Pot-free Relay1NO
Item no.	750-523

Technical Data	
Number of digital outputs	1
Switching power max.	440 VAC
Output switching design	1 make contact, relay
Output characteristic	Potential-free
Switching current	16 A
Actuator connection	1-conductor
Field supply voltage	24 VDC (-25 ... +30 %), via power jumper contacts
Current consumption, system supply	5 mA
Internal data width	2 bits out, 2 bits in
Isolation	1500 V system/field
Ambient temperature (operation)	0 ... +55 °C
Dimensions W x H x D	24 x 67.8 x 100 mm
Approvals	CE,  Marine,  UL 508
Data sheet and further information, see:	wago.com/750-523



A connected actuator or load is switched via the relay output module. The 24VDC supply is derived from the power jumper contacts to trigger the relays.

The switched status of the relay is shown by the manual switch (1/0). The operating mode can be set using a manual/automatic selector switch. The mode status is indicated by an LED and via status bits in the process image.

Manual: Coil triggering is interrupted. Actuation only via the red manual operating switches.

Auto: The relay is operated via the control system. Manual status changeover via manual operating switch is canceled by the control system in less than 500ms.

The manual switch can also be used without 24V supply to switch the output ON.

The relay meets both international standards of IEC and DIN EN 61810 part 1 /VDE 0435 part 201 as well as overload and short circuit requirements of IEC and DIN EN 61036 /61037.

Analog Input Modules



750 Series housing design

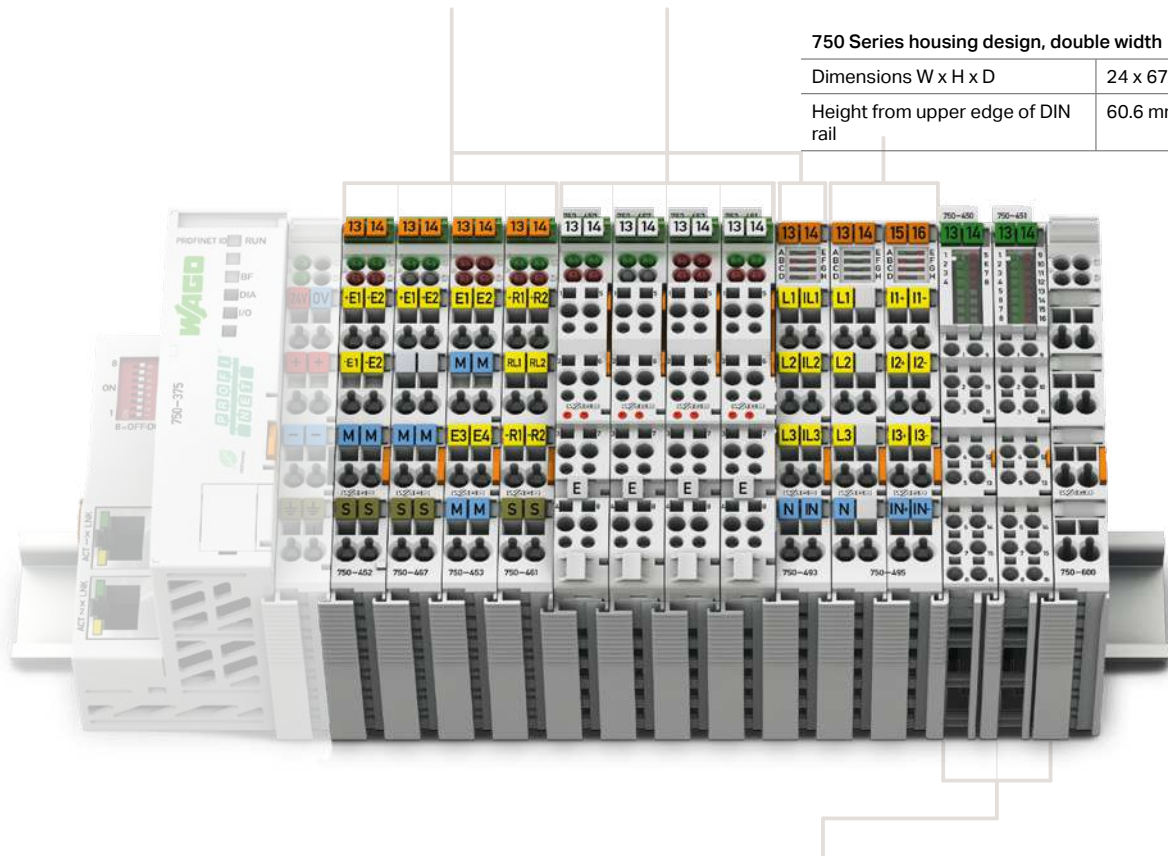
Dimensions W x H x D	Housing with 4 LEDs: 12 x 69.8 x 100 mm Housing with 8 LEDs: 12 x 67.8 x 100 mm
Height from upper edge of DIN rail	Housing with 4 LEDs: 62.6 mm Housing with 8 LEDs: 60.6 mm
Connection technology	CAGE CLAMP®
Conductor size	0.08 ... 2.5 mm² / 28 ... 14 AWG
Strip length	8 ... 9 mm / 0.33 inch

753 Series housing design

Dimensions W x H x D	Housing with 4 LEDs: 12 x 69.8 x 100 mm Housing with 8 LEDs: 12 x 69 x 100 mm
Height from upper edge of DIN rail	Housing with 4 LEDs: 62.6 mm Housing with 8 LEDs: 61.8 mm
Connection technology	CAGE CLAMP®
Conductor size	0.08 ... 2.5 mm² / 28 ... 14 AWG
Strip length	9 ... 10 mm / 0.37 inch

750 Series housing design, double width

Dimensions W x H x D	24 x 67.8 x 100 mm
Height from upper edge of DIN rail	60.6 mm



750 Series housing design with push-in CAGE CLAMP® connectors (up to 16 connector points)

Dimensions W x H x D	12 x 69 x 100 mm
Height from upper edge of DIN rail	61.8 mm
Connection technology	Push-in CAGE CLAMP®
Conductor size	Solid: 0.08 ... 1.5 mm² / 28 ... 16 AWG Fine-stranded: 0.25 ... 1.5 mm² / 22 ... 16 AWG
Strip length	8 ... 9 mm / 0.33 inch



750 and 753 Series I/O-System, Analog Input Modules

Contents

Function	1-channel AI	2-channel AI	4-channel AI	8-channel AI	Description	Item number				Page
						Standard	/S5 or /S7 Customized data format	T ext. Tempera- ture	Pluggable	
0–20 mA		■			Differential input	750-452	750-452/000-200		753-452	172
		■			Single-ended	750-465		750-465/025-000	753-465	172
			■		Single-ended Single-ended, 60 Hz	750-470 750-470/005-000				173
		■			Single-ended, 16 bits	750-472	750-472/000-200		753-472	173
		■			Single-ended, 16 bits, 60 Hz	750-472/005-000				173
		■			Differential measurement input	750-480			753-480	174
			■		Single-ended	750-453			753-453	174
4–20 mA		■			Differential input	750-454	750-454/000-200	750-454/025-000	753-454	175
		■			Single-ended	750-466	750-466/000-200	750-466/025-000	753-466	176
			■		Single-ended Single-ended, 60 Hz	750-473 750-473/005-000				177
		■			Single-ended, 16 bits	750-474	750-474/000-200		753-474	178
		■			Single-ended, 16 bits, 60 Hz	750-474/005-000				178
		■			Differential measurement input	750-492			753-492	179
			■		HART	750-482	750-482/000-300	750-482/025-000	753-482	179
			■		Single-ended	750-455		750-455/025-000	753-455	180
			■		Single-ended, 4 x 24 V	750-455/020-000				180
0/4–20 mA				■	Single-ended	750-496				181
0–1 A		■			Differential input	750-475			753-475	182
0–5 A		■			Differential input	750-475/020-000				182
±10 V		■			Differential input	750-456	750-456/000-200		753-456	183
		■			Differential measurement input	750-479			753-479	183
		■			Differential measurement input, synchronous	750-479/000-001				183
		■			Single-ended, 16 bits	750-476	750-476/000-200		753-476	184
			■		Single-ended	750-457		750-457/025-000	753-457	184
0–10 V		■			Single-ended	750-467	750-467/000-200		753-467	185
		■			Single-ended, 16 bits	750-478			753-478	185
		■			Single-ended, 16 bits, 60 Hz	750-478/005-000				185
			■		Single-ended	750-468	750-468/000-200	750-468/025-000		186
			■		Single-ended	750-459			753-459	187
0–10 V / ±10 V				■	Single-ended	750-497				188
0–10 VAC/VDC		■			Differential input	750-477			753-477	189
0–30 V		■			Differential input	750-483			753-483	189
Resistance sensors		■			Pt100/RTD	750-461	750-461/000-200	750-461/025-000	753-461	190
		■			Pt100 / adjustable	750-461/003-000			753-461/003-000	190
		■			NTC 20k	750-461/020-000				191
		■			Resistance measurement (other variants)	750-461/000-00x				191
		■	■		RTD, adjustable	750-464				192
			■		NTC, adjustable	750-464/020-000				192
			■		RTD, measurement range –30 ... +150 °C	750-463				193
			■		RTD, adjustable	750-450				193
				■	RTD, adjustable	750-451				193
Thermocouples		■			K, diagnostics	750-469	750-469/000-200		753-469	194
					K, diagnostics, adjustable	750-469/003-000			753-469/003-000	194
		■			J, diagnostics	750-469/000-006				195
		■			S/, T/, ±120 mV/, E/, L/diagnostics	750-469/000-00x				195
				■	Thermocouple, adjustable	750-458				195
Analog Special Functions	■				Resistor bridges (strain gauge) Resistor bridges (strain gauge), 125 ms	750-491 750-491/000-001				196
		■			3-phase power measurement (1 A) 3-phase power measurement (5 A)	750-493 750-493/000-001				197
		■			3-phase power measurement (480 V / 1 A)	750-494		750-494/025-000		198
		■			3-phase power measurement (480 V / 5 A)	750-494/000-001		750-494/025-001		198
		■			3-phase power measurement (690 V / 1 A) 3-phase power measurement (690 V / 5 A)	750-495 750-495/000-001				199
					3-phase power measurement (690 V / RC)	750-495/000-002				
Ex i						see Section 4.9				

Analog Input, 0 ... 20 mA



Figure: 750-452

2-channel analog input; 0 ... 20 mA; Differential input; optional: S5 PLC data format

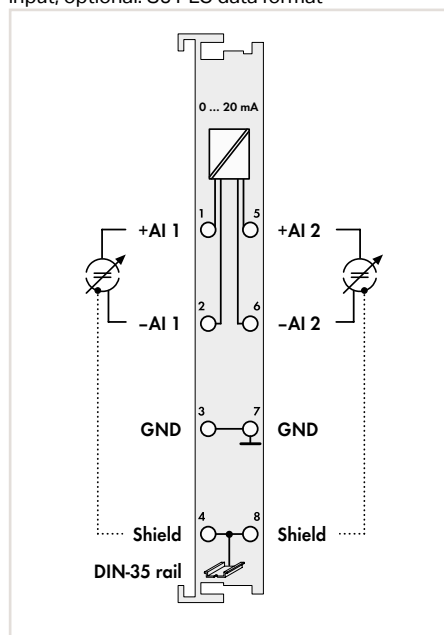
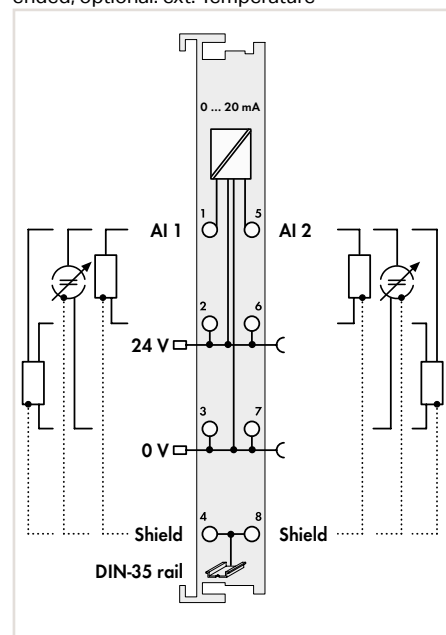


Figure: 753-452

2-channel analog input; 0 ... 20 mA; Single-ended; optional: ext. Temperature



Item description	2AI		
Version	0-20mA Diff	0-20mA Diff S5	0-20mA Diff
Item no.	750-452	750-452/000-200	753-452

Item description	2AI		
Version	0-20mA SE	0-20mA SE T	0-20mA SE
Item no.	750-465	750-465/025-000	753-465

Technical Data

Advanced functionality			
Pluggable connector			•
Customized data format for S5 control*		•	
Number of analog inputs	2		
Type of signal	0 ... 20 mA		
Signal characteristic	differential		
Resolution	12 bits		
Conversion time	2 ms		
Input resistance	< 220 Ω / 20 mA		
Input filter (analog)			
Measuring error (25 °C)	< ± 0.2 % of the largest measurement range		
Temperature coefficient	< ± 0.01 % /K of the largest measurement range		
System supply voltage	5VDC via data contacts		
Current consumption, system supply	70 mA		
Data width	2 x 16 bits data, 2 x 8 bits control/status (optional)		
Isolation	500 V system/field		
Ambient temperature (operation)	0 ... +55 °C		
Dimensions W x H x D	12 x 69.8 x 100 mm		
Approvals	CE, UL 508, ANSI/ISA, ATEX/IECEx		
Data sheet and further information, see:	wago.com/750-452	wago.com/753-452	

Accessories	Item no.
Plug	753-110
753 Series coding elements	753-150

Accessories	Item no.
Plug	753-110
753 Series coding elements	753-150

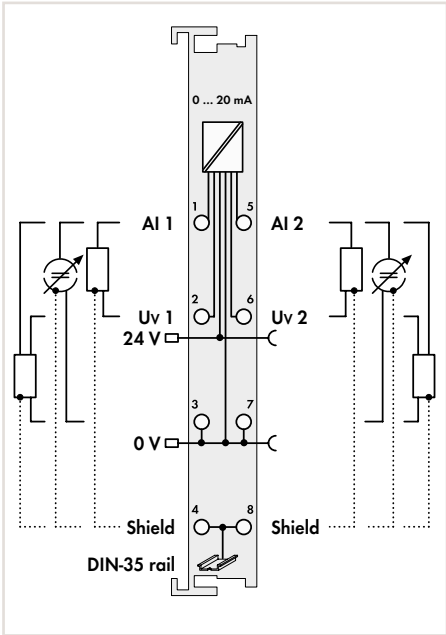
*The S5 format allows you to import data with the standard S5 FB 250 function block.

Mini-WSB Quick Marking System
see Full Line Catalog, Volume 6

DIN rails and tool
see Section 11

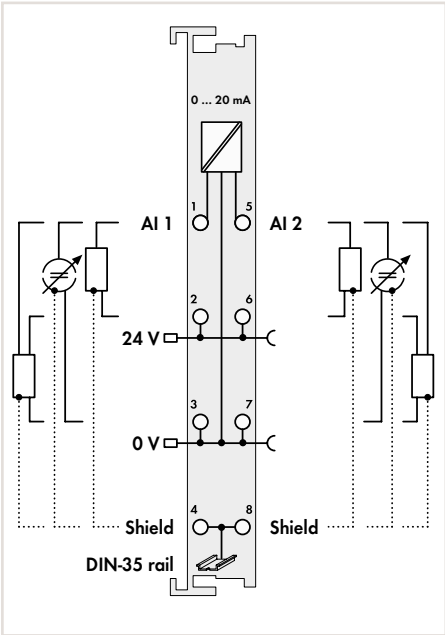
Approvals and corresponding ratings,
see Page 519 or www.wago.com

2-channel analog input; 0 ... 20 mA; Single-ended; short circuit protected sensor supply; optional: 60 Hz



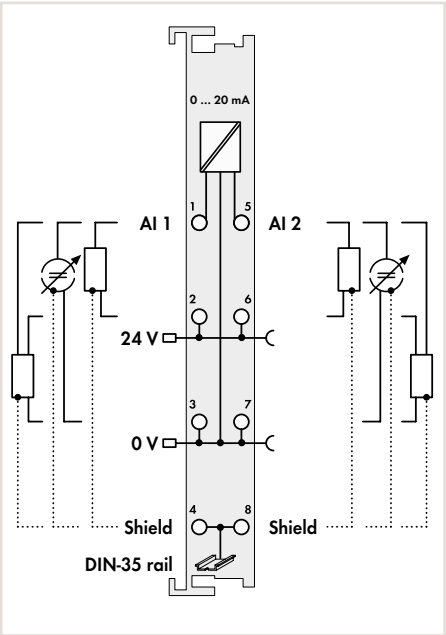
2AI	
0-20mA SE	0-20mA SE 60Hz
750-470	750-470/005-000

2-channel analog input; 0 ... 20 mA; Single-ended; 16 bits; optional: 60 Hz



2AI		
0-20mA SE 16Bit	0-20mA SE 16Bit 60Hz	0-20mA SE 16Bit
750-472	750-472/005-000	753-472

2-channel analog input; 0 ... 20 mA; Single-ended; 16 bits; S5 PLC data format



2AI	
0-20mA SE 16Bit S5	
750-472/000-200	

Product discontinuation
Last call: 31.5.2017

short circuit protected sensor supply	
2	
0 ... 20 mA	
single-ended	
12 bits	
80 ms	
< 160 Ω / 20 mA	
50 Hz	60 Hz
< ± 0.1 % of the largest measurement range	
< ± 0.01 % /K of the largest measurement range	
5VDC via data contacts	
100 mA	
2 x 16 bits data, 2 x 8 bits control/status (optional)	
500 V system/field	
0 ... +55 °C	
12 x 69.8 x 100 mm	
CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX	
wago.com/750-470	

overload protection		
2		
0 ... 20 mA		
single-ended		
15 bits		
80 ms		
220 Ω / 20 mA		
50 Hz	60 Hz	50 Hz
< ± 0.1 % of the largest measurement range		
< ± 0.01 % /K of the largest measurement range		
5VDC via data contacts		
75 mA		
2 x 16 bits data, 2 x 8 bits control/status (optional)		
500 V system/field		
0 ... +55 °C		
12 x 69.8 x 100 mm		
CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX		
wago.com/750-472		wago.com/753-472

overload protection	
2	
0 ... 20 mA	
single-ended	
15 bits	
80 ms	
220 Ω / 20 mA	
50 Hz	
< ± 0.1 % of the largest measurement range	
< ± 0.01 % /K of the largest measurement range	
5VDC via data contacts	
75 mA	
2 x 16 bits data, 2 x 8 bits control/status (optional)	
500 V system/field	
0 ... +55 °C	
12 x 69.8 x 100 mm	
CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX	
wago.com/750-472/000-200	

	Item no.
	753-110
	753-150

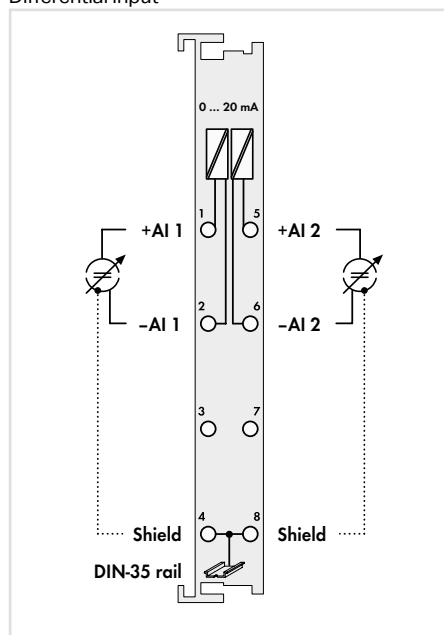
Analog Input, 0 ... 20 mA or 4 ... 20 mA



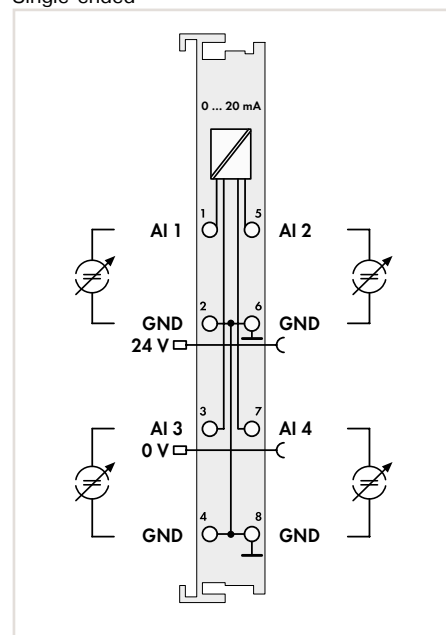
Figure: 750-480

Figure: 753-480

2-channel analog input; 0 ... 20 mA;
Differential input



4-channel analog input; 0 ... 20 mA;
Single-ended



Item description	2AI	
Version	0-20mA Diff	0-20mA Diff
Item no.	750-480	753-480

Technical Data

Advanced functionality	time-synchronous measured-value acquisition within the modules	
Pluggable connector		
Customized data format for S5 control*		
Number of analog inputs	2	
Type of signal	0 ... 20 mA	
Signal characteristic	differential	
Resolution	13 bits	
Conversion time	1 ms	
Input resistance	< 270 Ω / 20 mA	
Input filter (analog)	5 kHz	
Measuring error (25 °C)	< ± 0.05 % of the largest measurement range	
Temperature coefficient	< ± 0.01 % /K of the largest measurement range	
System supply voltage	5VDC via data contacts	
Current consumption, system supply	80 mA	
Data width	2 x 16 bits data, 2 x 8 bits control/status (optional)	
Isolation	500 V channel/channel or channel/system	
Ambient temperature (operation)	0 ... +55 °C	
Dimensions W x H x D	12 x 69.8 x 100 mm	
Approvals	CE, UL 508, ANSI/ISA, ATEX/IECEX	
Data sheet and further information, see:	wago.com/750-480	wago.com/753-480

Accessories	Item no.
Plug	753-110
753 Series coding elements	753-150

Item description	4AI	
Version	0-20mA SE	0-20mA SE
Item no.	750-453	753-453

Advanced functionality		
Pluggable connector		
Customized data format for S5 control*		
Number of analog inputs	4	
Type of signal	0 ... 20 mA	
Signal characteristic	single-ended	
Resolution	12 bits	
Conversion time	10 ms	
Input resistance	< 100 Ω / 20 mA	
Input filter (analog)		
Measuring error (25 °C)	< ± 0.1 % of the largest measurement range	
Temperature coefficient	< ± 0.01 % /K of the largest measurement range	
System supply voltage	5VDC via data contacts	
Current consumption, system supply	65 mA	
Data width	4 x 16 bits data, 4 x 8 bits control/status (optional)	
Isolation	500 V system/field	
Ambient temperature (operation)	0 ... +55 °C	
Dimensions W x H x D	12 x 69.8 x 100 mm	
Approvals	CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX	
Data sheet and further information, see:	wago.com/750-453	wago.com/753-453

Accessories	Item no.
Plug	753-110
753 Series coding elements	753-150

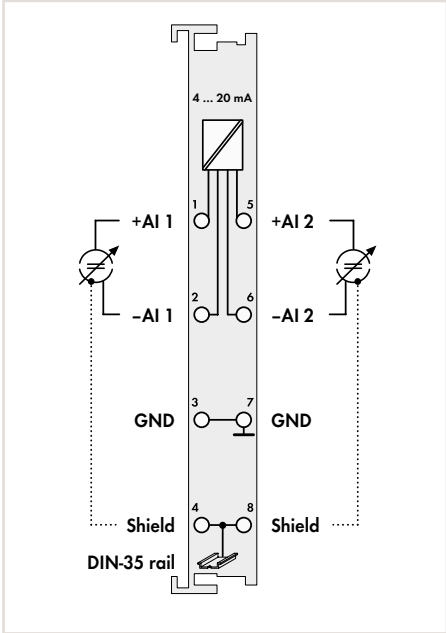
*The S5 format allows you to import data with the standard S5 FB 250 function block.

Mini-WSB Quick Marking System
see Full Line Catalog, Volume 6

DIN rails and tool
see Section 11

Approvals and corresponding ratings,
see Page 519 or www.wago.com

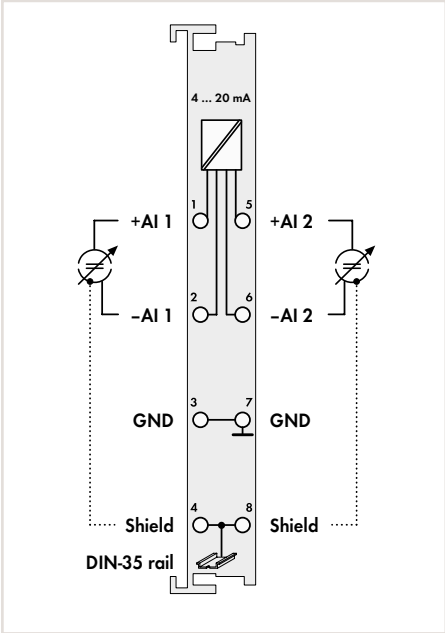
2-channel analog input; 4 ... 20 mA; Differential input; optional: ext. Temperature



2AI		
4-20mA Diff	4-20mA Diff T	4-20mA Diff
750-454	750-454/025-000	753-454

2		
4 ... 20 mA		
differential		
12 bits		
2 ms		
< 220 Ω / 20 mA		
< ± 0.2 % of the largest measurement range		
< ± 0.01 % /K of the largest measurement range		
5VDC via data contacts		
70 mA		
2 x 16 bits data, 2 x 8 bits control/status (optional)		
500 V system/field		
0 ... +55 °C	-20 ... +60 °C	0 ... +55 °C
12 x 69.8 x 100 mm		
CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX		
wago.com/750-454		wago.com/753-454
		Item no.
		753-110
		753-150

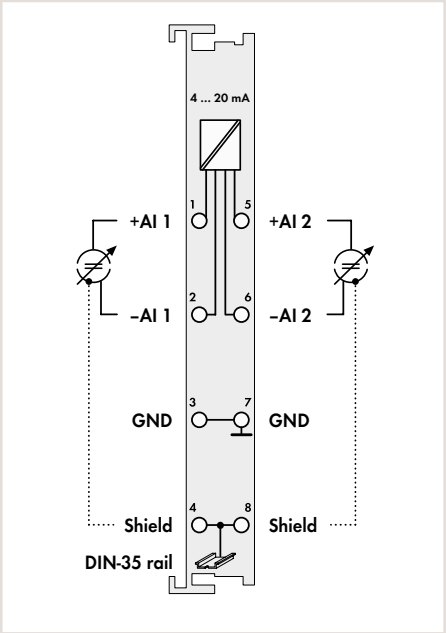
2-channel analog input; 4 ... 20 mA; Differential input; Extend. measurement range; optional: ext. Temperature



2AI	
4-20mA Diff EM	4-20mA Diff EM T
750-454/000-003	750-454/025-003

2	
3.8 ... 20.5 mA	
differential	
12 bits	
2 ms	
< 220 Ω / 20 mA	
< ± 0.2 % of the largest measurement range	
< ± 0.01 % /K of the largest measurement range	
5VDC via data contacts	
70 mA	
2 x 16 bits data, 2 x 8 bits control/status (optional)	
500 V system/field	
0 ... +55 °C	-20 ... +60 °C
12 x 69.8 x 100 mm	
CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX	
wago.com/750-454	

2-channel analog input; 4 ... 20 mA; Differential input; S5 PLC data format



2AI	
4-20mA Diff S5	
750-454/000-200	

2	
4 ... 20 mA	
differential	
12 bits	
2 ms	
< 220 Ω / 20 mA	
< ± 0.2 % of the largest measurement range	
< ± 0.01 % /K of the largest measurement range	
5VDC via data contacts	
70 mA	
2 x 16 bits data, 2 x 8 bits control/status (optional)	
500 V system/field	
0 ... +55 °C	
12 x 69.8 x 100 mm	
CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX	
wago.com/750-454/000-200	

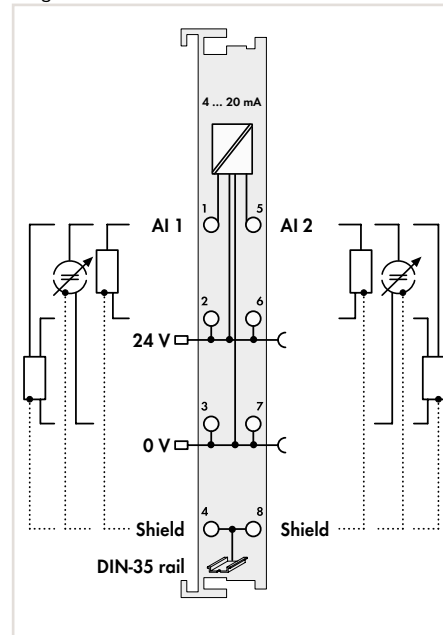
Analog Input, 4 ... 20 mA



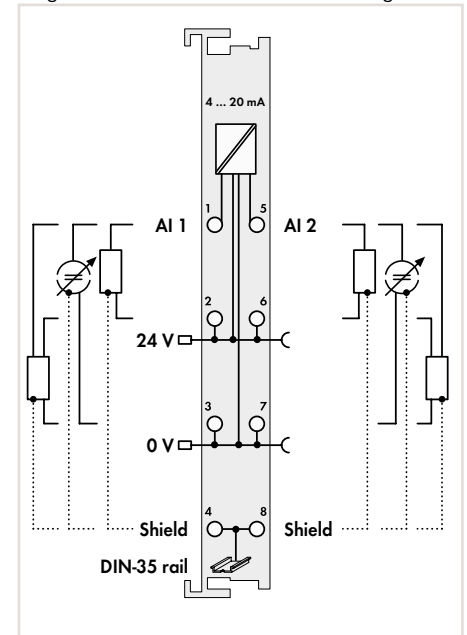
Figure: 750-466

Figure: 753-466

2-channel analog input; 4 ... 20 mA;
Single-Ended



2-channel analog input; 4 ... 20 mA;
Single-Ended; Extend. measurement range



Item description	2AI		
Version	4-20mA SE	4-20mA SE T	4-20mA SE
Item no.	750-466	750-466/025-000	753-466

Technical Data

Advanced functionality			
Pluggable connector			
Customized data format for S5 control*			
Number of analog inputs	2		
Type of signal	4 ... 20 mA		
Signal characteristic	single-ended		
Resolution	12 bits		
Conversion time	2 ms		
Input resistance	< 220 Ω / 20 mA		
Input filter (analog)			
Measuring error (25 °C)	< ± 0.2 % of the largest measurement range		
Temperature coefficient	< ± 0.01 % /K of the largest measurement range		
System supply voltage	5VDC via data contacts		
Current consumption, system supply	75 mA		
Data width	2 x 16 bits data, 2 x 8 bits control/status (optional)		
Isolation	500 V system/field		
Ambient temperature (operation)	0 ... +55 °C	-20 ... +60 °C	0 ... +55 °C
Dimensions W x H x D	12 x 69.8 x 100 mm		
Approvals	CE, UL 508, ANSI/ISA, ATEX/IECEx		
Data sheet and further information, see:	wago.com/750-466		wago.com/753-466

Accessories	Item no.
Plug	753-110
753 Series coding elements	753-150

Item description	2AI
Version	4-20mA SE EM
Item no.	750-466/000-003

Advanced functionality	
Pluggable connector	
Customized data format for S5 control*	
Number of analog inputs	2
Type of signal	3.8 ... 20.5 mA
Signal characteristic	single-ended
Resolution	12 bits
Conversion time	2 ms
Input resistance	< 220 Ω / 20 mA
Input filter (analog)	
Measuring error (25 °C)	< ± 0.2 % of the largest measurement range
Temperature coefficient	< ± 0.01 % /K of the largest measurement range
System supply voltage	5VDC via data contacts
Current consumption, system supply	75 mA
Data width	2 x 16 bits data, 2 x 8 bits control/status (optional)
Isolation	500 V system/field
Ambient temperature (operation)	0 ... +55 °C
Dimensions W x H x D	12 x 69.8 x 100 mm
Approvals	CE, UL 508, ANSI/ISA, ATEX/IECEx
Data sheet and further information, see:	wago.com/750-466/000-003

Accessories	Item no.
Plug	753-110
753 Series coding elements	753-150

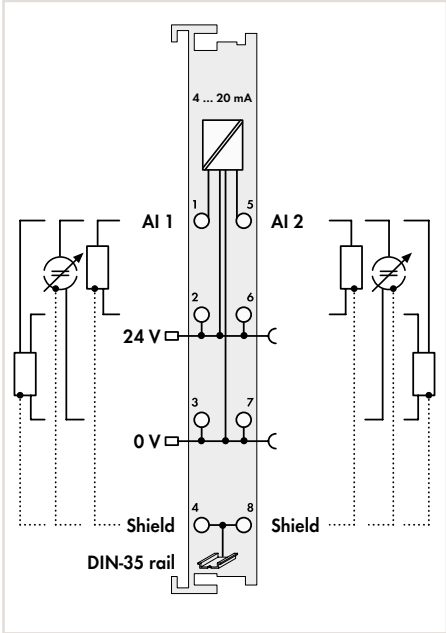
*The S5 format allows you to import data with the standard S5 FB 250 function block.

Mini-WSB Quick Marking System
see Full Line Catalog, Volume 6

DIN rails and tool
see Section 11

Approvals and corresponding ratings,
see Page 519 or www.wago.com

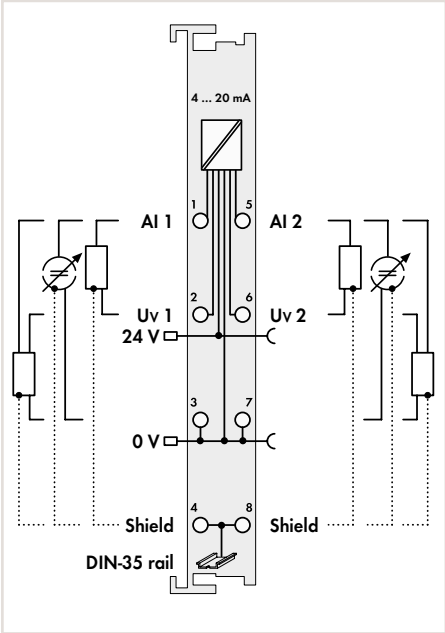
2-channel analog input; 4 ... 20 mA;
Single-Ended; S5 PLC data format



2AI
4-20mA SE S5
750-466/000-200

•
2
4 ... 20 mA
single-ended
12 bits
2 ms
< 220 Ω / 20 mA
< ± 0.2 % of the largest measurement range
< ± 0.01 % /K of the largest measurement range
5VDC via data contacts
75 mA
2 x 16 bits data, 2 x 8 bits control/status (optional)
500 V system/field
0 ... +55 °C
12 x 69.8 x 100 mm
CE, UL 508, ANSI/ISA, ATEX/IECEX
wago.com/750-466/000-200

2-channel analog input; 4 ... 20 mA; Single-
Ended; short circuit protected sensor supply;
optional: 60 Hz



2AI	
4-20mA SE	4-20mA SE 60Hz
750-473	750-473/005-000

short circuit protected sensor supply	
2	
4 ... 20 mA	
single-ended	
12 bits	
80 ms	
< 160 Ω / 20 mA	
50 Hz	60 Hz
< ± 0.1 % of the largest measurement range	
< ± 0.01 % /K of the largest measurement range	
5VDC via data contacts	
100 mA	
2 x 16 bits data, 2 x 8 bits control/status (optional)	
500 V system/field	
0 ... +55 °C	
12 x 69.8 x 100 mm	
CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX	
wago.com/750-473	

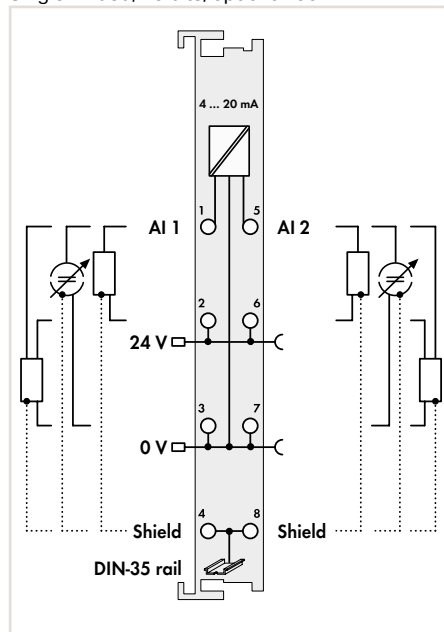
Analog Input, 4 ... 20 mA



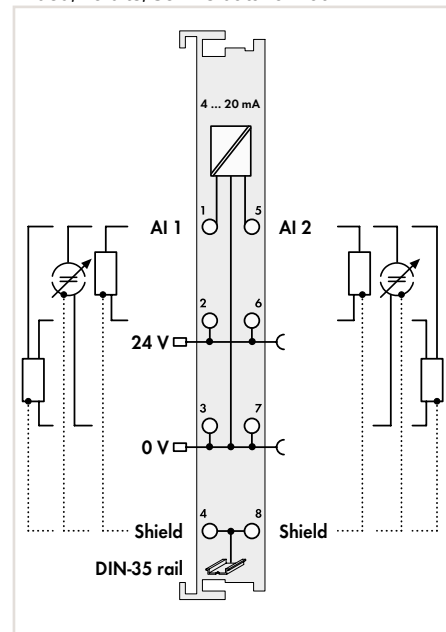
Figure: 750-474

Figure: 753-474

2-channel analog input; 4 ... 20 mA;
Single-Ended; 16 bits; optional: 60 Hz



2-channel analog input; 4 ... 20 mA; Single-
Ended; 16 bits; S5 PLC data format



Item description	2AI		
Version	4-20mA SE 16Bit	4-20mA SE 16Bit 60Hz	4-20mA SE 16Bit
Item no.	750-474	750-474/005-000	753-474

Technical Data			
Advanced functionality	overload protection		
Pluggable connector			
Customized data format for S5*/S7 control			
Number of analog inputs	2		
Type of signal	4 ... 20 mA		
Signal characteristic	single-ended		
Resolution	15 bits		
Conversion time	80 ms		
Input resistance	220 Ω / 20 mA		
Input filter (analog)	50 Hz	60 Hz	50 Hz
Measuring error (25 °C)	< ± 0.1 % of the largest measurement range		
Temperature coefficient	< ± 0.01 % /K of the largest measurement range		
System supply voltage	5VDC via data contacts		
Current consumption, system supply	75 mA		
Data width	2 x 16 bits data, 2 x 8 bits control/status (optional)		
Configurable functions			
Isolation	500 V system/field		
Ambient temperature (operation)	0 ... +55 °C		
Dimensions W x H x D	12 x 69.8 x 100 mm		
Approvals	CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX		
Data sheet and further information, see:	wago.com/750-474	wago.com/753-474	wago.com/750-474/000-200

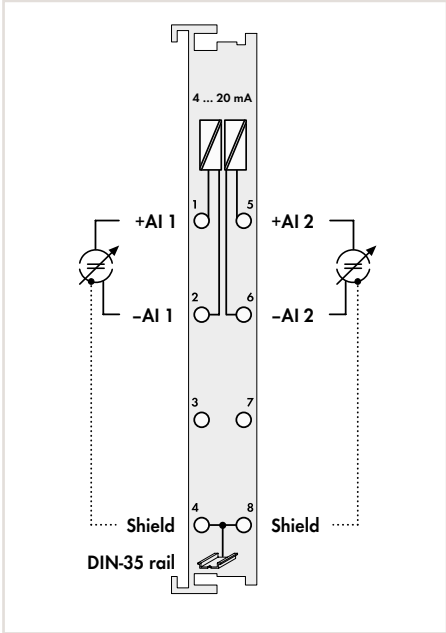
Accessories	Item no.
Plug	753-110
753 Series coding elements	753-150

*The S5 format allows you to import data with the standard S5 FB 250 function block.
Mini-USB Quick Marking System
see Full Line Catalog, Volume 6

DIN rails and tool
see Section 11

Approvals and corresponding ratings,
see Page 519 or www.wago.com

2-channel analog input; 4 ... 20 mA;
Differential input

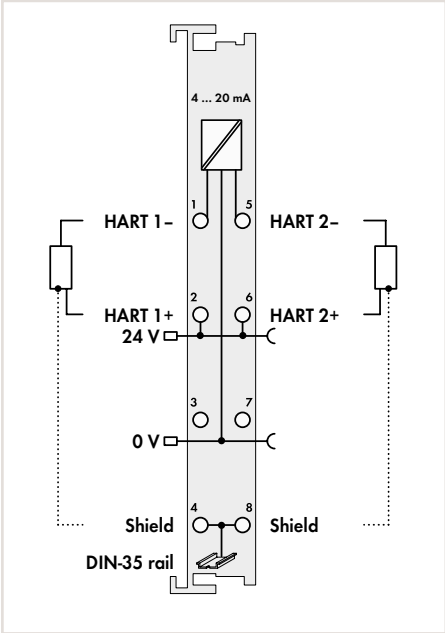


2AI	
4-20mA Diff	4-20mA Diff
750-492	753-492

time-synchronous measured-value acquisition within the modules	
	•
2	
4 ... 20 mA	
differential	
13 bits	
1 ms	
< 270 Ω / 20 mA	
< ± 0.05 % of the largest measurement range	
< ± 0.01 % /K of the largest measurement range	
5VDC via data contacts	
80 mA	
2 x 16 bits data, 2 x 8 bits control/status (optional)	
500 V DC channel/channel or channel/system	
0 ... +55 °C	
12 x 69.8 x 100 mm	
CE, UL 508, ANSI/ISA, ATEX/IECEx	
wago.com/750-492	wago.com/753-492

	Item no.
	753-110
	753-150

2-channel analog input; 4 ... 20 mA; HART;
optional: ext. Temperature



2AI		
4-20mA HART	4-20mA HART T	4-20mA HART
750-482	750-482/025-000	753-482

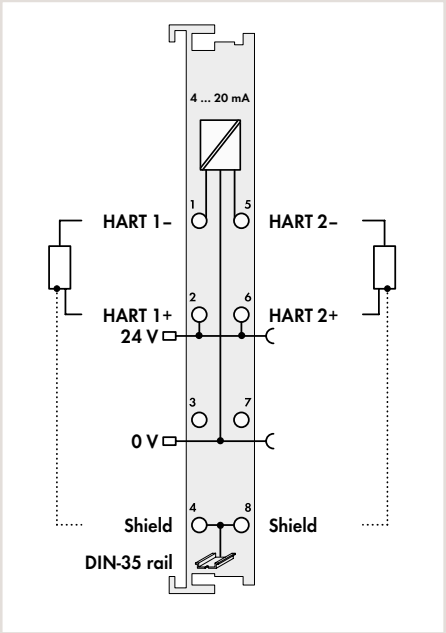
overload protection		
		•
2		
4 ... 20 mA		
single-ended		
12 bits		
10 ms		
< ± 0.1 % of the largest measurement range		
< ± 0.01 % /K of the largest measurement range		
5VDC via data contacts		
65 mA		
2 x 2 bytes data, 2 x 2 bytes data + 2n x 4 bytes data (n = number of dynamic variables), 2 x 2 bytes data + 6 bytes mailbox		
4 HART dynamic variables (PV, SV, TV, QV)		
500 V system/field		
0 ... +55 °C	-20 ... +60 °C	0 ... +55 °C
12 x 69.8 x 100 mm		
CE, UL 508, ANSI/ISA, ATEX/IECEx		
wago.com/750-482	wago.com/753-482	

	Item no.
	753-110
	753-150

HART devices per channel:
1 channel (SingleDrop, no MultiDrop)

For some fieldbus couplers, FDT/DTM device drivers are available that can be used to integrate the I/O module in a higher-level control system.

2-channel analog input; 4 ... 20 mA; HART;
S7 PLC data format



2AI	
4-20mA HART S7	
750-482/000-300	

overload protection	
	•
2	
4 ... 20 mA	
single-ended	
12 bits	
10 ms	
< ± 0.1 % of the largest measurement range	
< ± 0.01 % /K of the largest measurement range	
5VDC via data contacts	
65 mA	
2 x 2 bytes data, 2 x 2 bytes data + 2n x 4 bytes data (n = number of dynamic variables), 2 x 2 bytes data + 6 bytes mailbox	
4 HART dynamic variables (PV, SV, TV, QV)	
500 V system/field	
0 ... +55 °C	
12 x 69.8 x 100 mm	
CE, UL 508, ANSI/ISA, ATEX/IECEx	
wago.com/750-482/000-300	

	Item no.
	753-110
	753-150

HART devices per channel:
1 channel (SingleDrop, no MultiDrop)

For some fieldbus couplers, FDT/DTM device drivers are available that can be used to integrate the I/O module in a higher-level control system.

Analog Input, 4 ... 20 mA



Figure: 750-455

4-channel analog input; 4 ... 20 mA;
Single-Ended; 4 x GND

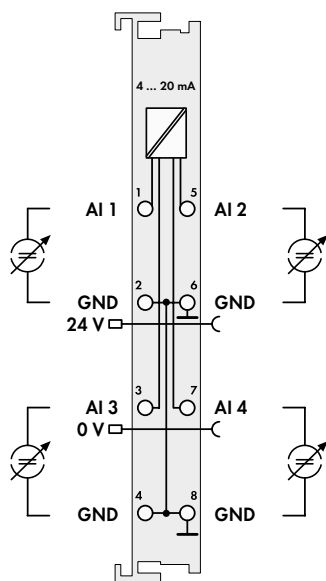
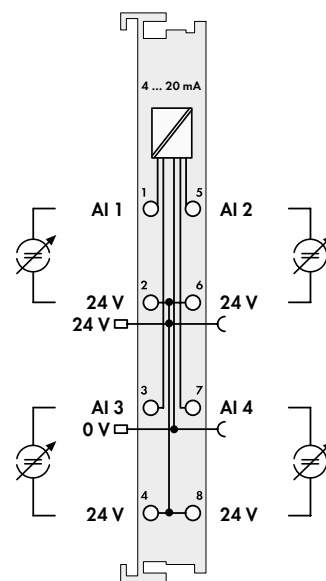


Figure: 753-455

4-channel analog input; 0 ... 20 mA;
Single-Ended; 4 x 24 V



Item description	4AI		
Version	4-20mA SE	4-20mA SE T	4-20mA SE
Item no.	750-455	750-455/025-000	753-455

Technical Data

Pluggable connector		•
Number of analog inputs	4	
Type of signal	4 ... 20 mA	
Signal characteristic	single-ended	
Resolution	12 bits	
Conversion time	10 ms	
Input resistance	< 100 Ω / 20 mA	
Measuring error (25 °C)	< ± 0.1 % of the largest measurement range	
Temperature coefficient	< ± 0.01 % /K of the largest measurement range	
System supply voltage	5VDC via data contacts	
Current consumption, system supply	65 mA	
Data width	4 x 16 bits data, 4 x 8 bits control/status (optional)	
Isolation	500 V system/field	
Ambient temperature (operation)	0 ... +55 °C	
Dimensions W x H x D	12 x 69.8 x 100 mm	

Approvals

Data sheet and further information, see:	wago.com/750-455	wago.com/753-455

Accessories

	Item no.
Plug	753-110
753 Series coding elements	753-150

Item description	4AI
Version	4-20mA SE 4x24V
Item no.	750-455/020-000

Pluggable connector	
Number of analog inputs	4
Type of signal	4 ... 20 mA
Signal characteristic	single-ended
Resolution	12 bits
Conversion time	10 ms
Input resistance	< 100 Ω / 20 mA
Measuring error (25 °C)	< ± 0.1 % of the largest measurement range
Temperature coefficient	< ± 0.01 % /K of the largest measurement range
System supply voltage	5VDC via data contacts
Current consumption, system supply	65 mA
Data width	4 x 16 bits data, 4 x 8 bits control/status (optional)
Isolation	500 V system/field
Ambient temperature (operation)	0 ... +55 °C
Dimensions W x H x D	12 x 69.8 x 100 mm

CE, UL 508, ANSI/ISA, ATEX/IECEX

Data sheet and further information, see:	wago.com/750-455/020-000

Mini-WSB Quick Marking System
see Full Line Catalog, Volume 6

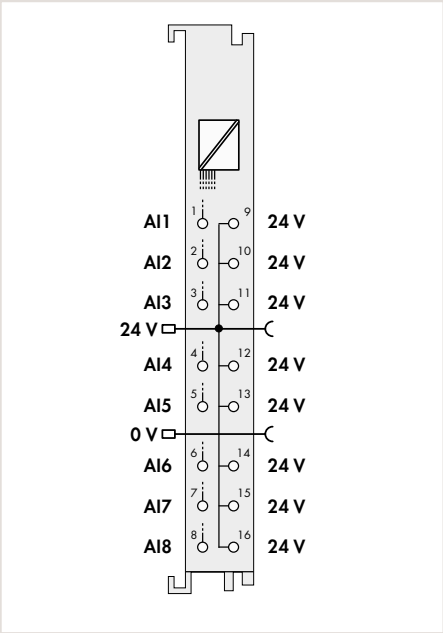
DIN rails and tool
see Section 11

Approvals and corresponding ratings,
see Page 519 or www.wago.com

Analog Input, adjustable 0/4 ... 20 mA



8-channel analog input; 0/4 ... 20 mA



Item description	8AI
Version	0/4-20mA
Item no.	750-496

Technical Data

Number of analog inputs	8
Type of signal	adjustable: 0 ... 20 mA, 4 ... 20 mA, 3.6 ... 21 mA
Resolution	12 bits
Conversion time	10 ms
Input resistance	< 220 Ω
Input voltage max.	31.2 V
Measuring error (25 °C)	< ± 0.1 % of the largest measurement range
Temperature coefficient	< ± 0.01 % /K of the largest measurement range
System supply voltage	5VDC via data contacts
Current consumption, system supply	69 mA
Data width	8 x 16 bits data, 8 x 8 bits control/status (optional)
Isolation	500 V system/field
Ambient temperature (operation)	0 ... +55 °C
Dimensions W x H x D	12 x 69 x 100 mm
Approvals	CE,  Marine,  UL 508*, ANSI/ISA*
Data sheet and further information, see:	wago.com/750-496

*pending

Analog Input, 0 ... 1 A or 0 ... 5 A AC/DC



Figure: 750-475

2-channel analog input; 0 ... 1 A AC/DC;
Differential input

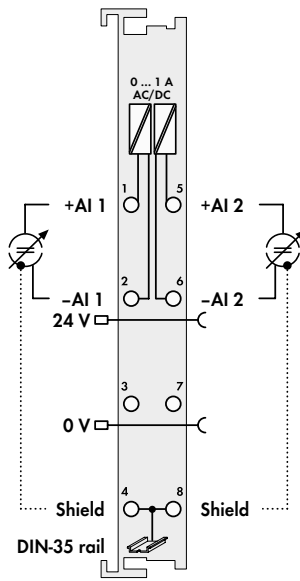
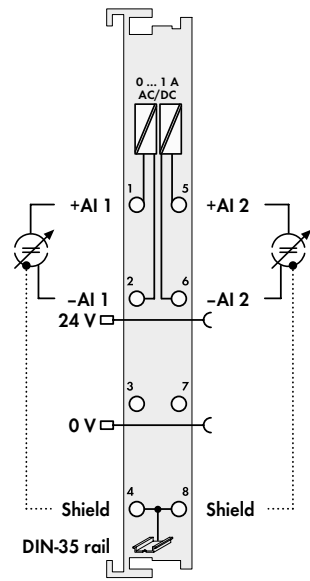


Figure: 753-475

2-channel analog input; 0 ... 5 A AC/DC;
Differential input



Item description	2AI		2AI
Version	0-1A AC/DC Diff	0-1A AC/DC Diff	0-5A AC/DC Diff
Item no.	750-475	753-475	750-475/020-000
Technical Data			
Pluggable connector			•
Number of analog inputs	2		2
Type of signal	0 ... 1 A eff. (peak value 2.0 A)		0 ... 5 A eff. (peak value 6.0 A)
Signal characteristic	differential		differential
Input voltage max.	24 V AC/DC (-20 ... +20 %)		24 V AC/DC (-20 ... +20 %)
Resolution	15 bits		15 bits
Conversion time	200 ms		200 ms
Load impedance	22 mΩ		22 mΩ
Measuring error (25 °C)	< ± 0.1 % of the largest measurement range		< ± 0.1 % of the largest measurement range
Temperature coefficient	< ± 110 ppm/K of the largest measurement range		< ± 110 ppm/K of the largest measurement range
System supply voltage	5VDC via data contacts		5VDC via data contacts
Current consumption, system supply	80 mA		80 mA
Data width	2 x 16 bits data, 2 x 8 bits control/status (optional)		2 x 16 bits data, 2 x 8 bits control/status (optional)
Isolation	500 V channel/channel or channel/system		500 V channel/channel or channel/system
Ambient temperature (operation)	0 ... +55 °C		0 ... +55 °C
Dimensions W x H x D	12 x 69.8 x 100 mm		12 x 69.8 x 100 mm
Approvals	CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX		CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX
Data sheet and further information, see:	wago.com/750-475	wago.com/753-475	wago.com/750-475/020-000
Accessories			
Plug		Item no.	
753 Series coding elements		753-110	
		753-150	

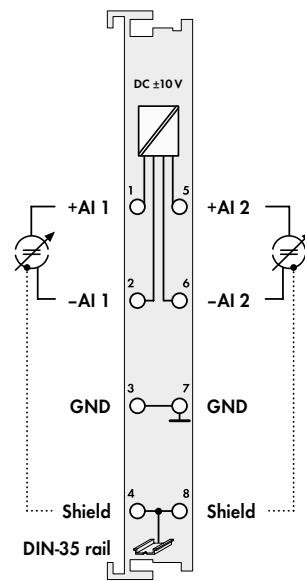
Analog Input, ± 10 VDC



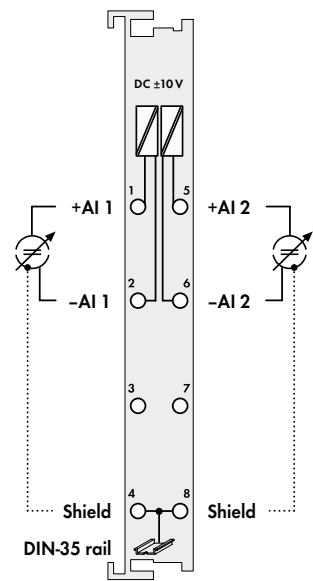
Figure: 750-456

Figure: 750-479

2-channel analog input; ± 10 VDC; Differential input; optional: S5 PLC data format



2-channel analog input; ± 10 VDC; Differential input; synchronous



Item description	2AI			2AI		
Version	±10 VDC Diff	±10 VDC Diff S5	±10 VDC Diff	±10 VDC Diff	±10 VDC Diff Sync	±10 VDC Diff
Item no.	750-456	750-456/000-200	753-456	750-479	750-479/000-001	753-479
Technical Data						
Advanced functionality				time-synchro- nous measured- value acquisi- tion within the modules		
Pluggable connector			●			●
Customized data format for S5 control*	●					
Number of analog inputs	2			2		
Type of signal	±10 V			±10 V		
Signal characteristic	differential			differential		
Resolution	12 bits			13 bits + sign bit		
Conversion time	2 ms			1 ms		
Internal resistance	570 kΩ			1 MΩ		
Input filter (analog)				5 kHz		
Admissible continuous overload				60 V		
Measuring error (25 °C)	< ± 0.2 % of the largest measurement range			< ± 0.05 % of the largest measurement range		
Temperature coefficient	< ± 0.015 % /K of the largest measurement range			< ± 0.01 % /K of the largest measurement range		
System supply voltage	5VDC via data contacts			5VDC via data contacts		
Current consumption, system supply	80 mA			100 mA		
Data width	2 x 16 bits data, 2 x 8 bits control/status (optional)			2 x 16 bits data, 2 x 8 bits control/status (optional)		
Isolation	500 V system/field			500 V channel/channel or channel/system		
Ambient temperature (operation)	0 ... +55 °C			0 ... +55 °C		
Dimensions W x H x D	12 x 69.8 x 100 mm			12 x 69.8 x 100 mm		
Approvals	CE,  Marine,  UL 508, ANSI/ISA,  ATEX/IECEX			CE,  Marine,  UL 508, ANSI/ISA,  ATEX/IECEX		
Data sheet and further information, see:	wago.com/750-456		wago.com/753-456	wago.com/750-479		wago.com/753-479
Accessories						
Plug		Item no.			Item no.	
		753-110			753-110	
753 Series coding elements		753-150			753-150	

*The S5 format allows you to import data with the standard S5 FB 250 function block.

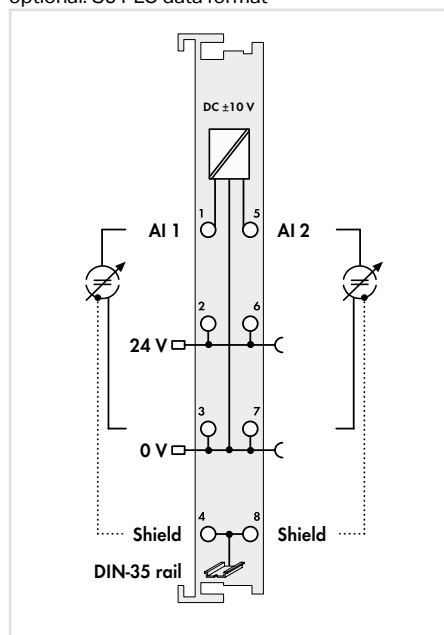
Analog Input, ± 10 VDC



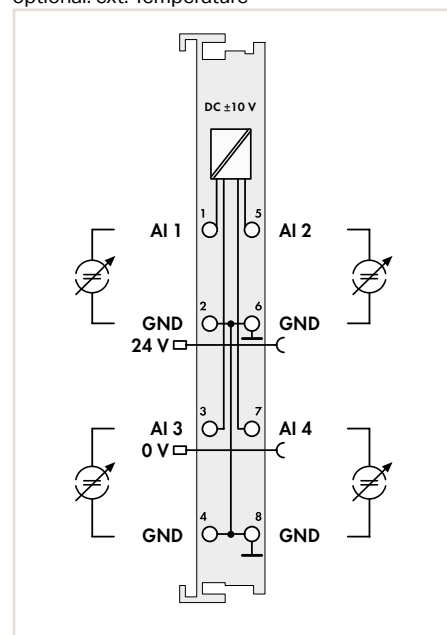
Figure: 750-476

Figure: 750-457

2-channel analog input; ± 10 VDC; Single-Ended;
optional: S5 PLC data format



4-channel analog input; ± 10 VDC; Single-Ended;
optional: ext. Temperature



Item description		2AI			4AI		
Version		± 10 VDC SE 16Bit	± 10 VDC SE 16Bit S5	± 10 VDC SE 16Bit	± 10 VDC SE	± 10 VDC SE T	± 10 VDC SE
Item no.		750-476	750-476/000-200	753-476	750-457	750-457/025-000	753-457
Technical Data							
Pluggable connector				•			•
Customized data format for S5 control*			•				
Number of analog inputs		2			4		
Type of signal		± 10 V			± 10 V		
Signal characteristic		single-ended			single-ended		
Resolution		15 bits + sign bit			12 bits		
Conversion time		80 ms			10 ms		
Internal resistance		130 k Ω			> 100 k Ω		
Input voltage max.		24 V			± 40 V		
Input filter (analog)		50 Hz	60 Hz	50 Hz			
Measuring error (25 °C)		< ± 0.1 % of the largest measurement range			< ± 0.1 % of the largest measurement range		
Temperature coefficient		< ± 0.01 % /K of the largest measurement range			< ± 0.01 % /K of the largest measurement range		
System supply voltage		5VDC via data contacts			5VDC via data contacts		
Current consumption, system supply		75 mA			65 mA		
Data width		2 x 16 bits data, 2 x 8 bits control/status (optional)			4 x 16 bits data, 4 x 8 bits control/status (optional)		
Isolation		500 V system/field			500 V system/field		
Ambient temperature (operation)		0 ... +55 °C			0 ... +55 °C	-20 ... +60 °C	0 ... +55 °C
Dimensions W x H x D		12 x 69.8 x 100 mm			12 x 69.8 x 100 mm		
Approvals		CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX			CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX		
Data sheet and further information, see:		wago.com/750-476		wago.com/753-476	wago.com/750-457		wago.com/753-457
Accessories		Item no.			Item no.		
Plug		753-110			753-110		
753 Series coding elements		753-150			753-150		

*The S5 format allows you to import data with the standard S5 FB 250 function block.

Mini-WSB Quick Marking System
see Full Line Catalog, Volume 6

DIN rails and tool
see Section 11

Approvals and corresponding ratings,
see Page 519 or www.wago.com

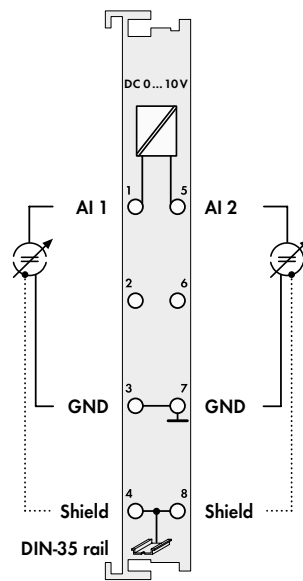
Analog Input, 0 ... 10 VDC



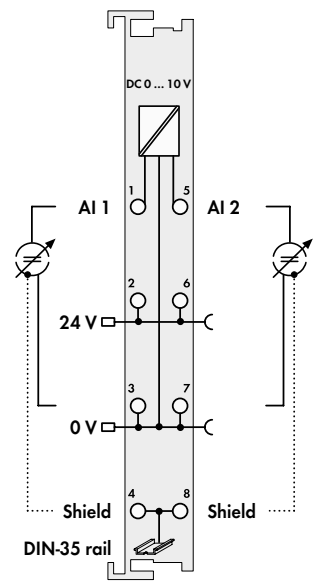
Figure: 750-467

Figure: 750-478

2-channel analog input; 0 ... 10 VDC; Single-Ended; optional: S5 PLC data format



2-channel analog input, 0 ... 10 VDC, Single-Ended, optional: 60 Hz



Item description
Version
Item no.

2AI		
0-10 VDC SE	0-10 VDC SE S5	0-10 VDC SE
750-467	750-467/000-200*	753-467

*Product discontinuation
Last call: 31.5.2017

Technical Data

Pluggable connector
Customized data format for S5 control*
Number of analog inputs
Type of signal
Signal characteristic
Resolution
Conversion time
Internal resistance
Input voltage max.
Input filter (analog)
Measuring error (25 °C)
Temperature coefficient
System supply voltage
Current consumption, system supply
Data width
Isolation
Ambient temperature (operation)
Dimensions W x H x D

	●	●
	2	
	0 ... 10 V	
	single-ended	
	12 bits	
	2 ms	
	130 kΩ	
	35 V	
	< ± 0.2 % of the largest measurement range	
	< ± 0.01 % /K of the largest measurement range	
	5VDC via data contacts	
	60 mA	
	2 x 16 bits data, 2 x 8 bits control/status (optional)	
	500 V system/field	
	0 ... +55 °C	
	12 x 69.8 x 100 mm	

			●
2			
0 ... 10 V			
single-ended			
16 bits			
2 ms			
130 kΩ			
24 V			
50 Hz	60 Hz	50 Hz	
< ± 0.1 % of the largest measurement range			
< ± 0.01 % /K of the largest measurement range			
5VDC via data contacts			
75 mA			
2 x 16 bits data, 2 x 8 bits control/status (optional)			
500 V system/field			
0 ... +55 °C			
12 x 69.8 x 100 mm			

Approvals

CE, UL 508, ANSI/ISA, ATEX/IECEX

CE,  Marine,  UL 508, ANSI/ISA,  ATEX/
IECEX

Data sheet and further information, see:

wago.com/750-467	wago.com/753467

wago.com/750-478	wago.com/753-478

Accessories
Plug
753 Series coding elements

	Item no.
	753-110
	753-150

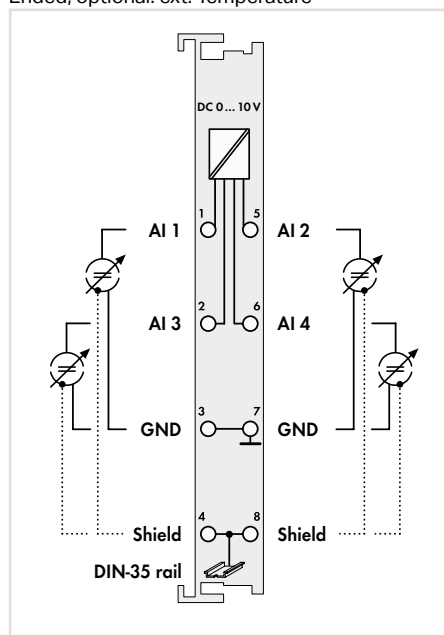
*The S5 format allows you to import data with the standard S5 FB 250 function block.

Analog Input, 0 ... 10 VDC

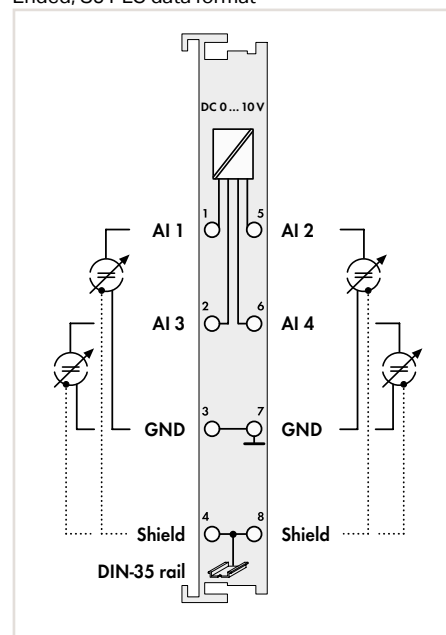


Figure: 750-468

4-channel analog input; 0 ... 10 VDC; Single-Ended; optional: ext. Temperature



4-channel analog input; 0 ... 10 VDC; Single-Ended; S5 PLC data format



Item description	4AI	
Version	0-10 VDC SE	0-10 VDC SE T
Item no.	750-468	750-468/025-000

Technical Data

Customized data format for S5 control*		
Number of analog inputs	4	
Type of signal	0 ... 10 V	
Signal characteristic	single-ended	
Resolution	12 bits	
Conversion time	4 ms	
Internal resistance	133 kΩ	
Input voltage max.	35 V	
Measuring error (25 °C)	< ± 0.2 % of the largest measurement range	
Temperature coefficient	< ± 0.01 % /K of the largest measurement range	
System supply voltage	5VDC via data contacts	
Current consumption, system supply	60 mA	
Data width	4 x 16 bits data, 4 x 8 bits control/status (optional)	
Isolation	500 V system/field	
Ambient temperature (operation)	0 ... +55 °C	-20 ... +60 °C
Dimensions W x H x D	12 x 69.8 x 100 mm	
Approvals	CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX	
Data sheet and further information, see:	wago.com/750-468	

*The S5 format allows you to import data with the standard S5 FB 250 function block.

Item description	4AI	
Version	0-10 VDC SE S5	
Item no.	750-468/000-200	

Product discontinuation
Last call: 31.5.2017

Customized data format for S5 control*		
Number of analog inputs	4	
Type of signal	0 ... 10 V	
Signal characteristic	single-ended	
Resolution	12 bits	
Conversion time	4 ms	
Internal resistance	133 kΩ	
Input voltage max.	35 V	
Measuring error (25 °C)	< ± 0.2 % of the largest measurement range	
Temperature coefficient	< ± 0.01 % /K of the largest measurement range	
System supply voltage	5VDC via data contacts	
Current consumption, system supply	60 mA	
Data width	4 x 16 bits data, 4 x 8 bits control/status (optional)	
Isolation	500 V system/field	
Ambient temperature (operation)	0 ... +55 °C	
Dimensions W x H x D	12 x 69.8 x 100 mm	
Approvals	CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX	
Data sheet and further information, see:	wago.com/750-468	

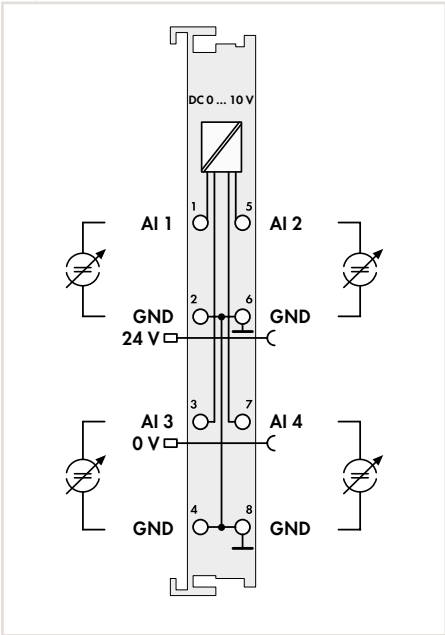
Analog Input, 0 ... 10 VDC

4-channel analog input; 0 ... 10 VDC;
Single-Ended



Figure: 750-459

Figure: 753-459

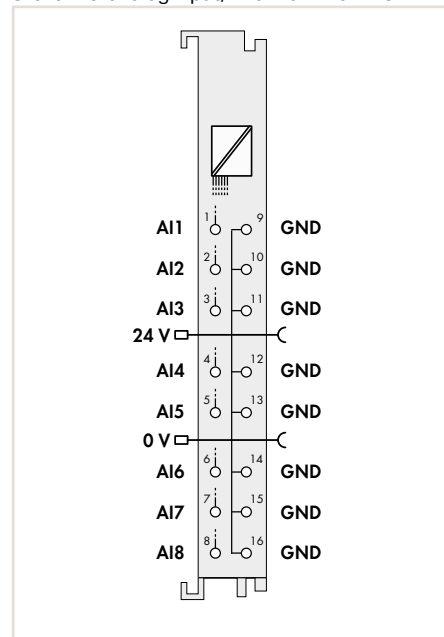


Item description	4AI	
Version	0-10 VDC SE	0-10 VDC SE
Item no.	750-459	753-459
Technical Data		
Pluggable connector		
Number of analog inputs	4	
Type of signal	0 ... 10 V	
Signal characteristic	single-ended	
Resolution	12 bits	
Conversion time	10 ms	
Internal resistance	> 100 kΩ	
Input voltage max.	± 40 V	
Measuring error (25 °C)	< ± 0.1 % of the largest measurement range	
Temperature coefficient	< ± 0.01 % /K of the largest measurement range	
System supply voltage	5VDC via data contacts	
Current consumption, system supply	65 mA	
Data width	4 x 16 bits data, 4 x 8 bits control/status (optional)	
Isolation	500 V system/field	
Ambient temperature (operation)	0 ... +55 °C	
Dimensions W x H x D	12 x 69.8 x 100 mm	
Approvals	CE, Marine, UL 508, ANSI/ISA, ATEX/IECEx	
Data sheet and further information, see:	wago.com/750-459	wago.com/753-459
Accessories	Item no.	
Plug	753-110	
753 Series coding elements	753-150	

Analog Input, adjustable ± 10 VDC/0 ... 10 VDC



8-channel analog input, ± 10 V/0 ... 10 VDC



Item description	8AI
Version	± 10 V/0-10 VDC
Item no.	750-497
Technical Data	
Number of analog inputs	8
Type of signal	adjustable: 0 ... 10 V / ± 10 V
Resolution	12 bits
Internal resistance	> 100 k Ω
Measuring error (25 °C)	< ± 0.1 % of the largest measurement range
Temperature coefficient	< ± 0.01 % /K of the largest measurement range
System supply voltage	5VDC via data contacts
Current consumption, system supply	105 mA
Data width	8 x 16 bits data, 8 x 8 bits control/status (optional)
Isolation	500 V system/field
Ambient temperature (operation)	0 ... +55 °C
Dimensions W x H x D	12 x 69 x 100 mm
Approvals	CE, Marine, UL 508*, ANSI/ISA*
Data sheet and further information, see:	wago.com/750-497

*pending

Mini-WSB Quick Marking System
see Full Line Catalog, Volume 6

DIN rails and tool
see Section 11

Approvals and corresponding ratings,
see Page 519 or www.wago.com

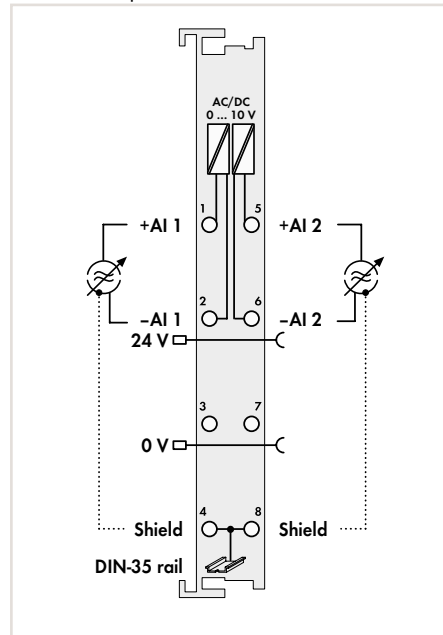
Analog Input, 0 ... 10 VAC/DC or 0 ... 30 VDC



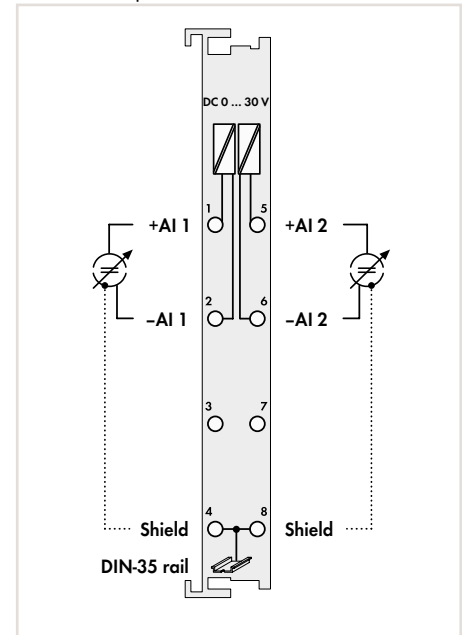
Figure: 750-477

Figure: 753-477

4-channel analog input; 0 ... 10 VAC/DC;
Differential input



4-channel analog input; 0 ... 30 VDC;
Differential input



Item description	2AI	
Version	0-10 V AC/DC	0-10 V AC/DC
Item no.	750-477	753-477

Technical Data

Advanced functionality		
Pluggable connector		•
Number of analog inputs	2	
Type of signal	0 ... 10 V eff. (peak value 20 V)	
Signal characteristic	differential	
Resolution	15 bits	
Conversion time	200 ms	
Internal resistance	120 kΩ	
Measuring error (25 °C)	< ± 0.1 % of the largest measurement range	
Temperature coefficient	< ± 110 ppm/K of the largest measurement range	
System supply voltage	5VDC via data contacts	
Current consumption, system supply	80 mA	
Data width	2 x 16 bits data, 2 x 8 bits control/status (optional)	
Isolation	500 V channel/channel or channel/system	
Ambient temperature (operation)	0 ... +55 °C	
Dimensions W x H x D	12 x 69.8 x 100 mm	
Approvals	CE, UL 508, ANSI/ISA, ATEX/IECEX	
Data sheet and further information, see:	wago.com/750-477	wago.com/753-477
Accessories		
Plug		Item no. 753-110
753 Series coding elements		753-150

Item description	2AI	
Version	0-30 VDC	0-30 VDC
Item no.	750-483	753-483

time-synchronous measured-value acquisition within the modules		
Pluggable connector		•
Number of analog inputs	2	
Type of signal	0 ... 30 V	
Signal characteristic	differential	
Resolution	14 bits	
Conversion time	1 ms	
Internal resistance	1 MΩ	
Measuring error (25 °C)	< ± 0.05 % of the largest measurement range	
Temperature coefficient	< ± 0.01 % /K of the largest measurement range	
System supply voltage	5VDC via data contacts	
Current consumption, system supply	80 mA	
Data width	2 x 16 bits data, 2 x 8 bits control/status (optional)	
Isolation	500 V DC channel/channel or channel/system	
Ambient temperature (operation)	0 ... +55 °C	
Dimensions W x H x D	12 x 69.8 x 100 mm	
Approvals	CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX	
Data sheet and further information, see:	wago.com/750-483	wago.com/753-483
Accessories		
Plug		Item no. 753-110
753 Series coding elements		753-150

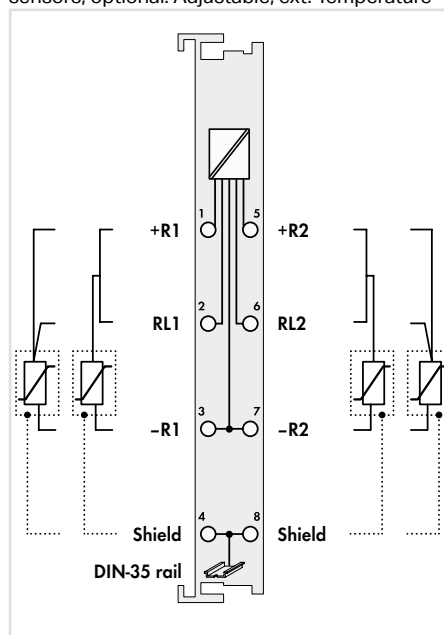
Analog Input, for Resistance Sensors



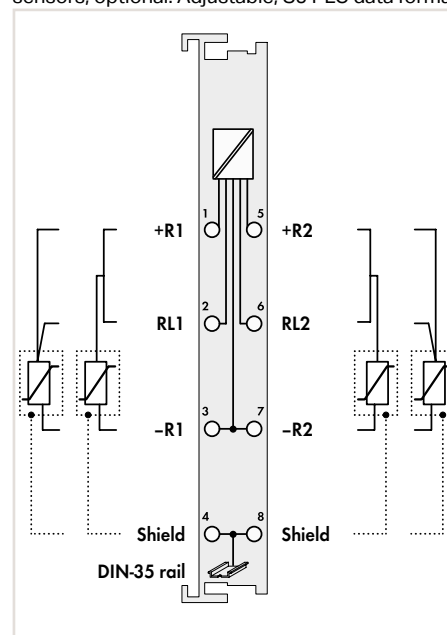
Figure: 750-461

Figure: 753-461

2-channel analog input; for Pt100/ RTD resistance sensors; optional: Adjustable; ext. Temperature



2-channel analog input; for Pt100/ RTD resistance sensors; optional: Adjustable; S5 PLC data format



Item description	2AI		
Version	Pt100/RTD	Pt100/RTD Adjust	Pt100/RTD T
Item no.	750-461	750-461/003-000	750-461/025-000

Item description	2AI		
Version	Pt100/RTD	Pt100/RTD Adjust	Pt100/RTD S5
Item no.	753-461	753-461/003-000	750-461/000-200

Technical Data

Pluggable connector			
Customized data format for S5 control*			
Number of analog inputs	2		
Type of signal	Pt100	Pt100, configurable: Pt, Ni, Ohm	Pt100
Sensor connection	2-conductor, 3-conductor		
Temperature range	-200 ... +850 °C		
Resolution	0.1 °C		
Conversion time	320 ms (per channel)		
Measuring current typ.	0.5 mA		
Measuring error (25 °C)	< ± 0.2 % of the largest measurement range		
Temperature coefficient	< ± 0.01 % /K of the largest measurement range		
System supply voltage	5VDC via data contacts		
Current consumption, system supply	80 mA		
Data width	2 x 16 bits data, 2 x 8 bits control/status (optional)		
Isolation	500 V system/field		
Ambient temperature (operation)	0 ... +55 °C		
Dimensions W x H x D	12 x 69.8 x 100 mm		
Approvals	CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX		
Data sheet and further information, see:	wago.com/750-461		

Pluggable connector			
Customized data format for S5 control*			
Number of analog inputs	2		
Type of signal	Pt100	Pt100, configurable: Pt, Ni, Ohm	Pt100
Sensor connection	2-conductor, 3-conductor		
Temperature range	-200 ... +850 °C		
Resolution	0.1 °C		
Conversion time	320 ms (per channel)		
Measuring current typ.	0.5 mA		
Measuring error (25 °C)	< ± 0.2 % of the largest measurement range		
Temperature coefficient	< ± 0.01 % /K of the largest measurement range		
System supply voltage	5VDC via data contacts		
Current consumption, system supply	80 mA		
Data width	2 x 16 bits data, 2 x 8 bits control/status (optional)		
Isolation	500 V system/field		
Ambient temperature (operation)	0 ... +55 °C		
Dimensions W x H x D	12 x 69.8 x 100 mm		
Approvals	CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX		
Data sheet and further information, see:	wago.com/753-461	wago.com/750-461	

Accessories

- Plug
- 753 Series coding elements

*The S5 format allows you to import data with the standard S5 FB 250 function block.

Mini-WSB Quick Marking System
see Full Line Catalog, Volume 6

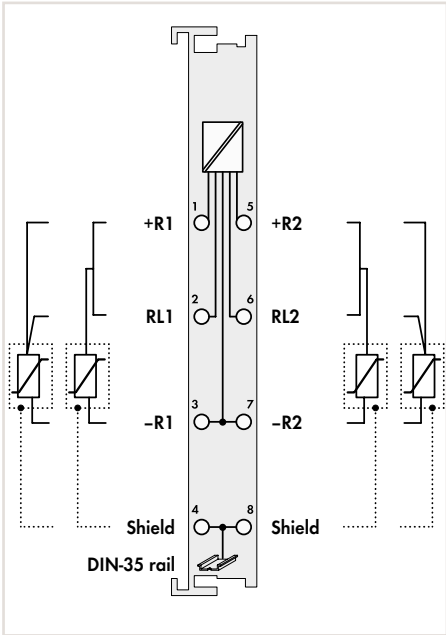
DIN rails and tool
see Section 11

Approvals and corresponding ratings,
see Page 519 or www.wago.com

Item no.

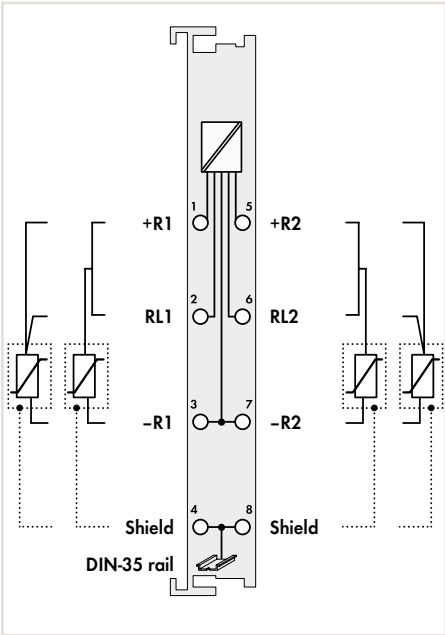
- 753-110
- 753-150

2-channel analog input; for Pt1000/ RTD resistance sensors; optional: Resistance measurement



2AI		
Pt1000/RTD	10R-1k2	10R-5k0
750-461/000-003	750-461/000-002	750-461/000-007

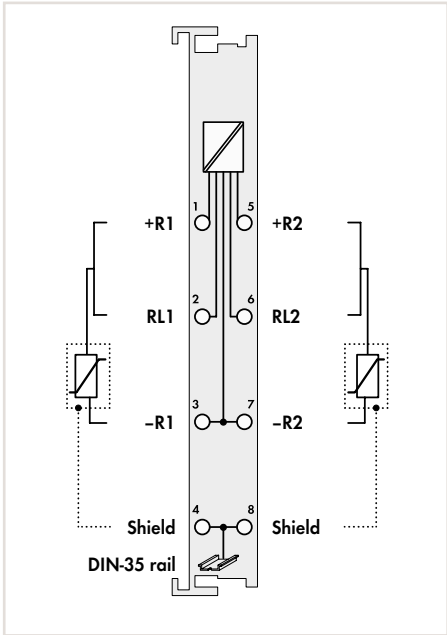
2-channel analog input; for Ni100/RTD resistance sensors; optional: Ni1000



2AI		
Ni100/RTD	Ni1000/RTD	Ni1000/RTD
750-461/000-004*	750-461/000-005	750-461/000-009

*Product discontinuation
Last call: 31.5.2017

2-channel analog input; for NTC 20k resistance sensors



2AI		
NTC 20k		
750-461/020-000		

2		
Pt1000	10R ... 1k2	10R ... 5k0
2-/3-conductor	2-conductor	
-200 ... +850 °C		
0.1 °C	0.1 Ohm	0,5 Ohm
320 ms (per channel)		
0,5 mA		
< ± 0.2 % of the largest measurement range		
< ± 0.01 % /K of the largest measurement range		
5VDC via data contacts		
80 mA		
2 x 16 bits data, 2 x 8 bits control/status (optional)		
500 V system/field		
0 ... +55 °C		
12 x 69.8 x 100 mm		
CE, Marine, UL 508, ANSI/ISA, ATEX/IECEx		
wago.com/750-461		

2		
Ni100	Ni1000 TK6180	Ni1000 TK5000
2-conductor, 3-conductor		
-60 ... +250 °C		-30 ... +122 °C
0.1 °C		
320 ms (per channel)		
0,5 mA		
< ± 0.2 % of the largest measurement range		
< ± 0.01 % /K of the largest measurement range		
5VDC via data contacts		
80 mA		
2 x 16 bits data, 2 x 8 bits control/status (optional)		
500 V system/field		
0 ... +55 °C		
12 x 69.8 x 100 mm		
CE,   Marine,  UL 508, ANSI/ISA,  ATEX/IECEx		
wago.com/750-461		

2		
NTC 20k		
2-conductor		
-30 ... +130 °C		
0.1 °C		
320 ms (per channel)		
0.05 mA		
0,5 ... 3 K (dependent on temperature)		
< ± 0.002 % /K of the largest measurement range		
5VDC via data contacts		
65 mA		
2 x 16 bits data, 2 x 8 bits control/status (optional)		
500 V system/field		
0 ... +55 °C		
12 x 69.8 x 100 mm		
CE, Marine, UL 508, ANSI/ISA, ATEX/IECEx		
wago.com/750-461		

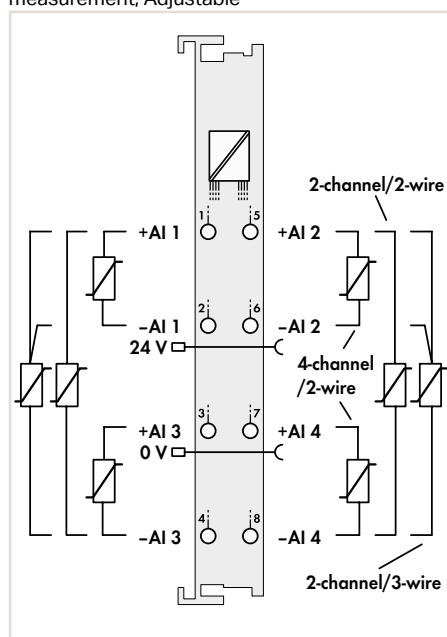
Analog Input, for Resistance Sensors



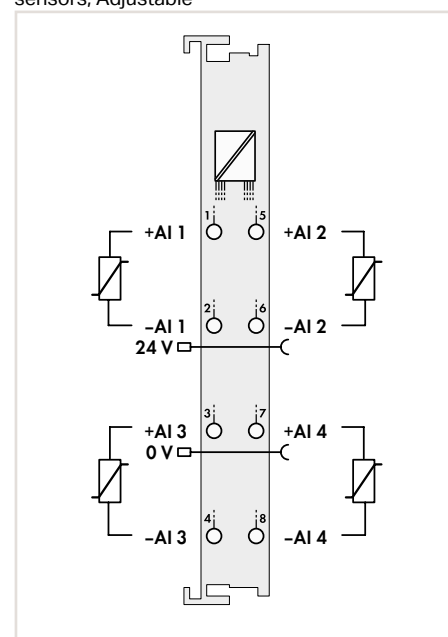
Figure: 750-464

Figure: 750-464

2/4-channel analog input; Resistance measurement; Adjustable



4-channel analog input; for NTC resistance sensors; Adjustable



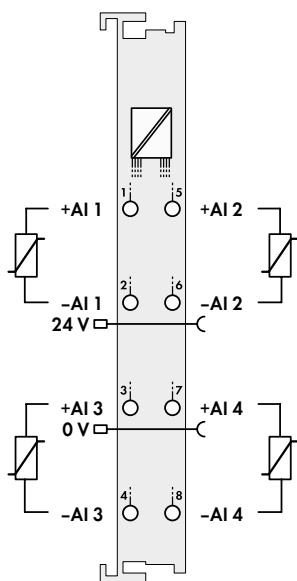
Item description	2/4AI	4AI
Version	RTD Adjust	NTC Adjust
Item no.	750-464	750-464/020-000
Technical Data		
Number of analog inputs	2/4	4
Type of signal	Pt100, configurable: Pt200, Pt500, Pt1000, Ni 100, Ni 120, Ni 1000, Potentiometer (only 2-channel operation), 10 Ohm ... 1,2 kOhm, 10 Ohm ... 5 kOhm	NTC 10 kOhm, configurable: NTC 10 kOhm Thermokon, NTC 20 kOhm
Sensor connection	2-conductor, 3-conductor	2-conductor
Temperature range	-200 ... +850 °C (Pt100 ... Pt1000), -60 ... +300 °C (Ni 100, Ni 1000), -60 ... +250 °C (Ni 1000 TK5000), -80 ... +260 °C (Ni 120)	-50 ... +150 °C
Resolution	0.1 °C	0.1 °C
Conversion time	320 ms (per channel)	320 ms (per channel)
Measuring current typ.	≤ 350 µA	≤ 350 µA
Measuring error (25 °C)	≤ 1 K in the entire temp. range, ≤ 0,5 K in the restricted temp. range (-30 ... +120 °C, Pt 1000)	≤ 2 K in the entire temp. range
Temperature coefficient	≤ 20 ppm/K	≤ 20 ppm/K
System supply voltage	5VDC via data contacts	5VDC via data contacts
Current consumption, system supply	50 mA	50 mA
Data width	4 (2) x 16 bits data, 4 (2) x 8 bits control/status (optional)	4 x 16 bits data, 4 x 8 bits control/status (optional)
Isolation	500 V system/field	500 V system/field
Ambient temperature (operation)	0 ... +55 °C	0 ... +55 °C
Dimensions W x H x D	12 x 69.8 x 100 mm	12 x 69.8 x 100 mm
Approvals	CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX	CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX
Data sheet and further information, see:	wago.com/750-464	wago.com/750-464/020-000

Mini-WSB Quick Marking System
see Full Line Catalog, Volume 6

DIN rails and tool
see Section 11

Approvals and corresponding ratings,
see Page 519 or www.wago.com

4-channel analog input; for Pt1000/ RTD resistance sensors; Adjustable

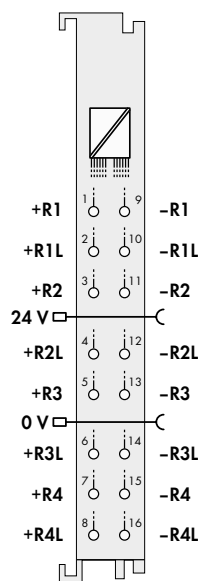


4AI

RTD -30°C...+150°C

750-463

4-channel analog input; Resistance measurement; Adjustable

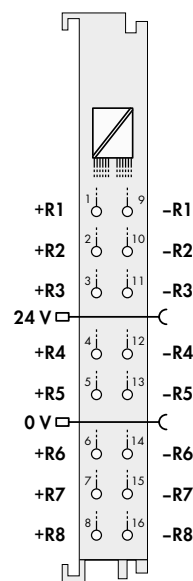


4AI

RTD Adjust

750-450

8-channel analog input; Resistance measurement; Adjustable



8AI

RTD Adjust

750-451

4

Pt1000, configurable: Ni1000, KTY 81

2-conductor

-30 ... +150 °C

0.1 °C

≤ 350 µA

≤ 0.5 K in temperature range -30 ... +150 °C

≤ 20 ppm/K

5VDC via data contacts

50 mA

4 x 16 bits data, 4 x 8 bits control/status (optional)

500 V system/field

0 ... +55 °C

12 x 69.8 x 100 mm

CE, UL 508, ANSI/ISA, ATEX/IECEX

wago.com/750-463

4

Pt100, configurable: Pt200, Pt500, Pt1000, Ni100, Ni120, Ni1000 (TK6180 + TK5000), Potentiometer 0 Ohm ... 1,2 kOhm, 0 Ohm ... 5 kOhm

2-conductor, 3-conductor, 4-conductor

-200 ... +850 °C (Pt100, Pt200, Pt500, Pt1000),
-60 ... +250 °C (Ni100, Ni1000),
-80 ... +260 °C (Ni120)

0.1 °C

per channel: ≤ 100 ms (2-/4-conductor),
≤ 200 ms (3-conductor)

≤ 350 µA

≤ ±0.6 K (Pt100, Pt200, Pt500, Ni100, Ni120),
≤ ±0.2 K (Pt1000, Ni1000),
≤ ±0.3 ... 0.7 Ω at resistance measurement

≤ ± 5 ppm/K

5VDC via data contacts

85 mA

4 x 16 bits data, 4 x 8 bits control/status (optional)

500 V system/field

0 ... +55 °C

12 x 69.8 x 100 mm

CE, Marine, UL 508*, ANSI/ISA*, ATEX/IECEX

wago.com/750-450

*pending

8

Pt100, configurable: Pt200, Pt500, Pt1000, Ni100, Ni120, Ni1000 (TK6180 + TK5000), Potentiometer 0 Ohm ... 1,2 kOhm, 0 Ohm ... 5 kOhm

2-conductor

-200 ... +850 °C (Pt100, Pt200, Pt500, Pt1000),
-60 ... +250 °C (Ni100, Ni1000),
-80 ... +260 °C (Ni120)

0.1 °C

per channel: ≤ 100 ms

≤ 350 µA

≤ ±0.6 K (Pt100, Pt200, Pt500, Ni100, Ni120),
≤ ±0.2 K (Pt1000, Ni1000),
≤ ±0.3 Ω at resistance measurement

≤ ± 5 ppm/K

5VDC via data contacts

110 mA

8 x 16 bits data, 8 x 8 bits control/status (optional)

500 V system/field

0 ... +55 °C

12 x 69.8 x 100 mm

CE, Marine, UL 508*, ANSI/ISA*, ATEX/IECEX

wago.com/750-451

*pending

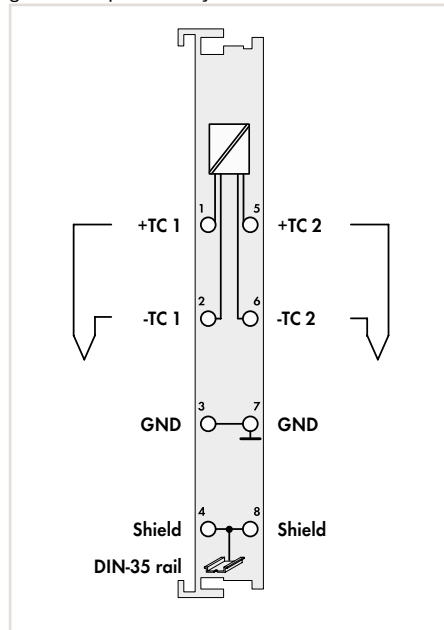
Analog Input, for Thermocouple



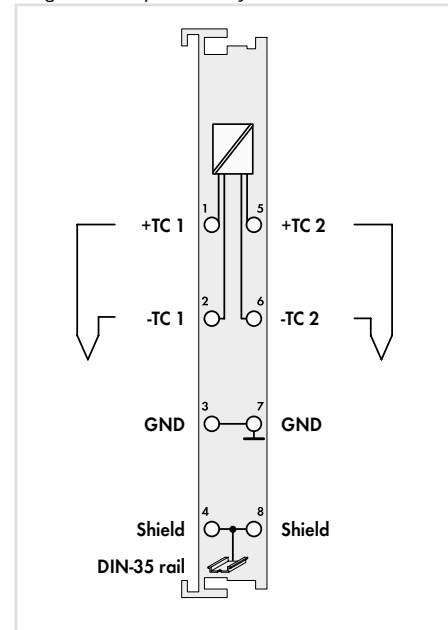
Figure: 750-469

Figure: 750-458

2-channel analog input; Thermocouple K; Diagnostics; optional: Adjustable; S5 PLC data format



2-channel analog input; Thermocouple K; Diagnostics; optional: Adjustable



Item description
Version
Item no.

2AI		
TC K Diagn	TC K Diagn Adjust	TC K Diagn S5
750-469	750-469/003-000	750-469/000-200

Technical Data

Pluggable connector
Customized data format for S5 control*
Number of analog inputs
Type of signal
Temperature range
Resolution
Conversion time
Measuring error (25 °C)

2		
Thermocouple K	Thermocouple K, configurable: L, J, E, T, N, U, B, R, S, mV	Thermocouple K
-100 ... +1370 °C	depending on sensor	-100 ... +1370 °C
0.1 °C		
320 ms		
<± 6 K (voltage input <± 2 K, cold junction compensation <± 4 K)		

Temperature coefficient
Cold junction compensation
System supply voltage
Current consumption, system supply
Data width
Isolation
Ambient temperature (operation)
Dimensions W x H x D

<± 0.2 K/K
integrated or external
5VDC via data contacts
65 mA
2 x 16 bits data, 2 x 8 bits control/status (optional)
500 V system/field
0 ... +55 °C
12 x 69.8 x 100 mm

Approvals

Data sheet and further information, see:

CE, Marine, UL 508, ANSI/ISA, ATEX/IECEx
wago.com/750-469

Accessories

Plug
753 Series coding elements

2AI	
TC K Diagn	TC K Diagn Adjust
753-469	753-469/003-000

2	
Thermocouple K	Thermocouple K, configurable: L, J, E, T, N, U, B, R, S, mV
-100 ... +1370 °C	depending on sensor
0.1 °C	
320 ms	
<± 6 K (voltage input <± 2 K, cold junction compensation <± 4 K)	

<± 0.2 K/K
integrated or external
5VDC via data contacts
65 mA
2 x 16 bits data, 2 x 8 bits control/status (optional)
500 V system/field
0 ... +55 °C
12 x 69.8 x 100 mm

CE, Marine, UL 508, ANSI/ISA, ATEX/IECEx
wago.com/753-469

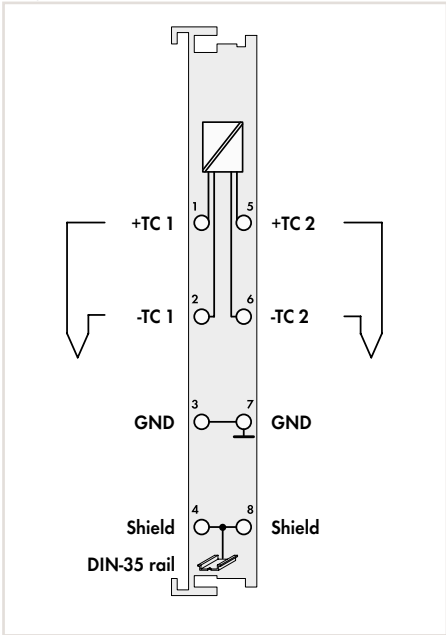
Item no.
753-110
753-150

*The S5 format allows you to import data with the standard S5 FB 250 function block.

Mini-WSB Quick Marking System
see Full Line Catalog, Volume 6

Approvals and corresponding ratings,
see Page 519 or www.wago.com

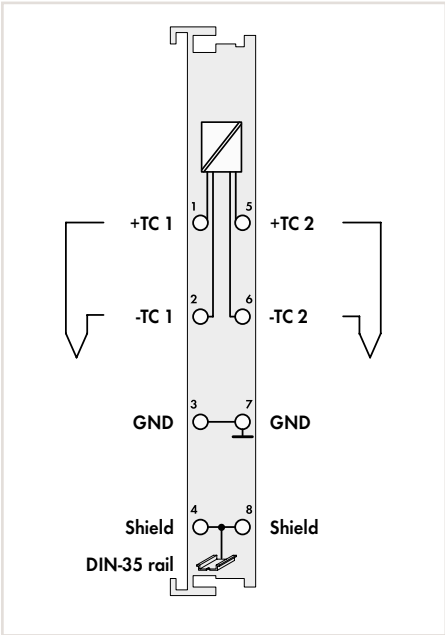
2-channel analog input; Thermocouple S; Diagnostics; optional: Thermocouple T or J



2AI		
TC S Diagn	TC T Diagn	TC J Diagn
750-469/000-001	750-469/000-002	750-469/000-006

2		
Thermocouple S	Thermocouple T	Thermocouple J
-50 ... +1700 °C	-100 ... +400 °C	-100 ... +1200 °C
0.1 °C		
320 ms		
<± 6 K (voltage input <± 2 K, cold junction compensation <± 4 K)		
<± 0.2 K/K		
integrated or external		
5VDC via data contacts		
65 mA		
2 x 16 bits data, 2 x 8 bits control/status (optional)		
500 V system/field		
0 ... +55 °C		
12 x 69.8 x 100 mm		
CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX		
wago.com/750-469		

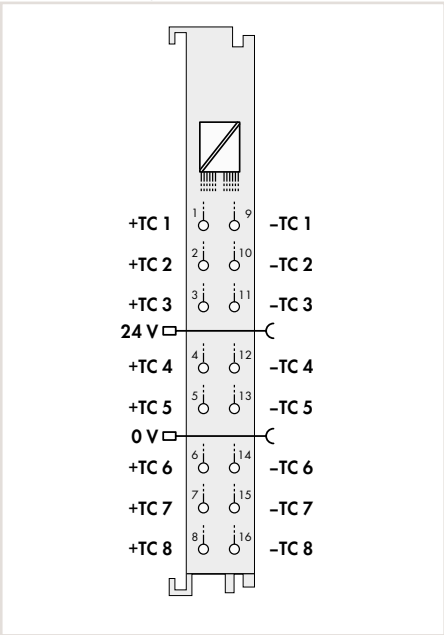
2-channel analog input; Thermocouple E; Diagnostics; optional: Thermocouple L or ±120 mV



2AI		
TC E Diagn	TC L Diagn	TC ±120mV Diagn
750-469/000-008	750-469/000-012	750-469/000-003

2		
Thermocouple E	Thermocouple L	±120mV
-100 ... +1000 °C	-100 ... +900 °C	
0.1 °C		
320 ms		
<± 6 K (voltage input <± 2 K, cold junction compensation <± 4 K)		
<± 0.2 K/K		
integrated or external		
5VDC via data contacts		
65 mA		
2 x 16 bits data, 2 x 8 bits control/status (optional)		
500 V system/field		
0 ... +55 °C		
12 x 69.8 x 100 mm		
CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX		
wago.com/750-469		

8-channel analog input for Thermocouple



8AI	
TC Adjust	
750-458	

8
Thermocouple K, configurable: J, B, E, N, R, S, T, U, C; Voltage measurement -30 ... +30 mV, -60 ... +60 mV, -120 ... +120 mV, -240 ... +240 mV
depending on sensor
0.1 °C
per channel: ≤ 100 ms
without cold junction compensation: ≤ ±1 K (Type E, N, K, T, J, C); ≤ ±2 K (Type S, R); ≤ ±3 K (Type B); Cold-junction compensation measurement error: ≤ ±4 K
≤ ±0.05 K/K
integrated or external
5VDC via data contacts
100 mA
8 x 16 bits data, 8 x 8 bits control/status (optional)
500 V system/field
0 ... +55 °C
12 x 69.8 x 100 mm
CE, Marine, UL 508*, ANSI/ISA*, ATEX/IECEX
wago.com/750-458

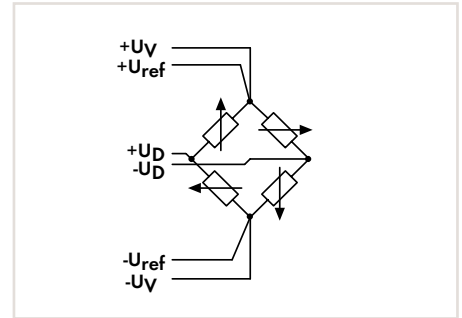
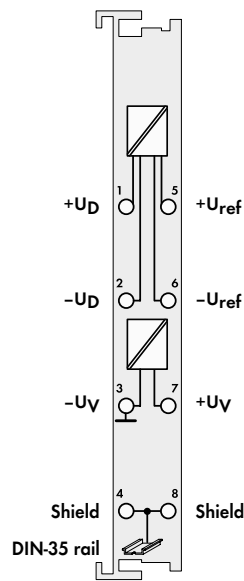
*pending

Analog Input, for Resistor bridges (strain gauge)



Figure: 750-491

1-channel analog input;
Resistor bridges (strain gauge)



Item description	1AI	
Version	DMS	DMS 125ms
Item no.	750-491	750-491/000-001
Technical Data		
Number of analog inputs	1	
Type of signal	Resistor bridges (strain gauge)	
Signal voltage U_D	-15 ... +15 mV	
Signal voltage U_{ref}	+2 ... +6 V	
Internal resistance	> 200 k Ω (U_{ref}), > 1 M Ω (U_D)	
Voltage supply U_V	5 VDC, 20 mA	
Resolution	16 bits	
Conversion time	500 ms	125 ms
Measuring errors	UD: $\pm 30 \mu V$, Uref: $\pm 10 mV$	
Filter	50 Hz	200 Hz
System supply voltage	5VDC via data contacts	
Current consumption, system supply	65 mA	
Data width	2 x 16 bits data, 2 x 8 bits control/status (optional)	
Isolation	500 V system/field	
Ambient temperature (operation)	0 ... +55 °C	
Dimensions W x H x D	12 x 69.8 x 100 mm	
Approvals	CE, UL 508*, ANSI/ISA*	
Data sheet and further information, see:	wago.com/750-491	

*pending

Mini-WSB Quick Marking System
see Full Line Catalog, Volume 6

DIN rails and tool
see Section 11

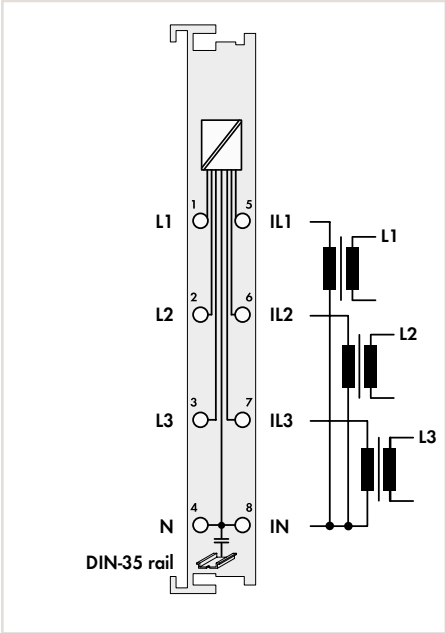
Approvals and corresponding ratings,
see Page 519 or www.wago.com

Analog Input, for 3-Phase Power Measurement



Figure: 750-493

3-Phase Power Measurement; 480 VAC 1 A;
optional: ext. Temperature; 480 VAC 5 A



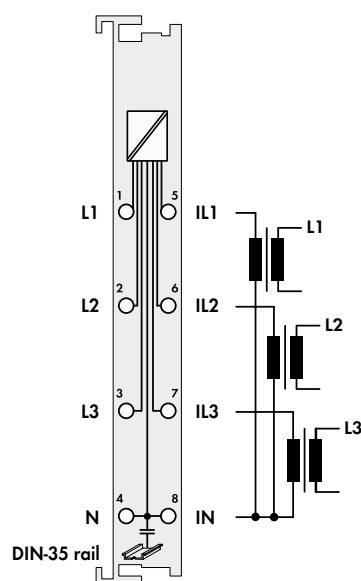
Item description	3-PHASE POM		
Version	480VAC 1A	480VAC 1A T	480VAC 5A
Item no.	750-493	750-493/025-000	750-493/000-001
Technical Data			
Type of signal	3-Phase Power Measurement		
Measured values	current, voltage, active power, apparent power, reactive power, energy, frequency, cos phi		
Number of measurement inputs	6 (3 voltage measurement inputs, 3 current measurement inputs)		
Rated surge voltage	U _{LN} = 277 V AC/DC, U _{LL} = 480 V AC		
Input resistance voltage path typ.	1071 kΩ		
Measuring current max.	1 A	5 A	
Input resistance current path typ.	22 mΩ	5 mΩ	
Resolution	16 bits		
Measuring error (25 °C)	AC current/voltage:		
	± 0,5 % of the largest measurement range	± 0,6 % of the largest measurement range	± 0,5 % of the largest measurement range
Frequency range, power supply frequency	45 ... 65 Hz		
Max. operating frequency	7.2 kHz		
System supply voltage	5VDC via data contacts		
Current consumption, system supply	100 mA		
Data width	2 x 48 bits data, 2 x 24 bits control/status (optional)		
Isolation	4 kV system/field		
Ambient temperature (operation)	0 ... +55 °C	-20 ... +60 °C	0 ... +55 °C
Dimensions W x H x D	12 x 69.8 x 100 mm		
Approvals	CE,  ,  UL 508, ANSI/ISA,  ATEX/IECEX		
Data sheet and further information, see:	wago.com/750-493		
Accessories			
Plug-In and Split-Core Current Transformers	see Full Line Catalog, Volume 4		

Analog Input, for 3-Phase Power Measurement

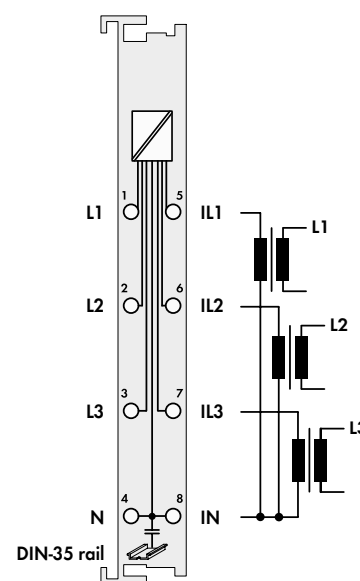


Figure: 750-494

3-Phase Power Measurement; 480 VAC 1 A;
optional: ext. Temperature



3-Phase Power Measurement; 480 VAC 5 A;
optional: ext. Temperature



Item description	3-PHASE POM	
Version	480VAC 1A	480VAC 1A T
Item no.	750-494	750-494/025-000

Technical Data

Type of signal	3-Phase Power Measurement	
Measured values	current, voltage, active power, apparent power, reactive power, energy, frequency, cos phi, harmonic analysis (up to the 41st harmonic), THD and other	
Number of measurement inputs	6 (3 voltage measurement inputs, 3 current measurement inputs)	
Rated surge voltage	$U_{LN} = 277 \text{ V AC/DC}$, $U_{LL} = 480 \text{ V AC}$	
Input resistance voltage path typ.	1072 k Ω	
Measuring current max.	1 A	
Input resistance current path typ.	22 m Ω	
Resolution	24 bits	
Measuring error (25 °C)	AC current/voltage: $\pm 0,5 \%$ of the largest measurement range	
Frequency range, power supply frequency	45 ... 65 Hz	
Frequency range, harmonics analysis	0 ... 3300 Hz	
Max. operating frequency	15.9 kHz	
System supply voltage	5VDC via data contacts	
Current consumption, system supply	100 mA	
Data width	2 x 128 bits data, 2 x 64 bits control/status	
Isolation	4 kV system/field	
Ambient temperature (operation)	0 ... +55 °C	-20 ... +60 °C
Dimensions W x H x D	12 x 69.8 x 100 mm	
Approvals	CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX	
Data sheet and further information, see:	wago.com/750-494	

Item description	3-PHASE POM	
Version	480VAC 5A	480VAC 5A T
Item no.	750-494/000-001	750-494/025-001

Type of signal	3-Phase Power Measurement	
Measured values	current, voltage, active power, apparent power, reactive power, energy, frequency, cos phi, harmonic analysis (up to the 41st harmonic), THD and other	
Number of measurement inputs	6 (3 voltage measurement inputs, 3 current measurement inputs)	
Rated surge voltage	$U_{LN} = 277 \text{ V AC/DC}$, $U_{LL} = 480 \text{ V AC}$	
Input resistance voltage path typ.	1072 k Ω	
Measuring current max.	5 A	
Input resistance current path typ.	5 m Ω	
Resolution	24 bits	
Measuring error (25 °C)	AC current/voltage: $\pm 0,5 \%$ of the largest measurement range	
Frequency range, power supply frequency	45 ... 65 Hz	
Frequency range, harmonics analysis	0 ... 3300 Hz	
Max. operating frequency	15.9 kHz	
System supply voltage	5VDC via data contacts	
Current consumption, system supply	100 mA	
Data width	2 x 128 bits data, 2 x 64 bits control/status	
Isolation	4 kV system/field	
Ambient temperature (operation)	0 ... +55 °C	-20 ... +60 °C
Dimensions W x H x D	12 x 69.8 x 100 mm	
Approvals	CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX	
Data sheet and further information, see:	wago.com/750-494/000-001	

Accessories
Plug-In and Split-Core Current Transformers

Item no.
see Full Line Catalog, Volume 4

Item no.
see Full Line Catalog, Volume 4

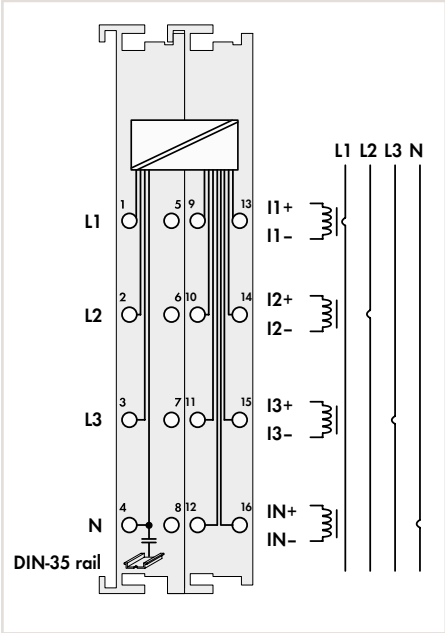
 Mini-WSB Quick Marking System see Full Line Catalog, Volume 6
 DIN rails and tool see Section 11
 Approvals and corresponding ratings, see Page 519 or www.wago.com

Analog Input, for 3-Phase Power Measurement

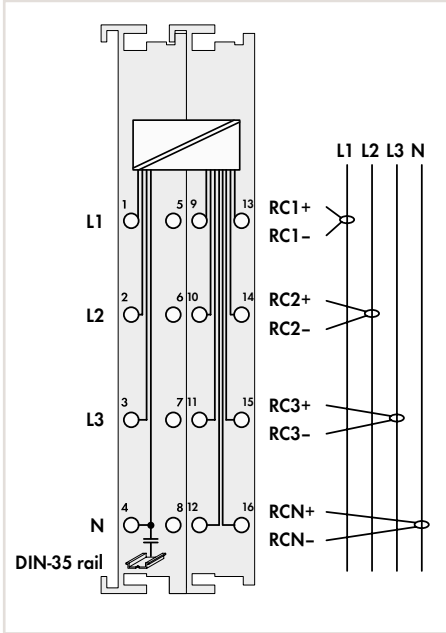


Figure: 750-495

3-Phase Power Measurement; 690 VAC 1 A;
optional: 690 VAC 5 A



3-Phase Power Measurement,
690 VAC Rogowski coils



Item description
Version
Item no.

3-PHASE POM	
690VAC 1A	690VAC 5A
750-495	750-495/000-001

3-PHASE POM	
690VAC R.C.	
750-495/000-002	

Technical Data	
Type of signal	3-Phase Power Measurement
Measured values	current, voltage, active power, apparent power, reactive power, energy, frequency, cos phi, harmonic analysis (up to the 41st harmonic), THD, current measurement in the neutral conductor and other
Number of measurement inputs	7 (3 voltage measurement inputs, 4 differential current measurement inputs)
Rated surge voltage	$U_{LN} = 400 \text{ V AC}$, $U_{LL} = 690 \text{ V AC}$
Input resistance voltage path typ.	1429 k Ω
Measuring current max.	1 A
Input resistance current path typ.	22 m Ω
Resolution	24 bits
Measuring error (25 °C)	AC current/voltage: $\pm 0,5 \%$ of the largest measurement range
Frequency range, power supply frequency	45 ... 65 Hz
Frequency range, harmonics analysis	0 ... 3300 Hz
Max. operating frequency	15.9 kHz
System supply voltage	5VDC via data contacts
Current consumption, system supply	100 mA
Data width	2 x 128 bits data, 2 x 64 bits control/status
Isolation	6 kV system/field
Ambient temperature (operation)	0 ... +55 °C
Dimensions W x H x D	24 x 69.8 x 100 mm
Approvals	CE, Marine
Data sheet and further information, see:	wago.com/750-495
Accessories	
Plug-In and Split-Core Current Transformers	
Rogowski Coils RT500/RT2000	

3-Phase Power Measurement	
current, voltage, active power, apparent power, reactive power, energy, frequency, cos phi, harmonic analysis (up to the 41st harmonic), THD, current measurement in the neutral conductor and other	
7 (3 voltage measurement inputs, 4 differential current measurement inputs)	
$U_{LN} = 400 \text{ V AC}$, $U_{LL} = 690 \text{ V AC}$	
1429 k Ω	
1 A	5 A
22 m Ω	5 m Ω
24 bits	
AC current/voltage: $\pm 0,5 \%$ of the largest measurement range	
45 ... 65 Hz	
0 ... 3300 Hz	
15.9 kHz	
5VDC via data contacts	
100 mA	
2 x 128 bits data, 2 x 64 bits control/status	
6 kV system/field	
0 ... +55 °C	
24 x 69.8 x 100 mm	
CE, Marine	
wago.com/750-495	
Item no.	see Full Line Catalog, Volume 4

3-Phase Power Measurement	
current, voltage, active power, apparent power, reactive power, energy, frequency, cos phi, harmonic analysis (up to the 41st harmonic), THD, current measurement in the neutral conductor and other	
7 (3 voltage measurement inputs, 4 differential current measurement inputs)	
$U_{LN} = 277 \text{ V AC}$, $U_{LL} = 480 \text{ V AC}$	
1429 k Ω	
Rogowski coils RT500/RT2000	
44 k Ω	
24 bits	
AC current/voltage: $\pm 0,5 \%$ of the largest measurement range	
45 ... 65 Hz	
0 ... 3300 Hz	
15.9 kHz	
5VDC via data contacts	
100 mA	
2 x 128 bits data, 2 x 64 bits control/status	
6 kV system/field	
0 ... +55 °C	
24 x 69.8 x 100 mm	
CE, Marine	
wago.com/750-495/000-002	
Item no.	see Full Line Catalog, Volume 4

Analog Output Modules

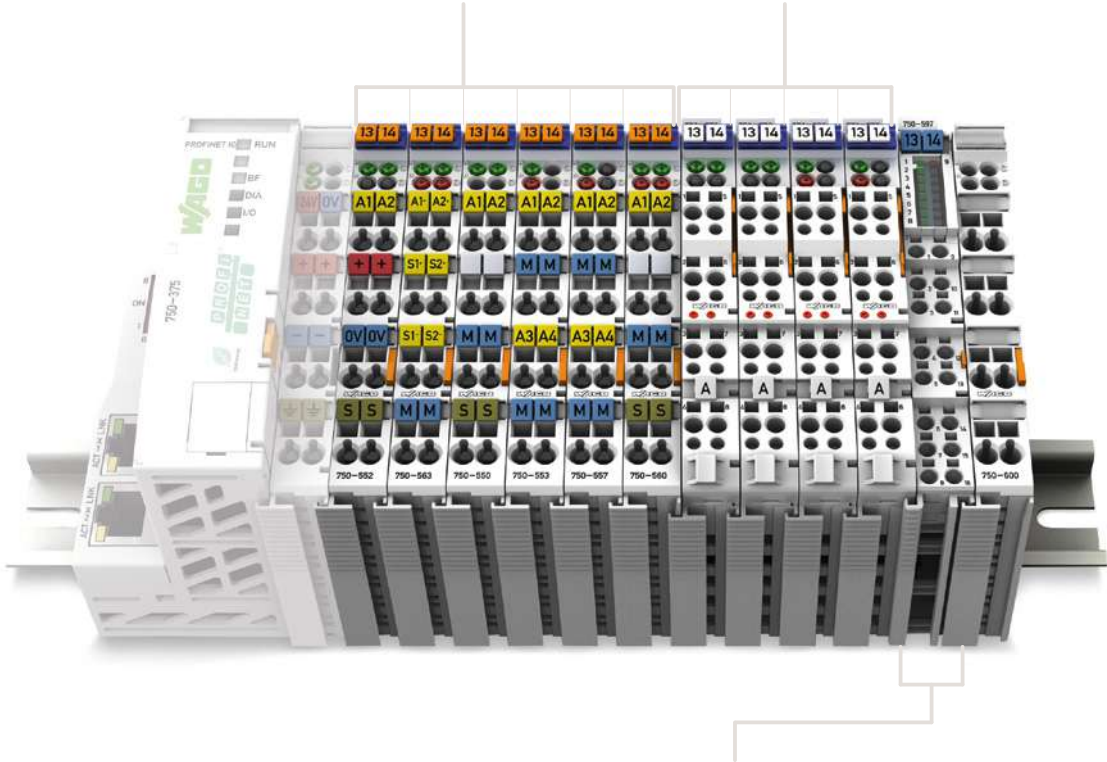


750 Series housing design

Dimensions W x H x D	12 x 69.8 x 100 mm
Height from upper edge of DIN rail	62.6 mm
Connection technology	CAGE CLAMP®
Conductor size	0.08 ... 2.5 mm² / 28 ... 14 AWG
Strip length	8 ... 9 mm / 0.33 inch

753 Series housing design

Dimensions W x H x D	12 x 69.8 x 100 mm
Height from upper edge of DIN rail	62.6 mm
Connection technology	CAGE CLAMP®
Conductor size	0.08 ... 2.5 mm² / 28 ... 14 AWG
Strip length	9 ... 10 mm / 0.37 inch



750 Series housing design with push-in CAGE CLAMP® connectors (up to 16 connector points)

Dimensions W x H x D	12 x 69 x 100 mm
Height from upper edge of DIN rail	61.8 mm
Connection technology	Push-in CAGE CLAMP®
Conductor size	Solid: 0.08 ... 1.5 mm² / 28 ... 16 AWG Fine-stranded: 0.25 ... 1.5 mm² / 22 ... 16 AWG
Strip length	8 ... 9 mm / 0.33 inch



750 and 753 Series I/O-System, Analog Output Modules

Contents

Function	2-channel AO	4-channel AO	8-channel AO	Description	Item number				Page
					Standard	/S5 Customized data format	T ext. Temperature	Pluggable	
0 – 20 mA	■			12 bits	750-552	750-552/000-200	750-552/025-000	753-552	202
		■		12 bits	750-553			753-553	203
4 – 20 mA	■			12 bits	750-554	750-554/000-200	750-554/025-000	753-554	204
		■		12 bits	750-555			753-555	205
0/4 – 20 mA	■			16 bits, DC 6 ... 18 V, adjustable	750-563				205
0 – 10 V	■			12 bits	750-550	750-550/000-200		753-550	206
	■			10 bits, 10 mA	750-560				206
		■		12 bits	750-559		750-559/025-000	753-559	207
± 10 V	■			12 bits	750-556	750-556/000-200		753-556	208
		■		12 bits	750-557			753-557	208
0 V/± 10 V	■			16 bits, adjustable	750-562				209
			■	12 bits, adjustable	750-597				209
Ex i					see Section 4.9				

Figure: 753-552

*The S5 format allows you to import data with the standard S5 FB 250 function block.

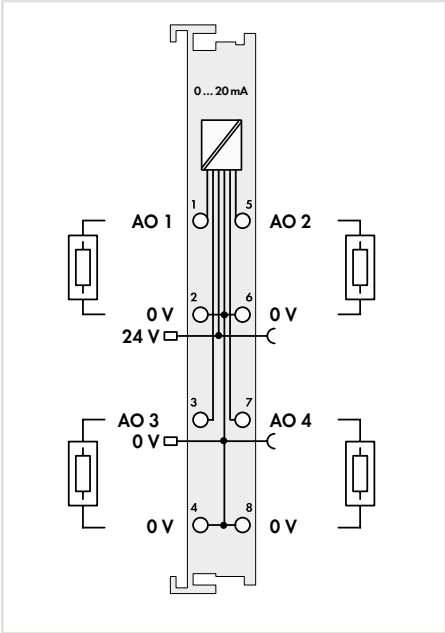
Analog Output, 0 ... 20 mA



Figure: 750-553

Figure: 753-553

4-channel analog output; 0 ... 20 mA



Item description	4AO	
Version	0-20mA	0-20mA
Item no.	750-553	753-553
Technical Data		
Pluggable connector		
Number of analog outputs	4	
Type of signal	0 ... 20 mA	
Actuator connection	2-conductor	
Load impedance	either 0 ... 300 Ω or 300 ... 600 Ω (same resistance for all load impedances)	
Resolution	12 bits	
Conversion time	10 ms	
Measuring error (25 °C)	< ± 0.1 % of largest measurement range	
Temperature coefficient	< ± 0.01 % /K of largest measurement range	
Field supply voltage	24 VDC (–25 ... +30 %), via power jumper contacts	
Current consumption, system supply	60 mA	
Data width	4 x 16 bits data, 4 x 8 bits control/status (optional)	
Isolation	500 V system/field	
Ambient temperature (operation)	0 ... +55 °C	
Dimensions W x H x D	12 x 69.8 x 100 mm	
Approvals	CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX	
Data sheet and further information, see:	wago.com/750-553	wago.com/753-553
Accessories		
Plug		Item no. 753-110
753 Series coding elements		753-150

Figure: 753-554

4 ... 20 mA

AO 1

AO 2

24 V

0 V

Shield

DIN-35 rail

*The S5 format allows you to import data with the standard S5 FB 250 function block.

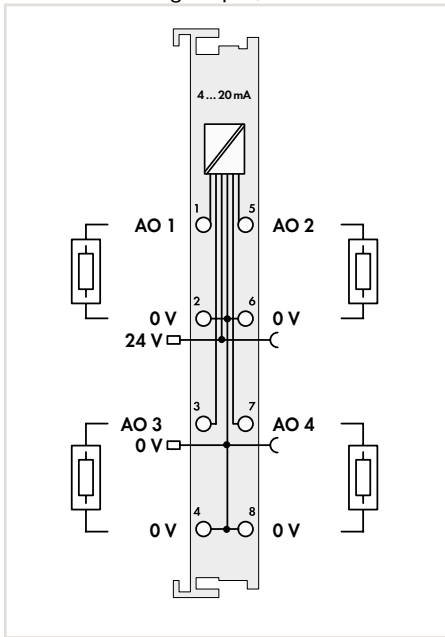
Analog Output, 4 ... 20 mA or adjustable 0/4 ... 20 mA, 6 ... 18 VDC



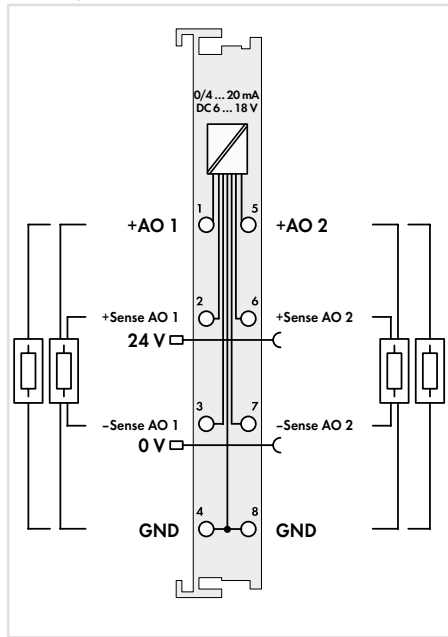
Figure: 750-555

Figure: 753-555

4-channel analog output; 4 ... 20 mA



2-channel analog output; 0/4 ... 20 mA;
16 bits; 6 ... 18 VDC



Item description	4AO	
Version	4-20mA	4-20mA
Item no.	750-555	753-555

Technical Data

Pluggable connector		
Number of analog outputs	4	
Type of signal	4 ... 20 mA	
Actuator connection	2-conductor	
Load impedance	either 0 ... 300 Ω or 300 ... 600 Ω (same resistance for all load impedances)	
Resolution	12 bits	
Conversion time	10 ms	
Measuring error (25 °C)	< ± 0.1 % of largest measurement range	
Temperature coefficient	< ± 0.01 % /K of largest measurement range	
Field supply voltage	24 VDC (–25 ... +30 %), via power jumper contacts	
Current consumption, system supply	60 mA	
Data width	4 x 16 bits data, 4 x 8 bits control/status (optional)	
Isolation	500 V system/field	
Ambient temperature (operation)	0 ... +55 °C	
Dimensions W x H x D	12 x 69.8 x 100 mm	

Approvals	CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX	
Data sheet and further information, see:	wago.com/750-555	wago.com/753-555

Accessories

	Item no.
Plug	753-110
753 Series coding elements	753-150

Item description	2AO
Version	0/4-20mA 16Bit 6-18 VDC
Item no.	750-563

Pluggable connector	
Number of analog outputs	2
Type of signal	0 ... 20 mA; 4 ... 20 mA; 6 ... 18 V
Actuator connection	2-conductor, 4-conductor
Load impedance	> 1.8 kΩ (voltage output), < 500 Ω (current output)
Resolution	16 bits
Conversion time	5 ms
Measuring error (25 °C)	< ± 0.05 % of largest measurement range
Temperature coefficient	< ± 100 ppm
Field supply voltage	24 VDC (–15 ... +20 %), via power jumper contacts
Current consumption, system supply	80 ... 110 mA
Data width	2 x 16 bits data, 2 x 8 bits control/status (optional)
Isolation	500 V system/field
Ambient temperature (operation)	0 ... +55 °C
Dimensions W x H x D	12 x 69.8 x 100 mm

Approvals	CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX
Data sheet and further information, see:	wago.com/750-563

	Item no.
Plug	753-110
753 Series coding elements	753-150

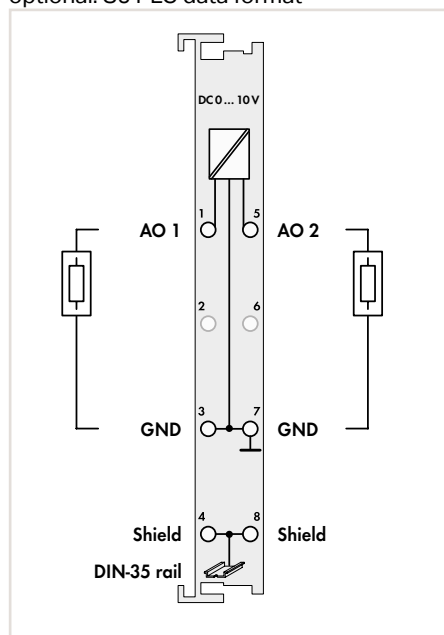
Analog Output, 0 ... 10 VDC



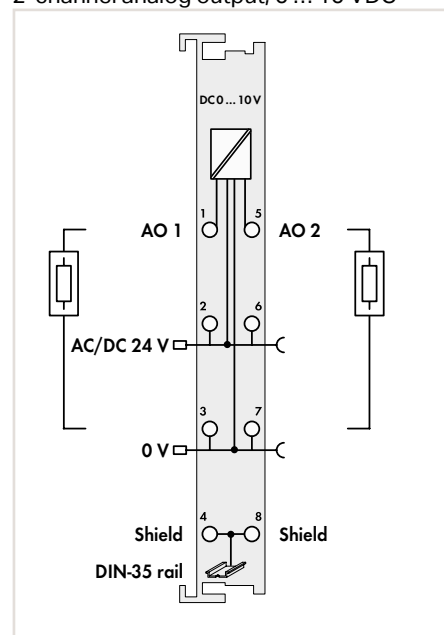
Figure: 750-550

Figure: 753-550

2-channel analog output; 0 ... 10 VDC;
optional: S5 PLC data format



2-channel analog output; 0 ... 10 VDC



Item description	2AO		
Version	0-10V DC	0-10V DC S5	0-10V DC
Item no.	750-550	750-550/000-200	753-550

Technical Data

Pluggable connector			•
Customized data format for S5 control*		•	
Number of analog outputs	2		
Type of signal	0 ... 10 V		
Actuator connection	2-conductor		
Load impedance	> 5 kΩ		
Resolution	12 bits		
Conversion time	approx. 2 ms		
Measuring error (25 °C)	< ± 0.1 % of largest measurement range		
Temperature coefficient	< ± 0.01 % /K of largest measurement range		
Field supply voltage			
Current consumption, system supply	65 mA		
Data width	2 x 16 bits data, 2 x 8 bits control/status (optional)		
Isolation	500 V system/field		
Ambient temperature (operation)	0 ... +55 °C		
Dimensions W x H x D	12 x 69.8 x 100 mm		
Approvals	CE, Marine, UL 508, ANSI/ISA, ATEX/IECEx		
Data sheet and further information, see:	wago.com/750-550	wago.com/753-550	
Accessories		Item no.	
Plug		753-110	
753 Series coding elements		753-150	

Item description	2AO		
Version	0-10V DC		
Item no.	750-560		

Pluggable connector			
Customized data format for S5 control*			
Number of analog outputs	2		
Type of signal	0 ... 10 V		
Actuator connection	2-conductor		
Load impedance	≥ 1 kΩ		
Resolution	10 bits		
Conversion time	approx. 10 ms		
Measuring error (25 °C)	< ± 0.2 % of largest measurement range		
Temperature coefficient	< ± 0.02 % /K of largest measurement range		
Field supply voltage	24 V AC/DC, via power jumper contacts		
Current consumption, system supply	16 mA		
Data width	2 x 16 bits data, 2 x 8 bits control/status (optional)		
Isolation	500 V system/field		
Ambient temperature (operation)	0 ... +55 °C		
Dimensions W x H x D	12 x 69.8 x 100 mm		
Approvals	CE, Marine, UL 508, ANSI/ISA, ATEX/IECEx		
Data sheet and further information, see:	wago.com/750-560		
Accessories		Item no.	
Plug			
753 Series coding elements			

*The S5 format allows you to import data with the standard S5 FB 250 function block.

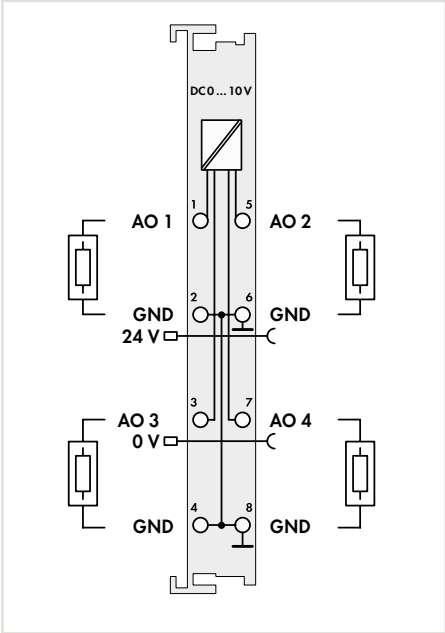
Analog Output, 0 ... 10 VDC



Figure: 750-559

Figure: 753-559

4-channel analog output; 0 ... 10 VDC



Item description		4AO		
Version		0-10V DC	0-10V DC T	0-10V DC
Item no.		750-559	750-559/025-000	753-559
Technical Data				
Pluggable connector				
Number of analog outputs		4		
Type of signal		0 ... 10 V		
Actuator connection		2-conductor		
Load impedance		> 5 kΩ		
Resolution		12 bits		
Conversion time		10 ms		
Measuring error (25 °C)		< ± 0.1 % of largest measurement range		
Temperature coefficient		< ± 0.01 % /K of largest measurement range		
Field supply voltage		24 VDC (–25 ... +30 %), via power jumper contacts		
Current consumption, system supply		125 mA		
Data width		4 x 16 bits data, 4 x 8 bits control/status (optional)		
Isolation		500 V system/field		
Ambient temperature (operation)		0 ... +55 °C	–20 ... +60 °C	0 ... +55 °C
Dimensions W x H x D		12 x 69.8 x 100 mm		
Approvals				
Data sheet and further information, see:		CE,  Marine,  UL 508, ANSI/ISA,  ATEX/IECEx		
		wago.com/750-559		wago.com/753-559
Accessories				
Plug		753-110		
753 Series coding elements		753-150		

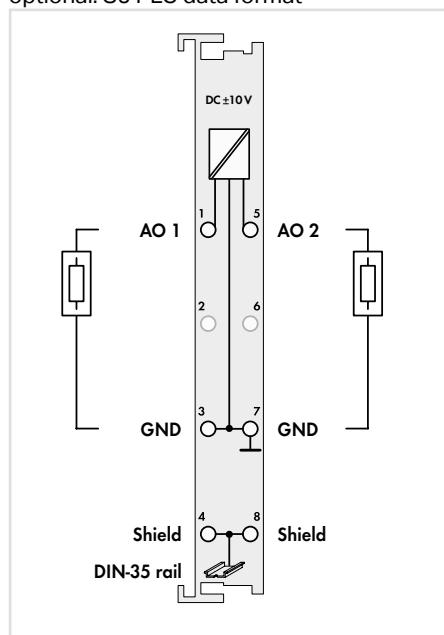
Analog Output, ± 10 VDC



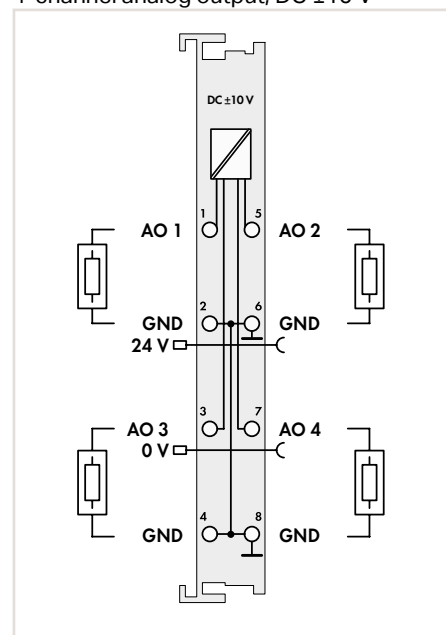
Figure: 750-556

Figure: 753-556

2-channel analog output; ± 10 VDC;
optional: S5 PLC data format



4-channel analog output; DC ± 10 V



Item description
Version
Item no.

2AO
± 10 V DC
± 10 V DC S5
± 10 V DC
750-556
750-556/000-200
753-556

4AO
± 10 V DC
± 10 V DC
750-557
753-557

Technical Data

Pluggable connector
Customized data format for S5 control*
Number of analog outputs
Type of signal
Actuator connection
Load impedance
Resolution
Conversion time
Measuring error (25 °C)
Temperature coefficient
Field supply voltage
Current consumption, system supply
Data width
Isolation
Ambient temperature (operation)
Dimensions W x H x D
Approvals
Data sheet and further information, see:
Accessories
Plug
753 Series coding elements

2
± 10 V
2-conductor
> 5 k Ω
12 bits
approx. 2 ms
< ± 0.1 % of largest measurement range
< ± 0.01 % /K of largest measurement range
65 mA
2 x 16 bits data, 2 x 8 bits control/status (optional)
500 V system/field
0 ... +55 °C
12 x 69.8 x 100 mm
CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX
wago.com/750-556
wago.com/753-556
Item no.
753-110
753-150

4
± 10 V
2-conductor
> 5 k Ω
12 bits
10 ms
< ± 0.1 % of largest measurement range
< ± 0.01 % /K of largest measurement range
24 VDC (-25 ... +30 %), via power jumper contacts
125 mA
4 x 16 bits data, 4 x 8 bits control/status (optional)
500 V system/field
0 ... +55 °C
12 x 69.8 x 100 mm
CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX
wago.com/750-557
wago.com/753-557
Item no.
753-110
753-150

*The S5 format allows you to import data with the standard S5 FB 250 function block.

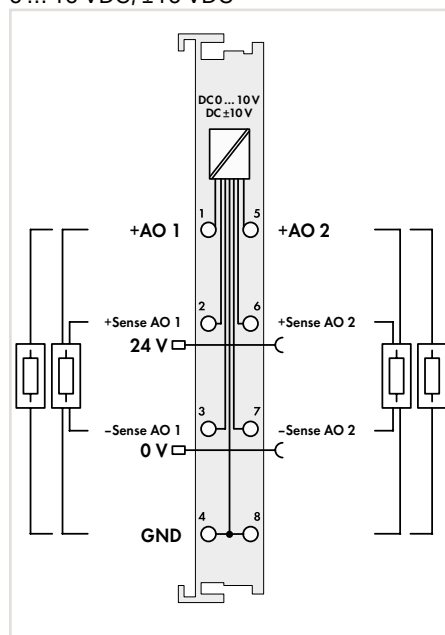
Analog Output, adjustable 0 ... 10 VDC, ± 10 VDC



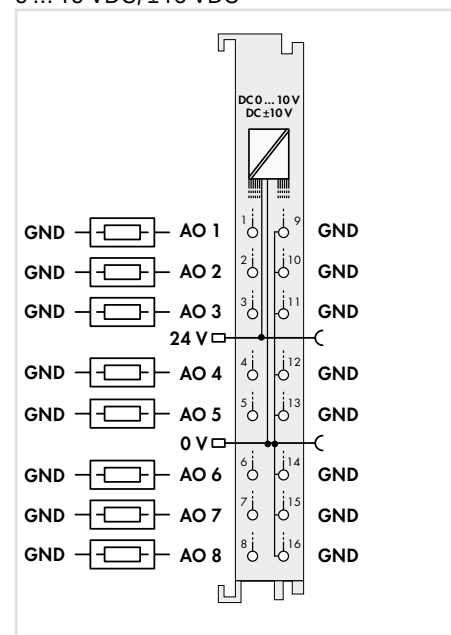
Figure: 750-562

Figure: 750-597

2-channel analog output;
0 ... 10 VDC; ± 10 VDC



8-channel analog output;
0 ... 10 VDC; ± 10 VDC



Item description	2AO
Version	0-10V/ ± 10 VDC 16Bit
Item no.	750-562

Item description	8AO
Version	0-10V/ ± 10 VDC
Item no.	750-597

Technical Data

Number of analog outputs	2
Type of signal	0 ... 10 V, ± 10 V
Actuator connection	2-conductor, 4-conductor
Load impedance	$> 5 \text{ k}\Omega$
Resolution	16 bits
Conversion time	5 ms
Measuring error (25 °C)	$< \pm 0.05 \%$ of largest measurement range
Temperature coefficient	$< \pm 100 \text{ ppm}$
Field supply voltage	24 VDC ($-15 \dots +20 \%$), via power jumper contacts
Current consumption, system supply	80 ... 170 mA
Data width	2 x 16 bits data, 2 x 8 bits control/status (optional)
Isolation	500 V system/field
Ambient temperature (operation)	0 ... $+55 \text{ }^{\circ}\text{C}$
Dimensions W x H x D	12 x 69.8 x 100 mm
Approvals	CE, UL 508, ANSI/ISA, ATEX/IECEx
Data sheet and further information, see:	wago.com/750-562

Number of analog outputs	8
Type of signal	0 ... 10 V, ± 10 V
Actuator connection	2-conductor
Load impedance	$\geq 2 \text{ k}\Omega$
Resolution	12 bits
Conversion time	13 ms
Measuring error (25 °C)	$\leq \pm 0.1 \%$ of largest measurement range
Temperature coefficient	$\leq \pm 10 \text{ ppm/K}$ of largest measurement range
Field supply voltage	24 VDC ($-15 \dots +30 \%$), via power jumper contacts
Current consumption, system supply	61 mA
Data width	8 x 16 bits data, 8 x 8 bits control/status (optional)
Isolation	500 V system/field
Ambient temperature (operation)	0 ... $+55 \text{ }^{\circ}\text{C}$
Dimensions W x H x D	12 x 69 x 100 mm
Approvals	CE
Data sheet and further information, see:	wago.com/750-597

Number of analog outputs	8
Type of signal	0 ... 10 V, ± 10 V
Actuator connection	2-conductor
Load impedance	$\geq 2 \text{ k}\Omega$
Resolution	12 bits
Conversion time	13 ms
Measuring error (25 °C)	$\leq \pm 0.1 \%$ of largest measurement range
Temperature coefficient	$\leq \pm 10 \text{ ppm/K}$ of largest measurement range
Field supply voltage	24 VDC ($-15 \dots +30 \%$), via power jumper contacts
Current consumption, system supply	61 mA
Data width	8 x 16 bits data, 8 x 8 bits control/status (optional)
Isolation	500 V system/field
Ambient temperature (operation)	0 ... $+55 \text{ }^{\circ}\text{C}$
Dimensions W x H x D	12 x 69 x 100 mm
Approvals	CE
Data sheet and further information, see:	wago.com/750-597

Function and Technology Modules



750 Series housing design

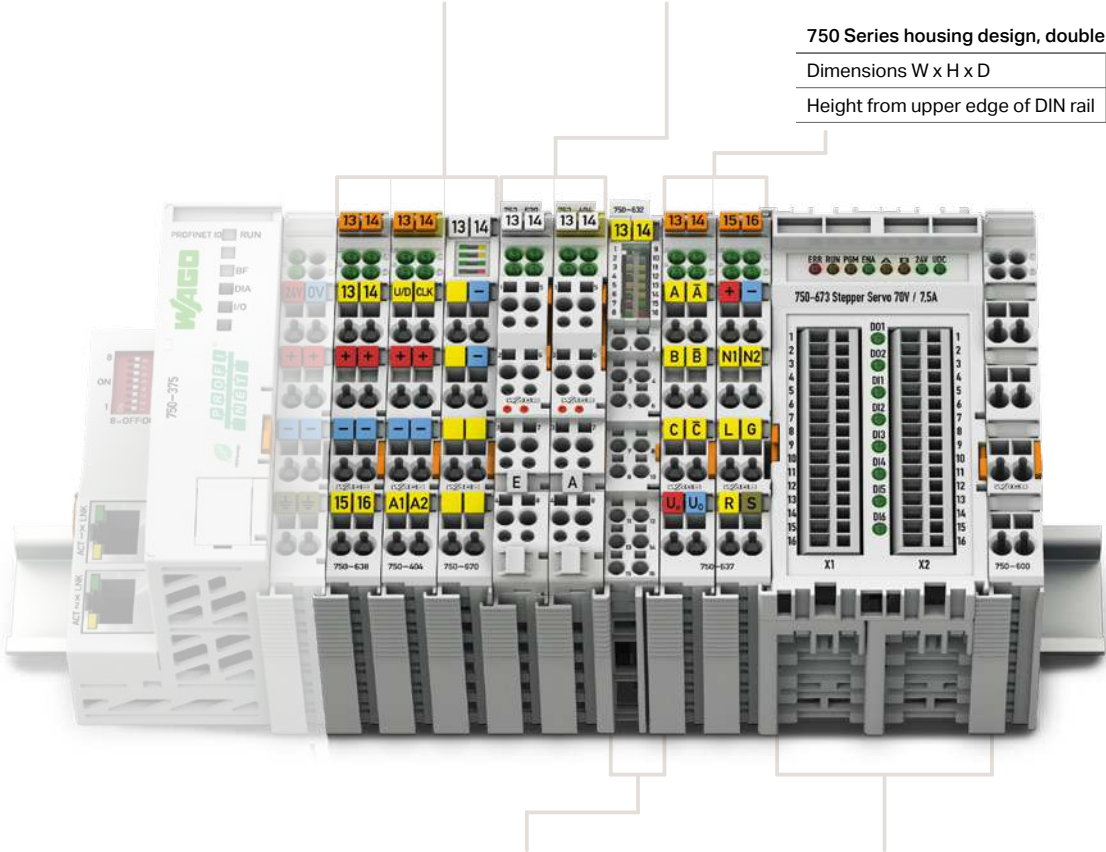
Dimensions W x H x D	Housing with 4 LEDs: 12 x 69.8 x 100 mm Housing with 8 LEDs: 12 x 67.8 x 100 mm
Height from upper edge of DIN rail	Housing with 4 LEDs: 62.6 mm Housing with 8 LEDs: 60.6 mm
Connection technology	CAGE CLAMP®
Conductor size	0.08 ... 2.5 mm² / 28 ... 14 AWG
Strip length	8 ... 9 mm / 0.33 inch

753 Series housing design

Dimensions W x H x D	Housing with 4 LEDs: 12 x 69.8 x 100 mm Housing with 8 LEDs: 12 x 69 x 100 mm
Height from upper edge of DIN rail	Housing with 4 LEDs: 62.6 mm Housing with 8 LEDs: 61.8 mm
Connection technology	CAGE CLAMP®
Conductor size	0.08 ... 2.5 mm² / 28 ... 14 AWG
Strip length	9 ... 10 mm / 0.37 inch

750 Series housing design, double width

Dimensions W x H x D	24 x 69.8 x 100 mm
Height from upper edge of DIN rail	6,6 mm



750 Series housing design with push-in CAGE CLAMP® connectors (up to 16 connector points)

Dimensions W x H x D	12 x 69 x 100 mm
Height from upper edge of DIN rail	61.8 mm
Connection technology	Push-in CAGE CLAMP®
Conductor size	Solid: 0.08 ... 1.5 mm² / 28 ... 16 AWG Fine-stranded: 0.25 ... 1.5 mm² / 22 ... 16 AWG
Strip length	8 ... 9 mm / 0.33 inch

Specialty Housing

Dimensions W x H x D	51 x 69.8 x 100 mm
Height from upper edge of DIN rail	62,6 mm
Connection technology	CAGE CLAMP®
Conductor size	0.08 ... 1.5 mm² / 28 ... 14 AWG
Strip length	5 ... 6 mm / 0.22 in



750 and 753 Series I/O-System, Function and Technology Modules

Contents

Function	Description	Item number			Page
		Standard	T ext. Temperature	Pluggable	
Counter modules	Up/down counters	750-404		753-404	212
	Up counter, enable input	750-404/000-001			212
	Peak-time counter	750-404/000-002			212
	Frequency counter	750-404/000-003		753-404/000-003	213
	Up/down counter, switch output	750-404/000-004			212
	2 up counters, 16 bit	750-404/000-005		753-404/000-005	213
	Up/down counter, 24 VDC, 16 bits, 500 Hz	750-638	750-638/025-000	753-638	213
Pulse width output	2 pulse width outputs, 24 VDC, 0.1 A, 250 Hz	750-511		753-511	214
	2 pulse width outputs, 24 VDC, 0.1 A, 2 kHz, frequency counter	750-511/000-001			214
	2 pulse width outputs, 24 VDC, 0.1 A, 100 Hz	750-511/000-002			214
Distance and angle measurement modules	SSI absolute encoder, 24 bits, 125 kHz, gray code	750-630			215
	SSI absolute encoder, 24 bits, 125 kHz, bin. code	750-630/000-001			216
	SSI absolute encoder, 24 bits, 250 kHz, bin. code	750-630/000-002			217
	SSI absolute encoder, 24 bits, 125 kHz, gray code, status bit	750-630/000-004			215
	SSI absolute encoder, 15 bits, 125 kHz, gray code, status bit	750-630/000-005			215
	SSI absolute encoder, 24 bits, 250 kHz, gray code	750-630/000-006			216
	SSI absolute encoder, 25 bits, 125 kHz, gray code	750-630/000-008			216
	SSI absolute encoder, 13 bits, 250 kHz, bin. code	750-630/000-009			217
	SSI absolute encoder, 25 bits, 125 kHz, bin. code	750-630/000-011			216
	SSI absolute encoder, 13 bits, 125 kHz, gray code	750-630/000-012			216
	SSI absolute encoder, 29 bits, 125 kHz, bin. code	750-630/000-013			216
	SSI absolute encoder, adjustable	750-630/003-000			215
	Incremental encoder interface, RS-422	750-631/000-004			218
	Incremental encoder interface, RS-422, 32 bits	750-637			218
	Incremental encoder interface, 24 VDC, differential input, 32 bits	750-637/000-001			219
	Incremental encoder interface, 24 VDC, single-ended, 32 bits	750-637/000-002			219
	Incremental encoder interface, 5 VDC, 32 bits, single evaluation	750-637/000-003			219
	Incremental encoder interface, 24 VDC, single-ended, 32 bits, cam	750-637/000-004			219
	Digital Impulse Interface	750-635		753-635	220
RTC Module	Real-time clock module	750-640			221
Vibration monitoring	2-Channel, Vibration Velocity/Bearing Condition Monitoring VIB I/O Module	750-645			222
Stepper module	Stepper controller, RS-422, 24 VDC, 20 mA	750-670			223
	Stepper controller, 24 VDC, 1.5 A	750-671			224
	Stepper controller, 70 VDC, 7.5 A	750-672			225
	Stepper servo, 55 VDC, 7.5 A	750-673			226
DC drive controller	DC drive controller, 24 VDC, 5 A	750-636	750-636/025-000		227
	DC drive controller, 24 VDC, 5 A, separate motor voltage	750-636/000-700			227
	DC drive controller, 24 VDC, 5 A, interference-free	750-636/000-800			227
Proportional valve module	Proportional valve module	750-632			228
Ex i		see Section 4.9			

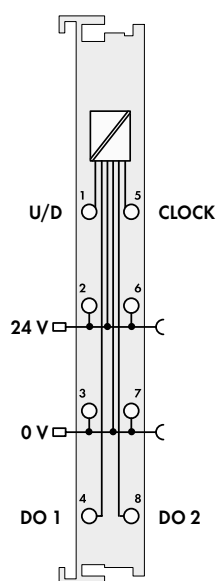
Counter, Up/Down Counter 100 kHz or 500 Hz



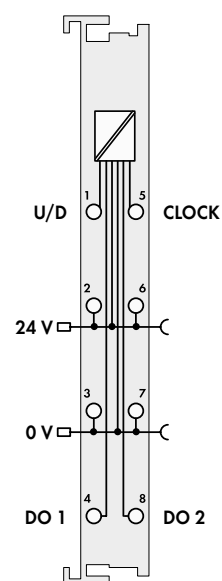
Figure: 750-404

Figure: 753-404

Up/Down Counter;
optional: Switching Output



Up Counter; Release Input or
Peak Time Counter



Item description
Version
Item no.

Up/Down Counter		
	Switch Output	
750-404	750-404/000-004	753-404

Up Counter	Peak Time Counter
Release Input	
750-404/000-001	750-404/000-002

Technical Data

Pluggable connector
No. of outputs
No. of counters
Voltage range for signal (0)
Voltage range for signal (1)
Output current
Switching frequency (max.)
Minimum pulse width
Input current (typ.)
Counter depth
Field supply voltage
Current consumption, system supply
Internal data width
Isolation
Ambient temperature (operation)
Dimensions W x H x D
Approvals
Data sheet and further information, see:
Accessories
Plug
753 Series coding elements

	2	
	1	
	-3 ... +5 VDC	
	15 ... 30 VDC	
	0.5 A, short-circuit-protected	
	100 kHz	
	6 mA	
	32 bits	
	24 VDC (-15 ... +20 %), via power jumper contacts	
	70 mA	
	32 bits data, 8 bits control/status	
	500 V system/field	
	0 ... +55 °C	
	12 x 69.8 x 100 mm	
	CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX	
	wago.com/750-404	wago.com/753-404
		Item no.
		753-110
		753-150

	2
	1
	-3 ... +5 VDC
	15 ... 30 VDC
	0.5 A, short-circuit-protected
	100 kHz
	10 kHz
	6 mA
	32 bits
	24 VDC (-15 ... +20 %), via power jumper contacts
	70 mA
	32 bits data, 8 bits control/status
	500 V system/field
	0 ... +55 °C
	12 x 69.8 x 100 mm
	CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX
	wago.com/750-404

When the U/D input is switched with +24 V, the counting direction is upward. When an input is not switched or is 0 V, the counting direction is downward.

Up counter: The counting is locked when the GATE input is open or 0 V is present. Counting is enabled with +24 V at the GATE input.

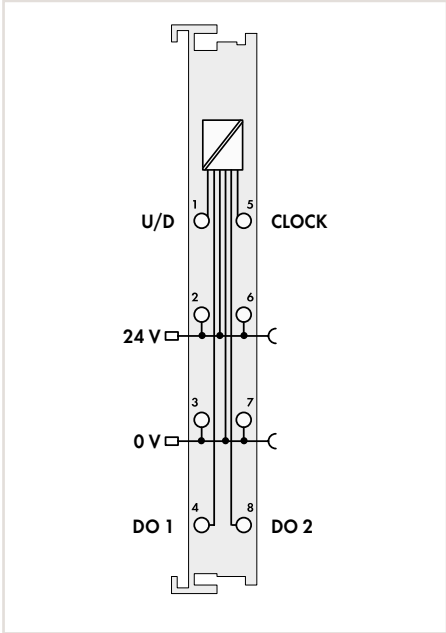
Peak-time counter: The count pulses at the CLOCK input are recorded over a pre-set period of 10 seconds.

Mini-WSB Quick Marking System
see Full Line Catalog, Volume 6

DIN rails and tool
see Section 11

Approvals and corresponding ratings,
see Page 521 or www.wago.com

Frequency Counter



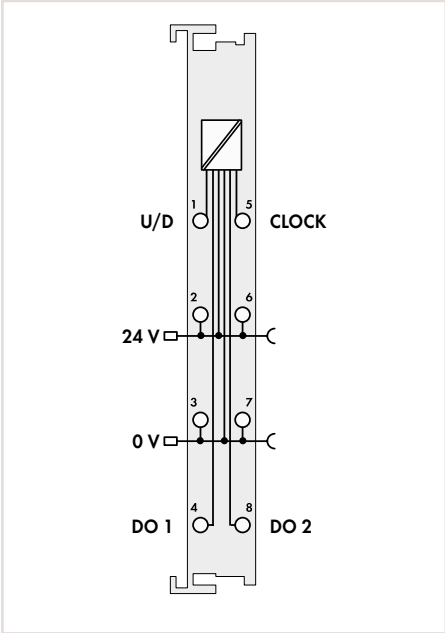
Frequency Counter	
750-404/000-003	753-404/000-003

	•
2	
1	
-3 ... +5 VDC	
15 ... 30 VDC	
0.5 A, short-circuit-protected	
100 kHz	
10 µs	
5 mA	
32 bits	
24 VDC (-15 ... +20 %), via power jumper contacts	
70 mA	
32 bits data, 8 bits control/status	
500 V system/field	
0 ... +55 °C	
12 x 69.8 x 100 mm	
CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX	
wago.com/750-404/000-003	wago.com/753-404/000-003

	Item no.
	753-110
	753-150

The counter module measures the 24 V signal pulse period at the CLOCK input and converts it to a frequency value. The measurement is enabled when the GATE input is open or 0 V is present. Measurement is disabled when 24 V are present at the GATE input.

2 up counter; 16 bits



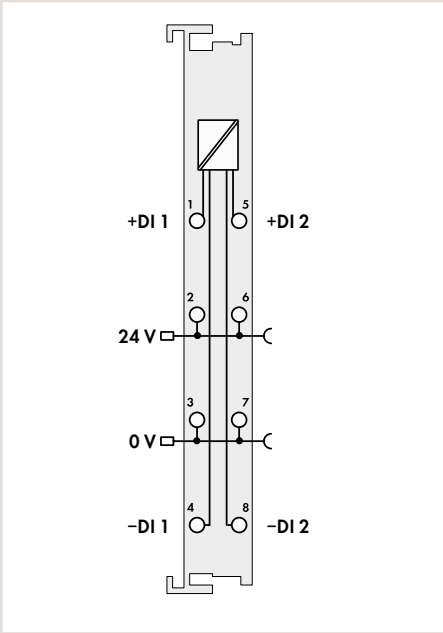
2Up Counter	
16Bit	16Bit
750-404/000-005	753-404/000-005

	•
2	
2	
-3 ... +5 VDC	
15 ... 30 VDC	
0.5 A, short-circuit-protected	
5 kHz (pulse width > 100 µs)	
5 mA	
2 x 16 bits data	
24 VDC (-15 ... +20 %), via power jumper contacts	
70 mA	
32 bits data, 8 bits control/status	
500 V system/field	
0 ... +55 °C	
12 x 69.8 x 100 mm	
CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX	
wago.com/750-404/000-005	wago.com/753-404/000-005

	Item no.
	753-110
	753-150

The I/O module is equipped with two 16-bit up counters. Thus, the count pulses at the CLOCK 1 und CLOCK 2 inputs are recorded

2 up/down counter; 16 bits; 500 Hz; optional: ext. Temperature



2Up/Down Counter		
16Bit 500Hz	16Bit 500Hz T	16Bit 500Hz
750-638	750-638/025-000	753-638

	•
2	
2	
-3 ... +5 VDC	
15 ... 30 VDC	
500 Hz	
1 ms	
16 bits	
24 VDC (-15 ... +20 %), via power jumper contacts	
10 mA	
2 x 16 bits data, 8 bits control/status	
500 V system/field	
0 ... +55 °C	-20 ... +60 °C
0 ... +55 °C	0 ... +55 °C
12 x 69.8 x 100 mm	
CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX	
wago.com/750-638	wago.com/753-638

	Item no.
	753-110
	753-150

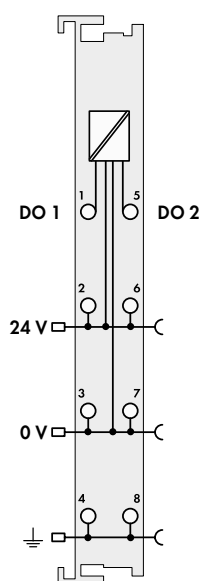
Pulse width outputs



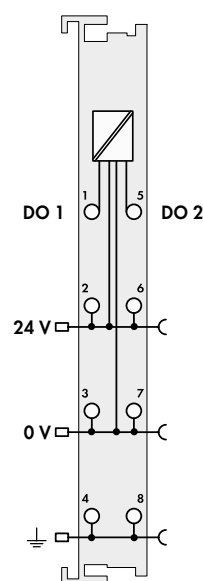
Figure: 750-511

Figure: 753-511

2 pulse width outputs; 24 VDC; 0.1 A;
250 kHz



2 pulse width outputs; 24 VDC; 0.1 A; 2 kHz;
Frequency Counter; optional: 100 Hz



Item description	2PWM	
Version	24 VDC 0.1A 250Hz	24 VDC 0.1A 250Hz
Item no.	750-511	753-511

Technical Data

Pluggable connector		•
No. of outputs	2	
Load type	Resistive, inductive	
Pulse frequency	250 Hz	
Duty cycle	0 ... 100 %	
Output current	0.1 A, short-circuit-protected	
Resolution	10 bits	
Field supply voltage	24 VDC (–15 ... +20 %), via power jumper contacts	
Current consumption, system supply	70 mA	
Internal data width	2 x 16 bits data, 8 bits control/status	
Isolation	500 V system/field	
Ambient temperature (operation)	0 ... +55 °C	
Dimensions W x H x D	12 x 69.8 x 100 mm	
Approvals	CE, UL 508, ANSI/ISA, ATEX/IECEX	
Data sheet and further information, see:	wago.com/750-511	wago.com/753-511

Accessories	Item no.
Plug	753-110
753 Series coding elements	753-150

2PWM	
24 VDC 0.1A 2kHz Frequency Counter	24 VDC 0.1A 100Hz
750-511/000-001	750-511/000-002

2	
Resistive, inductive	
2 Hz ... 2 kHz	100 Hz
50 %	0 ... 100 %
0.1 A, short-circuit-protected	
10 bits	
24 VDC (–15 ... +20 %), via power jumper contacts	
70 mA	
2 x 16 bits data, 8 bits control/status	
500 V system/field	
0 ... +55 °C	
12 x 69.8 x 100 mm	
CE, UL 508, ANSI/ISA, ATEX/IECEX	
wago.com/750-511/000-001	wago.com/750-511/000-002

Mini-WSB Quick Marking System
see Full Line Catalog, Volume 6

DIN rails and tool
see Section 11

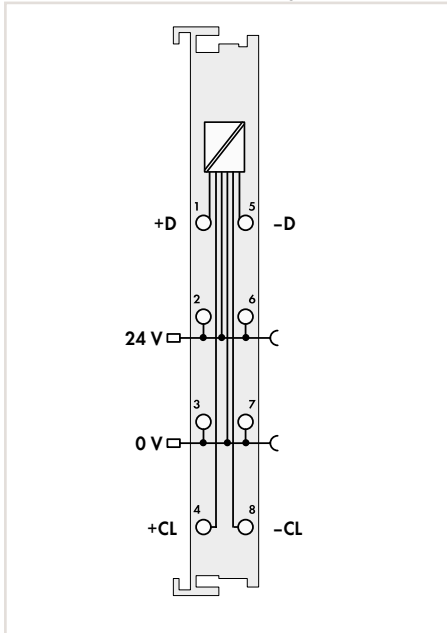
Approvals and corresponding ratings,
see Page 521 or www.wago.com

SSI transmitter interface

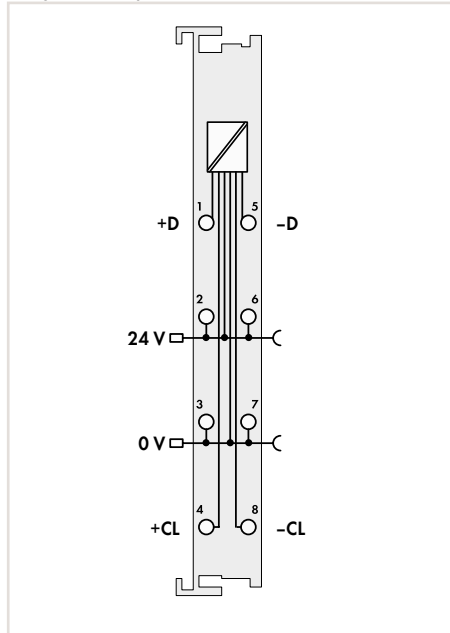


Figure: 750-630

SSI transmitter interface; adjustable



SSI transmitter interface; 24 bits; 125 kHz; Gray code; optional: 15 bits; Status bit



Item description
Version
Item no.

SSI Interface
Adjust
750-630/003-000

SSI Interface		
24Bit 125kHz Gray	24Bit 125kHz Gray Status	15Bit 125kHz Gray Status
750-630	750-630/000-004	750-630/000-005

Technical Data	
Transmitter connection	On + D, -D / Off + Cl, - Cl
Transmitter supply	24 VDC, via power jumper contacts
Baud rate	62.5 kHz ... 250 kHz
Serial input	Data width 1 ... 32 bits
Signal output	Differential signal (RS-422)
Signal input	Differential signal (RS-422)
Code	Gray code/Bin code
Field supply voltage	24 VDC (-15 ... +20 %), via power jumper contacts
Current consumption, system supply	20 mA
Internal data width	1 x 32 bits
Isolation	500 V system/field
Ambient temperature (operation)	0 ... +55 °C
Dimensions W x H x D	12 x 69.8 x 100 mm
Approvals	
CE, Marine, UL 508, ANSI/ISA, ATEX/IECEx	
Data sheet and further information, see:	wago.com/750-630

Technical Data	
On + D, -D / Off + Cl, - Cl	
24 VDC, via power jumper contacts	
62.5 kHz ... 250 kHz	
Data width 1 ... 32 bits	
Differential signal (RS-422)	
Differential signal (RS-422)	
Gray code/Bin code	
24 VDC (-15 ... +20 %), via power jumper contacts	
20 mA	
1 x 32 bits	
500 V system/field	
0 ... +55 °C	
12 x 69.8 x 100 mm	
Approvals	
CE, Marine, UL 508, ANSI/ISA, ATEX/IECEx	
wago.com/750-630	

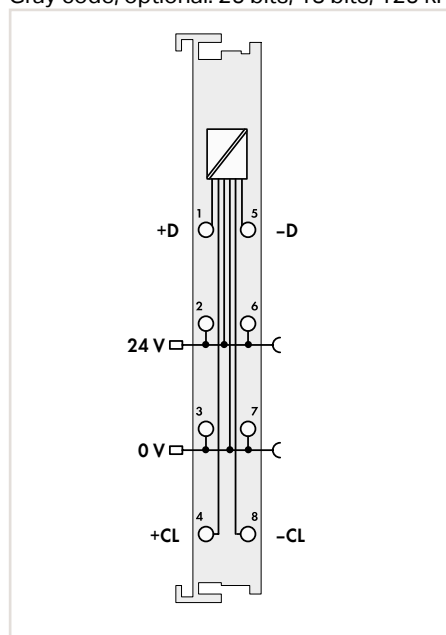
Technical Data	
On + D, -D / Off + Cl, - Cl	
24 VDC, via power jumper contacts	
125 kHz	
Data width 24 bits	Data width 15 bits
Differential signal (RS-422)	
Differential signal (RS-422)	
Gray code	
24 VDC (-15 ... +20 %), via power jumper contacts	
20 mA	
1 x 32 bits, 1 x 8 bits control/status (optional)	
500 V system/field	
0 ... +55 °C	
12 x 69.8 x 100 mm	
Approvals	
CE, Marine, UL 508, ANSI/ISA, ATEX/IECEx	
wago.com/750-630	

SSI transmitter interface

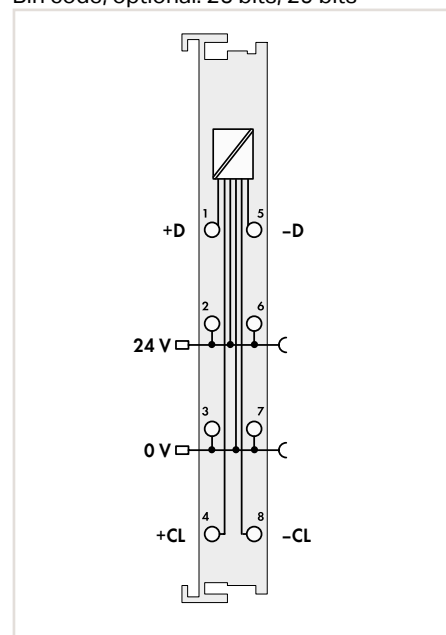


Figure: 750-630

SSI transmitter interface; 24 bits; 250 kHz;
Gray code; optional: 25 bits; 13 bits; 125 kHz



SSI transmitter interface; 24 bits; 125 kHz;
Bin code; optional: 25 bits; 29 bits



Item description
Version
Item no.

SSI Interface		
24Bit 250kHz Gray	25Bit 125kHz Gray	13Bit 125kHz Gray
750-630/000-006	750-630/000-008	750-630/000-012

SSI Interface		
24Bit 125kHz Bin	25Bit 125kHz Bin	29Bit 125kHz Bin
750-630/000-001	750-630/000-011	750-630/000-013

Technical Data

Transmitter connection
Transmitter supply
Baud rate
Serial input
Signal output
Signal input
Code
Field supply voltage
Current consumption, system supply
Internal data width
Isolation
Ambient temperature (operation)
Dimensions W x H x D
Approvals
Data sheet and further information, see:

On + D, -D / Off + Cl, - Cl		
24 VDC via power jumper contacts		
250 kHz	125 kHz	
Data width 24 bits	Data width 25 bits	Data width 13 bits
Differential signal (RS-422)		
Differential signal (RS-422)		
Gray code		
24 VDC (-15 ... +20 %), via power jumper contacts		
20 mA		
1 x 32 bits		
500 V system/field		
0 ... +55 °C		
12 x 69.8 x 100 mm		
CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX		
wago.com/750-630		

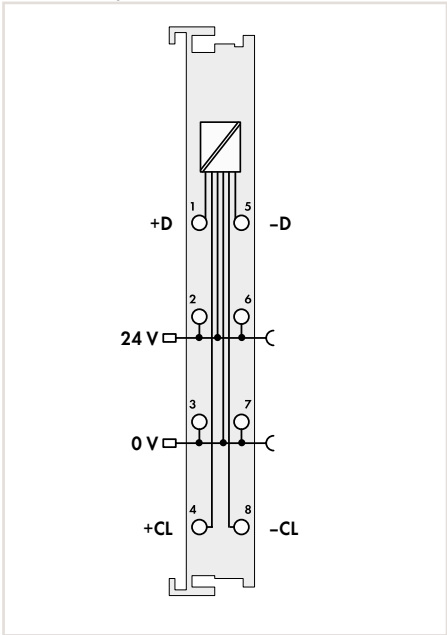
On + D, -D / Off + Cl, - Cl		
24 VDC via power jumper contacts		
125 kHz		
Data width 24 bits	Data width 25 bits	Data width 29 bits
Differential signal (RS-422)		
Differential signal (RS-422)		
Bin code		
24 VDC (-15 ... +20 %), via power jumper contacts		
20 mA		
1 x 32 bits		
500 V system/field		
0 ... +55 °C		
12 x 69.8 x 100 mm		
CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX		
wago.com/750-630		

Mini-WSB Quick Marking System
see Full Line Catalog, Volume 6

DIN rails and tool
see Section 11

Approvals and corresponding ratings,
see Page 521 or www.wago.com

SSI transmitter interface; 24 bits; 250 kHz;
Bin code; optional: 13 bits



SSI Interface	
24Bit 250kHz Bin	13Bit 250kHz Bin
750-630/000-002	750-630/000-009

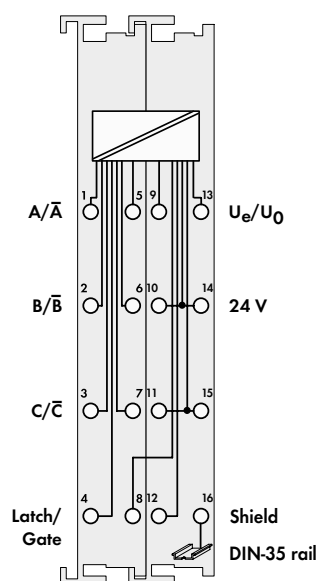
On + D, -D / Off + CL, - CL	
24 VDC via power jumper contacts	
250 kHz	
Data width 24 bits	Data width 13 bits
Differential signal (RS-422)	
Differential signal (RS-422)	
Bin code	
24 VDC (–15 ... +20 %), via power jumper contacts	
20 mA	
1 x 32 bits	
500 V system/field	
0 ... +55 °C	
12 x 69.8 x 100 mm	
CE,  Marine,  UL 508, ANSI/ISA,  ATEX/IECEX	
wago.com/750-630	

Incremental encoder interface

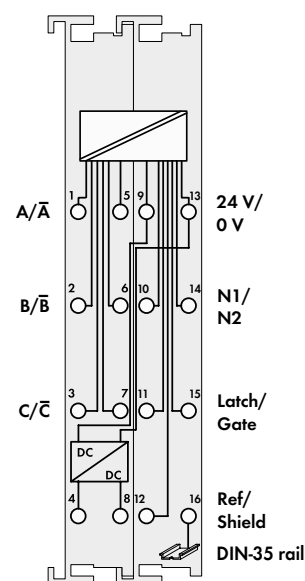


Figure: 750-631/000-004

Incremental encoder interface;
RS-422; 16 bits



Incremental encoder interface;
RS-422; 32 bits



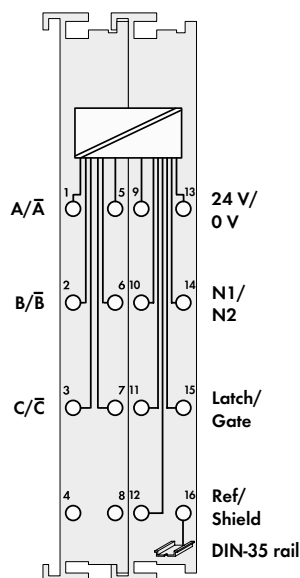
Item description	Inc. Encoder	Inc. Encoder
Version	RS422 16Bit	RS422 32Bit
Item no.	750-631/000-004	750-637
Technical Data		
Transmitter connection	A, /A, B, /B, C, /C (RS-422 inputs)	A, /A, B, /B, C, /C
Counter modules	16 bits binary	32 bits binary
Limit frequency	1000 kHz	250 kHz
Quadrature decoder	4x evaluation	4x evaluation
Zero impulse latch	16 bits	32 bits
Commands	Reading, setting, activating	Reading, setting, activating
Current consumption typ.	10 mA without transmitter	35 mA without transmitter
Encoder operating voltage	5 VDC	5 VDC
Encoder output current max.	200 mA	300 mA
Output voltage		24 VDC
Output current (max.)		0.5 A, short-circuit-protected
Signal voltage (0)	$U_{ABC} = 0 \text{ V}$, $U_{ABC/} = 5 \text{ V}$, Latch, Gate $\leq 5.0 \text{ V}$, external error $U \geq 5.0 \text{ V}$ or open input	-3 ... +5 VDC
Signal voltage (1)	$U_{ABC} = 5 \text{ V}$, $U_{ABC/} = 0 \text{ V}$, Latch, Gate $\geq 15.0 \text{ V}$, external error $U < 0.5 \text{ V}$	15 ... 30 VDC
Input current (typ.)		Latch 5 mA, Gate 7 mA, Ref. 7 mA
Current consumption, system supply	50 mA	110 mA
Internal data width	2 Byte Out, 5 Byte In 2x 8 bits control/status (optional) + 3 Byte Out reserved	1 x 32 bits data; 2 x 8 bits control/status
Isolation	500 V system/field	500 V system/field
Ambient temperature (operation)	0 ... +55 °C	0 ... +55 °C
Dimensions W x H x D	24 x 69.8 x 100 mm	24 x 69.8 x 100 mm
Approvals	CE, UL 508, ANSI/ISA	CE, Marine, UL 508, ANSI/ISA, ATEX/IECEx
Data sheet and further information, see:	wago.com/750-631/000-004	wago.com/750-637

Mini-WSB Quick Marking System
see Full Line Catalog, Volume 6

DIN rails and tool
see Section 11

Approvals and corresponding ratings,
see Page 521 or www.wago.com

Incremental encoder interface; 24 VDC;
Differential input; 32 bits

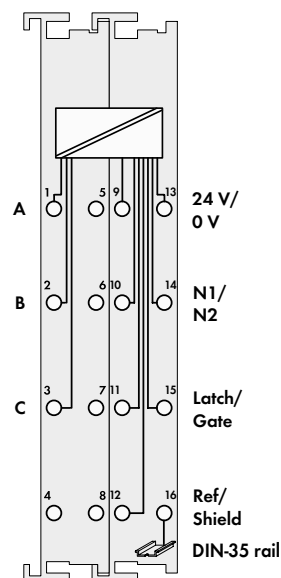


Inc. Encoder

24 VDC Diff 32Bit

750-637/000-001

Incremental encoder interface; 24 VDC;
Single-Ended; 32 bits; opt.: Cam



Inc. Encoder

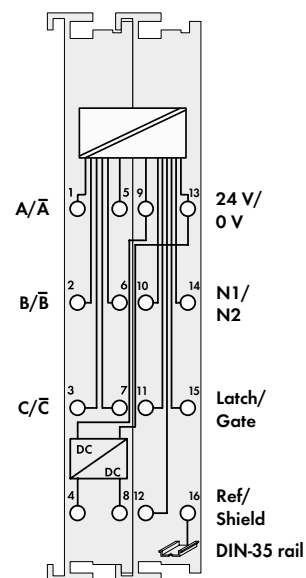
24 VDC SE 32Bit

750-637/000-002

24 VDC SE 32Bit Cam

750-637/000-004

Incremental encoder interface; RS-422;
32 bits; Single Interpreter



Inc. Encoder

RS422 32Bit Single Interp.

750-637/000-003

A, /A, B, /B, C, /C (differential inputs)

32 bits binary

250 kHz

4x evaluation

32 bits

Reading, setting, activating

35 mA without transmitter

5 VDC

300 mA

24 VDC

0.5 A, short-circuit-protected

-3 ... +5 VDC

15 ... 30 VDC

Latch 5 mA, Gate 7 mA, Ref. 7 mA

110 mA

1 x 32 bits data; 2 x 8 bits control/status

500 V system/field

0 ... +55 °C

24 x 69.8 x 100 mm

CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX

wago.com/750-637

A, B, C (single-ended inputs)

32 bits binary

250 kHz

4x evaluation

32 bits

Reading, setting, activating

35 mA without transmitter

5 VDC

300 mA

24 VDC

0.5 A, short-circuit-protected

-3 ... +5 VDC

15 ... 30 VDC

Latch 5 mA, Gate 7 mA, Ref. 7 mA

110 mA

1 x 32 bits data; 2 x 8 bits control/status

500 V system/field

0 ... +55 °C

24 x 69.8 x 100 mm

CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX

wago.com/750-637

A, /A, B, /B, C, /C (RS-422 inputs)

32 bits binary

250 kHz

1x report

32 bits

Reading, setting, activating

35 mA without transmitter

5 VDC

300 mA

5 VDC

0.5 A, short-circuit-protected

-3 ... +5 VDC

15 ... 30 VDC

Latch 5 mA, Gate 7 mA, Ref. 7 mA

110 mA

1 x 32 bits data; 2 x 8 bits control/status

500 V system/field

0 ... +55 °C

24 x 69.8 x 100 mm

CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX

wago.com/750-637

Digital impulse interface

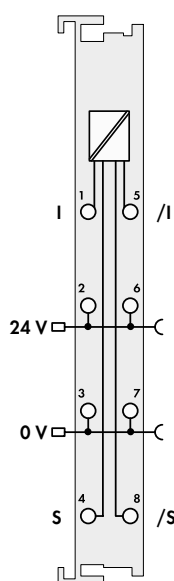


Figure: 750-635



Figure: 753-635

Digital impulse interface



Item description	Digital Impulse Interface	
Version		
Item no.	750-635	753-635
Technical Data		
Pluggable connector		
Transmitter connection	Start/stop, initialization, Uv, ground, shield connection via encoder housing	
Number of inputs	1	
Data transmission	RS-422	
Signal output	Differential signal (RS-422)	
Signal input	Differential signal (RS-422)	
Resolution	1 µm	
Update time	2 ms	
Distance sensor length	≤ 4 m	
Line length (max)	500 m	
Field supply voltage	24 VDC (–15 % ... +20 %), via power jumper contacts	
Current consumption, system supply	45 mA	
Internal data width	1 x 24 bits data; 1 x 8 bits control/status	
Isolation	500 V system/field	
Ambient temperature (operation)	0 ... +55 °C	
Dimensions W x H x D	12 x 69.8 x 100 mm	
Approvals	CE, UL 508, ANSI/ISA, ATEX/IECEx	
Data sheet and further information, see:	wago.com/750-635	wago.com/753-635
Accessories		
Plug		753-110
753 Series coding elements		753-150

The digital impulse interface is suitable for connecting magnetostrictive distance measurement sensors with a start/stop interface. After receiving a read pulse, these sensors deliver a time-delayed reply impulse. The time delay is proportional to the sensor distance.

Each sensor may have up to four position transmitters (permanent magnets). Their position data can be accessed serially by the control and are stored in the process image of the fieldbus coupler as a 24-bit value.

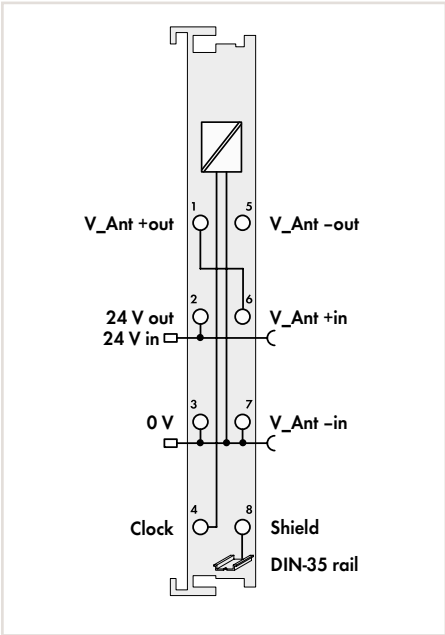
Distance sensors with the following features can be used:

- Start/stop interface with RS-422 differential signals
- 24 V sensor supply
- Manufacturer, e.g., Balluff

Real time clock Module



Real time clock Module

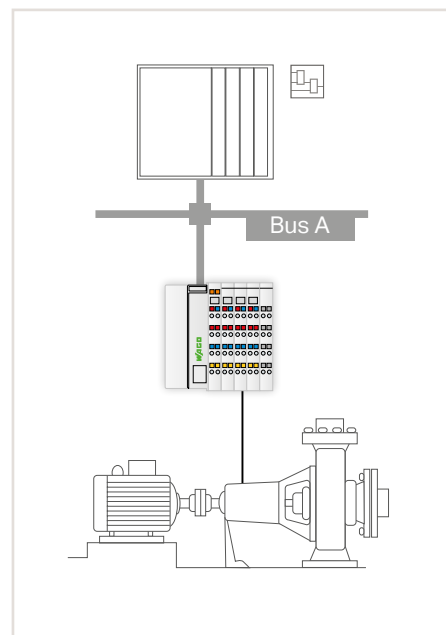
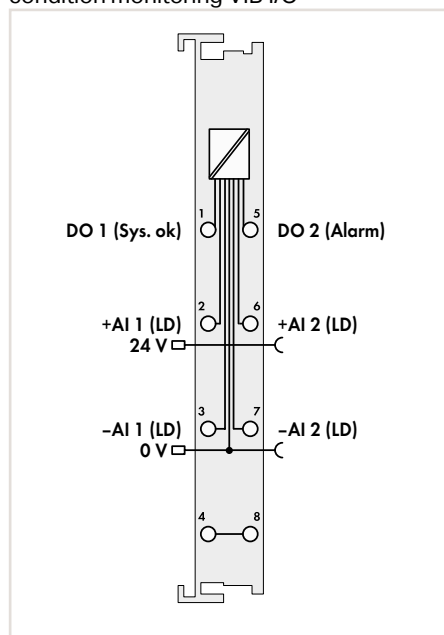


Item description	RTC Module
Item no.	750-640
Technical Data	
Drift (clock)	< 2 min./year
Buffer length	> 6 days
Timer	32 channels and switch points (32 x on/off)
Signal voltage (0)	-24 ... +1 V
Signal voltage (1)	3 ... 24 V
Input filter	10 ms
Field supply voltage	24 VDC (–15 % ... +20 %), via power jumper contacts
Current consumption, system supply	20 mA
Internal data width	1 x 40 bits data (in/out) (5 bytes user data); 1 x 8 bits control/status (optional)
Isolation	500 V system/field
Ambient temperature (operation)	0 ... +55 °C
Dimensions W x H x D	12 x 69.8 x 100 mm
Approvals	CE, UL 508, ANSI/ISA, ATEX/IECEX
Data sheet and further information, see:	wago.com/750-640

The RTC module provides the higher-level control system with the actual time. The time is buffered and continues to run in the event of a power failure. When an external receiver is connected, the clock can be set using the time signal from DCF77, WWVB, or MSF. By default, the module is set to receive DCF77 signals. The receiver can be supplied directly via the module. Connecting an external receiver to operate the RTC module is not absolutely necessary.

2-channel vibration velocity/bearing condition monitoring VIB I/O

2-channel vibration velocity/bearing
condition monitoring VIB I/O



Item description	2VIB VRMS/SPM Multi
Version	
Item no.	750-645
Technical Data	
Encoder inputs	+AI1, -AI1, +AI2, -AI2
Number of inputs	2
Oscillating velocity (RMS)	0–100 mm/s
Shock impulse (SPM)	-10 ... +80 dbSV
No. of outputs	2 (alarm and system OK)
Configuration	The alarm and warning threshold can be set in the process image or the engineering software.
Outputs	24 VDC, 0.5 A, short-circuit protected
Field supply voltage	24 VDC (–15 % ... +20 %), via power jumper contacts
Current consumption, system supply	30 mA
Isolation	500 V system/field
Ambient temperature (operation)	0 ... +55 °C
Dimensions W x H x D	12 x 67.8 x 100 mm
Approvals	CE, UL 508, ANSI/ISA, ATEX/IECEX
Data sheet and further information, see:	wago.com/750-645
Accessories	
Tandem-Piezo acceleration sensor	Item no. 750-925

This product is used for online monitoring of the machine vibration level. It records the two most important parameters required for condition analysis: vibration severity and roller bearing condition.

The severity of vibration is a measurement of the machine vibration energy and therefore, a suitable indicator for the vibration forces acting on the machine.

The roller bearing condition is evaluated on the basis of high-frequency shock impulse signals. Shock impulses are momentary impulses arising from mechanical damage to roller bearings or the bearing surfaces.

By recording the measurement results and evaluation in a trend curve, bearing damage can be detected at an early stage. A special Tandem-Piezo® acceleration sensor serves as encoder to facilitate simultaneous measurement of machine vibrations and high-frequency shock impulse signals.

Mini-WSB Quick Marking System
see Full Line Catalog, Volume 6

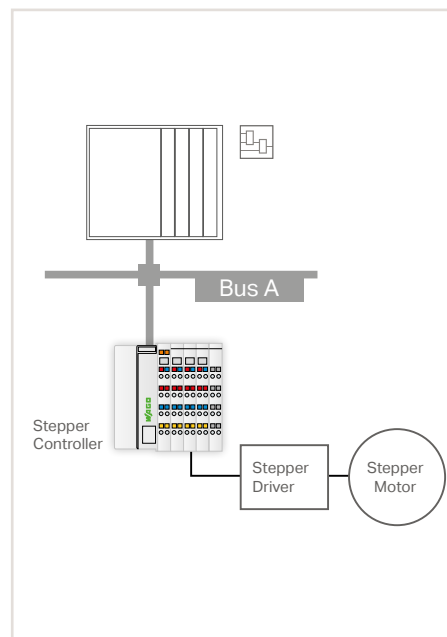
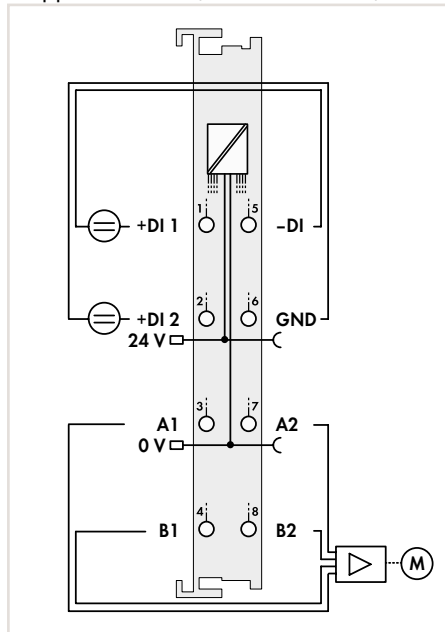
DIN rails and tool
see Section 11

Approvals and corresponding ratings,
see Page 521 or www.wago.com

Stepper Controller



Stepper Controller; RS-422/24 VDC; 20 mA



Item description	Stepper Controller
Version	RS422/24 VDC 20mA
Item no.	750-670
Technical Data	
No. of outputs	1 channel (2 differential outputs A1, A2, B1, B2)
Signal voltage	5 VDC internal, 5– 24 VDC external
Load type	RS-422, TTL, optocoupler
Output current (max.)	30 mA, short-circuit-protected
Output frequency	200– 500 kHz
Number of inputs	2 x 24 VDC
Signal voltage (0)	–3 ... +5 VDC
Signal voltage (1)	15 ... 30 VDC
Resolution	Path: 23 bits + sign bit; speed: 15 bits + 16 bits prescaler; acceleration: 15 bits + 16 bits prescaler
Field supply voltage	24 VDC (–25 % ... +30 %), via power jumper contacts
Current consumption, system supply	98 mA
Internal data width	12 bytes in/out
Isolation	500 V system/field
Ambient temperature (operation)	0 ... +55 °C
Dimensions W x H x D	12 x 67.8 x 100 mm
Approvals	CE, UL 508, ATEX/IECEX
Data sheet and further information, see:	wago.com/750-670

The stepper controller is used to control different drive power sections with pulse/direction interface or incremental encoder input.

The 64-fold microstepping prevents step losses due to resonance in the acceleration phases and reduces wear on the mechanical parts. Adjustable current limits for stop, acceleration and constant speed help minimize motor power dissipation. Two configurable inputs for Start/Stop, limit switches, reference cams, Jog/Tip, etc., are evaluated directly and without any further delay by the internal software.

Versatile functions, such as positioning with different acceleration slopes, command tables, camshaft controller, auto referencing and other event-dependent properties provide this controller with a wide spectrum of possible uses.

Operating modes:

Single positioning
Reference motion
Jog
Tip
Command table
Cam switch

Functions, e.g.:

Absolute/relative positioning
Setpoint change on the fly
Rotary axis

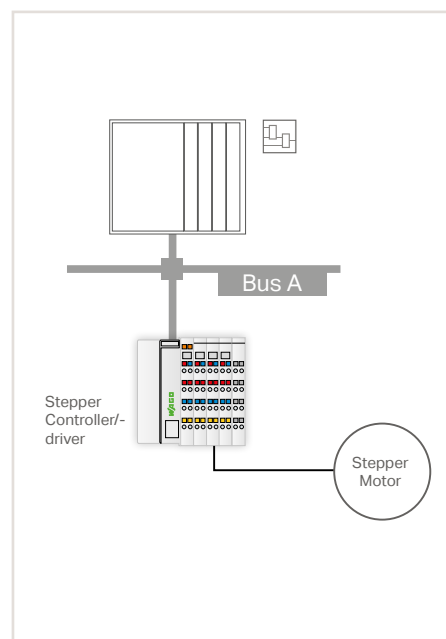
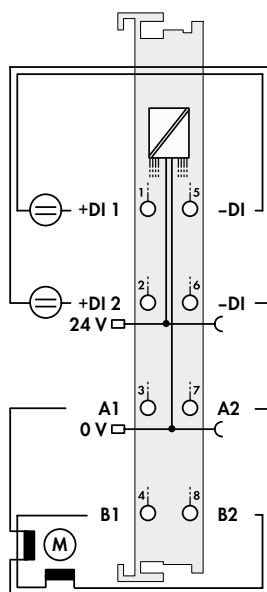
Additional operating modes:

Pulse width modulation
Frequency generator
Single-shot mode

Stepper Controller



Stepper Controller; 24 VDC; 1.5 A



Item description

Stepper Controller

Version

24 VDC 1.5A

Item no.

750-671

Technical Data

No. of outputs	1 stepper motor (2 phases/bipolar)
Output current (max.)	Up to 2 x 1.5 A peak value; 1 A eff.
Output frequency	7812 Hz
Number of inputs	2 x 24 VDC
Signal voltage (0)	-3 ... +5 VDC
Signal voltage (1)	15 ... 30 VDC
Resolution	Path: 23 bits + sign bit; speed: 15 bits + 16 bits prescaler; acceleration: 15 bits + 16 bits prescaler
Field supply voltage	24 VDC (-25 % ... +30 %), via power jumper contacts
Current consumption, system supply	85 mA
Internal data width	12 bytes in/out
Isolation	500 V system/field
Ambient temperature (operation)	0 ... +55 °C
Dimensions W x H x D	12 x 67.8 x 100 mm
Approvals	CE, ANSI/ISA, ATEX/IECEx
Data sheet and further information, see:	wago.com/750-671

The stepper controller has an on-board power driver designed to control 2-phase stepper motors up to 24 V / 1.5 A.

The 64-fold microstepping prevents step losses due to resonance in the acceleration phases and reduces wear on the mechanical parts. Adjustable current limits for stop, acceleration and constant speed help minimize motor power dissipation. Two configurable inputs for Start/Stop, limit switches, reference cams, Jog/Tip, etc., are evaluated directly and without any further delay by the internal software.

Versatile functions, such as positioning with different acceleration slopes, command tables, camshaft controller, auto referencing and other event-dependent properties provide this controller with a wide spectrum of possible uses.

Operating modes:
 Single positioning
 Reference motion
 Jog
 Tip
 Command table
 Cam switch

Functions, e.g.:
 Absolute/relative positioning
 Setpoint change on the fly
 Rotary axis

Mini-WSB Quick Marking System
 see Full Line Catalog, Volume 6

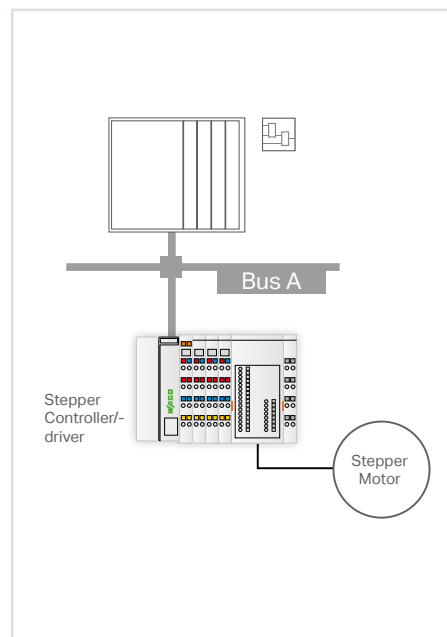
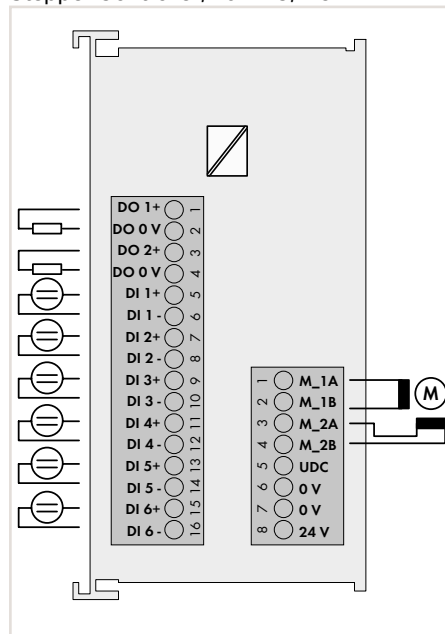
DIN rails and tool
 see Section 11

Approvals and corresponding ratings,
 see Page 521 or www.wago.com

Stepper Controller



Stepper Controller; 70 VDC; 7.5 A



Item description	Stepper Controller
Version	70 VDC 7.5A
Item no.	750-672

Technical Data	
No. of outputs motor	1 stepper motor (2 phases)
Motor voltage	55 VDC, absolute upper limit: 71.5 V, absolute lower limit: 18 V
Output current max. motor	2 x 5.0 A (2 x 7.5 A transient)
Stepper frequency	7812 Hz
Number of digital outputs	2
Control voltage	24 VDC (-25 % ... +30 %)
Output current digital outputs	0.5 A, short-circuit-protected
Output frequency	5 Hz
Number of digital inputs	2 x 24 VDC
Input filter	100 µs, software filter can be installed
Resolution	Path: 23 bits + sign bit; speed: 15 bits + 16 bits prescaler; acceleration: 15 bits + 16 bits prescaler
Current consumption, system supply	70 mA
Internal data width	12 bytes in/out
Isolation	500 V system/field
Ambient temperature (operation)	0 ... +55 °C
Dimensions W x H x D	48 x 69.8 x 100 mm
Approvals	CE, RoHS
Data sheet and further information, see:	wago.com/750-672

The stepper controller has an on-board power driver designed to control 2-phase stepper motors.

The 64-fold microstepping prevents step losses due to resonance in the acceleration phases and reduces wear on the mechanical parts. Adjustable current limits for stop, acceleration and constant speed help minimize motor power dissipation.

Six configurable inputs are directly processed by the internal software without delay. Two outputs can be linked with internal functions or freely allocated. Versatile functions enable a wide application range.

Inputs:
Start/stop
Limit switch (positive und negative direction)
Reference cam
Jog/tip (positive und negative direction)

Outputs (default setting):
Target reached
Error

Operating modes:
Single positioning with different acceleration ramps
Reference motion
Jog
Tip
Command table
Cam switch

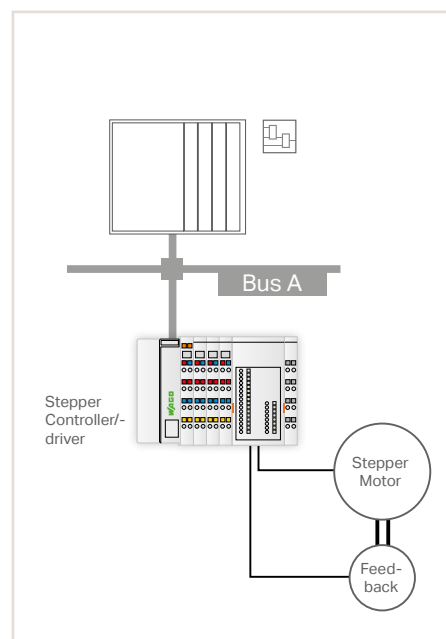
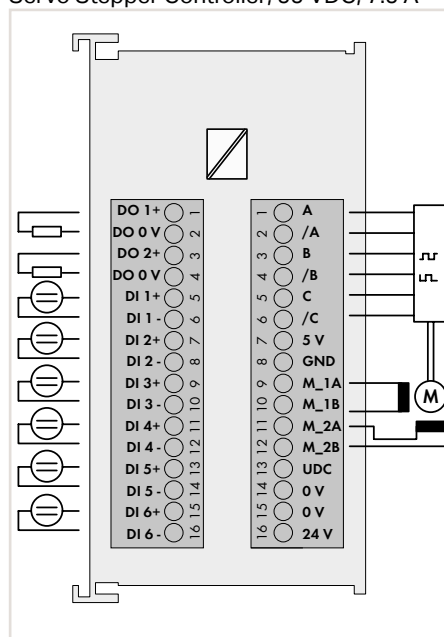
Functions, e.g.,:
Absolute/relative positioning
Setpoint change on the fly
Rotary axis

Protection:
Short circuit monitoring of motor connections:
Winding short circuit and short circuit to 0 V and 24 V;
24 V supply: Reverse voltage protection;
Motor supply: Reverse voltage protection via external fuse

Servo Stepper Controller



Servo Stepper Controller; 55 VDC; 7.5 A



Item description

Version

Item no.

Servo Stepper Controller

55 VDC 7.5A

750-673

Technical Data

No. of outputs motor	1 stepper motor (2 phases)
Motor voltage	55 VDC, absolute upper limit: 71.5 V, absolute lower limit: 18 V
Output current max. motor	2 x 5.0 A (2 x 7.5 A transient)
Stepper frequency	7812 Hz
Number of digital outputs	2
Control voltage	24 VDC (-25 % ... +30 %)
Output current digital outputs	0.5 A, short-circuit-protected
Output frequency	5 Hz
Number of digital inputs	2 x 24 VDC
Input filter	100 µs, software filter can be installed
Signal voltage	RS-485/-422 compatible
Sensor frequency	1 MHz
Sensor supply	5 VDC, 300 mA, short-circuit-protected
Quadrature decoder	4x evaluation
Counter modules	32 bits binary
Resolution	Path: 23 bits + sign bit; speed: 15 bits + 16 bits prescaler; acceleration: 15 bits + 16 bits prescaler
Current consumption, system supply	70 mA
Internal data width	12 bytes in/out
Isolation	500 V system/field
Ambient temperature (operation)	0 ... +55 °C
Dimensions W x H x D	48 x 69.8 x 100 mm
Approvals	CE, E
Data sheet and further information, see:	wago.com/750-673

The stepper servo has its own power stage and an incremental encoder evaluation for controlling 2-phase stepper motors.

The 64-fold microstepping prevents step losses due to resonance in the acceleration phases and reduces wear on the mechanical parts. Together with the incremental encoder, the integrated vector control contributes to efficient, dynamic rotation speed characteristics.

Six configurable inputs are directly processed by the internal software without delay. Two outputs can be linked with internal functions or freely allocated. Versatile functions enable a wide application range.

Inputs:
 Start/stop
 Limit switch (positive und negative direction)
 Reference cam
 Jog/tip (positive und negative direction)

Outputs (default setting):
 Target reached
 Error

Operating modes:
 Single positioning with different acceleration ramps
 Reference motion
 Jog
 Tip
 Command table
 Cam switch

Functions, e.g.:
 Absolute/relative positioning
 Setpoint change on the fly
 Rotary axis

Protection:
 Short circuit monitoring of motor connections:
 Winding short circuit and short circuit to 0 V and 24 V;
 24 V supply: Reverse voltage protection;
 Motor supply: Reverse voltage protection via external fuse

Mini-WSB Quick Marking System
 see Full Line Catalog, Volume 6

DIN rails and tool
 see Section 11

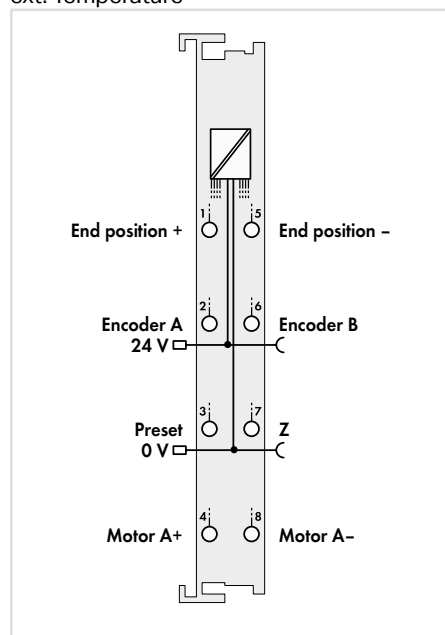
Approvals and corresponding ratings,
 see Page 521 or www.wago.com

DC Drive Controller

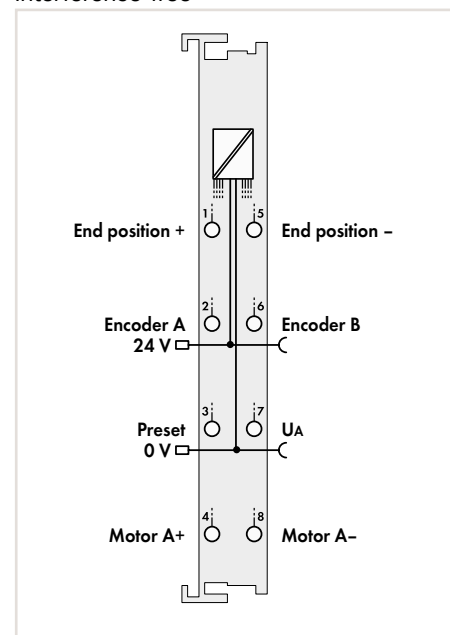


Figure: 750-636

DC Drive Controller; 24 VDC; 5 A, optional:
ext. Temperature



DC Drive Controller; 24 VDC; 5 A;
optional: Separate motor power supply;
Interference-free



Item description
Version
Item no.

DC-Drive Controller	
24 VDC 5A	24 VDC 5A T
750-636	750-636/025-000

DC-Drive Controller	
24 VDC 5A UA	24 VDC 5A IF
750-636/000-700	750-636/000-800

Technical Data

Interference-free
No. of outputs
Motor voltage
Separate motor voltage
Output current (max.)
PWM typical frequency
Number of digital inputs
Signal voltage (0)
Signal voltage (1)
Transmitter connection
Signal voltage
Limit frequency
Quadrature decoder
Current consumption, system supply
Internal data width
Isolation
Ambient temperature (operation)
Dimensions W x H x D
Approvals
Data sheet and further information, see:

1 (A+, A-, H-bridge output)	
24 VDC (-20 ... +15 %)	
5 A (15 A / 500 ms), short-circuit-protected	
20 kHz	
3 (E+, E-, preset), type 1, high-side switching	
-3 ... +1.5 VDC	
2.4 ... 30 VDC	
A, B, Zero low-side switching	
5 ... 24 VDC, open collector	
50 kHz	
1x, 2x, 4x evaluation	
55 mA	
32 bits set/actual value; 16 bits control or status	
500 V system/field	
0 ... +55 °C	-20 ... +60 °C
12 x 67.8 x 100 mm	
CE, 	CE
wago.com/750-636	

1 (A+, A-, H-bridge output)
24 VDC (-20 ... +15 %)
24 VDC (-20 ... +30 %)
5 A (15 A / 500 ms), short-circuit-protected
20 kHz
3 (E+, E-, preset), type 1, high-side switching
-3 ... +1.5 VDC
2.4 ... 30 VDC
A, B, Zero low-side switching
5 ... 24 VDC, open collector
50 kHz
1x, 2x, 4x evaluation
55 mA
32 bits set/actual value; 16 bits control or status
500 V system/field
0 ... +55 °C
12 x 67.8 x 100 mm
CE
wago.com/750-636

The DC Drive Controller is a single-channel, intelligent positioning controller for 24 VDC motors up to 5 A with incremental position feedback.

Three 24 V inputs record the limit switches and a preset signal.

An incremental encoder interface evaluates signals from the position transmitter and determines actual value.

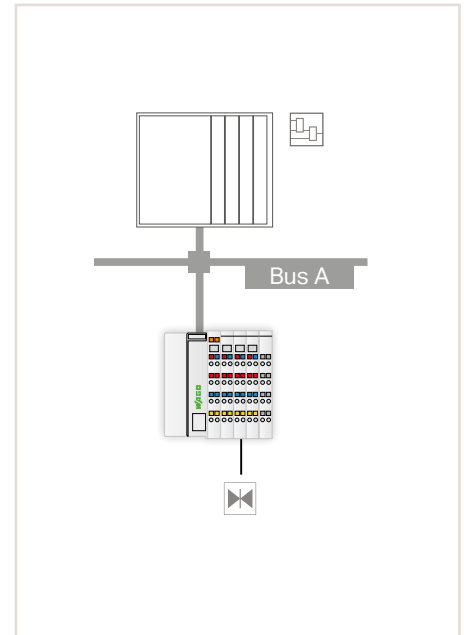
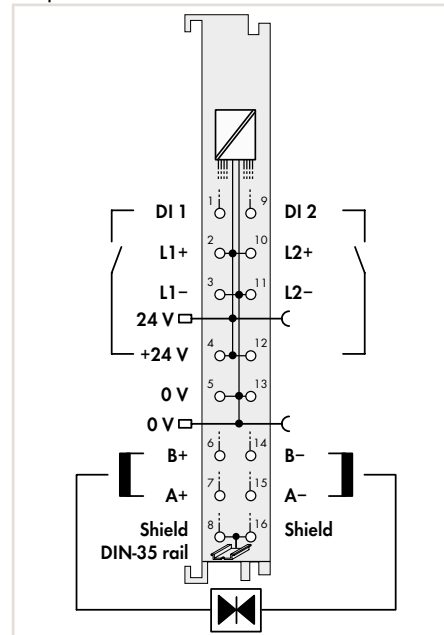
Current reduction is possible via PWM.

As an option, the motor voltage can be supplied separately.

Proportional valve module



Proportional valve module



Item description

Item no.

Proportional Valve Module

750-632

Technical Data

No. of outputs

Output current (max.)

Output type

Dither frequency

PWM typical frequency

Nominal output voltage

Load type

Number of digital inputs

Field supply voltage

Current consumption, system supply

Internal data width

Isolation

Ambient temperature (operation)

Dimensions W x H x D

Approvals

Data sheet and further information, see:

2 bipolar outputs (A+, A- and B+, B-)

1-channel operation: 2 A (derating must be observed);

2-channel operation: 1.6 A per channel (derating must be observed)

H-bridge output with current-regulated PWM output (short-circuit-proof and thermal overload-proof for each channel)

250 Hz, 125 Hz, 62.5–1 Hz (parameterizable)

50 kHz

24 VDC (–25 % ... +30 %)

Operating range: inductive (1– 600 mH), internal load resistance (> 8 Ohm)

2 (DI 1, DI 2), type 1 per IEC 61131, high-side switching

24 VDC (–25 % ... +30 %), via power jumper contacts

125 mA

6 bytes (single-channel operating mode), 12 bytes (dual-channel operating mode)

500 V system/field

0 ... +55 °C

12 x 69 x 100 mm

CE, Marine, UL 508, ANSI/ISA, ATEX/IECEx

wago.com/750-632

The proportional valve module controls two single-coil valves or one valve.

It features two current-controlled PWM outputs with adjustable dither. Both unipolar and bipolar valve control are possible. Yet another operating mode involves controlling a valve with two unipolar coils. The module is single-channel in this operating mode! Characteristic curve adaptations, such as zero offset, dual gain compensation or range limitations, can be adjusted via parameters. The module functions can be internally triggered via digital outputs without any detours.

Mini-WSB Quick Marking System
see Full Line Catalog, Volume 6

DIN rails and tool
see Section 11

Approvals and corresponding ratings,
see Page 521 or www.wago.com

Communication Modules

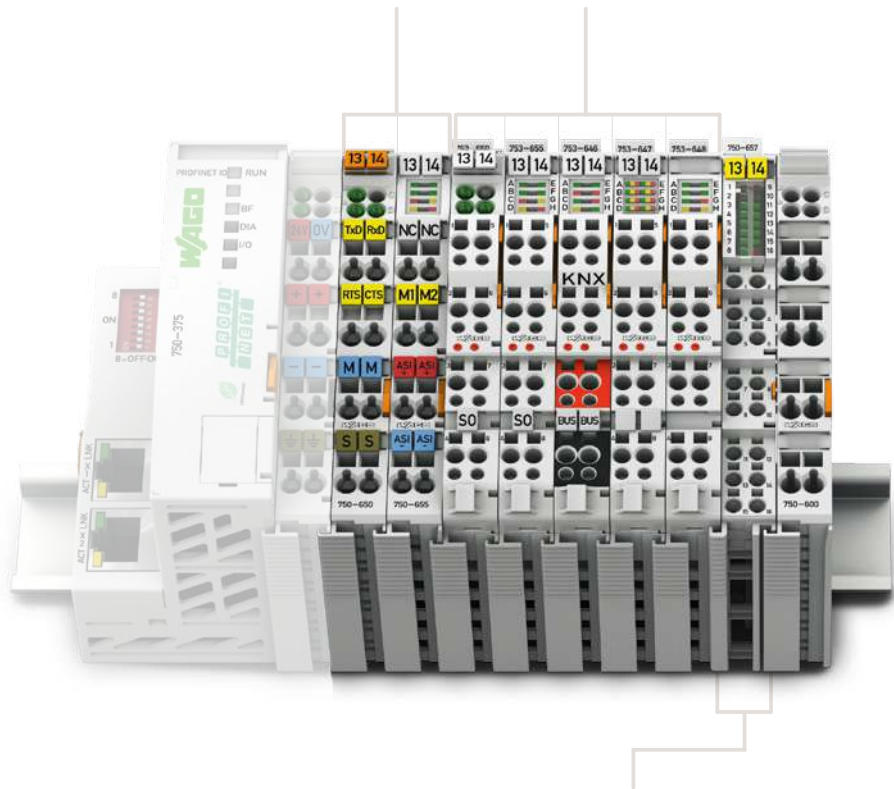


750 Series housing design

Dimensions W x H x D	Housing with 4 LEDs: 12 x 69.8 x 100 mm Housing with 8 LEDs: 12 x 67.8 x 100 mm
Height from upper edge of DIN rail	Housing with 4 LEDs: 62.6 mm Housing with 8 LEDs: 60.6 mm
Connection technology	CAGE CLAMP®
Conductor size	0.08 ... 2.5 mm ² / 28 ... 14 AWG
Strip length	8 ... 9 mm / 0.33 inch

753 Series housing design

Dimensions W x H x D	Housing with 4 LEDs: 12 x 69.8 x 100 mm Housing with 8 LEDs: 12 x 69 x 100 mm
Height from upper edge of DIN rail	Housing with 4 LEDs: 62.6 mm Housing with 8 LEDs: 61.8 mm
Connection technology	CAGE CLAMP®
Conductor size	0.08 ... 2.5 mm ² / 28 ... 14 AWG
Strip length	9 ... 10 mm / 0.37 inch



750 Series housing design with push-in CAGE CLAMP® connectors (up to 16 connector points)

Dimensions W x H x D	12 x 69 x 100 mm
Height from upper edge of DIN rail	61.8 mm
Connection technology	Push-in CAGE CLAMP®
Conductor size	Solid: 0.08 ... 1.5 mm ² / 28 ... 16 AWG Fine-stranded: 0.25 ... 1.5 mm ² / 22 ... 16 AWG
Strip length	8 ... 9 mm / 0.33 inch

750 and 753 Series I/O-System, Communication Modules

Contents

Function	Description	Item number			Page
		Standard	T ext. Temperature	Pluggable	
Serial interface	RS-232 C serial interface, 9600 baud	750-650		753-650	232
	RS-232 C serial interface, 9600 baud, 5 bytes	750-650/000-001			232
	RS-232 C serial interface, 9600 baud, even, 7/2 bits	750-650/000-002			232
	RS-232 C serial interface, 9600 baud, even, 8/1 bits	750-650/000-006			232
	RS-232 C serial interface, 19200 baud, none, 8/1 bits	750-650/000-010			233
	RS-232 C serial interface, 19200 baud, even, 8/1 bits	750-650/000-011			233
	RS-232 C serial interface, 2400 baud, none, 8/1 bits	750-650/000-012			233
	RS-232 C serial interface, 4800 baud, even, 8/1 bits, 5 bytes	750-650/000-015			233
	RS-232 C serial interface, adjustable	750-650/003-000		753-650/003-000	233
	RS-485 serial interface, 9600 baud, none, 8/1 bits	750-653	750-653/025-018	753-653	234
	RS-485 serial interface, 9600 baud, even, 7/2 bits	750-653/000-001			234
	RS-485 serial interface, 9600 baud, even, 8/1 bits	750-653/000-002			234
	RS-485 serial interface, 19200 baud, none, 8/1 bits, 5 bytes	750-653/000-006			235
	RS-485 serial interface, 2400 baud, none, 8/1 bits	750-653/000-007			235
	RS-485 serial interface, adjustable	750-653/003-000	750-653/025-000	753-653/003-000	235
	RS-232/485 serial interface	750-652	750-652/025-000	753-652	236
	Serial TTY interface, 9600 baud, none, 8/1 bits	750-651			237
	Serial TTY interface, 9600 baud, even, 8/1 bits	750-651/000-002			237
Bluetooth	Bluetooth® RF Transceiver	750-644			238
EnOcean	EnOcean Radio Receiver Module	750-642			239
KNX	KNX/EIB/TP1 interface			753-646	240
DALI	DALI Multi-Master			753-647	241
LON	LON-FTT interface			753-648	242
MP-Bus	MP-Bus Master	750-643			243
AS-Interface Master	AS-Interface Master	750-655		753-655	244
IO-Link Master	IO-Link Master	750-657			245
CAN Gateway	CAN Gateway	750-658			246
Data exchange	Serial Data Exchange Interface	750-654			247

RS-232 C Serial Interface

4.7

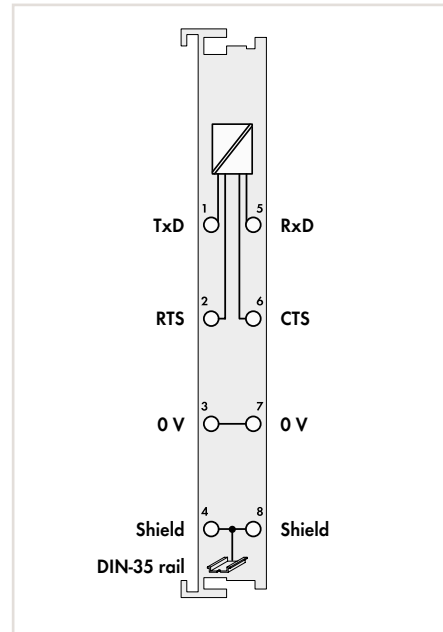


Figure: 750-650

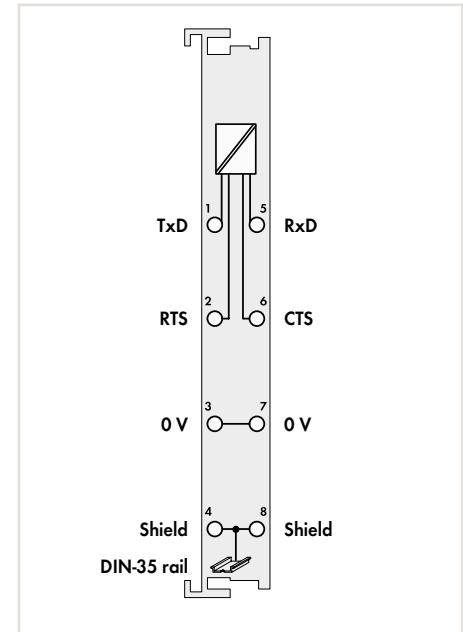


Figure: 753-650

RS-232 C Serial Interface;
9600 baud



RS-232 C Serial Interface;
9600 baud



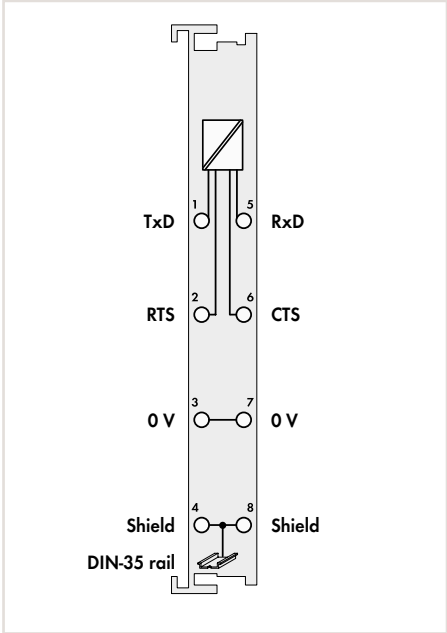
Item description	RS232 C Interface		RS232 C Interface		
Version	9600Bd	9600Bd	9600Bd N 8/1 5byte	9600Bd E 7/2	9600Bd E 8/1
Item no.	750-650	753-650	750-650/000-001	750-650/000-002	750-650/000-006
Technical Data					
Pluggable connector					
Type of signal	RS-232		RS-232		
Transmission channels	1 Tx/D / 1 Rx/D, full-duplex		1 Tx/D / 1 Rx/D, full-duplex		
Baud rate	9600 baud		9600 baud		
Parity	None		None	Even	Even
Number of data bits	8		8	7	8
Number of stop bits	1		1	2	1
Buffer	120 bytes in/16 bytes out		120 bytes in/16 bytes out		
System supply voltage	5 VDC via data contacts		5 VDC via data contacts		
Current consumption, system supply	55 mA		55 mA		
Internal data width	1 x 24 bits in/out (3 bytes user data), 1 x 8 bits control/status		1 x 24 bits in/out (5 bytes user data), 1 x 8 bits control/status	1 x 24 bits in/out (3 bytes user data), 1 x 8 bits control/status	
Isolation	500 V system/field		500 V system/field		
Ambient temperature (operation)	0 ... +55 °C		0 ... +55 °C		
Dimensions W x H x D	12 x 69.8 x 100 mm		12 x 69.8 x 100 mm		
Approvals	CE,  Marine,  UL 508, ANSI/ISA,  ATEX/IECEX		CE,  Marine,  UL 508, ANSI/ISA,  ATEX/IECEX		
Data sheet and further information, see:	wago.com/750-650		wago.com/753-650		
Accessories		Item no.			
Plug		753-110			
753 Series coding elements		753-150			

Mini-WSB Quick Marking System
see Full Line Catalog, Volume 6

DIN rails and tool
see Section 11

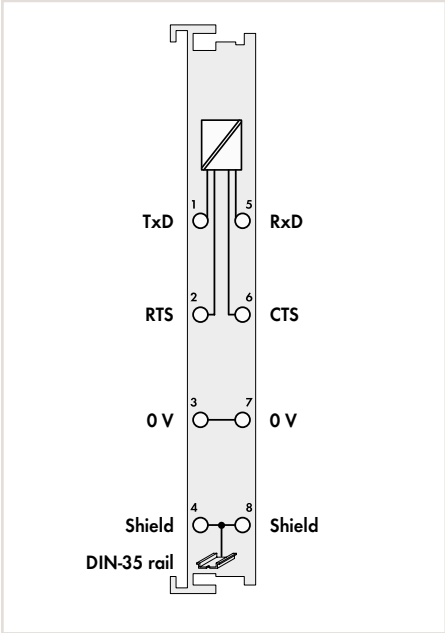
Approvals and corresponding ratings,
see Page 521 or www.wago.com

RS-232 C Serial Interface;
4800 baud; optional: 2400 baud



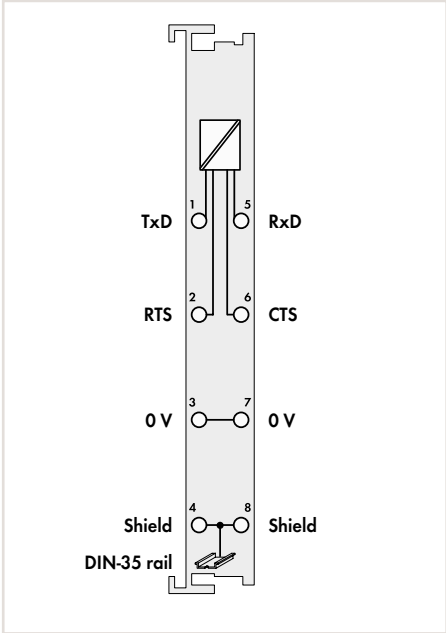
RS232 C Interface	
4800Bd E 8/1 5byte	2400Bd N 8/1
750-650/000-015	750-650/000-012

RS-232 C Serial Interface;
19200 baud



RS232 C Interface	
19200Bd N 8/1	19200Bd E 8/1
750-650/000-010	750-650/000-011

RS-232 C Serial Interface;
adjustable



RS232 C Interface	
Adjust	Adjust
750-650/003-000	753-650/003-000

RS-232	
1 TxD / 1 RxD, full-duplex	
4800 baud	2400 baud
Even	None
8	
1	
120 bytes in/16 bytes out	
5 VDC via data contacts	
55 mA	
1 x 24 bits in/out (3 bytes user data), 1 x 8 bits control/status	
500 V system/field	
0 ... +55 °C	
12 x 69.8 x 100 mm	
CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX	
wago.com/750-650	

RS-232	
1 TxD / 1 RxD, full-duplex	
19200 baud	
None	Even
8	
1	
120 bytes in/16 bytes out	
5 VDC via data contacts	
55 mA	
1 x 24 bits in/out (3 bytes user data), 1 x 8 bits control/status	
500 V system/field	
0 ... +55 °C	
12 x 69.8 x 100 mm	
CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX	
wago.com/750-650	

RS-232	
1 TxD / 1 RxD, full-duplex	
1200 ... 57600 baud	
None/Even, adjustable	
7/8, adjustable	
1/2, adjustable	
120 bytes in/16 bytes out	
5 VDC via data contacts	
55 mA	
1 x 24 bits in/out (3 bytes user data), 1 x 8 bits control/status	1 x 40 bits in/out (5 bytes user data), 1 x 8 bits control/status
500 V system/field	
0 ... +55 °C	
12 x 69.8 x 100 mm	
CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX	
wago.com/750-650/003-000	

Item no.
753-110
753-150

Item no.
753-110
753-150

Item no.
753-110
753-150

RS-485 Serial Interface

4.7

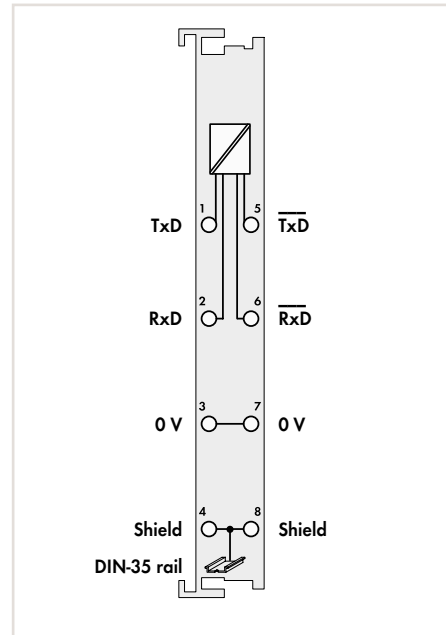


Figure: 750-653

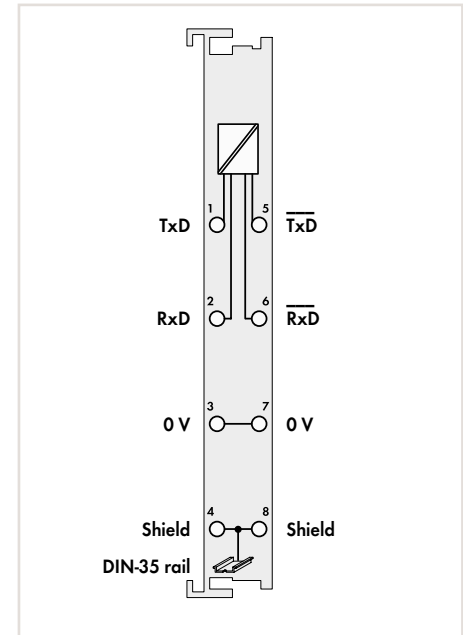


Figure: 753-653

RS-485 Serial Interface;
9600 baud



RS-485 Serial Interface;
9600 baud



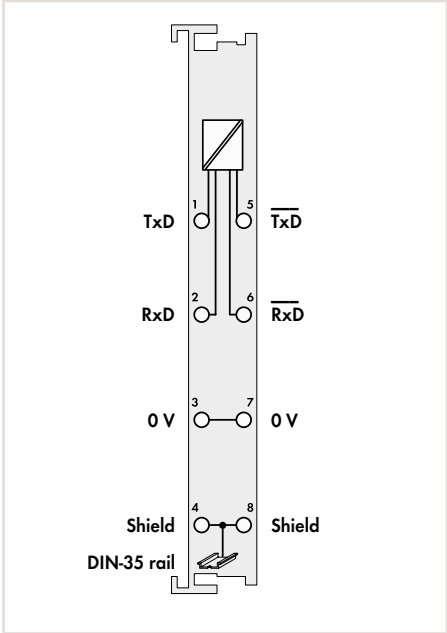
Item description	RS485 Interface		RS485 Interface		
Version	9600Bd	9600Bd	9600Bd E 7/2	9600Bd E 8/1	9600Bd N 8/1 5byte T
Item no.	750-653	753-653	750-653/000-001	750-653/000-002	750-653/025-018
Technical Data					
Pluggable connector					
Type of signal	RS-422 / RS-485		RS-422 / RS-485		
Transmission channels	1 TxD / 1 RxD, full-duplex		1 TxD / 1 RxD, full-duplex		
Baud rate	9600 baud		9600 baud		
Parity	None		Even		None
Number of data bits	8		7	8	
Number of stop bits	1		2	1	
Buffer	120 bytes in/16 bytes out		120 bytes in/16 bytes out		
System supply voltage	5 VDC via data contacts		5 VDC via data contacts		
Current consumption, system supply	65 mA		65 mA		
Internal data width	1 x 24 bits in/out (3 bytes user data), 1 x 8 bits control/status		1 x 24 bits in/out (3 bytes user data), 1 x 8 bits control/status		1 x 40 bits in/out (5 bytes user data), 1 x 8 bits control/status
Isolation	500 V system/field		500 V system/field		
Ambient temperature (operation)	0 ... +55 °C		0 ... +55 °C		-20 ... +60 °C
Dimensions W x H x D	12 x 69.8 x 100 mm		12 x 69.8 x 100 mm		
Approvals	CE,  Marine,  UL 508, ANSI/ISA,  ATEX/IECEX		CE,  Marine,  UL 508, ANSI/ISA,  ATEX/IECEX		
Data sheet and further information, see:	wago.com/750-653		wago.com/753-653		
Accessories		Item no.			
Plug		753-110			
753 Series coding elements		753-150			

Mini-WSB Quick Marking System
see Full Line Catalog, Volume 6

DIN rails and tool
see Section 11

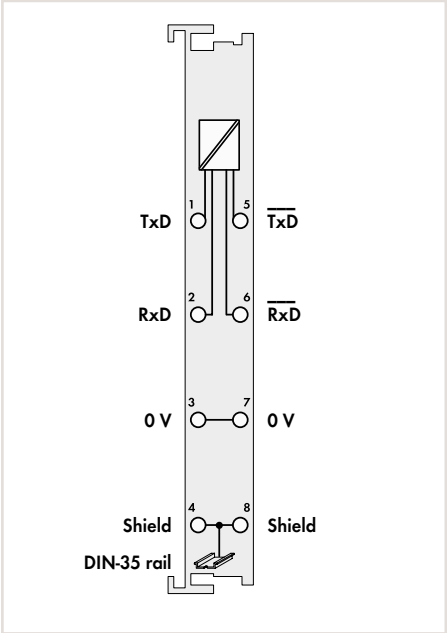
Approvals and corresponding ratings,
see Page 521 or www.wago.com

RS-485 Serial Interface;
19200 baud; optional: 2400 baud



RS485 Interface	
19200Bd N 8/1 5byte	2400Bd N 8/1
750-653/000-006	750-653/000-007

RS-485 Serial Interface;
adjustable



RS485 Interface		
Adjust	Adjust T	Adjust
750-653/003-000	750-653/025-000	753-653/003-000

RS-422 / RS-485	
1 TxD / 1 RxD, full-duplex	
19200 baud	2400 baud
None	
8	
1	
120 bytes in/16 bytes out	
5 VDC via data contacts	
65 mA	
1 x 40 bits in/out (5 bytes user data), 1 x 8 bits control/status	1 x 24 bits in/out (3 bytes user data), 1 x 8 bits control/status
500 V system/field	
0 ... +55 °C	
12 x 69.8 x 100 mm	
CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX	
wago.com/750-653	

RS-422 / RS-485		
1 TxD / 1 RxD, full-duplex		
1200 ... 19200 baud		
None/Even, adjustable		
7/8, adjustable		
1/2, adjustable		
120 bytes in/16 bytes out		
5 VDC via data contacts		
65 mA		
1 x 24 bits in/out (3/5 bytes user data), 1 x 8 bits control/status		
500 V system/field		
0 ... +55 °C	-20 ... +60 °C	0 ... +55 °C
12 x 69.8 x 100 mm		
CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX		
wago.com/750-653		wago.com/753-653
		Item no.
		753-110
		753-150

RS-232/485 Serial Interface

4.7

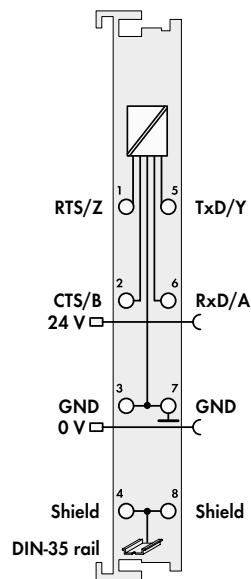


Figure: 750-652



Figure: 753-652

RS-232/485 Serial Interface



Item description	RS232/485 Interface		
Version	T		
Item no.	750-652	750-652/025-000	753-652
Technical Data			
Pluggable connector			●
Type of signal	RS-232 / RS-422 / RS-485		
Transmission channels	1 TxD / 1 RxD, full-duplex, half-duplex		
Baud rate	9600 baud (default setting), 300 baud ... 115200 baud		
Parity	None/Odd/Even		
Number of data bits	7/8, adjustable		
Number of stop bits	1/2, adjustable		
Buffer	2560 bytes for reception / 512 bytes for transmission		
System supply voltage	5 VDC via data contacts		
Current consumption, system supply	85 mA		
Internal data width	8, 24 or 48 bytes (parametrizable)		
Isolation	500 V system/field		
Ambient temperature (operation)	0 ... +55 °C		
Dimensions W x H x D	12 x 67.8 x 100 mm	12 x 69 x 100 mm	
Approvals			
CE,  Marine,  UL 508, ANSI/ISA,  ATEX/IECEx			
			
Data sheet and further information, see:		wago.com/750-652	wago.com/753-652
Accessories			
Plug			753-110
753 Series coding elements			753-150

Mini-WSB Quick Marking System
see Full Line Catalog, Volume 6

DIN rails and tool
see Section 11

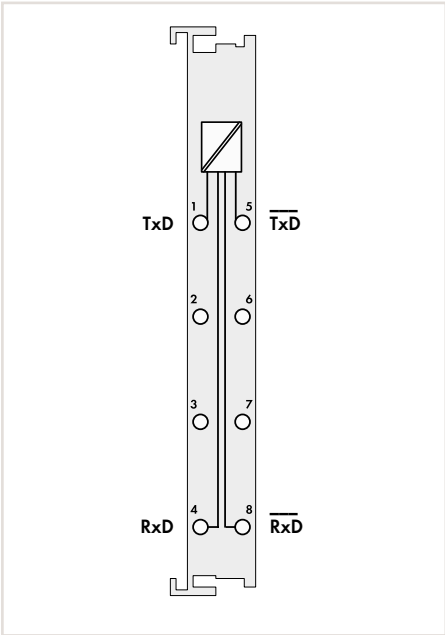
Approvals and corresponding ratings,
see Page 521 or www.wago.com

Serial TTY Interface



Figure: 750-651

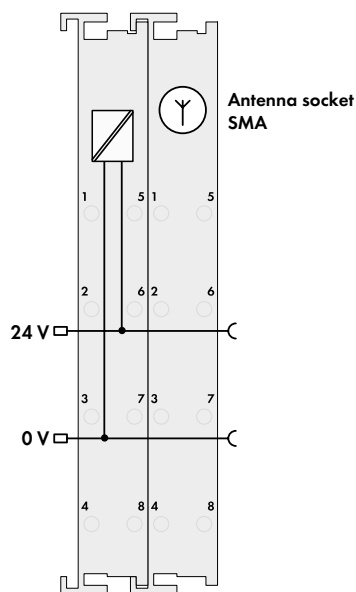
Serial TTY Interface; 9600 baud



Item description	TTY Interface	
Version	9600Bd N 8/1	9600Bd E 8/1
Item no.	750-651	750-651/000-002
Technical Data		
Type of signal	TTY, 20 mA	
Transmission channels	1 TxD / 1 RxD, full-duplex	
Baud rate	9600 baud (default setting), 1200 baud ... 19200 baud	
Parity	None	Even
Number of data bits	8	
Number of stop bits	1	
Buffer	128 bytes in/16 bytes out	
Load impedance	< 500 Ω	
System supply voltage	5 VDC via data contacts	
Current consumption, system supply	55 mA	
Internal data width	1 x 24 bits in/out (3 bytes user data), 1 x 8 bits control/status	
Isolation	500 V system/field	
Ambient temperature (operation)	0 ... +55 °C	
Dimensions W x H x D	12 x 69.8 x 100 mm	
Approvals	CE,  Marine,  UL 508, ANSI/ISA	
Data sheet and further information, see:	wago.com/750-651	

Bluetooth® RF Transceiver

Bluetooth® RF Transceiver



Item description

Item no.

Bluetooth® RF-Transceiver

750-644

Technical Data

Antenna
Radio technology
Topology
Profiles
Frequency band
Transmitter power
Receiver sensitivity
Transmission range
Power supply (Bluetooth®)
System supply voltage
Current consumption, system supply
Internal data width
Diagnostics (via visual indicator)
Diagnostics (via process image)
Ambient temperature (operation)
Dimensions W x H x D
Approvals
Data sheet and further information, see:

External via SMA socket
Bluetooth® 2.0 + EDR
Piconet (1 master, max. 7 slaves)
SPP, PAN
ISM band, 2402 ... 2480 MHz
Up to 20 dBm (Bluetooth® Class 1)
-94 dBm
Max. 1000 m free field, 100 m within buildings*
24 VDC via power jumper contacts
5 VDC via data contacts
20 mA
Configurable to 12, 24, 48 bytes, including 1 control/status byte
Device status, connection status (radio connection quality, signal strength, interference)
Device status, connection status (radio connection quality, signal strength, interference), time monitoring
0 ... +55 °C
24 x 72 x 100 mm
FCC approval (this device complies with Part 15 of FCC rules), Bluetooth® approval, CE, UL 508, ANSI/ISA, ATEX/IECEx
wago.com/750-644

Accessories

External antenna

Item no.	Page
758-912	405

The *Bluetooth®* Transceiver enables wireless exchange of process data with up to seven other devices using *Bluetooth®* 2.0 radio technology. Interoperability with *Bluetooth®* devices is provided via the *Bluetooth®* PAN and SPP profiles and is not restricted to any one manufacturer.

The module's extended diagnostic functions include cyclic and acyclic state information. For quick on-site diagnostics, main information on operational status and radio connection is also displayed via 8 LEDs.

* The specifications only apply when the antenna listed as an accessory is used. The maximum range in the field decreases with use in buildings and changes depending on the building materials used and the spatial geometry. Therefore range specifications within buildings can only represent typical values which can normally be reached. More detailed information is available in the manual.

Mini-WSB Quick Marking System
see Full Line Catalog, Volume 6

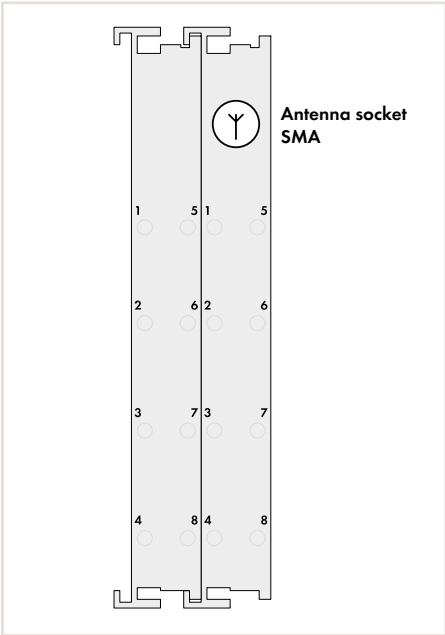
DIN rails and tool
see Section 11

Approvals and corresponding ratings,
see Page 521 or www.wago.com

Radio Receiver EnOcean



Radio Receiver EnOcean



Item description	
Item no.	
Technical Data	
Antenna	
Frequency band	
Transmission range	
Transmission protocol (radio telegram)	
System supply voltage	
Current consumption, system supply	
Internal data width	
Ambient temperature (operation)	
Dimensions W x H x D	
Approvals	
Data sheet and further information, see:	
Accessories	
External antenna	

Radio Receiver EnOcean	
750-642	
External via SMA socket	
868.3 MHz	
Up to 300 m in open field (30 m typical in buildings, see manual)*	
EnOcean	
5 VDC via data contacts	
80 mA	
1 x 24 bits in/out (3 bytes user data), 1 x 8 bits control/status	
0 ... +55 °C	
24 x 72 x 100 mm	
CE,  Marine,  UL 508, ANSI/ISA,  ATEX/IECEX	
wago.com/750-642	
Item no.	Page
758-910	405

* The maximum range in the field decreases with use in buildings and changes depending on the building materials used and the spatial geometry. Therefore range specifications within buildings can only represent typical values which can normally be reached. More detailed information is available in the manual.

This radio receiver receives radio telegrams from maintenance-free, battery-less and wireless switches and sensors based on EnOcean radio technology.

The energy required for switch or sensor operation is produced by converting one type of energy (heat, solar or mechanical energy) into usable electrical energy.

The LED (RSSI) indicates a sufficient input level.

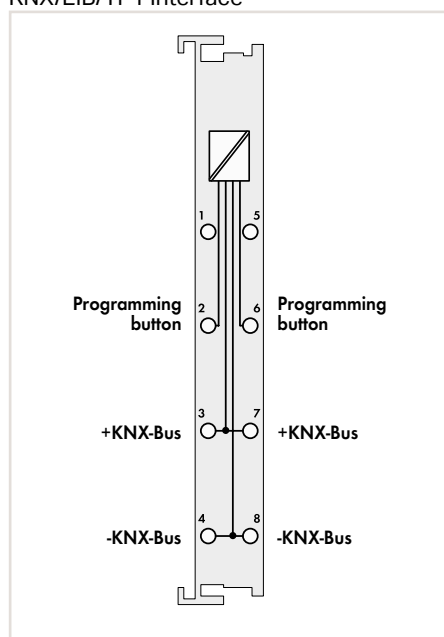
Preprogrammed function blocks for WAGO Controllers make integration easy.

KNX/EIB/TP1 Interface

4.7



KNX/EIB/TP1 Interface



Item description

Item no.

KNX/EIB/TP1 Interface

753-646

Technical Data

Pluggable connector

•

Specification

KNX/TP1-Bus: 1.0

Number of communication objects

253

Number of group addresses

254

Number of associations

254

Baud rate

9.6 kBd

Additional connections

Programming button

Applicability

On programmable fieldbus controller

Current consumption, system supply

25 mA

Internal data width

24 bytes

Isolation

2500 V rms

Ambient temperature (operation)

0 ... +55 °C

Dimensions W x H x D

12 x 69 x 100 mm

Approvals

CE, Marine, UL 508

Data sheet and further information, see:

wago.com/753-646

Accessories

Plug

Item no.

part of the delivery

753 Series coding elements

753-150

The KNX/EIB/TP1 I/O module connects to a KNX/EIB/TP1 network. The module supports two different functions:

1. Device mode:

With this module, all programmable fieldbus controllers relevant for building automation can be connected to a KNX/TP1 network. The module is a standard KNX device and is linked via ETS3/4 Professional Commissioning Tool.

An ETS3/4 plug-in is required so that data from the application program can be allocated to group addresses for the programming software.

2. Router mode:

When connected to a KNX/IP Controller (e.g., 750-849), the combination becomes a KNXnet/IPRouter. The module is switched to router mode automatically. An application program is not required for operation in router mode. Additional modules that are connected to a KNX IP controller are addressed in the device mode by the application.

The bus connections are internally bridged inside the plug, so the bus is not interrupted when the plug is pulled from the module. The plug is included with delivery.

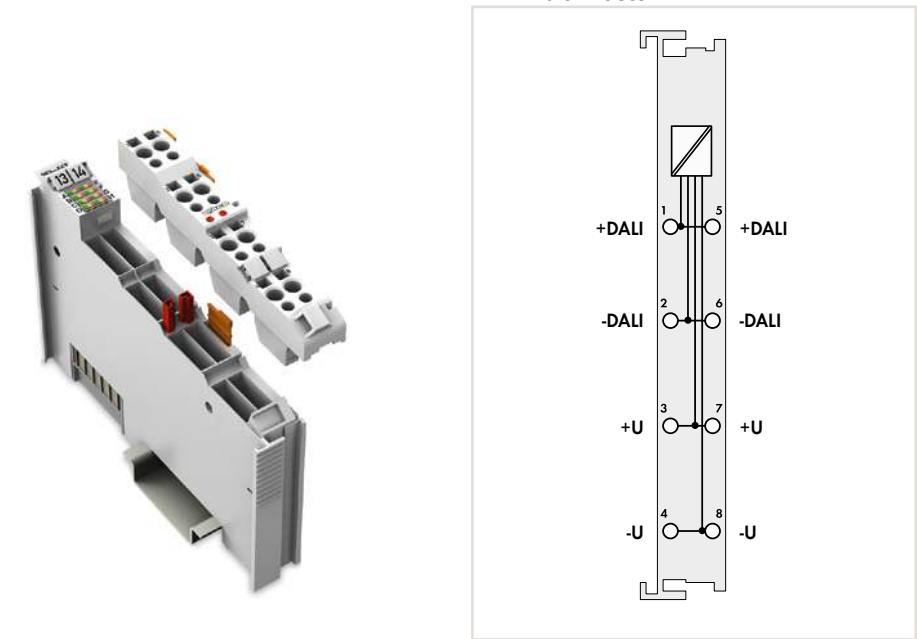
Mini-WSB Quick Marking System
see Full Line Catalog, Volume 6

DIN rails and tool
see Section 11

Approvals and corresponding ratings,
see Page 521 or www.wago.com

DALI Multi-Master

4.7



Item description	DALI Multi-Master	
Item no.	753-647	
Technical Data		
Pluggable connector	•	
Number of participants	64 control gears (ECGs) + 16 Multi sensor (max. 64 addresses for control devcies)	
Baud rate	1200 bit/s	
Max. bus length	300 m	
Bus topology	Star/line/combination	
DALI power supply	18 V (external)	
Number of groups	16 (+ 16 virtual groups)	
Number of scenes	16	
Applicability	On programmable fieldbus controllers	
Current consumption, system supply	85 mA	
Internal data width	24 bytes	
Isolation	1500 V DALI bus/Internal data bus	
Ambient temperature (operation)	0 ... +55 °C	
Dimensions W x H x D	12 x 69 x 100 mm	
Approvals	CE,  Marine,  UL 508	
Data sheet and further information, see:	wago.com/753-647	
Accessories	Item no.	Page
DALI Multi-Master DC/DC Converter (used to supply one single module)	753-620	278
EPSITRON®, Power Supply (used to supply several 753-647 DALI Multi-Master modules)	787-1007	487
Plug	part of the delivery	
753 Series coding elements	753-150	

This manufacturer-independent DALI standard (IEC 62386) ensures interoperability of DALI devices in lighting applications. This new standard replaces the analog 1–10 V dimmer interface.

Each DALI Multi-Master module supports 64 addresses for electronic control gears (ECGs) and 64 addresses for DALI sensors. Each DALI ECG can be assigned to 16 groups and 16 scenes. The module also offers 16 additional virtual groups on the DALI bus.

DALI control devices can be seamlessly integrated with all other building systems. Several DALI masters can be connected to a single fieldbus node. The maximum number of modules within a controller depends on the memory requirements of the application. Function blocks prepared for DALI are available for programming fieldbus nodes.

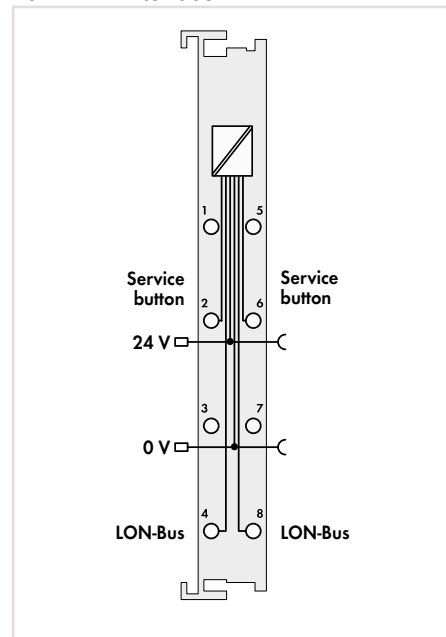
Alternatively, an Easy Mode allows lighting functions to be easily controlled without any complicated PLC programming.

LON®-FTT Interface

4.7



LON®-FTT Interface



Item description

Item no.

LON FTT Interface

753-648

Technical Data

Pluggable connector	•
Number of network variables	249
Number of aliases	127
Baud rate	78 kbit/s
Max. bus length	500 m (free topology) / 2700 m (bus)
Transmission medium	Twisted Pair – FTT
Additional connections	Service button
Applicability	On programmable fieldbus controller; max. 2 per controller
Current consumption, system supply	30 mA
Internal data width	24 bytes
Isolation	500 V system/field
Ambient temperature (operation)	0 ... +55 °C
Dimensions W x H x D	12 x 69.8 x 100 mm
Approvals	C€, UL 508, ANSI/ISA
Data sheet and further information, see:	wago.com/753-648

Accessories

Plug	part of the delivery
753 Series coding elements	753-150

The LON FTT Module complies with the ISO/IEC 14908 standard. It is a full-fledged and flexible LON device within LonWorks FT or LP networks. The module's network variable interface defines 249 network variables of any type and supports both LonMark objects and configuration properties.

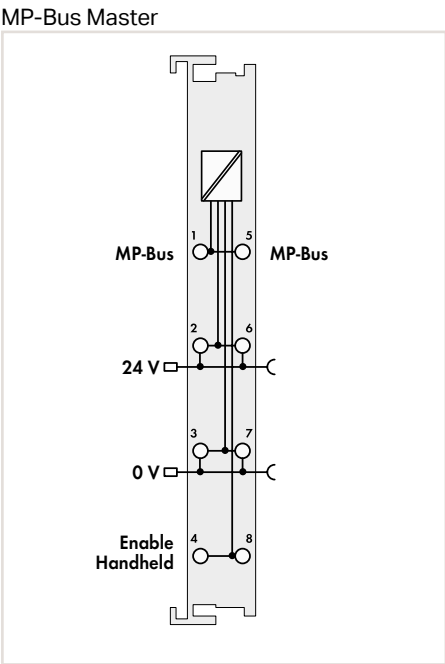
Mini-WSB Quick Marking System
see Full Line Catalog, Volume 6

DIN rails and tool
see Section 11

Approvals and corresponding ratings,
see Page 521 or www.wago.com

MP-Bus Master

4.7



Item description	MP-Bus Master
Item no.	750-643
Technical Data	
Number of participants	Max. 8 slaves
Power supply (mp-bus)	24 VDC via power jumper contacts
Max. bus length	800 m
Applicability	On programmable fieldbus controller
Current consumption, system supply	15 mA
Internal data width	8 bytes
Isolation	500 V system/field
Ambient temperature (operation)	0 ... +55 °C
Dimensions W x H x D	12 x 69.8 x 100 mm
Approvals	CE, UL 508, ANSI/ISA, ATEX/IECEX
Data sheet and further information, see:	wago.com/750-643

The module acts as a master for the MP bus (Multi-Point bus from Belimo/Switzerland) and allows the bus to be integrated into a higher level bus network such as ETHERNET or LONWORKS®. The MP bus controls HVAC actuators for dampers, regulator valves or VAV air volume controls.

Devices that are equipped with an MP bus connection can communicate with a higher-level control system via bus cable. The actuators have connections for active and passive sensors (temperature, humidity, ON/OFF switch, etc.), and are accessible via MP-Bus. An MP bus master can manage up to 8 slaves (actuators) + 8 sensors (1 sensor per slave) via a common bus line, which considerably reduces the wiring effort involved for actuators and sensors.

AS Interface Master

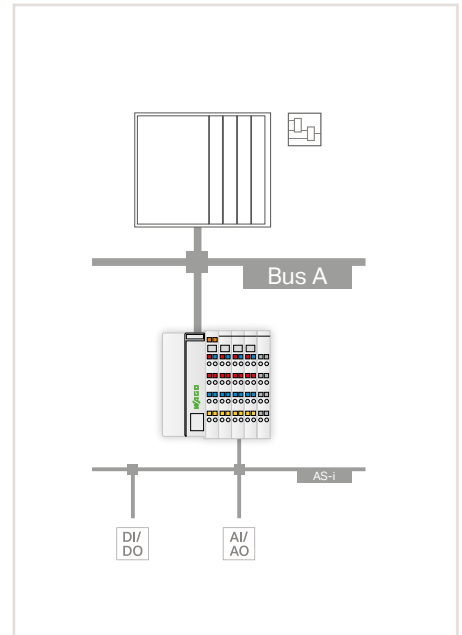
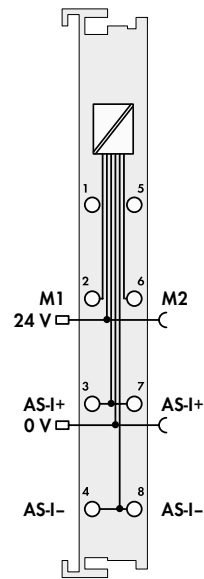
4.7



Figure: 750-655

Figure: 753-655

AS Interface Master



The 75x-655 AS-I Master Module connects AS-Interface systems to a higher-level fieldbus. It acts as a master for the AS-Interface and via the fieldbus coupler, as a slave for the fieldbus. The AS-I functions are provided both cyclically and acyclically via the fieldbus.

Diagnostics, which go far beyond the AS-I specifications, simplify detection of both sporadic configuration errors and AS-I communication interference sources. An auto-installation mode allows an AS-Interface network to be created via sequential slave installation, with no addressing tool required.

Both signal transmission and operating status, as well as trouble-free internal data bus communication, are indicated via LEDs.

Item description		AS-Interface Master	
Item no.		750-655	753-655
Technical Data			
Pluggable connector			•
Number of slaves		62	
Slave profiles		V3.0 with transaction types 1–5	
Cable length		100 m (with repeater 300 m)	
AS-i cycle time		0,3 ... 10 ms	
Voltage supply (AS-I)		26.5 ... 31.6 V	
System supply voltage		24 VDC via power jumper contacts	
Current consumption, system supply		55 mA	
Internal data width		12 ... 48 bytes max., configurable, including 1 byte control/status	
Isolation		500 V system/field	
Ambient temperature (operation)		0 ... +55 °C	
Dimensions W x H x D		12 x 67.8 x 100 mm	12 x 69 x 100 mm
Approvals			
Data sheet and further information, see:		wago.com/750-655	wago.com/753-655
Accessories			
Plug		753-110	
753 Series coding elements		753-150	

Mini-WSB Quick Marking System
see Full Line Catalog, Volume 6

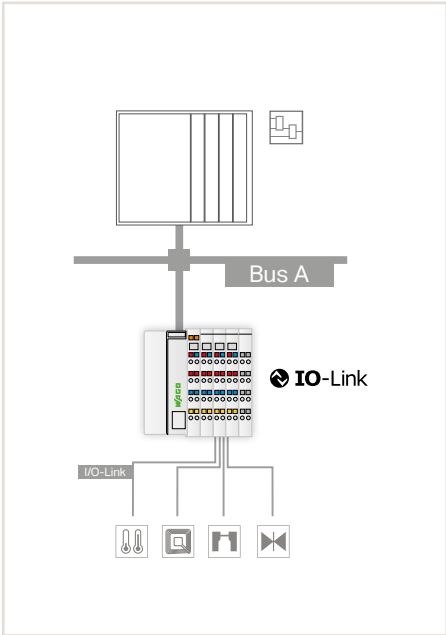
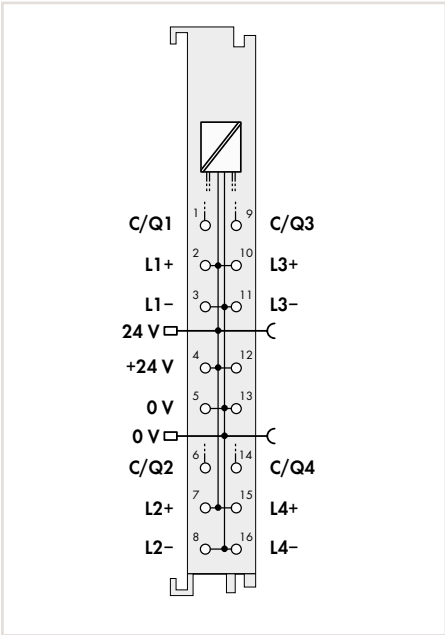
DIN rails and tool
see Section 11

Approvals and corresponding ratings,
see Page 521 or www.wago.com

IO-Link Master



IO-Link Master



Item description
Item no.

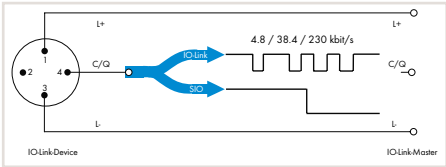
IO-Link Master
750-657

Technical Data	
Number of I/O link ports	4
Baud rate	4.8 kbit/s, 38.4 kbit/s, 230.4 kbit/s
Cable length	20 m
System supply voltage	24 VDC via power jumper contacts
Current consumption, system supply	40 mA
Internal data width	4 ... 24 bytes
Isolation	500 V system/field
Ambient temperature (operation)	0 ... +55 °C
Dimensions W x H x D	12 x 69 x 100 mm
Approvals	CE, UL 508, ANSI/ISA
Data sheet and further information, see:	wago.com/750-657

4
4.8 kbit/s, 38.4 kbit/s, 230.4 kbit/s
20 m
24 VDC via power jumper contacts
40 mA
4 ... 24 bytes
500 V system/field
0 ... +55 °C
12 x 69 x 100 mm
CE, UL 508, ANSI/ISA
wago.com/750-657

This product is used to simultaneously connect four different I/O-link devices or standard digital sensors/actuators. Process data and data blocks, as well as acyclic data for identification, configuration, parameterization and diagnostics can be communicated to the respective device via a 3-wire connection.

The functions and performance data are defined in device description files for master and devices; these are easy to customize via the engineering. If a device must be replaced, the configuration and parameterization can be automatically restored without maintenance personnel. Project design, installation and operation are simplified!

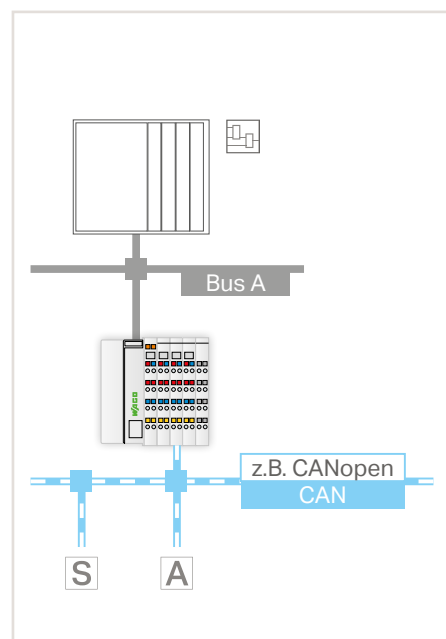
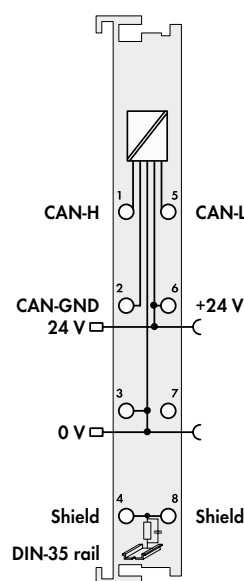


CAN Gateway

4.7



CAN Gateway



Item description

Item no.

CAN Gateway

750-658

Technical Data

Number of CAN interfaces

1

Baud rate

10 kbit/s, 20 kbit/s, 50 kbit/s, 125 kbit/s, 250 kbit/s, 500 kbit/s, 800 kbit/s, (automatic baud rate)

Data formats

Per 2.0 A standard (11-bit ID, per 2.0 B extended (29-bit ID))

System supply voltage

24 VDC via power jumper contacts

Data transfer time

5 ms (at 32 bit I/O)

Current consumption, system supply

50 mA

Internal data width

4 ... 24 Byte

Isolation

500 V system/field

Ambient temperature (operation)

0 ... +55 °C

Dimensions W x H x D

12 x 67,8 x 100 mm

Approvals

CE, Marine, UL 508, ANSI/ISA, ATEX/IECEx

Data sheet and further information, see:

wago.com/750-658

With a CAN Gateway, a CAN bus can be installed as a sub-bus beneath a fieldbus coupler or fieldbus controller. It enables special sensors/actuators that are only available with the widely spread CAN bus to also be integrated under other bus systems. Function blocks allow the gateway to read and write higher-protocol telegrams (e.g., CANopen).

You can select from three different operating modes:

- Sniffer mode: Detailed analysis of the CAN bus through passive "snooping"
- Transparent mode: Active CAN subscriber that can send and receive any type of CAN telegram
- Mapped mode: Enables direct generation of CAN telegrams from the process image, or selective copying of process values from received CAN telegrams into the input process image (cyclic or event-based).

Mini-WSB Quick Marking System
see Full Line Catalog, Volume 6

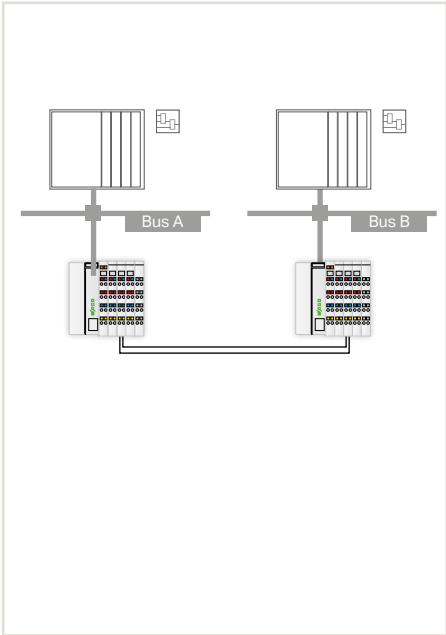
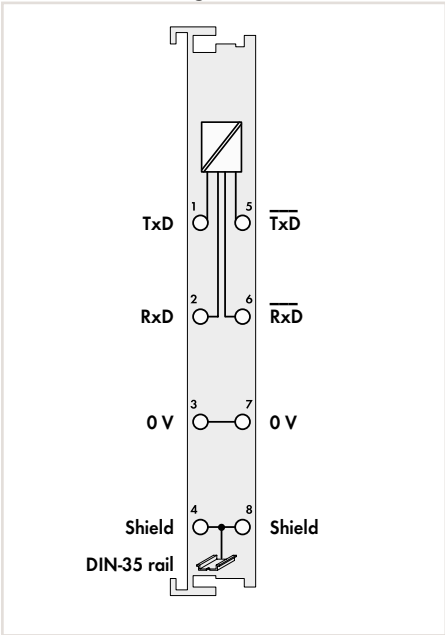
DIN rails and tool
see Section 11

Approvals and corresponding ratings,
see Page 521 or www.wago.com

Serial Data Exchange Interface



Serial Data Exchange Interface



4.7

Item description
Item no.
Technical Data
Transmission channels
Baud rate
Bit transfer
Line impedance
Line length (max)
Current consumption, system supply
Internal data width
Isolation
Ambient temperature (operation)
Dimensions W x H x D
Approvals
Data sheet and further information, see:

Data Exchange Interface
750-654
1 TxD / 1 RxD, full-duplex
62500 baud (8 N 1)
Via 2 twisted pairs with differential signals
120 Ω
1000 m
65 mA
1 x 32 bits in/out, 1 x 8 bits control/status
500 V system/field
0 ... +55 °C
12 x 69.8 x 100 mm
CE, Marine, UL 508
wago.com/750-654

The data exchange module allows the exchange of data between different fieldbus systems. Two modules are a communication pair that is connected by means of two twisted wire pairs. Each module is part of a fieldbus node. The data exchange is done in full duplex operation, independent of the fieldbus system used. The data of the output process image of the fieldbus coupler is transmitted to the communication partner. This module then transmits the data to the input process image of its fieldbus coupler and vice versa. The LED "function" indicates a data exchange with the buscoupler. The status of the data transmission is indicated by the TxD and RxD LEDs.

Functional Safety

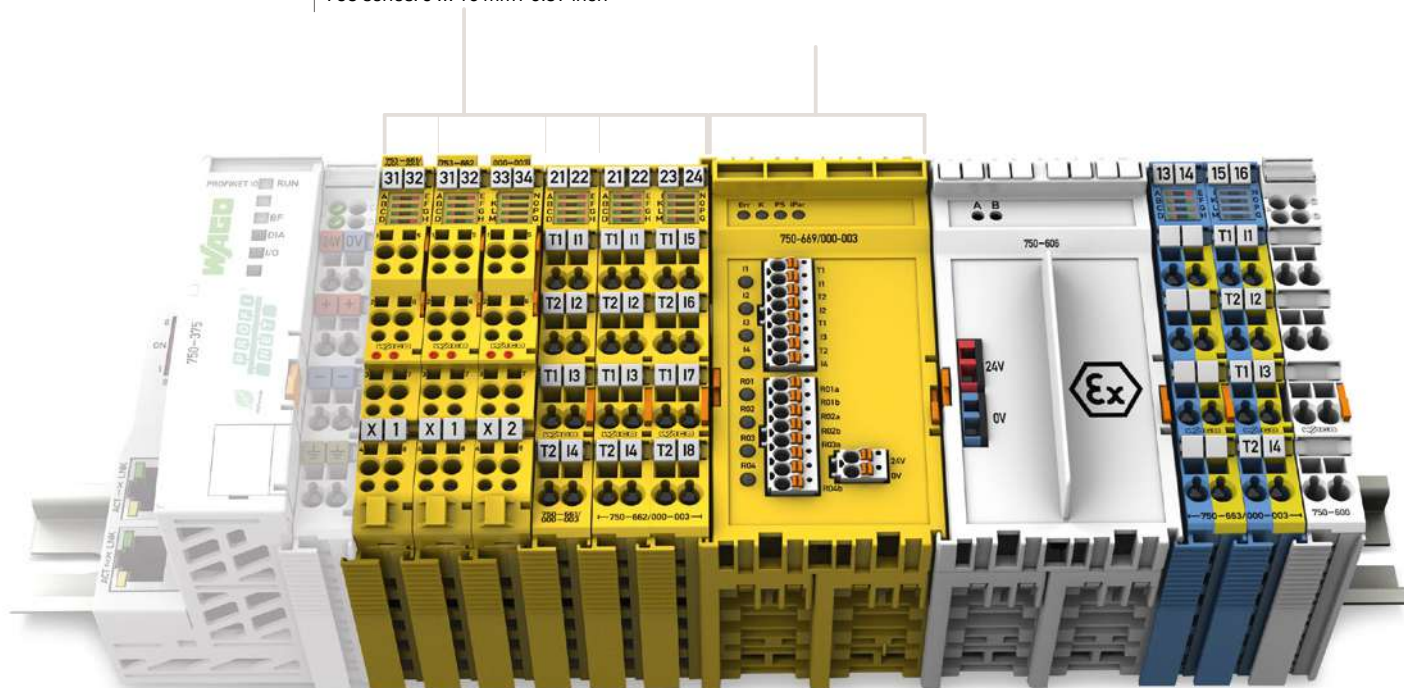


750/753 Series housing design

Dimensions W x H x D	750 series: 12 or 24 x 67.8 x 100 mm 753 series: 12 or 24 x 69 x 100 mm
Height from upper edge of DIN rail	750 series: 60.6 mm; 753 series: 61.8 mm
Connection technology	CAGE CLAMP®
Conductor size	0.08 ... 2.5 mm² / 28 ... 14 AWG
Strip length	750 series: 8 ... 9 mm / 0.33 inch 753 series: 9 ... 10 mm / 0.37 inch

Specialty housing

Dimensions W x H x D	48 x 69.8 x 100
Height from upper edge of DIN rail	62.6 mm
Connection technology	Push-in CAGE CLAMP®
Conductor size	0.05 ... 1.5 mm² / 20 ... 14 AWG
Strip length	8 ... 9 mm / 0.33 in

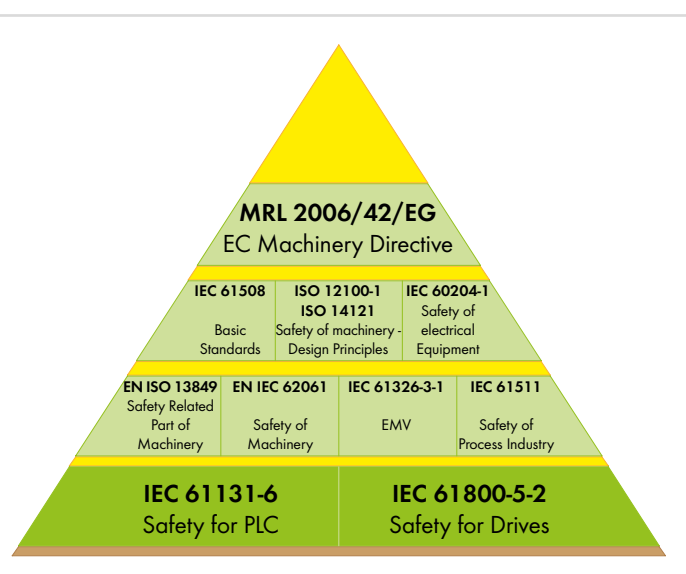


Functional Safety

In the European Union, the machinery directive defines the requirements for machine and system safety. This ensures a uniform standard for the protection of "life and limb" for people within a machine's operating area.

The required risk assessment is based on harmonized standards (e.g., EN 13849) that identify existing risks and required risk reduction (SIL or PL quality). Based on the risk assessment, safety functionality can be implemented, e.g., by presence detection or protection zone violations using secure switches or light arrays to immediately shut down the "risk". For this purpose, the safety signals are detected by the "yellow" safety modules and transmitted via "PROFIsafe" to the fail-safe PLC for further processing. The result is then executed via a safe actuator (output module, controller, etc.).

The unique safety characteristic values of the WAGO modules facilitate calculation of the final safety function up to Cat. 4/PL according to EN 13849, or SIL3 according to EN 62061 or IEC 61511.



750 and 753 Series I/O-System, Functional Safety

Contents

Function	Description	Item number		Page
		Standard	Pluggable	
Fail-safe digital input PROFI-safe	Fail-safe digital input, 8 channels, 24 VDC, PROFI-safe	750-660/000-001		250
	Fail-safe digital input, 4 channels, 24 VDC, PROFI-safe V 2.0 iPar	750-661/000-003	753-661/000-003	251
	Fail-safe digital input, 8 channels, 24 VDC, PROFI-safe V 2.0 iPar	750-662/000-003	753-662/000-003	251
Fail-safe digital input/output PROFI-safe	Fail-safe digital input/output, 4/4 channels, 24 VDC, 0.5 A, PROFI-safe	750-665/000-001		250
	Fail-safe digital input/output, 4/2 channels, 24 VDC, 10 A, PROFI-safe V 2.0 iPar	750-666/000-003	753-666/000-003	252
	Fail-safe digital input/output, 4/4 channels, 24 VDC, 2 A, PROFI-safe V 2.0 iPar	750-667/000-003	753-667/000-003	253
	Fail-safe digital input / relay output, 4/4 channels, 48 VAC, 60 VDC, 6 A, PROFI-safe V 2.0 iPar	750-669/000-003		254
Intrinsically safe digital input for functional safety	Intrinsically safe, 4-channel, PROFI-safe, 24 VDC, with diagnostics, Cat. Ia	750-663/000-003		255
Bus supply module, Ex i 	The intrinsically safe digital input module with inputs for functional safety (750-663/000-003) must only be operated using an Ex i 24 VDC power supply (e.g., 750-606, 750-625/000-001)! General information (e.g., installation regulations) on explosion protection is available in the WAGO-I/O-SYSTEM 750 manuals!			
	Bus supply module, 24 VDC, intrinsically safe	750-606		258
	Bus supply module, 24 VDC, intrinsically safe	750-625/000-001		258
Filter Modules 	The mixed operation of safe and conventional I/O modules streamlines system configuration. For increased electromagnetic immunity (EMC standard), WAGO offers compact power supply filter modules (Section 4.10). Specific power supply features must be considered, which are described in detail in the corresponding manuals.			
	24 VDC filter module (surge), high isolation	750-624/020-000		282
	Filter module, 24 VDC, high isolation	750-626/020-000		283

Fail-safe digital input or digital input/output, 24 VDC, PROFIsafe

4.8

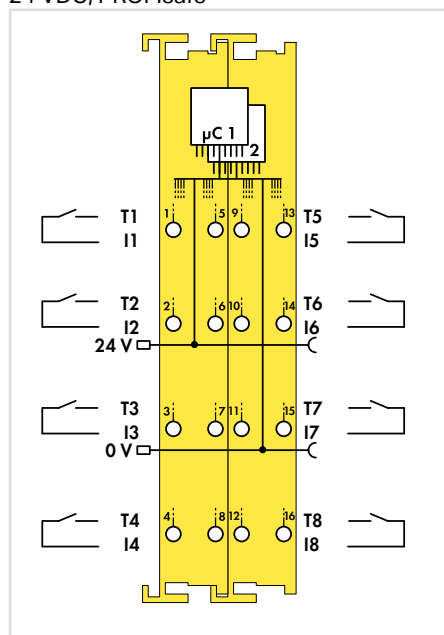


Figure: 750-660/000-001

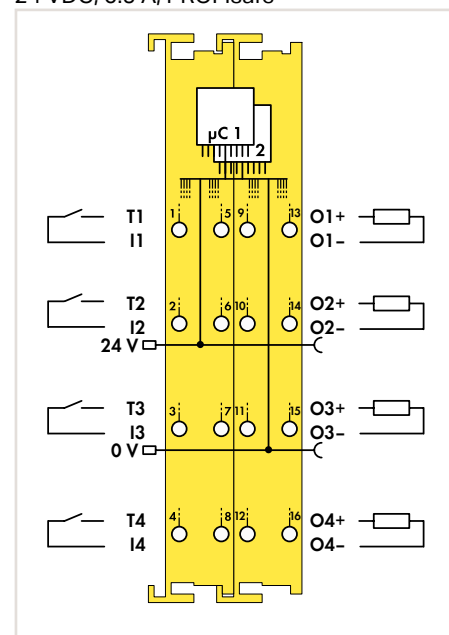


Figure: 750-665/000-001

Fail-safe 8 channel digital input;
24 VDC; PROFIsafe



Fail-safe 4/4 channel digital input/output;
24 VDC; 0.5 A; PROFIsafe



Item description	8FDI
Version	24 VDC PROFIsafe
Item no.	750-660/000-001

8FDI
24 VDC PROFIsafe
750-660/000-001

4FDI/4FDO
24 VDC 0.5A PROFIsafe
750-665/000-001

Technical Data

Number of digital inputs	8
Achievable safety classes	8 x Cat. 2/SIL 2 or 4 x Cat. 4/SIL 3
Protocol	PROFIsafe V1.3
Configuration options	PROFIsafe address adjustable via DIP switches or engineering software
Sensor connection	fail-safe input with test pulse
Input characteristic	clock sensitive
Input current per channel for signal (1) typ.	2.2 mA
Number of digital outputs	
Output switching design	
Actuator connection	
Switching frequency (max.) with load type	
Field supply voltage	24 VDC (-15 ... +20 %), via power jumper contacts
Proof test interval	10 years
System supply voltage	5 VDC; via data contacts
Current consumption, system supply	40 mA
Ambient temperature (operation)	0 ... +55 °C
Dimensions W x H x D	24 x 70.9 x 100 mm
Safety standards	IEC 61508, parts 1-7, 1998 and 2000, EN 954-1 Cat. 4
Approvals	CE, UL 508, ANSI/ISA, ATEX/IECEX
Data sheet and further information, see:	wago.com/750-660/000-001

8
8 x Cat. 2/SIL 2 or 4 x Cat. 4/SIL 3
PROFIsafe V1.3
PROFIsafe address adjustable via DIP switches or engineering software
fail-safe input with test pulse
clock sensitive
2.2 mA
24 VDC (-15 ... +20 %), via power jumper contacts
10 years
5 VDC; via data contacts
40 mA
0 ... +55 °C
24 x 70.9 x 100 mm
IEC 61508, parts 1-7, 1998 and 2000, EN 954-1 Cat. 4
CE, UL 508, ANSI/ISA, ATEX/IECEX
wago.com/750-660/000-001

4
4 x Cat. 2/SIL 2 or 2 x Cat. 4/SIL 3
PROFIsafe V1.3
PROFIsafe address adjustable via DIP switches or engineering software
fail-safe input with test pulse
clock sensitive
2.2 mA
4
Power outputs
fail-safe output with test pulse
5 Hz, resistive load, 0.1 Hz, inductive load acc. to IEC 947-5-1, DC 13, 5 Hz, inductive load acc. to IEC 947-5-1, DC 13, with free-wheeling diodes
24 VDC (-15 ... +20 %), via power jumper contacts
10 years
5 VDC; via data contacts
55 mA
0 ... +55 °C
24 x 70.9 x 100 mm
IEC 61508, parts 1-7, 1998 and 2000, EN 954-1 Cat. 4
CE, UL 508, ANSI/ISA, ATEX/IECEX
wago.com/750-665/000-001

Mini-WSB Quick Marking System
see Full Line Catalog, Volume 6

DIN rails and tool
see Section 11

Approvals and corresponding ratings,
see Page 521 or www.wago.com

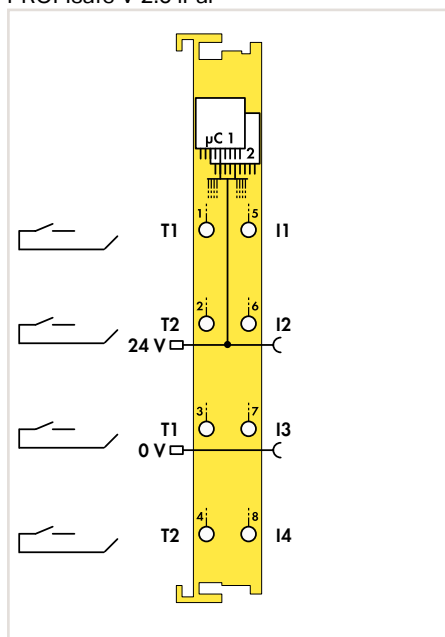
Fail-safe digital input, 24 VDC, PROFIsafe V 2.0 iPar

Fail-safe 4 channel digital input; 24 VDC;
PROFIsafe V 2.0 iPar

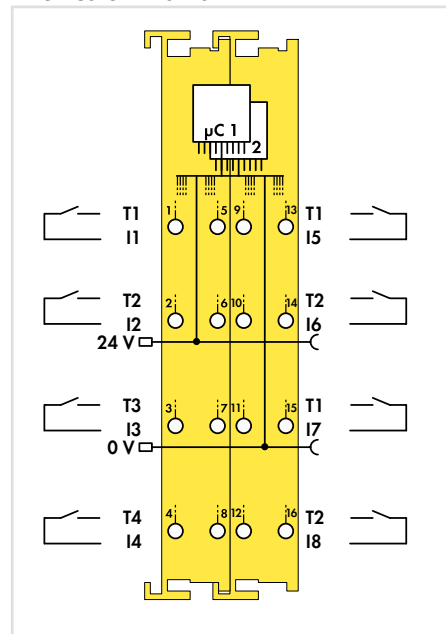


Figure: 750-661/000-003

Figure: 750-662/000-003



Fail-safe 8 channel digital input; 24 VDC;
PROFIsafe V 2.0 iPar



Item description
Version
Item no.

4FDI
24 VDC PROFIsafe V2 iPar
750-661/000-003

8FDI
24 VDC PROFIsafe V2 iPar
750-662/000-003

Technical Data

Pluggable connector
Number of digital inputs
Achievable safety classes
Protocol
Configuration options
Sensor connection
Input characteristic
Input current per channel for signal (1) typ.
Input characteristic
Signal frequency max.
Field supply voltage
System supply voltage
Current consumption, system supply
Ambient temperature (operation)
Dimensions W x H x D
Safety standards

•
4
SIL 3, Cat. 4, PL e
PROFIsafe V2
PROFIsafe address adjustable via DIP switches or engineering software
fail-safe input with test pulse
clock sensitive
2.2 mA
Type 1
50 Hz
24 VDC (–15 ... +20 %), via power jumper contacts
5 VDC; via data contacts
145 mA
0 ... +55 °C
24 x 70,9 x 100 mm
IEC 61508, parts 1-7, Edition 2: 2010; EN ISO 13849-1: 2008 + AC: 2009; EN 62061

•
8
SIL 3, Cat. 4, PL e
PROFIsafe V2
PROFIsafe address adjustable via DIP switches or engineering software
fail-safe input with test pulse
clock sensitive
2.2 mA
Type 1
50 Hz
24 VDC (–15 ... +20 %), via power jumper contacts
5 VDC; via data contacts
145 mA
0 ... +55 °C
24 x 70,9 x 100 mm
IEC 61508, parts 1-7, Edition 2: 2010; EN ISO 13849-1: 2008 + AC: 2009; EN 62061

Approvals

Data sheet and further information, see:

CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX
wago.com/750-661/000-003
wago.com/753-661/000-003

CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX
wago.com/750-662/000-003
wago.com/753-662/000-003

Accessories

Plug, Safety
753 Series coding elements

Item no.
753-120
753-150

Item no.
753-120
753-150

Support for iPar servers allows automatic parameter restoration when replacing an I/O module.

Support for iPar servers allows automatic parameter restoration when replacing an I/O module.

Fail-safe digital input/output, 24 VDC, 10 A, PROFIsafe V 2.0 iPar

Fail-safe 4/2 channel digital input/output;
24 VDC; 10 A; PROFIsafe V 2.0 iPar

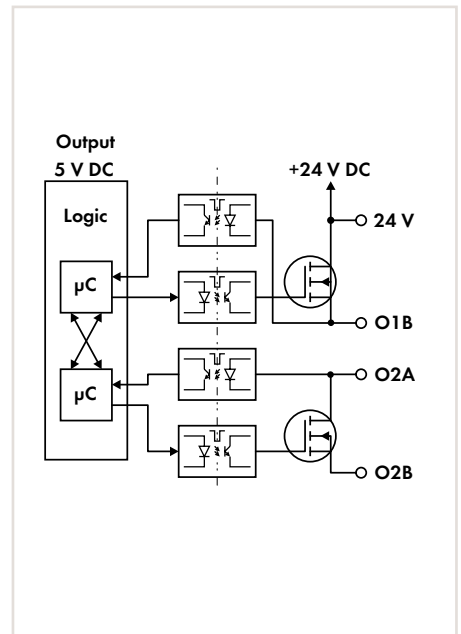
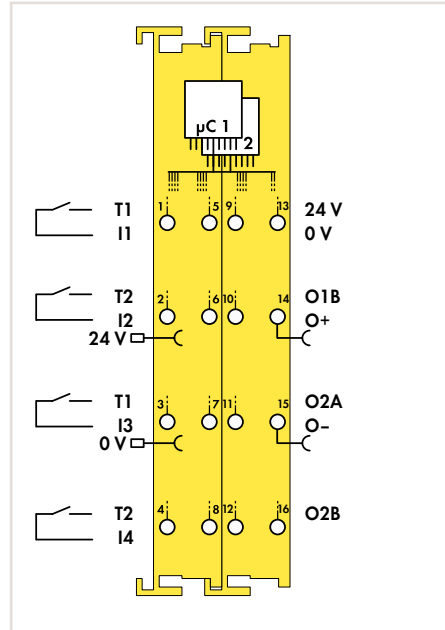
4.8



Figure: 750-666/000-003



Figure: 753-666/000-003



This module enables a secure 2-channel switch-off (single fault protection) when the power outputs are used in a bipolar configuration. If a secure 1-channel switch-off is adequate, two independent switching channels are available.

The module is capable of safely shutting off the supply voltage of entire actuator groups which are connected to the conventional modules arranged to the right.

The 2-channel circuit types P-M and P-P as well as the 1-channel circuit types P, P or P, M are available.

Item description	4FDI/2FDO	
Version	24 VDC 10A PROFIsafe V2 iPar	24 VDC 10A PROFIsafe V2 iPar
Item no.	750-666/000-003	753-666/000-003
Technical Data		
Pluggable connector		
Number of digital inputs	4	
Achievable safety classes	SIL 3, Cat. 4, PL e	
Protocol	PROFIsafe V2	
Configuration options	PROFIsafe address adjustable via DIP switches or engineering software	
Sensor connection	fail-safe input with test pulse	
Input characteristic	clock sensitive	
Input current per channel for signal (1) typ.	2.2 mA	
Signal frequency max.	50 Hz	
Number of digital outputs	2	
Output switching design	Power outputs	
Actuator connection	2 x (fail-safe output with test pulse)	
Output current (per channel)	10 A	
Output current (module) max.	20 A (Single output operation)	
Protection against incorrect wiring	Short-circuit-protected	
Switching frequency (max.) with load type	50 Hz, Resistive load; 0.1 Hz, Inductive load	
Field supply voltage	24 VDC (-15 ... +20 %), via power jumper contacts	
System supply voltage	5 VDC; via data contacts	
Current consumption, system supply	190 mA	
Ambient temperature (operation)	0 ... +55 °C	
Dimensions W x H x D	24 x 70.9 x 100 mm	
Safety standards	IEC 61508, parts 1-7, Edition 2: 2010; EN ISO 13849-1: 2008 + AC: 2009; EN 62061	
Approvals	CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX	
Data sheet and further information, see:	wago.com/750-666/000-003	wago.com/753-666/000-003
Accessories		
Plug, Safety	753-120	
753 Series coding elements	753-150	

Mini-WSB Quick Marking System
see Full Line Catalog, Volume 6

Approvals and corresponding ratings,
see Page 521 or www.wago.com

Support for iPar servers allows automatic parameter restoration when replacing an I/O module.

Fail-safe digital input/output, 24 VDC, 2 A, PROFIsafe V 2.0 iPar

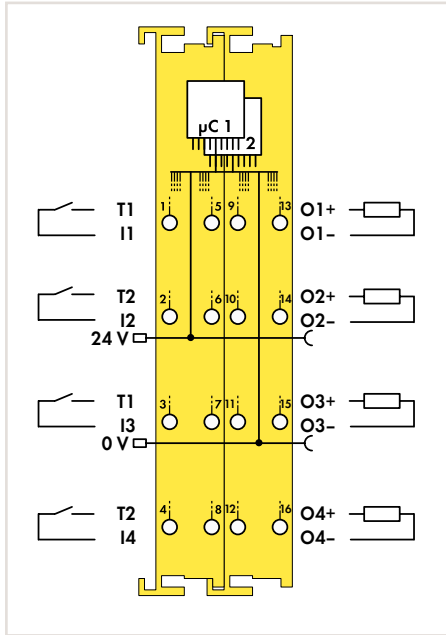
Fail-safe 4/4 channel digital input/output;
24 VDC; 2 A, PROFIsafe V 2.0 iPar



Figure: 750-667/000-003



Figure: 753-667/000-003



Item description	4FDI/4FDO	
Version	24 VDC 2A PROFIsafe V2 iPar	24 VDC 2A PROFIsafe V2 iPar
Item no.	750-667/000-003	753-667/000-003

The 2-channel circuit types P-M and P-P as well as the 1-channel circuit types P, P or P, M are available at each output. When two 1-channel P circuits are use, Categories 4/PLe or SIL3 are possible.

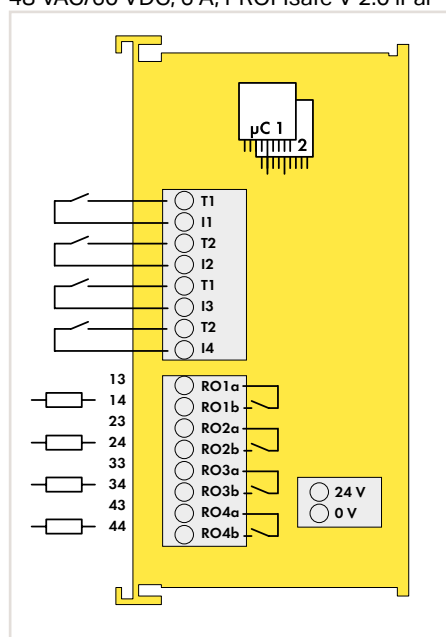
Technical Data	
Pluggable connector	●
Number of digital inputs	4
Achievable safety classes	SIL 3, Cat. 4, PL e
Protocol	PROFIsafe V2
Configuration options	PROFIsafe address adjustable via DIP switches or engineering software
Sensor connection	fail-safe input with test pulse
Input characteristic	clock sensitive
Input current per channel for signal (1) typ.	2.2 mA
Signal frequency max.	50 Hz
Number of digital outputs	4
Output switching design	Power outputs
Actuator connection	4 x (fail-safe output with test pulse)
Output current (per channel)	2 A
Output current (module) max.	8 A
Protection against incorrect wiring	Short-circuit-protected
Switching frequency (max.) with load type	50 Hz, Resistive load; 0.1 Hz, Inductive load
Field supply voltage	24 VDC (-15 ... +20 %), via power jumper contacts
System supply voltage	5 VDC; via data contacts
Current consumption, system supply	180 mA
Ambient temperature (operation)	0 ... +55 °C
Dimensions W x H x D	24 x 70.9 x 100 mm
Safety standards	IEC 61508, parts 1-7, Edition 2: 2010; EN ISO 13849-1: 2008 + AC: 2009; EN 62061
Approvals	
CE, Marine, UL 508, ANSI/ISA, ATEX/IECEx	
Data sheet and further information, see:	wago.com/750-667/000-003 wago.com/753-667/000-003
Accessories	
Plug, Safety	753-120
753 Series coding elements	753-150

Support for iPar servers allows automatic parameter restoration when replacing an I/O module.

Fail-safe digital input and relay output, 48 VAC/60 VDC, 6 A, PROFIsafe V 2.0 iPar

Fail-Safe 4/4-Channel Digital Input and Relay Output
48 VAC/60 VDC, 6 A, PROFIsafe V 2.0 iPar

4.8



Item description	4FDI/4FRO
Version	48 VAC/60 VDC 6A PROFIsafe V2 iPar
Item no.	750-669/000-003

Technical Data

Number of digital inputs	4
Achievable safety classes	SIL 3, Cat. 4, PL e
Protocol	PROFIsafe V2
Configuration options	PROFIsafe address adjustable via DIP switches or engineering software
Sensor connection	4 x (fail-safe input with test pulse)
Input characteristic	clock sensitive
Input current per channel for signal (1) typ.	2,2 mA
Input characteristic	Type 1
Signal frequency max.	50 Hz
Number of digital outputs	4
Output switching design	Relay Output
Actuator connection	4 x (fail-safe output with test pulse)
Load switching voltage range	5 V ... 60 VDC (SELV/PELV), 5 V ... 48 VAC
Isolation voltage	Relay Output: 48 VAC, 60 VDC
Switching current min.	3 mA
Output current (per channel)	6 A
Output current (module) max.	24 A
Switching delay	50 ms
Field supply voltage	24 VDC via wiring level (push-in CAGE CLAMP® connector)
System supply voltage	5 VDC; via data contacts
Current consumption, system supply	120 mA
Ambient temperature (operation)	0 ... +55 °C
Dimensions W x H x D	24 x 70.9 x 100 mm
Safety standards	IEC 61508, parts 1-7, Edition 2: 2010; EN ISO 13849-1: 2008 + AC: 2009; EN 62061
Approvals	CE
Data sheet and further information, see:	wago.com/750-669/000-003

 Mini-WSB Quick Marking System
see Full Line Catalog, Volume 6

 DIN rails and tool
see Section 11

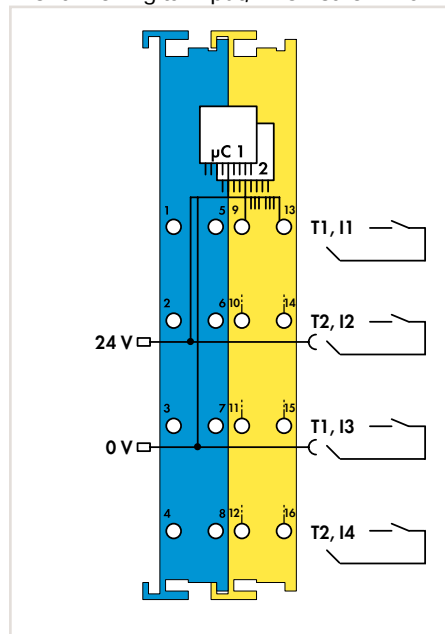
 Approvals and corresponding ratings,
see Page 521 or www.wago.com

Support for iPar servers allows automatic parameter restoration when replacing an I/O module.

Digital input, PROFIsafe V2 iPar



4-Channel Digital Input, PROFIsafe V 2.0 iPar



Item description	4F-Ex i DI
Version	24 VDC PROFIsafe V2 iPar
Item no.	750-663/000-003
Technical Data	
Protocol	PROFIsafe V2
Configuration options	PROFIsafe address adjustable via DIP switches or engineering software
Sensor inputs	4, clock sensitive to T1 ... T2
Input current typ.	3 mA
Input frequency max.	50 Hz
Input filter (digital)	0 ms ... 200 ms configurable in steps
Clock outputs	2
System supply voltage	5 VDC; via data contacts
Field supply voltage	24 VDC via power jumper contacts (provided via Ex-i supply $U_i = \max. 27.3 \text{ V}$)
Current consumption, field supply (module with no external load)	20 mA
Current consumption, system supply	145 mA
Isolation (peak value)	$U_m = 375 \text{ V system/supply}$
Ambient temperature (operation)	$0 \dots +55 \text{ }^\circ\text{C}$
Dimensions W x H x D	$24 \times 67.8 \times 100 \text{ mm}$
Functional Safety	
Achievable risk reduction	SIL 3 acc. to IEC 61508:2010; SIL 3 acc. to IEC 61511:2005; SIL 3 acc. to IEC 62061:2005; Cat. 4, PL e acc. to EN ISO 13849:2008
Safety standards	IEC 61508, IEC 62061, EN ISO 13849, IEC 61511
Explosion protection	
Safety-relevant data (circuit)	$U_o = 27.3 \text{ V}; I_o = 23 \text{ mA}; P_o = 157 \text{ mW};$ linear characteristic curve
Reactances Ex ia IIC	$L_o = 61 \text{ mH}; C_o = 64 \text{ nF}$
Reactances Ex ia IIB	$L_o = 100 \text{ mH}; C_o = 552 \text{ nF}$
Reactances Ex ia IIA	$L_o = 100 \text{ mH}; C_o = 2.28 \text{ } \mu\text{F}$
Reactances Ex ia I	$L_o = 100 \text{ mH}; C_o = 2.95 \text{ } \mu\text{F}$
Ex Guideline	EN/IEC 60079-0, -7, -11, -26, -31
Approvals	CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX
Marking	ATEX: $\text{II M2 (M1) Ex d [ia Ma] I Mb}$ $\text{II 3 (1) G Ex ec [ia Ga] IIC T4 Gc}$ $\text{II 3 (1) D Ex tc [ia Da] IIIC T135^\circ\text{C Dc}$ IECEX: Ex d [ia Ma] I Mb $\text{Ex ec [ia Ga] IIC T4 Gc}$ $\text{Ex tc [ia Da] IIIC T135^\circ\text{C Dc}$
Data sheet and further information, see:	wago.com/750-663/000-003

This product combines intrinsic safety with functional safety and is specially conceived for reliable acquisition from potential-free, contact-based emergency stop switches, safety interlock switches, mode selectors, as well as safe sensors, that are located in hazardous environments. Thus, safety functions with safe sensors from Ex Zones 0 and 1 are attainable.

Support for iPar servers allows automatic parameter restoration when replacing an I/O module.

Reactances without accounting for the concurrence of L and C

Intrinsically Safe Ex i modules



Specialty housings

Dimensions W x H x D	48 x 70.9 x 100
Height from upper edge of DIN rail	63.7 mm
Connection technology	CAGE CLAMP®
Conductor size	0.08 ... 1.5 mm² / 28 ... 16 AWG
Strip length	5 ... 6 mm / 0.22 in

750 Series housing design

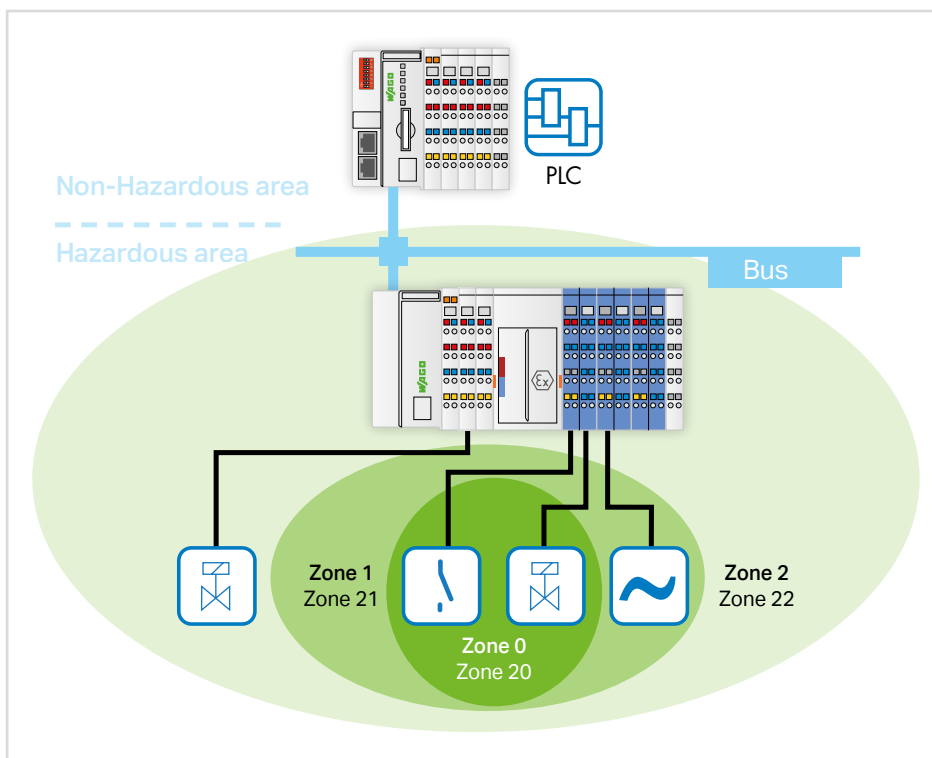
Dimensions W x H x D	12 or 24 x 67.8 x 100 mm
Height from upper edge of DIN rail	60.6 mm
Connection technology	CAGE CLAMP®
Conductor size	0.08 ... 2.5 mm² / 28 ... 14 AWG
Strip length	8 ... 9 mm / 0.33 inch



Use in Hazardous Areas

In many plants across the chemical and petrochemical industries, as well as in the production and process automation sectors, installations are operated that process explosive gas- or dust-air mixtures. For this reason, electrical equipment must be explosion-proof in order to avoid injuries to personnel and equipment damages.

The modules within the WAGO 750 I/O-SYSTEM are designed for use in both non-potentially explosive and potentially explosive hazardous areas. The direct application of fieldbus technology in potentially explosive areas is typically resource-intensive. When used in hazardous areas of Zone 2/22, the WAGO I/O-SYSTEM 750 offers a safe, easy and economical connection to the sensors and actuators of Zones 0/20 and 1/21. The "blue" Ex i I/O modules were specially developed for this purpose. They form an intrinsically safe section that can be integrated into a standard fieldbus node, offering all the advantages of a state-of-the-art fieldbus technology. The WAGO 750 I/O-SYSTEM is also approved for mining applications.



Series 750 and 753 I/O-System, Intrinsically Safe Ex i Modules

Contents

Function	Description	Item number	Page
Bus supply module, Ex i,	Bus supply module, 24 VDC, intrinsically safe	750-606	258
	Bus supply module, 24 VDC, intrinsically safe	750-625/000-001	258
Digital input Ex i for proximity switches per EN 60947-5-6	1-channel digital input, NAMUR, intrinsically safe	750-435	259
	2-channel digital input, NAMUR, intrinsically safe	750-438	259
	4-channel digital input, PROFIsafe V2 iPar	750-663/000-003	261
	8-channel digital input, NAMUR, intrinsically safe	750-439	260
Digital output Ex i	2-channel digital output, 24 VDC, intrinsically safe	750-535	262
	4-channel digital output, 24 VDC, valve, intrinsically safe	750-539	262
	2-channel relay output, 2 changeover contacts, intrinsically safe	750-538	263
Analog input Ex i	2-channel analog input, 0 ... 20 mA, intrinsically safe	750-485	264
	4-channel analog input, 0/4 ... 20 mA, NE43, intrinsically safe	750-486	264
	2-channel analog input, 4 ... 20 mA HART, intrinsically safe	750-484	265
	2-channel analog input, resistance measurement, intrinsically safe	750-481/003-000	266
	2-channel analog input, thermocouple, intrinsically safe	750-487/003-000	266
Analog output Ex i	2-channel analog output, 0 ... 20 mA, intrinsically safe	750-585	267
	2-channel analog output, 4 ... 20 mA, intrinsically safe	750-586	267
Up/down counter, Ex i	Up/down counter, intrinsically safe	750-633	268

Bus supply module, Intrinsically Safe

Power Supply; 24 VDC; with diagnostics;
Intrinsically safe

Power Supply; 24 VDC; Intrinsically safe

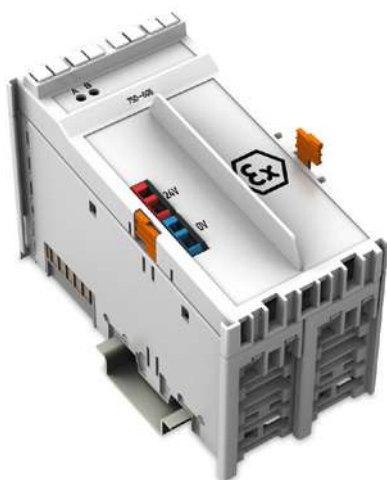
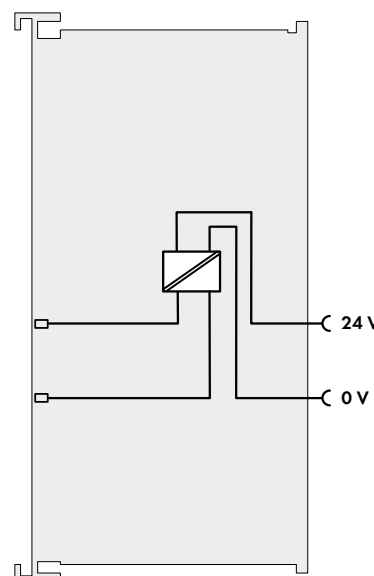
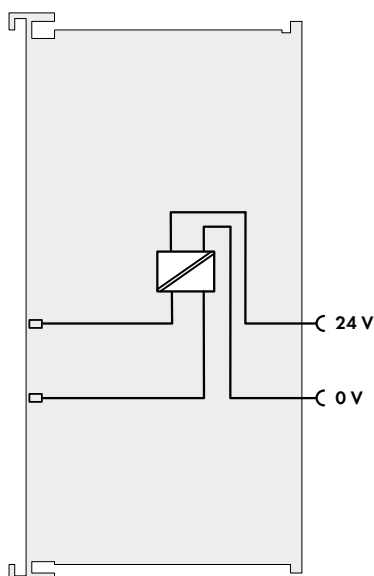


Figure: 750-606



Item description
Version
Item no.

Power Supply
24 VDC Diag Ex i
750-606

Power Supply
24 VDC Ex i
750-625/000-001

Technical Data	
Current consumption, system supply	7.5 mA
Field supply voltage	24 VDC via power jumper contacts
Current carrying capacity of the power jumper contacts	1 A (DC)
Input voltage	24 VDC (-25 ... +30 %)
Fuse	electronic
Data width	2 bits (input voltage failure, fuse triggered)
Ambient temperature (operation)	0 ... +55 °C
Dimensions W x H x D	24 x 70.9 x 100 mm
Explosion Protection	
Power supply (input)	$U_n = 24 \text{ VDC} (-25 \% \dots +30 \%);$ $P_{\max} = 29 \text{ W}; U_m = 253 \text{ V}$
Power supply (output)	$U_o = 27.3 \text{ V}$ (intrinsically safe output voltage per protection level ia); $I_n = 1 \text{ A}$
Ex Guideline	EN/IEC 60079-0, -7, -11, -26, -31
Approvals	CE, Marine, UL 508, ANSI/ISA, ATEX/IECEx
Marking	ATEX: I M2 Ex d I Mb II 3 G Ex ec IIC T4 Gc II 3 D Ex tc IIIC T135°C Dc IECEx: Ex d I Mb Ex ec IIC T4 Gc Ex tc IIIC T135°C Dc
Data sheet and further information, see:	wago.com/750-606

Power Supply	7.5 mA
Field supply voltage	24 VDC via power jumper contacts
Current carrying capacity of the power jumper contacts	1 A (DC)
Input voltage	24 VDC (-25 ... +30 %)
Fuse	electronic
Data width	2 bits (input voltage failure, fuse triggered)
Ambient temperature (operation)	0 ... +55 °C
Dimensions W x H x D	24 x 70.9 x 100 mm
Explosion Protection	
Power supply (input)	$U_n = 24 \text{ VDC} (-25 \% \dots +30 \%);$ $P_{\max} = 29 \text{ W}; U_m = 253 \text{ V}$
Power supply (output)	$U_o = 27.3 \text{ V}$ (intrinsically safe output voltage per protection level ia); $I_n = 1 \text{ A}$
Ex Guideline	EN/IEC 60079-0, -7, -11, -26, -31
Approvals	CE, Marine, UL 508, ANSI/ISA, ATEX/IECEx
Marking	ATEX: I M2 Ex d I Mb II 3 G Ex ec IIC T4 Gc II 3 D Ex tc IIIC T135°C Dc IECEx: Ex d I Mb Ex ec IIC T4 Gc Ex tc IIIC T135°C Dc
Data sheet and further information, see:	wago.com/750-625/000-001

Power Supply	7.5 mA
Field supply voltage	24 VDC via power jumper contacts
Current carrying capacity of the power jumper contacts	1 A (DC)
Input voltage	24 VDC (-25 ... +30 %)
Fuse	electronic
Data width	2 bits (input voltage failure, fuse triggered)
Ambient temperature (operation)	0 ... +55 °C
Dimensions W x H x D	24 x 70.9 x 100 mm
Explosion Protection	
Power supply (input)	$U_n = 24 \text{ VDC} (-25 \% \dots +30 \%);$ $P_{\max} = 29 \text{ W}; U_m = 253 \text{ V}$
Power supply (output)	$U_o = 27.3 \text{ V}$ (intrinsically safe output voltage per protection level ia); $I_n = 1 \text{ A}$
Ex Guideline	EN/IEC 60079-0, -7, -11, -26, -31
Approvals	CE, Marine, UL 508, ANSI/ISA, ATEX/IECEx
Marking	ATEX: I M2 Ex d I Mb II 3 G Ex ec IIC T4 Gc II 3 D Ex tc IIIC T135°C Dc IECEx: Ex d I Mb Ex ec IIC T4 Gc Ex tc IIIC T135°C Dc
Data sheet and further information, see:	wago.com/750-625/000-001

The supply modules monitors power supply to the downstream Ex i segment and separates the intrinsically safe from the non-intrinsically safe section of the WAGO-I/O-SYSTEM 750. Input and output sides are electrically isolated from each other.

If, due to load conditions, more than one supply module is required per station, four separation modules (750-616) must be placed between the intrinsically safe sections.

General information (e.g., installation regulations) on explosion protection is available in the WAGO-I/O-SYSTEM 750 manuals!

Mini-WSB Quick Marking System
see Full Line Catalog, Volume 6

DIN rails and tool
see Section 11

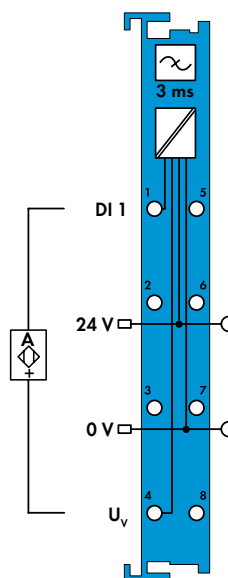
Approvals and corresponding ratings,
see Page 521 or 517 or www.wago.com

Digital input, NAMUR, Intrinsically safe

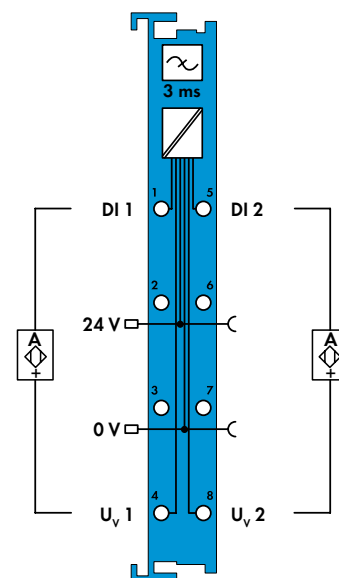


Figure: 750-435

1-channel digital input; NAMUR;
Intrinsically safe



2-channel digital input; NAMUR;
Intrinsically safe



Item description	1DI
Version	NAMUR Ex i
Item no.	750-435

1DI	
NAMUR Ex i	
750-435	

2DI	
NAMUR Ex i	
750-438	

Technical Data

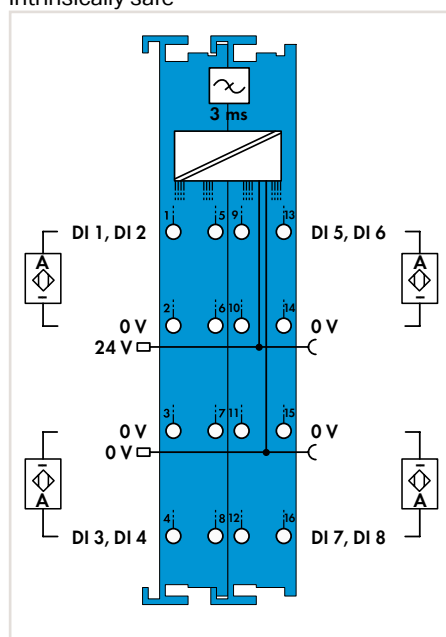
Number of digital inputs	1
Type of signal	NAMUR
Sensor connection	2-conductor
Input characteristic	High-side switching
Input filter (digital)	3 ms
Open-circuit voltage	8.2 VDC
Diagnostics	Short circuit, wire break
Sensor supply voltage	8.2 VDC, short-circuit-protected, isolated channels
Field supply voltage	24 VDC via power jumper contacts (provided via Ex i supply U_i = max. 27.3 V)
Current consumption, field supply (module with no external load)	13 mA
Current consumption, system supply	2.5 mA
Internal data width	2 bits
Isolation	U_m = 375 V system/supply
Ambient temperature (operation)	0 ... +55 °C
Dimensions W x H x D	12 x 67.8 x 100 mm
Explosion protection	
Safety-relevant data (circuit)	U_o = 12 V; I_o = 16 mA; P_o = 48 mW; linear characteristic curve
Reactances Ex ia IIC	L_o = 180 mH; C_o = 1.4 µF
Reactances Ex ia IIB	L_o = 560 mH; C_o = 9 µF
Reactances Ex ia IIA	L_o = 900 mH; C_o = 36 µF
Reactances Ex ia I	L_o = 1 H; C_o = 38 µF
Reactances	Reactances without accounting for the concurrence of L and C
Ex Guideline	EN/IEC 60079-0, -7, -11, -26, -31
Approvals	CE, Marine, UL 508, ANSI/ISA, ATEX/IECEx
Marking	ATEX: I M2 (M1) Ex d [ia Ma] I Mb II 3 (1) G Ex ec [ia Ga] IIC T4 Gc II 3 (1) D Ex tc [ia Da] IIIC T135°C Dc IECEx: Ex d [ia Ma] I Mb Ex ec [ia Ga] IIC T4 Gc Ex tc [ia Da] IIIC T135°C Dc
Data sheet and further information, see:	wago.com/750-435

1	
NAMUR	
2-conductor	
High-side switching	
3 ms	
8.2 VDC	
Short circuit, wire break	
8.2 VDC, short-circuit-protected, isolated channels	
24 VDC via power jumper contacts (provided via Ex i supply U_i = max. 27.3 V)	
13 mA	
2.5 mA	
2 bits	
U_m = 375 V system/supply	
0 ... +55 °C	
12 x 67.8 x 100 mm	
U_o = 12 V; I_o = 16 mA; P_o = 48 mW; linear characteristic curve	
L_o = 180 mH; C_o = 1.4 µF	
L_o = 560 mH; C_o = 9 µF	
L_o = 900 mH; C_o = 36 µF	
L_o = 1 H; C_o = 38 µF	
Reactances without accounting for the concurrence of L and C	
EN/IEC 60079-0, -7, -11, -26, -31	
CE, Marine, UL 508, ANSI/ISA, ATEX/IECEx	
ATEX: I M2 (M1) Ex d [ia Ma] I Mb II 3 (1) G Ex ec [ia Ga] IIC T4 Gc II 3 (1) D Ex tc [ia Da] IIIC T135°C Dc	
IECEx: Ex d [ia Ma] I Mb Ex ec [ia Ga] IIC T4 Gc Ex tc [ia Da] IIIC T135°C Dc	
wago.com/750-435	

2	
NAMUR	
2-conductor	
High-side switching	
3 ms	
8.2 VDC	
8.2 VDC, short-circuit-protected, isolated channels	
24 VDC via power jumper contacts (provided via Ex i supply U_i = max. 27.3 V)	
16 mA	
2.5 mA	
2 bits	
U_m = 375 V system/supply	
0 ... +55 °C	
12 x 67.8 x 100 mm	
U_o = 12 V; I_o = 13.5 mA; P_o = 40.5 mW; linear characteristic curve	
L_o = 190 mH; C_o = 1.4 µF	
L_o = 600 mH; C_o = 9 µF	
L_o = 1 H; C_o = 36 µF	
L_o = 1 H; C_o = 38 µF	
Reactances without accounting for the concurrence of L and C	
EN/IEC 60079-0, -7, -11, -26, -31	
CE, Marine, UL 508, ANSI/ISA, ATEX/IECEx	
ATEX: I M2 (M1) Ex d [ia Ma] I Mb II 3 (1) G Ex ec [ia Ga] IIC T4 Gc II 3 (1) D Ex tc [ia Da] IIIC T135°C Dc	
IECEx: Ex d [ia Ma] I Mb Ex ec [ia Ga] IIC T4 Gc Ex tc [ia Da] IIIC T135°C Dc	
wago.com/750-438	

Digital input, NAMUR, Intrinsically safe

8-channel digital input; NAMUR;
Intrinsically safe



Item description

Version

Item no.

8DI

NAMUR Ex i

750-439

Technical Data

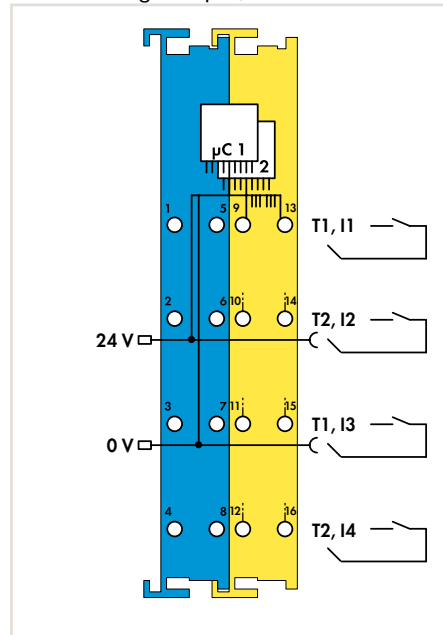
Number of digital inputs	8
Type of signal	NAMUR
Sensor connection	2-conductor
Input characteristic	High-side switching
Input filter (digital)	3 ms
Open-circuit voltage	8.2 VDC
Diagnostics	Short circuit, wire break
Sensor supply voltage	8.2 VDC, short-circuit-protected, isolated channels
Field supply voltage	24 VDC via power jumper contacts (provided via Ex i supply U_i = max. 27.3 V)
Current consumption, field supply (module with no external load)	11 mA
Current consumption, system supply	56 mA
Internal data width	16 bits
Isolation	U_m = 375 V system/supply
Ambient temperature (operation)	0 ... +55 °C
Dimensions W x H x D	12 x 67.8 x 100 mm
Explosion protection	
Safety-relevant data (circuit)	U_o = 11.76 V; I_o = 12.4 mA; P_o = 36.67 mW; linear characteristic curve
Reactances Ex ia IIC	L_o = 100 mH; C_o = 1 µF
Reactances Ex ia IIB	L_o = 100 mH; C_o = 9.9 µF
Reactances Ex ia IIA	L_o = 100 mH; C_o = 9.9 µF
Reactances Ex ia I	L_o = 100 mH; C_o = 39 µF
Ex Guideline	EN/IEC 60079-0, -7, -11, -26, -31
Approvals	CE, Marine, UL 508, ANSI/ISA, ATEX/IECEx
Marking	ATEX: I M2 (M1) Ex d [ia Ma] I Mb II 3 (1) G Ex ec [ia Ga] IIC T4 Gc II 3 (1) D Ex tc [ia Da] IIIC T135°C Dc IECEx: Ex d [ia Ma] I Mb Ex ec [ia Ga] IIC T4 Gc Ex tc [ia Da] IIIC T135°C Dc
Data sheet and further information, see:	wago.com/750-439

Reactances without accounting for the concurrence of L and C

Digital input, PROFIsafe V2 iPar



4-channel digital input, PROFIsafe V 2.0 iPar



Item description	4F-Ex i DI
Version	24 VDC PROFIsafe V2 iPar
Item no.	750-663/000-003
Technical Data	
Protocol	PROFIsafe V2
Configuration options	PROFIsafe address adjustable via DIP switches or engineering software
Sensor inputs	4, clock sensitive to T1 ... T2
Input current typ.	3 mA
Input frequency max.	50 Hz
Input filter (digital)	0 ms ... 200 ms configurable in steps
Clock outputs	2
System supply voltage	5 VDC; via data contacts
Field supply voltage	24 VDC via power jumper contacts (provided via Ex-i supply $U_i = \max. 27.3 \text{ V}$)
Current consumption, field supply (module with no external load)	20 mA
Current consumption, system supply	145 mA
Isolation (peak value)	$U_m = 375 \text{ V system/supply}$
Ambient temperature (operation)	$0 \dots +55 \text{ }^\circ\text{C}$
Dimensions W x H x D	$24 \times 67.8 \times 100 \text{ mm}$
Functional Safety	
Achievable risk reduction	SIL 3 acc. to IEC 61508:2010; SIL 3 acc. to IEC 61511:2005; SIL 3 acc. to IEC 62061:2005; Cat. 4, PL e acc. to EN ISO 13849:2008
Safety standards	IEC 61508, IEC 62061, EN ISO 13849, IEC 61511
Explosion protection	
Safety-relevant data (circuit)	$U_o = 27.3 \text{ V}; I_o = 23 \text{ mA}; P_o = 157 \text{ mW};$ linear characteristic curve
Reactances Ex ia IIC	$L_o = 61 \text{ mH}; C_o = 64 \text{ nF}$
Reactances Ex ia IIB	$L_o = 100 \text{ mH}; C_o = 552 \text{ nF}$
Reactances Ex ia IIA	$L_o = 100 \text{ mH}; C_o = 2.28 \text{ } \mu\text{F}$
Reactances Ex ia I	$L_o = 100 \text{ mH}; C_o = 2.95 \text{ } \mu\text{F}$
Ex Guideline	EN/IEC 60079-0, -7, -11, -26, -31
Approvals	CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX
Marking	ATEX: $\text{II M2 (M1) Ex d [ia Ma] I Mb}$ $\text{II 3 (1) G Ex ec [ia Ga] IIC T4 Gc}$ $\text{II 3 (1) D Ex tc [ia Da] IIIC T135^\circ\text{C Dc}$ IECEX: Ex d [ia Ma] I Mb Ex ec [ia Ga] IIC T4 Gc Ex tc [ia Da] IIIC T135°C Dc
Data sheet and further information, see:	wago.com/750-663/000-003

This product combines intrinsic safety with functional safety and is specially conceived for reliable acquisition from potential-free, contact-based emergency stop switches, safety interlock switches, mode selectors, as well as safe sensors, that are located in hazardous environments. Thus, safety functions with safe sensors from Ex Zones 0 and 1 are attainable.

Support for iPar servers allows automatic parameter restoration when replacing an I/O module.

Reactances without accounting for the concurrence of L and C

Digital output, 24 VDC, Intrinsically safe

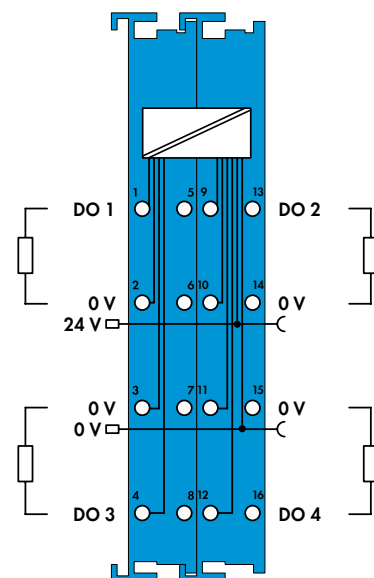
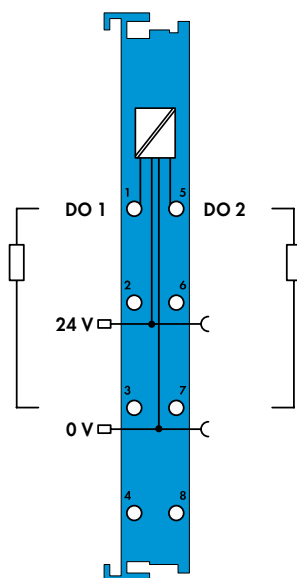
2-channel digital output; 24 VDC;
Intrinsically safe

4-channel digital output; 24 VDC; valve;
Intrinsically safe



Figure: 750-535

Figure: 750-539



Item description	2DO
Version	24 VDC Ex i
Item no.	750-535

Technical Data

Number of digital outputs	2
Type of signal	24 VDC
Output characteristic	High-side switching
Load type	Resistive, inductive, lamps
Actuator connection	2-conductor
Switching frequency (max.)	1 kHz
Actuator supply voltage	24 VDC
Field supply voltage	24 VDC via power jumper contacts (provided via Ex i supply U_i = max. 27.3 V)

Current consumption, field supply (module with no external load)	8.5 mA
Current consumption, system supply	7 mA
Internal data width	2 bits
Isolation	U_m = 375 V system/supply
Ambient temperature (operation)	0 ... +55 °C
Dimensions W x H x D	12 x 67.8 x 100 mm

Explosion protection	
Safety-relevant data (circuit)	U_o = 27.3 V; I_o = 106 mA; P_o = 723 mW; linear characteristic curve

Reactances Ex ia IIC	L_o = 3 mH; C_o = 88 nF

Reactances Ex ia IIB	L_o = 12 mH; C_o = 680 nF

Reactances Ex ia IIA	L_o = 18 mH; C_o = 2.2 μF

Reactances Ex ia I	L_o = 20 mH; C_o = 3.6 μF

Reactances	Reactances without accounting for the concurrence of L and C

Ex Guideline	EN/IEC 60079-0, -7, -11, -26, -31

Approvals	CE, Marine, UL 508, ANSI/ISA, ATEX/IECEx

Marking	ATEX: I M2 (M1) Ex d [ia Ma] I Mb II 3 (1) G Ex ec [ia Ga] IIC T4 Gc II 3 (1) D Ex tc [ia Da] IIIC T135°C Dc IECEx: Ex d [ia Ma] I Mb Ex ec [ia Ga] IIC T4 Gc Ex tc [ia Da] IIIC T135°C Dc

Data sheet and further information, see:	wago.com/750-535

Mini-WSB Quick Marking System	see Full Line Catalog, Volume 6

Approvals and corresponding ratings,	see Page 518 or www.wago.com

4DO
24 VDC Valve Ex i
750-539

Number of digital outputs	4
Type of signal	24 VDC
Output characteristic	High-side switching
Load type	Resistive, inductive, lamps
Actuator connection	2-conductor
Switching frequency (max.)	100 Hz
Actuator supply voltage	24 VDC
Field supply voltage	24 VDC via power jumper contacts (provided via Ex i supply U_i = max. 27.3 V)

Current consumption, field supply (module with no external load)	10 mA
Current consumption, system supply	20 mA
Internal data width	4 bits in, 4 bits out (diagnostics)
Isolation	U_m = 375 V system/supply
Ambient temperature (operation)	0 ... +55 °C
Dimensions W x H x D	12 x 67.8 x 100 mm

Explosion protection	
Safety-relevant data (circuit)	U_o = 27.3 V; I_o = 117.5 mA; P_o = 800.1 mW; linear characteristic curve

Reactances Ex ia IIC	L_o = 13 μH; C_o = 88 nF

Reactances Ex ia IIB	L_o = 8.1 mH; C_o = 683 nF

Reactances Ex ia IIA	L_o = 14 mH; C_o = 2.28 μF

Reactances Ex ia I	L_o = 21 mH; C_o = 540 nF

Reactances	Reactances without accounting for the concurrence of L and C

Ex Guideline	EN/IEC 60079-0, -7, -11, -26, -31

Approvals	CE, ATEX/IECEx

Marking	ATEX: I M2 (M1) Ex d [ia Ma] I Mb II 3 (1) G Ex ec [ia Ga] IIC T4 Gc II 3 (1) D Ex tc [ia Da] IIIC T135°C Dc IECEx: Ex d [ia Ma] I Mb Ex ec [ia Ga] IIC T4 Gc Ex tc [ia Da] IIIC T135°C Dc

Data sheet and further information, see:	wago.com/750-539

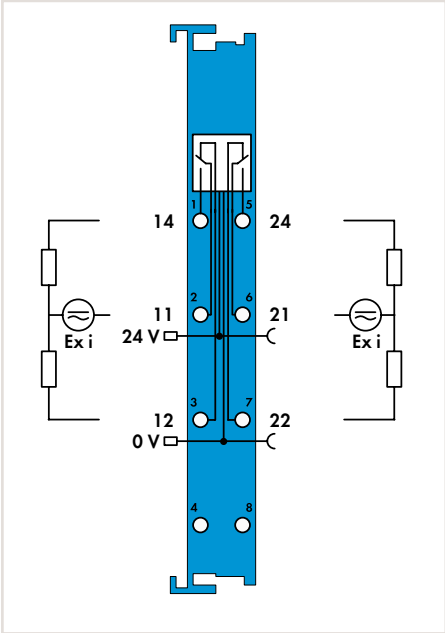
Mini-WSB Quick Marking System	see Full Line Catalog, Volume 6

Approvals and corresponding ratings,	see Page 518 or www.wago.com

Relay output, Intrinsically Safe



2-channel relay output; 2 changeover contacts; Intrinsically Safe



Item description	2RO
Version	Relay 2CO Ex i
Item no.	750-538
Technical Data	
Number of digital outputs	2
Type of signal	100 VAC, 30 VDC*
Output switching design	2 changeover contacts, relay
Output characteristic	Potential-free
Output current per channel	0.5 A AC / 1 A DC*
Actuator connection	2 conductor
Switching frequency (max.)	0.33 Hz
Field supply voltage	24 VDC via power jumper contacts (provided via Ex i supply U_i = max. 27.3 V)
Current consumption, field supply (module with no external load)	24 mA
Current consumption, system supply	26 mA
Internal data width	2 Bit
Isolation	U_m = 375 V system/supply
Ambient temperature (operation)	0 ... +55 °C
Dimensions W x H x D	12 x 67.8 x 100 mm
Explosion protection	
Safety-relevant data (circuit)	Relay output: U_i = 30 V DC; I_i = 1 A; P_i = 30 W; U_i = 100 V AC; I_i = 0.5 A; P_i = 50 VA; L_i = negligible; C_i = negligible EN/IEC 60079-0, -7, -11, -26, -31
Ex Guideline	CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX
Approvals	
Marking	ATEX: I M2 (M1) Ex d [ia Ma] I Mb II 3 (1) G Ex ec [ia Ga] IIC T4 Gc II 3 (1) D Ex tc [ia Da] IIIC T135°C Dc IECEX: Ex d [ia Ma] I Mb Ex ec [ia Ga] IIC T4 Gc Ex tc [ia Da] IIIC T135°C Dc
Data sheet and further information, see:	wago.com/750-538

*Both maximum switching current and voltage must comply with EN 60079-11.

Analog Input, 4 ... 20 mA or 0/4 ... 20 mA, Intrinsically Safe

2-channel analog input, 4 ... 20 mA,
Intrinsically Safe

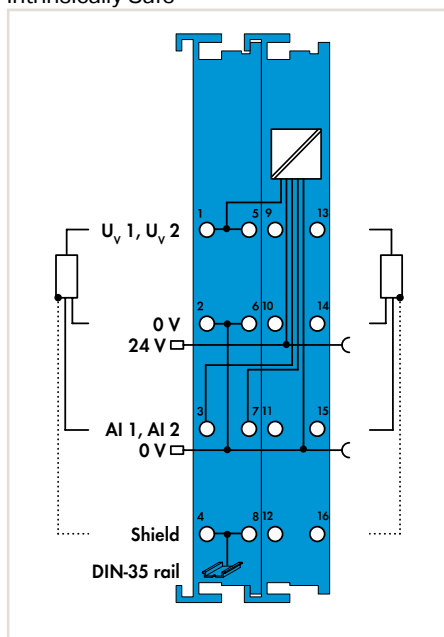
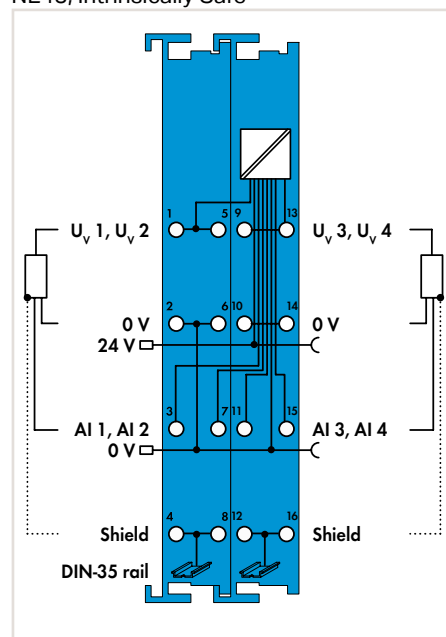


Figure: 750-486

4-channel analog input, 0/4 ... 20 mA,
NE43, Intrinsically Safe



Item description	2AI
Version	4-20mA Ex i
Item no.	750-485

Technical Data

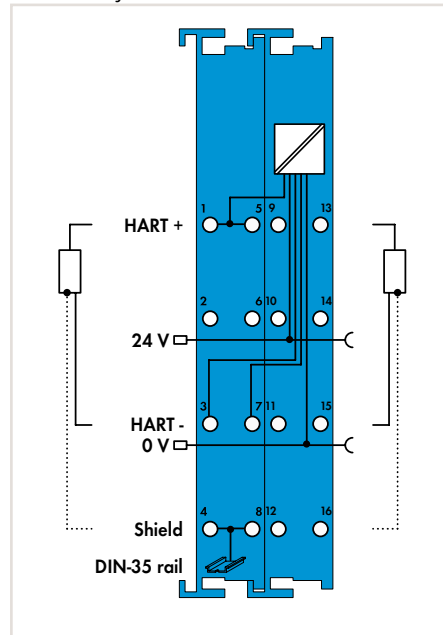
Number of analog inputs	2
Type of signal	4 ... 20 mA
Signal characteristic	single-ended
Input resistance	< 100 Ω
Resolution	12 bits
Conversion time	< 2 ms
Measuring error (25 °C)	< ± 0.2 % of largest measurement range
Temperature coefficient	< ± 0.01 % /K of largest measurement range
Field supply voltage	24 VDC via power jumper contacts (provided via Ex i supply U_i = max. 27.3 V)
Current consumption, field supply (module with no external load)	11 mA
Transmitter supply	U_v = 16 V at 20 mA
Current consumption, system supply	31 mA
Data width	2 x 16 bits data, 2 x 8 bits control/status (optional)
Isolation	U_m = 375 V system/supply
Ambient temperature (operation)	0 ... +55 °C
Dimensions W x H x D	24 x 67.8 x 100 mm
Explosion protection	
Safety-relevant data (circuit)	U_o = 27.3 V; I_o = 90 mA; P_o = 0.61 W; linear characteristic curve
Reactances Ex ia IIC	L_o = 5 mH; C_o = 88 nF
Reactances Ex ia IIB	L_o = 18 mH; C_o = 680 nF
Reactances Ex ia IIA	L_o = 40 mH; C_o = 2.2 μF
Reactances Ex ia I	L_o = 100 mH; C_o = 3.5 μF
Reactances	Reactances without accounting for the concurrence of L and C
Ex Guideline	EN/IEC 60079-0, -7, -11, -26, -31
Approvals	CE, Marine, UL 508, ANSI/ISA, ATEX/ IECEx
Marking	ATEX: Ⓜ I M2 (M1) Ex d [ia Ma] I Mb Ⓜ II 3 (1) G Ex ec [ia Ga] IIC T4 Gc Ⓜ II 3 (1) D Ex tc [ia Da] IIIC T135°C Dc IECEx: Ex d [ia Ma] I Mb Ex ec [ia Ga] IIC T4 Gc Ex tc [ia Da] IIIC T135°C Dc
Data sheet and further information, see:	wago.com/750-485

4AI
0/4-20mA NE43 Ex i
750-486

4
0 mA ... 20 mA, 4 mA ... 20 mA, 3.6 mA ... 21 mA
single-ended
< 200 Ω
12 bits + sign bit
< 10 ms
< ± 0.1 % of largest measurement range
< ± 0.01 % /K of largest measurement range
24 VDC via power jumper contacts (provided via Ex i supply U_i = max. 27.3 V)
19 mA
U_v = 15 V at 20 mA
45 mA
4 x 16 bits data, 4 x 8 bits control/status (optional)
U_m = 375 V system/supply
0 ... +55 °C
24 x 67.8 x 100 mm
U_o = 27.3 V; I_o = 98.4 mA; P_o = 0.672 W; linear characteristic curve
L_o = 970 nH; C_o = 88 nF
L_o = 13 mH; C_o = 683 nF
L_o = 22 mH; C_o = 2.28 μF
L_o = 31 mH; C_o = 3.6 μF
Reactances without accounting for the concurrence of L and C
EN/IEC 60079-0, -7, -11, -26, -31
CE, ATEX/IECEx
ATEX: Ⓜ I M2 (M1) Ex d [ia Ma] I Mb Ⓜ II 3 (1) G Ex ec [ia Ga] IIC T4 Gc Ⓜ II 3 (1) D Ex tc [ia Da] IIIC T135°C Dc IECEx: Ex d [ia Ma] I Mb Ex ec [ia Ga] IIC T4 Gc Ex tc [ia Da] IIIC T135°C Dc
wago.com/750-486

Analog input, 4 ... 20 mA HART, Intrinsically Safe

2-channel analog input, 4 ... 20 mA HART,
Intrinsically Safe



Item description	2AI
Version	4-20mA HART Ex i
Item no.	750-484
Technical Data	
Number of analog inputs	2
Type of signal	4 ... 20 mA
Signal characteristic	single-ended
Resolution	12 bits
Conversion time	10 ms
Measuring error (25 °C)	0.2 % of largest measurement range
Temperature coefficient	± 0.01 % /K of largest measurement range
Field supply voltage	24 VDC via power jumper contacts (provided via Ex i supply U_i = max. 27.3 V)
Current consumption, field supply (module with no external load)	26 mA
Transmitter supply	$U_V = 16.5$ V at 20 mA
Current consumption, system supply	25 mA
Data width	2 x 2 bytes data, 2 x 2 bytes data + 2n x 4 bytes data (n = number of dynamic variables), 2 x 2 bytes data + 6 bytes mailbox
Isolation	$U_m = 375$ V system/supply
Ambient temperature (operation)	0 ... +55 °C
Dimensions W x H x D	24 x 67.8 x 100 mm
Explosion protection	
Safety-relevant data (circuit)	$U_o = 27.3$ V; $I_o = 92.7$ mA; $P_o = 630$ mW; linear characteristic curve
Reactances Ex ia IIC	$L_o = 1.5$ mH; $C_o = 87$ nF
Reactances Ex ia IIB	$L_o = 15$ mH; $C_o = 670$ nF
Reactances Ex ia IIA	$L_o = 38$ mH; $C_o = 2.2$ μ F
Reactances Ex ia I	$L_o = 36$ mH; $C_o = 3.49$ μ F
Ex Guideline	EN/IEC 60079-0, -7, -11, -26, -31
Approvals	CE, Marine, UL 508, ANSI/ISA, ATEX/IECEx
Marking	ATEX: I M2 (M1) Ex d [ia Ma] I Mb II 3 (1) G Ex ec [ia Ga] IIC T4 Gc II 3 (1) D Ex tc [ia Da] IIIC T135°C Dc IECEx: Ex d [ia Ma] I Mb Ex ec [ia Ga] IIC T4 Gc Ex tc [ia Da] IIIC T135°C Dc
Data sheet and further information, see:	wago.com/750-484

In addition to the analog signal processing, this product offers the option of HART communication for parameterizing or recording side variables.

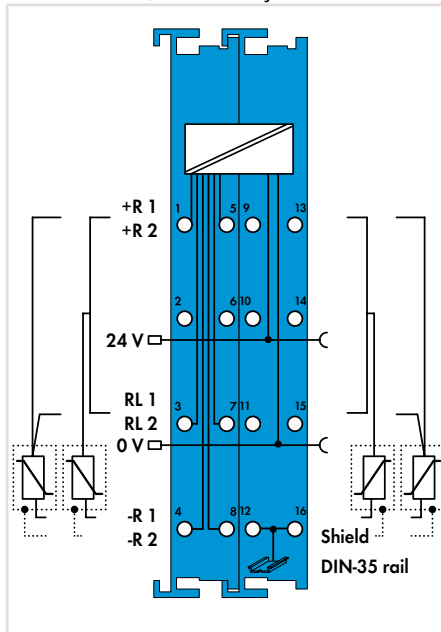
Reactances without accounting for the concurrence of L and C

Analog input, Resistance measurement or Thermocouple, Intrinsically Safe

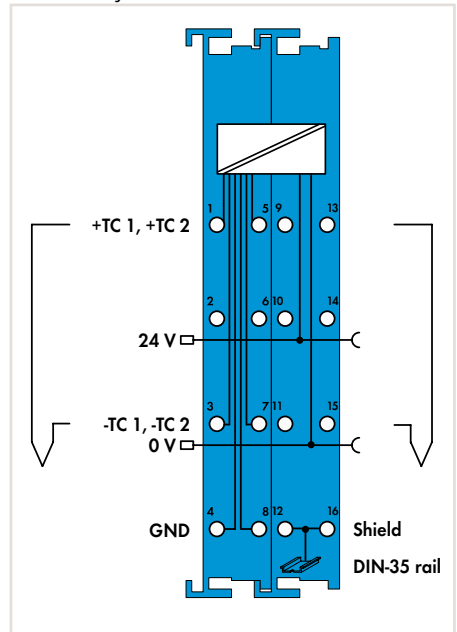


Figure: 750-481/003-000

2-channel analog input; Resistance measurement; Intrinsically safe



2-channel analog input; Thermocouple; Intrinsically safe



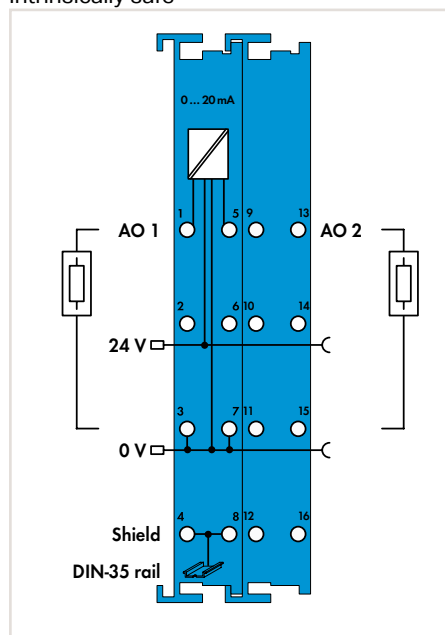
Item description	2AI	2AI
Version	RTD Ex i	TC Ex i
Item no.	750-481/003-000	750-487/003-000
Technical Data		
Number of analog inputs	2	2
Type of signal	Resistance thermometer: Pt100, Pt200, Pt500, Pt1000, Ni100, Ni120, Ni1000; Resistors: 1.2 kΩ, 5 kΩ; Potentiometer setting: 0 ... 100 % (1.2 kΩ, 5 kΩ)	Thermocouple: Type B, E, J, K, L, N, R, S, T, U; voltage encoder: ± 30 mV, ± 60 mV, ± 120 mV
Sensor connection	2-conductor, 3-conductor	2-conductor
Temperature range	-200 ... + 850 °C (Pt), -60 ... +250 °C (Ni), -80 ... +320 °C (Ni 120)	depending on sensor -100 ... +1800 °C
Resolution	0.1 °C, 0.1 Ω, 0.0049 %	0.1 °C or 0.01 mV for voltage measurement
Conversion time	150 ... 500 ms (per channel)	≤ 320 ms (both channels)
Measuring error (25 °C)	< ± 0.2 % of largest measurement range	< ± 6 K (type K); voltage input < ± 2 K; cold junction compensation < ± 4 K
Temperature coefficient	< ± 0.01 % /K of largest measurement range	< ± 0.2 K/K of largest measurement range (type K)
Cold junction compensation		integrated or external
Field supply voltage	24 VDC via power jumper contacts (provided via Ex i supply U_i = max. 27.3 V)	24 VDC via power jumper contacts (provided via Ex i supply U_i = max. 27.3 V)
Current consumption, field supply (module with no external load)	12 mA	8.5 mA
Current consumption, system supply	25 mA	13.5 mA
Data width	2 x 16 bits data, 2 x 8 bits control/status (optional)	2 x 16 bits data, 2 x 8 bits control/status (optional)
Isolation	U_m = 375 V system/supply	U_m = 375 V system/supply
Ambient temperature (operation)	0 ... +55 °C	0 ... +55 °C
Dimensions W x H x D	24 x 67.8 x 100 mm	24 x 67.8 x 100 mm
Explosion protection		
Safety-relevant data (circuit)	U_o = 7.2 V; I_o = 5.8 mA; P_o = 10.5 mW; linear characteristic curve	U_o = 14.4 V; I_o = 29.1 mA; P_o = 52.4 mW; linear characteristic curve
Reactances Ex ia IIC	L_o = 0.9 H; C_o = 13.5 μF	L_o = 52 mH; C_o = 650 nF
Reactances Ex ia IIB	L_o = 1 H; C_o = 240 μF	L_o = 100 mH; C_o = 4.0 μF
Reactances Ex ia IIA	L_o = 1 H; C_o = 1000 μF	L_o = 300 mH; C_o = 15.8 μF
Reactances Ex ia I	L_o = 1 H; C_o = 1000 μF	L_o = 400 mH; C_o = 17.9 μF
Reactances	Reactances without accounting for the concurrence of L and C	Reactances without accounting for the concurrence of L and C
Ex Guideline	EN/IEC 60079-0, -7, -11, -26, -31	EN/IEC 60079-0, -7, -11, -26, -31
Approvals	CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX	CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX
Marking	ATEX: I M2 (M1) Ex d [ia Ma] I Mb II 3 (1) G Ex ec [ia Ga] IIC T4 Gc II 3 (1) D Ex tc [ia Da] IIIC T135°C Dc IECEX: Ex d [ia Ma] I Mb Ex ec [ia Ga] IIC T4 Gc Ex tc [ia Da] IIIC T135°C Dc	ATEX: I M2 (M1) Ex d [ia Ma] I Mb II 3 (1) G Ex ec [ia Ga] IIC T4 Gc II 3 (1) D Ex tc [ia Da] IIIC T135°C Dc IECEX: Ex d [ia Ma] I Mb Ex ec [ia Ga] IIC T4 Gc Ex tc [ia Da] IIIC T135°C Dc
Data sheet and further information, see:	wago.com/750-481/003-000	wago.com/750-487/003-000

Analog output, 0 ... 20 mA or 4 ... 20 mA, Intrinsically Safe

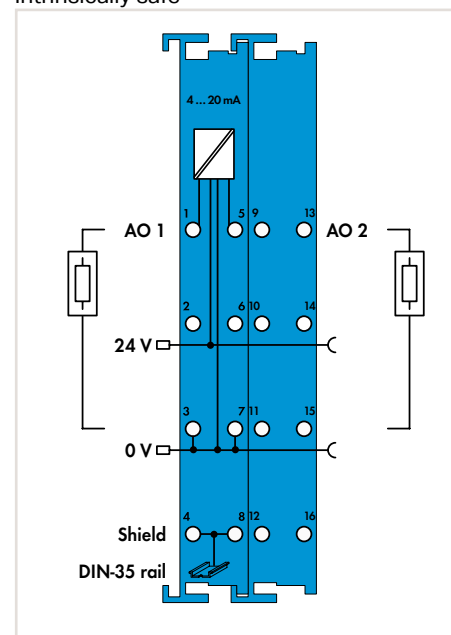


Figure: 750-585

2-channel analog output; 0 ... 20 mA;
Intrinsically safe



2-channel analog output; 4 ... 20 mA;
Intrinsically safe

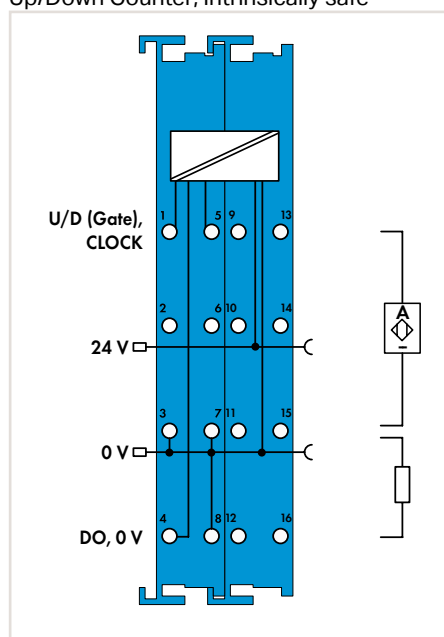


4.9

Item description	2AO	2AO
Version	0-20mA Ex i	4-20mA Ex i
Item no.	750-585	750-586
Technical Data		
Number of analog outputs	2	2
Type of signal	0 ... 20 mA	4 ... 20 mA
Signal characteristic	single-ended	single-ended
Load impedance	< 500 Ω	< 500 Ω
Resolution	12 bits	12 bits
Conversion time	< 2 ms	< 2 ms
Measuring error (25 °C)	< ± 0.2 % of largest measurement range	< ± 0.2 % of largest measurement range
Temperature coefficient	< ± 0.01 % /K of largest measurement range	< ± 0.01 % /K of largest measurement range
Field supply voltage	24 VDC via power jumper contacts (provided via Ex i supply U_i = max. 27.3 V)	24 VDC via power jumper contacts (provided via Ex i supply U_i = max. 27.3 V)
Current consumption, field supply (module with no external load)	19 mA	19 mA
Current consumption, system supply	21 mA	21 mA
Data width	2 x 16 bits data	2 x 16 bits data
Isolation	U_m = 375 V system/supply	U_m = 375 V system/supply
Ambient temperature (operation)	0 ... +55 °C	0 ... +55 °C
Dimensions W x H x D	24 x 67.8 x 100 mm	24 x 67.8 x 100 mm
Explosion protection		
Safety-relevant data (circuit)	U_o = 27.3 V; I_o = 57.5 mA; P_o = 392 mW; linear characteristic curve	U_o = 27.3 V; I_o = 57.5 mA; P_o = 392 mW; linear characteristic curve
Reactances Ex ia IIC	L_o = 11 mH; C_o = 88 nF	L_o = 11 mH; C_o = 88 nF
Reactances Ex ia IIB	L_o = 56 mH; C_o = 680 nF	L_o = 56 mH; C_o = 680 nF
Reactances Ex ia IIA	L_o = 90 mH; C_o = 2.2 μF	L_o = 90 mH; C_o = 2.2 μF
Reactances Ex ia I	L_o = 110 mH; C_o = 3.5 μF	L_o = 110 mH; C_o = 3.5 μF
Reactances	Reactances without accounting for the concurrence of L and C	Reactances without accounting for the concurrence of L and C
Ex Guideline	EN/IEC 60079-0, -7, -11, -26, -31	EN/IEC 60079-0, -7, -11, -26, -31
Approvals	CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX	CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX
Marking	ATEX: I M2 (M1) Ex d [ia Ma] I Mb II 3 (1) G Ex ec [ia Ga] IIC T4 Gc II 3 (1) D Ex tc [ia Da] IIIC T135°C Dc IECEX: Ex d [ia Ma] I Mb Ex ec [ia Ga] IIC T4 Gc Ex tc [ia Da] IIIC T135°C Dc	ATEX: I M2 (M1) Ex d [ia Ma] I Mb II 3 (1) G Ex ec [ia Ga] IIC T4 Gc II 3 (1) D Ex tc [ia Da] IIIC T135°C Dc IECEX: Ex d [ia Ma] I Mb Ex ec [ia Ga] IIC T4 Gc Ex tc [ia Da] IIIC T135°C Dc
Data sheet and further information, see:	wago.com/750-585	wago.com/750-586

Up/Down Counter, Intrinsically safe

Up/Down Counter; Intrinsically safe



Item description

Up/Down Counter

Version

Ex i

Item no.

750-633

Technical Data

No. of counters	1
No. of outputs	1
Sensor supply U_V	8.2 VDC
Input filter	10 μ s
Switching frequency	20 Hz ... 50 kHz
Counter depth	32 bits
Output voltage	24 VDC
Field supply voltage	24 VDC via power jumper contacts (provided via Ex i supply U_i = max. 27.3 V)
Current consumption, field supply (module with no external load)	31 mA
Current consumption, system supply	25 mA
Data width	1 x 32-bit data, 1 x 8-bit status/diagnostics
Isolation	U_m = 375 V system/supply
Ambient temperature (operation)	0 ... +55 °C
Dimensions W x H x D	24 x 67.8 x 100 mm
Explosion protection	
Safety data – input	U_o = 12 V; I_o = 13.5 mA; P_o = 40.5 mW; linear characteristic curve
Input reactances Ex ia IIC	L_o = 100 mH; C_o = 1.4 μ F
Input reactances Ex ia IIB	L_o = 100 mH; C_o = 9 μ F
Input reactances Ex ia IIA	L_o = 100 mH; C_o = 36 μ F
Input reactances Ex ia I inputs	L_o = 100 mH; C_o = 38 μ F
Safety data – output	U_o = 27.3 V; I_o = 103 mA; P_o = 703 mW; linear characteristic curve
Output reactances Ex ia IIC	L_o = 0.5 mH; C_o = 88 nF
Output reactances Ex ia IIB	L_o = 10 mH; C_o = 683 nF
Output reactances Ex ia IIA	L_o = 18 mH; C_o = 2.2 μ F
Output reactances Ex ia I	L_o = 26 mH; C_o = 3.6 μ F
Ex Guideline	EN/IEC 60079-0, -7, -11, -26, -31
Approvals	CE, Marine, UL 508, ANSI/ISA, ATEX/ IECEX
Marking	ATEX: I M2 (M1) Ex d [ia Ma] I Mb II 3 (1) G Ex ec [ia Ga] IIC T4 Gc II 3 (1) D Ex tc [ia Da] IIIC T135°C Dc IECEX: Ex d [ia Ma] I Mb Ex ec [ia Ga] IIC T4 Gc Ex tc [ia Da] IIIC T135°C Dc
Data sheet and further information, see:	wago.com/750-633

Reactances without accounting for the concurrence of L and C



Mini-WSB Quick Marking System
see Full Line Catalog, Volume 6



DIN rails and tool
see Section 11



Approvals and corresponding ratings,
see Page 521 or www.wago.com

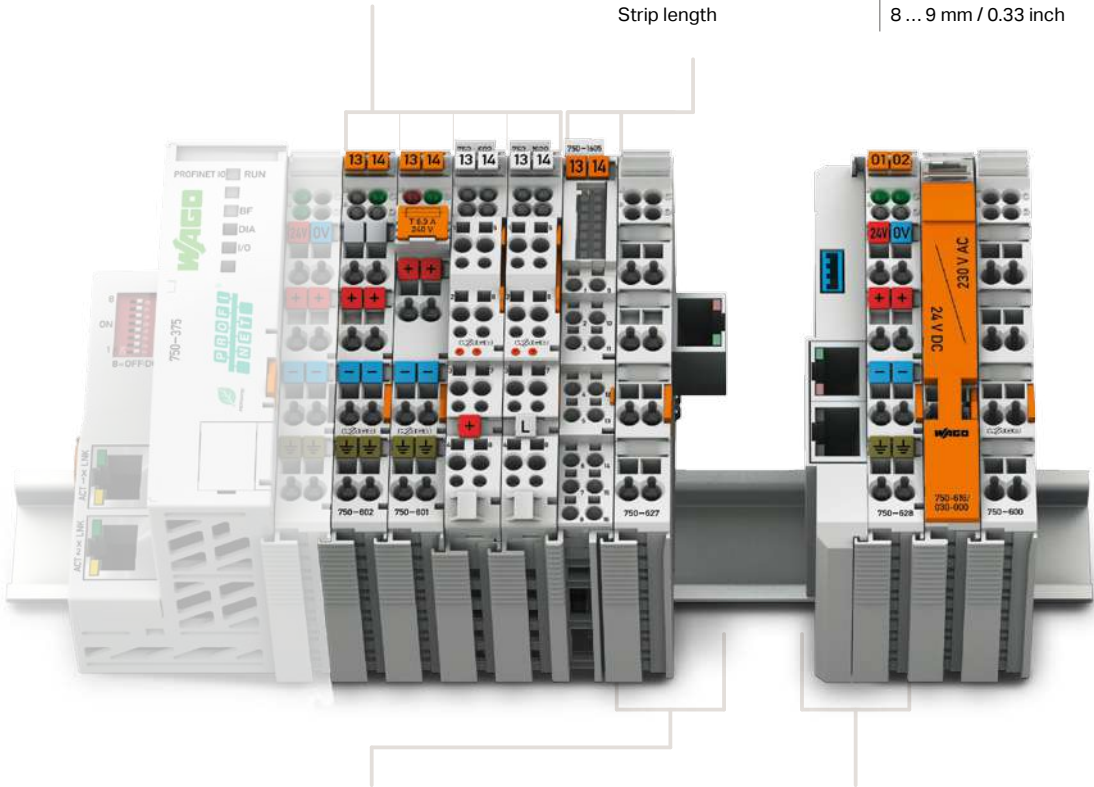
Supply and Segment Modules

750/753 Series housing design

Dimensions W x H x D	12 x 69.8 x 100 mm
Height from upper edge of DIN rail	62.6 mm
Connection technology	CAGE CLAMP®
Conductor size	0.08 ... 2.5 mm² / 28 ... 14 AWG
Strip length	750 series: 8 ... 9 mm / 0.33 inch 753 series: 9 ... 10 mm / 0.37 inch

750 Series housing design with push-in CAGE CLAMP® connectors (up to 16 connector points)

Dimensions W x H x D	12 x 69 x 100 mm
Height from upper edge of DIN rail	61.8 mm
Connection technology	Push-in CAGE CLAMP®
Conductor size	Solid: 0.08 ... 1.5 mm² / 28 ... 16 AWG Fine-stranded: 0.25 ... 1.5 mm² / 22 ... 16 AWG
Strip length	8 ... 9 mm / 0.33 inch



Specialty Housing for Internal Data Bus Extension End Module

Dimensions W x H x D	24 x 69.8 x 100
Height from upper edge of DIN rail	62.6 mm

Special Housing Design for Internal Data Bus Extension, Coupler Module

Dimensions W x H x D	24 x 69.8 x 100
Height from upper edge of DIN rail	62.6 mm



750 and 753 I/O-System, Supply and Segment Modules

Contents

Function	Description	Item No.			Page
		Standard	T ext. Tempera- ture	Pluggable	
Power Supply	24 VDC	750-602	750-602/025-000	753-602	272
	24 V/5 V ... 15 VDC	750-623			272
	24 VDC, fuse holder	750-601			273
	24 VDC, fuse holder, diagnostics	750-610			273
	24 VDC with Bus Power Supply	750-613			274
	230 V AC/DC	750-612		753-612	275
	24 VAC	750-617			276
	120 VAC	750-615			276
	230 VAC	750-609			277
	230 VAC, fuse holder, Diagnostics	750-611			277
	DALI Multi-Master DC/DC converter			753-620	278
	DALI Multi-Master DC/DC converter			753-620	278
Potential Distribution	Potential Distribution, 0 ... 230 V AC/DC	750-614		753-614	279
	Potential Distribution, 8-way 24 V	750-603		753-603	280
	Potential Distribution, 8-way 0 V	750-604		753-604	280
	Potential Distribution, 16-way 24 V	750-1605			281
	Potential Distribution, 16-way 0 V	750-1606			281
	Potential Distribution, 8-way 24 V/ 8-way 0 V	750-1607			281
Filter Module	Filter module for field-side power supply (surge); 24 VDC; Higher isolation	750-624/020-000			282
	Filter module for field-side power supply (surge); 24 VDC; Higher isolation; Without power jumper contacts	750-624/020-001			282
	Filter module for field-side power supply (surge); 24 VDC	750-624			282
	Filter module for field-side power supply (surge); 24 VDC; Without power jumper contacts	750-624/000-001			282
	Supply Filter; 24 VDC; Higher isolation	750-626/020-000	750-626/025-001		283
	Supply Filter; 24 VDC	750-626	750-626/025-000		283
Bus Extension	Bus Extension End Module	750-627			284
	Bus Extension Coupler Module	750-628			284
Spacer Module	Binary Spacer Module	750-622			285
	Spacer Module, active			753-1629	286
	Spacer Module, active, Without power jumper contacts			753-1629/000-001	286
	Spacer Module, passive			753-629/020-000	286
Distance Module	Distance Module	750-616			287
	Distance Module, 24 VDC /230 VAC	750-616/030-000			287
	Distance Module	750-621			287
End Module	End Module	750-600	750-600/025-000		288
Ex i		see Section 4.9			

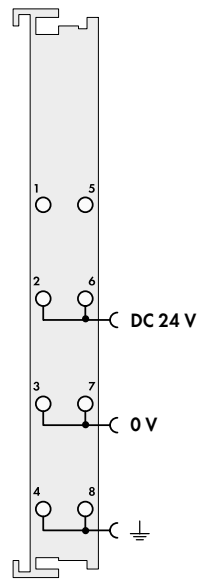
Power Supply, 24 VDC



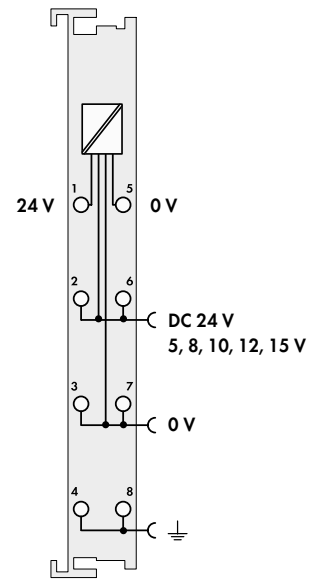
Figure: 750-602

Figure: 750-623

Power Supply; 24 VDC;
optional: ext. Temperature



Power Supply; 24 V/5 V ... 15 VDC



Item description	Power Supply		
Version	24 VDC	24 VDC T	24 VDC
Item no.	750-602	750-602/025-000	753-602
Technical Data			
Pluggable connector			
System supply voltage			
Field supply voltage	24 VDC, via power jumper contacts		
Total current for system supply	10 A		
Power jumper contact current carrying capacity	10 A		
Ambient temperature (operation)	0 ... +55 °C	-20 ... +60 °C	0 ... +55 °C
Dimensions W x H x D	12 x 69.8 x 100 mm		
Approvals			
Data sheet and further information, see:	  Marine,  UL 508, ANSI/ISA,  ATEX/IECEX		
	wago.com/750-602		wago.com/753-602
Accessories			
Plug			Item no.
			753-110
753 Series coding elements			753-150

This I/O module is used to provide the applied supply voltage to the field devices connected to the downstream I/O modules.

Item description	Power Supply
Version	24/5-15 VDC
Item no.	750-623
Technical Data	
System supply voltage	24 VDC (-15 ... +20 %)
Field supply voltage	5 V, 8 V, 10 V, 12 V, 15 VDC
Total current for system supply	0.5 A (1 A at 5 V)
Ambient temperature (operation)	0 ... +55 °C
Dimensions W x H x D	12 x 69.8 x 100 mm
Approvals	
CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX	
Data sheet and further information, see:	wago.com/750-623

This I/O module is used to convert the applied supply voltage to a value selected via DIP switch and provide it to the field devices connected to the downstream I/O modules.

Mini-WSB Quick Marking System
see Full Line Catalog, Volume 6

DIN rails and tool
see Section 11

Approvals and corresponding ratings,
see Page 522 or www.wago.com

Power Supply, 24 VDC

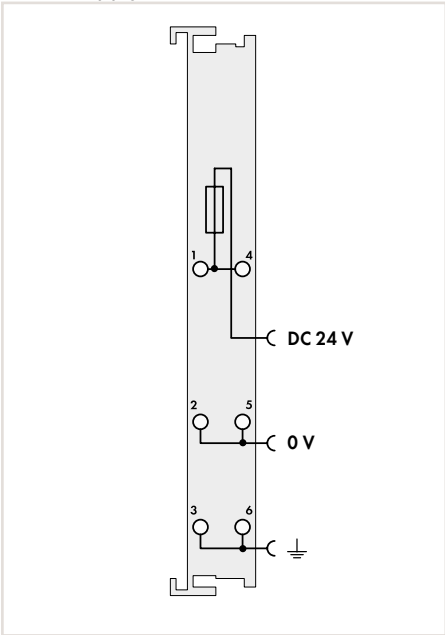


Figure: 750-601

Item description
Version
Item no.

Technical Data	
Field supply voltage	
Power jumper contact current carrying capacity	
Fuse	
Diagnostics	
Current consumption, system supply	
Internal data width	
Ambient temperature (operation)	
Dimensions W x H x D	
Approvals	
Data sheet and further information, see:	

Power Supply; 24 VDC; fuse holder

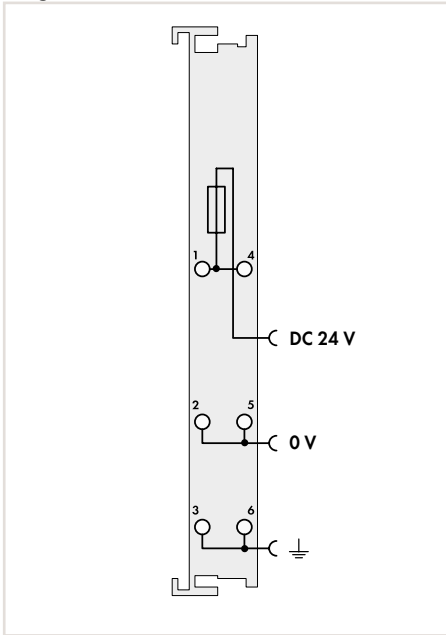


Power Supply
24 VDC Fuse
750-601

24 VDC, via power jumper contacts
6.3 A
5 x 20; T max. 6.3 A (Fuse not included)
0 ... +55 °C
12 x 69.8 x 100 mm
CE, Marine, UL 508, ANSI/ISA, ATEX/IECEx
wago.com/750-601

This I/O module is used to provide the applied supply voltage, protected by fuse, to the field devices connected to the downstream I/O modules. A blown fuse is indicated by an LED.

Power Supply; 24 VDC; fuse holder; Diagnostics



Power Supply
24 VDC Fuse Diagn
750-610

24 VDC, via power jumper contacts
6.3 A
5 x 20; T max. 6.3 A (Fuse not included)
Supply voltage detection level on > DC 15 V, Supply voltage detection level off < DC 5 V
5 mA
2 bits (1 bit current monitoring, 1 bit fuse fault)
0 ... +55 °C
12 x 69.8 x 100 mm
CE, Marine, UL 508, ANSI/ISA, ATEX/IECEx
wago.com/750-610

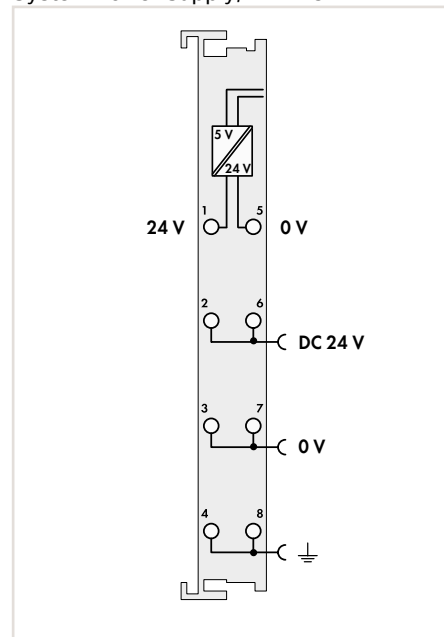
This I/O module is used to provide the applied supply voltage, protected by fuse, to the field devices connected to the downstream I/O modules. A blown fuse is indicated by an LED. The fuse status can also be queried from the fieldbus coupler.

System Power Supply, 24 VDC

4.10



System Power Supply; 24 VDC



Item description	System Power Supply
Version	24 VDC
Item no.	750-613
Technical Data	
System supply voltage	24 VDC (-25 ... +30 %)
Input current typ. at rated load (24 V)	500 mA
Efficiency of the power supply typ. at rated load (24 V)	90 %
Total current for system supply	2000 mA
Field supply voltage	24 VDC (-25 ... +30 %), via power jumper contacts
Power jumper contact current carrying capacity	10 A
Ambient temperature (operation)	0 ... +55 °C
Dimensions W x H x D	12 x 69.8 x 100 mm
Approvals	
CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX	
Data sheet and further information, see:	wago.com/750-613

This I/O module is used to provide the applied supply voltage to the field devices connected to the downstream I/O modules. It also stands as an additional system supply for large nodes, to cover the power demands of the I/O modules themselves.

Mini-WSB Quick Marking System
see Full Line Catalog, Volume 6

DIN rails and tool
see Section 11

Approvals and corresponding ratings,
see Page 522 or www.wago.com

Power Supply, 0 ... 230 V AC/DC



Figure: 750-612

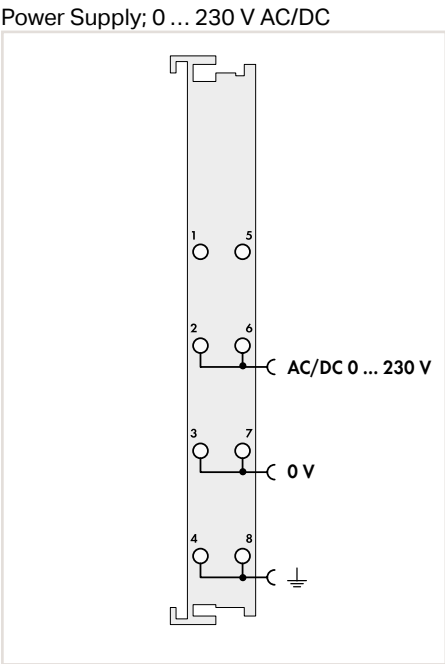


Figure: 753-612

Item description		Power Supply	
Version		0-230 VAC/DC	0-230 VAC/DC
Item no.		750-612	753-612
Technical Data			
Pluggable connector		●	
Field supply voltage		0 ... 230 V AC/DC, via power jumper contacts	
Power jumper contact current carrying capacity		10 A	
Ambient temperature (operation)		0 ... +55 °C	
Dimensions W x H x D		12 x 69.8 x 100 mm	
Approvals		CE,  Marine,  UL 508, ANSI/ISA,  ATEX/IECEX	
Data sheet and further information, see:		wago.com/750-612	wago.com/753-612
Accessories		Item no.	
Plug		753-110	
753 Series coding elements		753-150	

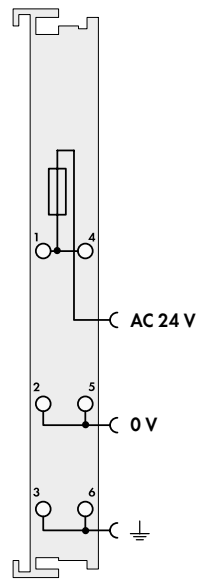
This I/O module is used to provide the applied supply voltage to the field devices connected to the downstream I/O modules.

Power Supply, 24 VAC or 120 VAC

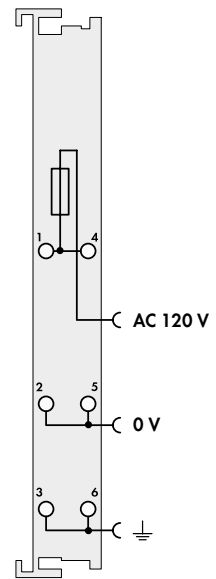


Figure: 750-617

Power Supply; 24 VAC; fuse holder



Power Supply; 120 VAC; fuse holder



Item description
Version
Item no.

Power Supply
24 VAC Fuse
750-617

Technical Data
Field supply voltage
Power jumper contact current carrying capacity
Fuse
Ambient temperature (operation)
Dimensions W x H x D
Approvals
Data sheet and further information, see:

24 VAC, via power jumper contacts
6.3 A
5 x 20; T max. 6.3 A (Fuse not included)
0 ... +55 °C
12 x 69.8 x 100 mm
CE, UL 508
wago.com/750-617

This I/O module is used to provide the applied supply voltage, protected by fuse, to the field devices connected to the downstream I/O modules. A blown fuse is indicated by an LED.

Power Supply
120 VAC Fuse
750-615

120 VAC, via power jumper contacts
6.3 A
5 x 20; T max. 6.3 A (Fuse not included)
0 ... +55 °C
12 x 69.8 x 100 mm
CE, UL 508, ANSI/ISA, ATEX/IECEX
wago.com/750-615

This I/O module is used to provide the applied supply voltage, protected by fuse, to the field devices connected to the downstream I/O modules. A blown fuse is indicated by an LED.

Mini-WSB Quick Marking System
see Full Line Catalog, Volume 6

DIN rails and tool
see Section 11

Approvals and corresponding ratings,
see Page 522 or www.wago.com

Power Supply, 230 VAC

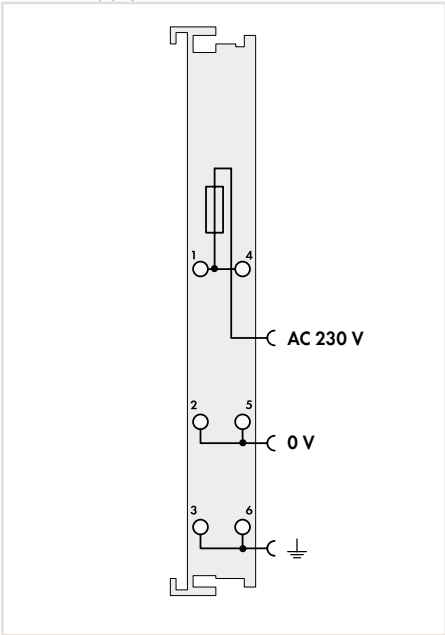


Figure: 750-609

Item description
Version
Item no.

Technical Data	
Field supply voltage	
Power jumper contact current carrying capacity	
Fuse	
Diagnostics	
Current consumption, system supply	
Internal data width	
Ambient temperature (operation)	
Dimensions W x H x D	
Approvals	
Data sheet and further information, see:	

Power Supply; 230 VAC; fuse holder

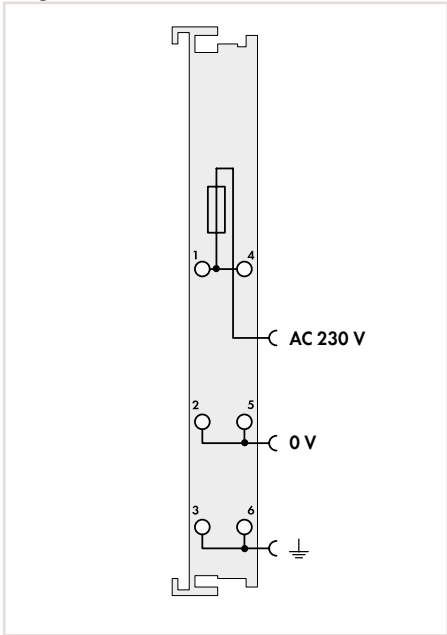


Power Supply
230 VAC Fuse
750-609

230 VAC, via power jumper contacts
6.3 A
5 x 20; T max. 6.3 A (Fuse not included)
0 ... +55 °C
12 x 69.8 x 100 mm
CE,  Marine,  UL 508, ANSI/ISA,  ATEX/IECEx
wago.com/750-609

This I/O module is used to provide the applied supply voltage, protected by fuse, to the field devices connected to the downstream I/O modules. A blown fuse is indicated by an LED.

Power Supply; 230 VAC; fuse holder, Diagnostics



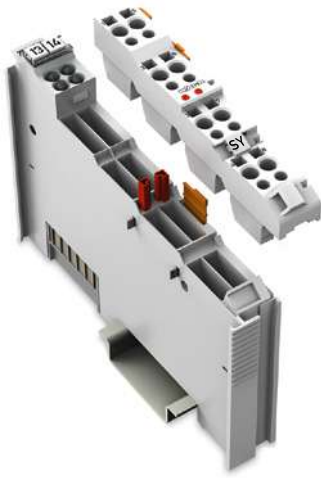
Power Supply
230 VAC Fuse Diagn
750-611

230 VAC, via power jumper contacts
6.3 A
5 x 20; T max. 6.3 A (Fuse not included)
Supply voltage detection level on > AC 164 V, Supply voltage detection level off < AC 40 V
5 mA
2 bits (1 bit current monitoring, 1 bit fuse fault)
0 ... +55 °C
12 x 69.8 x 100 mm
CE,  Marine,  UL 508, ANSI/ISA,  ATEX/ IECEx
wago.com/750-611

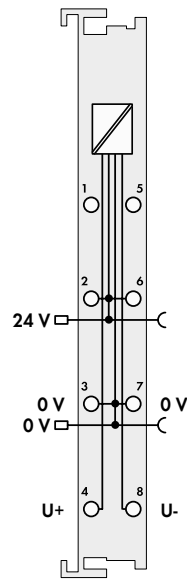
This I/O module is used to provide the applied supply voltage, protected by fuse, to the field devices connected to the downstream I/O modules. A blown fuse is indicated by an LED. The fuse status can also be queried from the fieldbus coupler.

DALI Multi-Master DC/DC converter

4.10



DALI Multi-Master DC/DC converter



Item description

Item no.

DALI Multi-Master DC/DC-Converter

753-620

Technical Data

Pluggable connector	•
System supply voltage	24 VDC (-25 ... +30 %)
Power jumper contact current carrying capacity	10 A
Field supply voltage	18 VDC (at +U and -U)
Total current for system supply	200 mA, short circuit protection
Test voltage input / output	1.5 kV
Ambient temperature (operation)	0 ... +55 °C
Dimensions W x H x D	12 x 69.8 x 100 mm
Approvals	Marine, UL 508
Data sheet and further information, see:	wago.com/753-620

The 753-620 DALI Multi-Master DC/DC Converter is designed to supply a 753-647 DALI Multi-Master Module.

The 753-620 DC/DC Converter is supplied via 24V power jumper contacts. Cable bridges connect the DC/DC Converter to the DALI Multi-Master Module.

Mini-WSB Quick Marking System
see Full Line Catalog, Volume 6

DIN rails and tool
see Section 11

Approvals and corresponding ratings,
see Page 522 or www.wago.com

Potential Distribution



Figure: 750-614

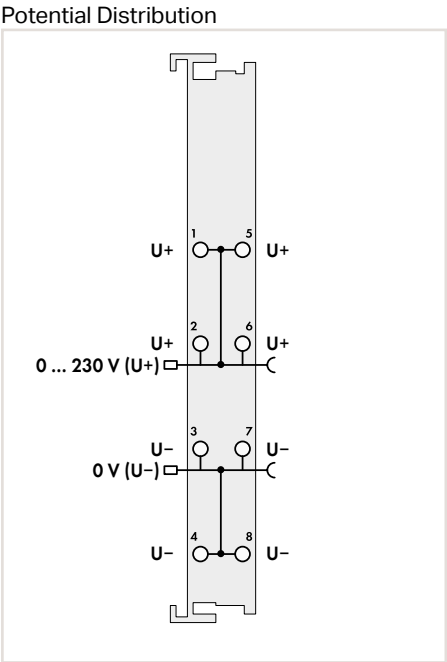


Figure: 753-614

Item description		Potential Distribution	
Item no.		750-614	753-614
Technical Data			
Pluggable connector		●	
Field supply voltage		0 ... 230 V AC/DC, via power jumper contacts	
Power jumper contact current carrying capacity		10 A	
Ambient temperature (operation)		0 ... +55 °C	
Dimensions W x H x D		12 x 69.8 x 100 mm	
Approvals		CE,  Marine,  UL 508, ANSI/ISA,  ATEX/IECEX	
Data sheet and further information, see:		wago.com/750-614	wago.com/753-614
Accessories		Item no.	
Plug		753-110	
753 Series coding elements		753-150	

Potential Distribution

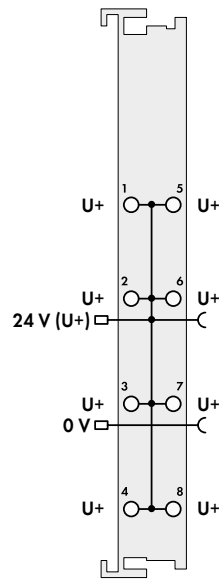


Figure: 750-603

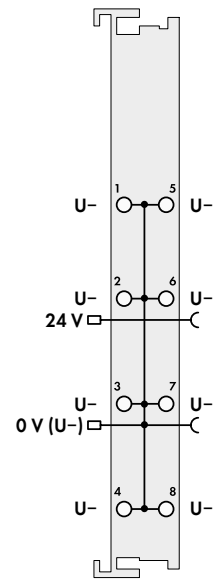


Figure: 750-1605

Potential Distribution, 8-way 24 V



Potential Distribution, 8-way 0 V



Item description
Version
Item no.

Potential Distribution	
8*24V	8*24V
750-603	753-603

Potential Distribution	
8*0V	8*0V
750-604	753-604

Technical Data	
Pluggable connector	
Field supply voltage	24 VDC (-25 ... +30 %), via power jumper contacts
Power jumper contact current carrying capacity	10 A
Ambient temperature (operation)	0 ... +55 °C
Dimensions W x H x D	12 x 69.8 x 100 mm
Approvals	
Data sheet and further information, see:	
Accessories	
Plug	753-110
753 Series coding elements	753-150

	•
24 VDC (-25 ... +30 %), via power jumper contacts	
10 A	
0 ... +55 °C	
12 x 69.8 x 100 mm	
CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX	
wago.com/750-603	wago.com/753-603
Accessories	
	Item no.
	753-110
	753-150

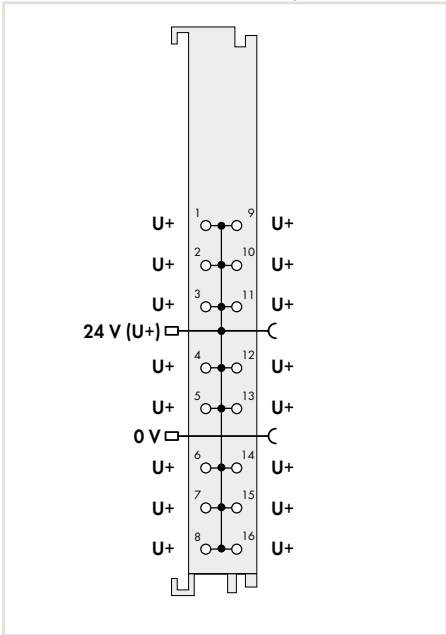
	•
24 VDC (-25 ... +30 %), via power jumper contacts	
10 A	
0 ... +55 °C	
12 x 69.8 x 100 mm	
CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX	
wago.com/750-604	wago.com/753-604
Accessories	
	Item no.
	753-110
	753-150

Mini-WSB Quick Marking System
see Full Line Catalog, Volume 6

DIN rails and tool
see Section 11

Approvals and corresponding ratings,
see Page 522 or www.wago.com

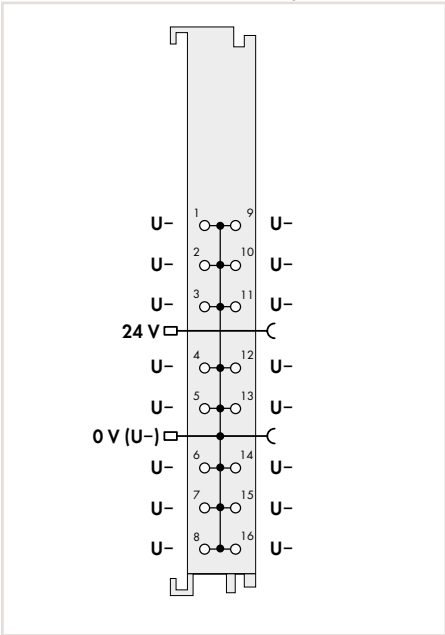
Potential Distribution, 16-way 24 V



Potential Distribution
16*24V
750-1605

24 VDC (-25 ... +30 %), via power jumper contacts
10 A
0 ... +55 °C
12 x 69 x 100 mm
CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX
wago.com/750-1605

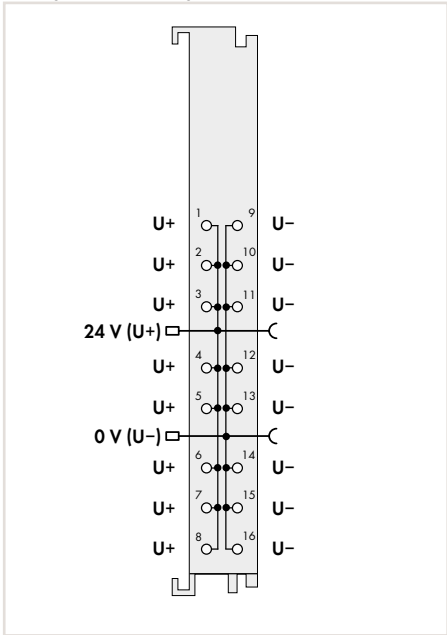
Potential Distribution, 16-way 0 V



Potential Distribution
16*0V
750-1606

24 VDC (-25 ... +30 %), via power jumper contacts
10 A
0 ... +55 °C
12 x 69 x 100 mm
CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX
wago.com/750-1606

Potential Distribution, 8-way 24 V / 8-way 0 V



Potential Distribution
8*24V/8*0V
750-1607

24 VDC (-25 ... +30 %), via power jumper contacts
10 A
0 ... +55 °C
12 x 69 x 100 mm
CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX
wago.com/750-1607

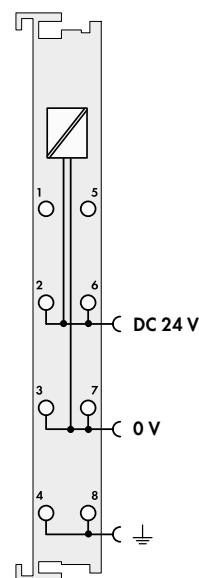
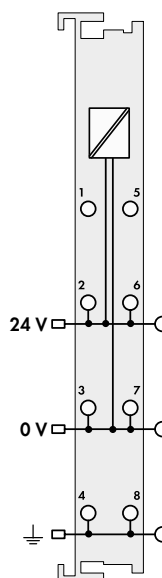
Filter module for field-side power supply (surge)

Filter module for field-side power supply (surge); 24 VDC; optional: Higher isolation



Figure: 750-624/020-000

Figure: 750-624/020-001



Item description
Version
Item no.

Field Supply Filter	
24 VDC	24 VDC HI
750-624	750-624/020-000

Technical Data

Field supply voltage
Power jumper contact current carrying capacity
Usage
Ambient temperature (operation)
Dimensions W x H x D
Approvals
Data sheet and further information, see:

24 VDC (-25 ... +30 %), via power jumper contacts	
10 A	
shipbuilding certified operation with 750-625 Ex i supply module and for the use of 750 Series PROFIsafe modules	shipbuilding certified operation with 750 Series I/O modules
0 ... +55 °C	
12 x 69.8 x 100 mm	
CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX	
wago.com/750-624	wago.com/750-624/020-000

Use in systems with isolation monitoring requires the high isolation variants.

Filter module for field-side power supply (surge); 24 VDC; without power jumper contacts; optional: Higher isolation

Field Supply Filter	
24 VDC NC	24 VDC HI NC
750-624/000-001	750-624/020-001

24 VDC (-25 ... +30 %), via power jumper contacts	
10 A	
shipbuilding certified operation with 750-625 Ex i supply module and for the use of 750 Series PROFIsafe modules	shipbuilding certified operation with 750 Series I/O modules
0 ... +55 °C	
12 x 69.8 x 100 mm	
CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX	
wago.com/750-624/000-001	wago.com/750-624/020-001

Use in systems with isolation monitoring requires the high isolation variants.

Mini-WSB Quick Marking System
see Full Line Catalog, Volume 6

DIN rails and tool
see Section 11

Approvals and corresponding ratings,
see Page 522 or www.wago.com

Supply Filter

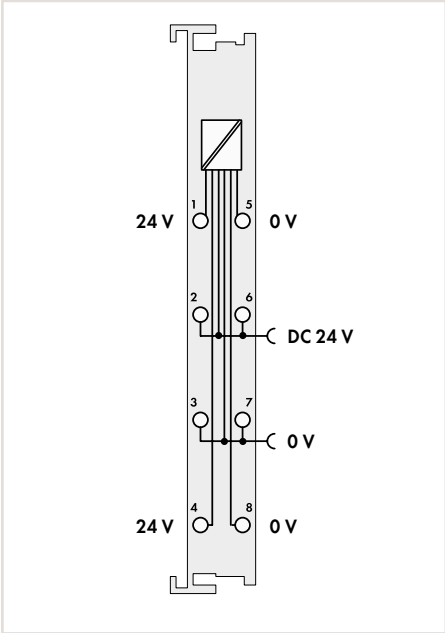


Figure: 750-626/020-000

Item description
Version
Item no.

Technical Data	
Field supply voltage	24 VDC (-25 ... +30 %), via power jumper contacts
Current via system voltage max.	1.5 A
Power jumper contact current carrying capacity	10 A
Usage	shipbuilding certified operation with both 750 Series couplers and programmable controllers
Ambient temperature (operation)	0 ... +55 °C
Dimensions W x H x D	12 x 69.8 x 100 mm
Approvals	CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX
Data sheet and further information, see:	

Supply Filter; 24 VDC; Higher isolation; optional: ext. Temperature

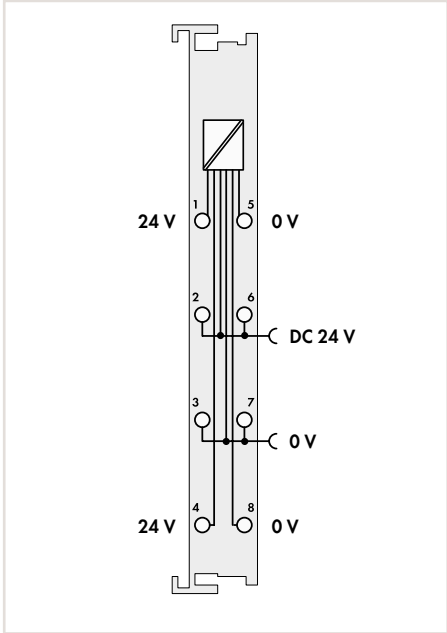


Supply Filter	
24 VDC HI	24 VDC HI T
750-626/020-000	750-626/025-001

24 VDC (-25 ... +30 %), via power jumper contacts	
1.5 A	
10 A	
shipbuilding certified operation with both 750 Series couplers and programmable controllers	
0 ... +55 °C	-20 ... +60 °C
12 x 69.8 x 100 mm	
CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX	
wago.com/750-626/020-000	

Use in systems with isolation monitoring requires the high isolation variants.

Supply Filter; 24 VDC; optional: ext. Temperature



Supply Filter	
24 VDC	24 VDC T
750-626	750-626/025-000

24 VDC (-25 ... +30 %), via power jumper contacts	
1.5 A	
10 A	
shipbuilding certified operation with 750-625 Ex i supply module and for the use of 750 Series PROFIsafe modules	
0 ... +55 °C	-20 ... +60 °C
12 x 69.8 x 100 mm	
CE, Marine, UL 508, ANSI/ISA, ATEX/IECEX	
wago.com/750-626	

Use in systems with isolation monitoring requires the high isolation variants.

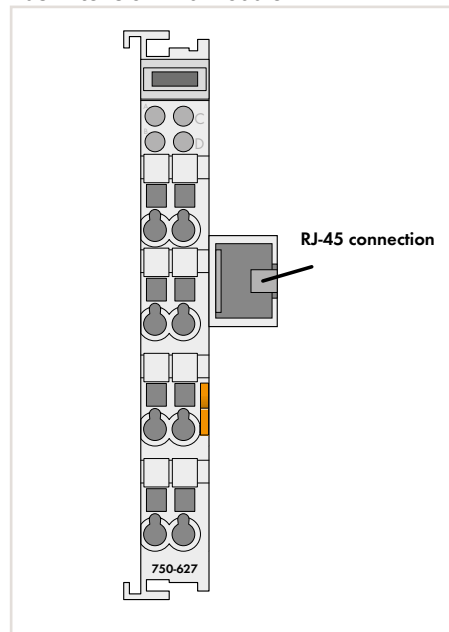
Bus Extension End Module or Coupler Module



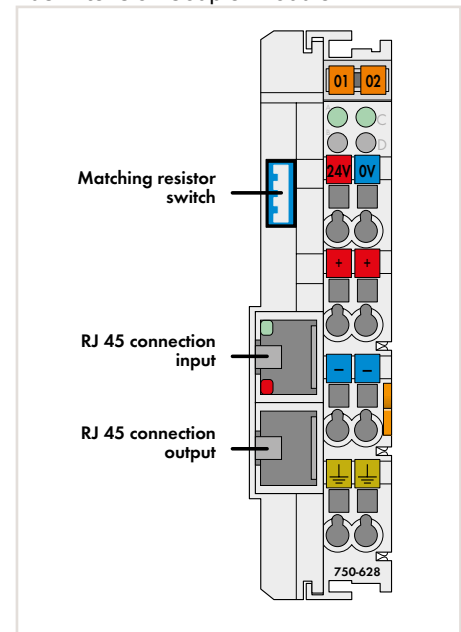
Figure: 750-627

Figure: 750-628

Bus Extension End Module



Bus Extension Coupler Module



Item description

Item no.

Technical Data

Max. no. of coupler modules

Max. no. of I/O modules

Buscoupler connection

Distance max.

System supply voltage

Field supply voltage

Current consumption, system supply

Power jumper contact current carrying capacity

Isolation

Ambient temperature (operation)

Dimensions W x H x D

Approvals

Data sheet and further information, see:

Bus Extension End Module

750-627

up to 10

1 x RJ-45 socket

5 m (10 m see manual), (end module and coupler or coupler and coupler)

70 mA

500 V system/field

0 ... +55 °C

24 x 69.8 x 100 mm

CE, Marine, UL 508

wago.com/750-627

Bus Extension Coupler Module

750-628

64 (in the whole system)

2 x RJ-45 socket (Input + Output)

5 m (10 m see manual), (end module and coupler or coupler and coupler)

24 VDC (-15 ... +20 %)

24 VDC (-15 % ... +20 %), via power jumper contacts

150 mA

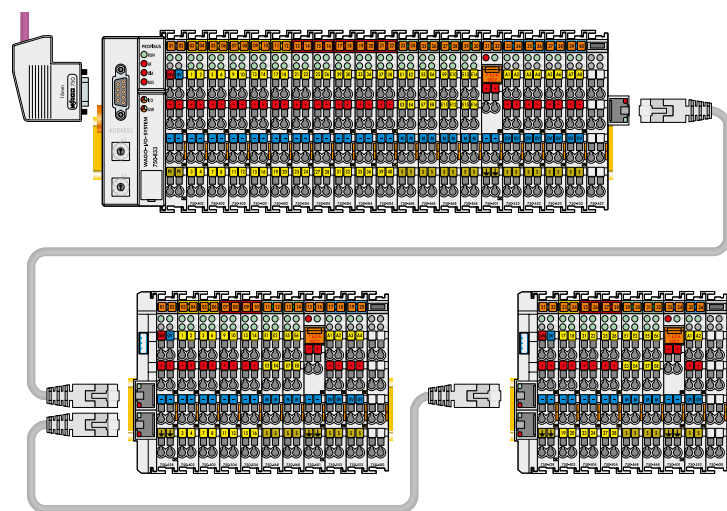
10 A

500 V system/field

0 ... +55 °C

24 x 69.8 x 100 mm

CE, Marine, UL 508

wago.com/750-628

Mini-WSB Quick Marking System
see Full Line Catalog, Volume 6

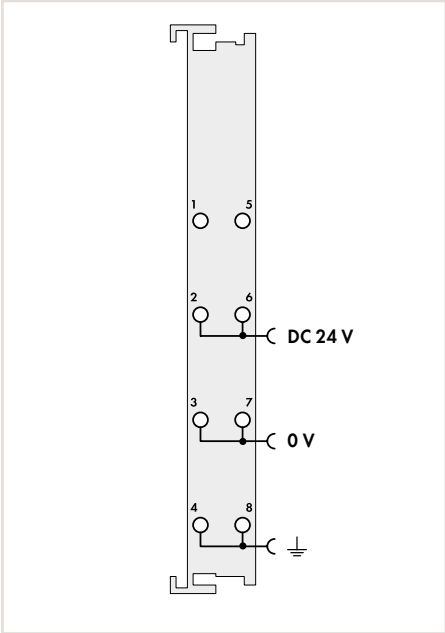
DIN rails and tool
see Section 11

Approvals and corresponding ratings,
see Page 522 or www.wago.com

Binary Spacer Module



Binary Spacer Module



Item description	Binary Spacer Module
Item no.	750-622
Technical Data	
Field supply voltage	24 VDC (-15 % ... +20 %), via power jumper contacts
Power jumper contact current carrying capacity	10 A
Internal data width	2, 4, 6 or 8 bits (adjustable via dip switch)
Operating mode	Inputs/Outputs (adjustable via dip switch)
Current consumption, system supply	10 mA
Isolation	500 V system/field
Ambient temperature (operation)	0 ... +55 °C
Dimensions W x H x D	12 x 69.8 x 100 mm
Approvals	CE, UL 508, ANSI/ISA, ATEX/IECEx
Data sheet and further information, see:	wago.com/750-622

The binary spacer module reserves bit addresses in the process image of a fieldbus node.

Spacer Module

4.10

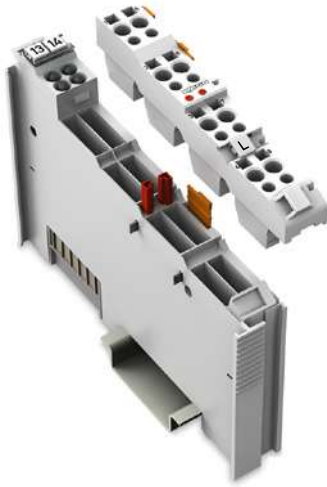
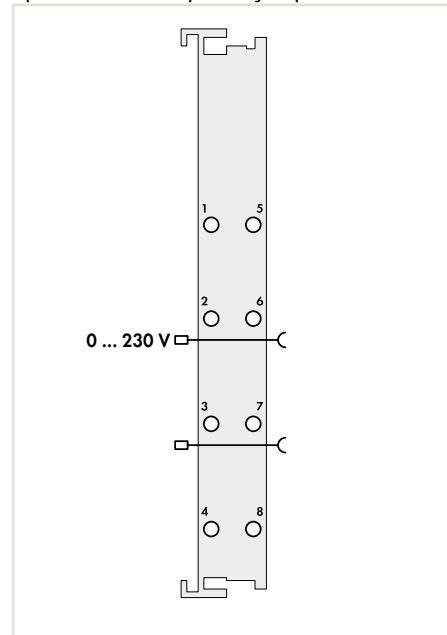
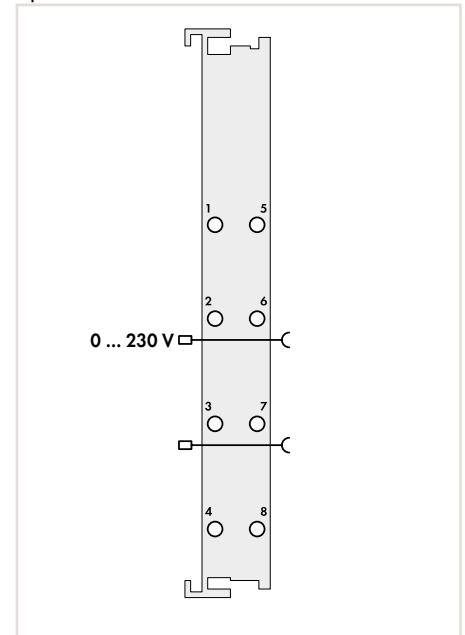


Figure: 753-1629

Spacer Module; active;
optional: without power jumper contacts



Spacer Module



Item description	Spacer Module	
Version	Active	Active NC
Item no.	753-1629	753-1629/000-001
Technical Data		
Field supply voltage	0 ... 230 V AC/DC, via power jumper contacts	
Ambient temperature (operation)	0 ... +55 °C	
Dimensions W x H x D	12 x 69.8 x 100 mm	
Approvals	CE, UL 508	
Data sheet and further information, see:	wago.com/753-1629	

Active spacer modules provide both hardware and software space reservation for standard function modules (digital/analog) in PROFIBUS/PROFINET networks (only in connection with 750-333, 750-375, 750-377 coupler).

Item description	Spacer Module
Version	Active NC
Item no.	753-629
Technical Data	
Field supply voltage	0 ... 230 V AC/DC, via power jumper contacts
Ambient temperature (operation)	0 ... +55 °C
Dimensions W x H x D	12 x 69.8 x 100 mm
Approvals	CE, UL 508
Data sheet and further information, see:	wago.com/753-629

Passive spacer modules provide hardware place reservation for standard function modules (digital/analog).

Mini-WSB Quick Marking System
see Full Line Catalog, Volume 6

DIN rails and tool
see Section 11

Approvals and corresponding ratings,
see Page 522 or www.wago.com

Distance Module



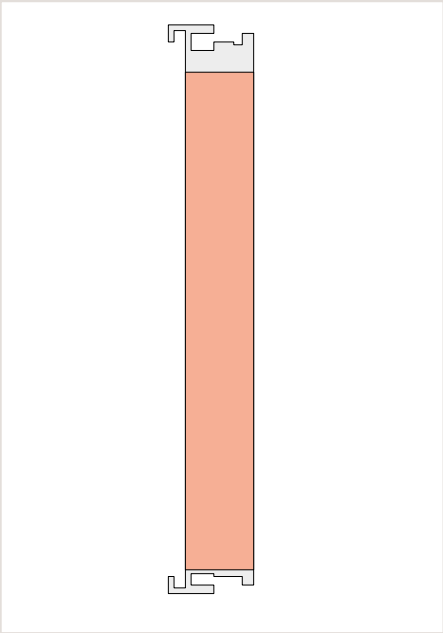
Figure: 750-616

Figure: 750-616/030-000

Item description
Version
Item no.

Technical Data
Ambient temperature (operation)
Dimensions W x H x D
Approvals
Data sheet and further information, see:

Distance Module;
optional: 24 VDC /230 VAC



Distance Module	
	24 VDC/230 VAC
750-616	750-616/030-000

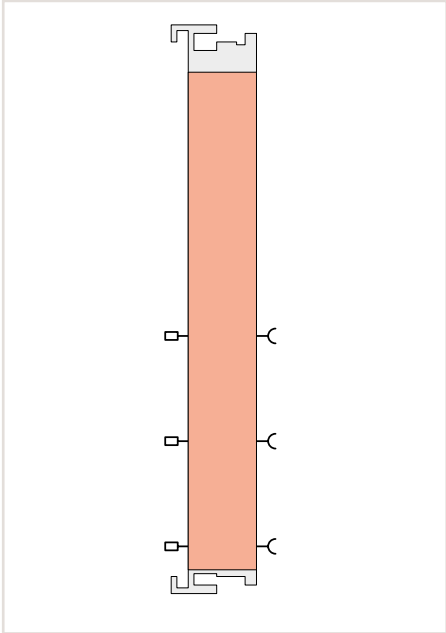
0 ... +55 °C
12 x 69.8 x 100 mm
CE,  Marine,  UL 508, ANSI/ISA,  ATEX/IECEX
wago.com/750-616

A separation module visually divides a fieldbus node into sections.

The 750-616 Separation Module has no power jumper contacts. A separation module with printing on its face has got the item no. 750-616/030-000.

Note:
Operation of the adjacent I/O modules requires a supply module.

Distance Module



Distance Module	
750-621	

0 ... +55 °C
12 x 69.8 x 100 mm
CE,  Marine,  UL 508, ANSI/ISA,  ATEX/IECEX
wago.com/750-621

The 750-621 Separation Module has power jumper contacts that can supply the power to adjacent bus modules.

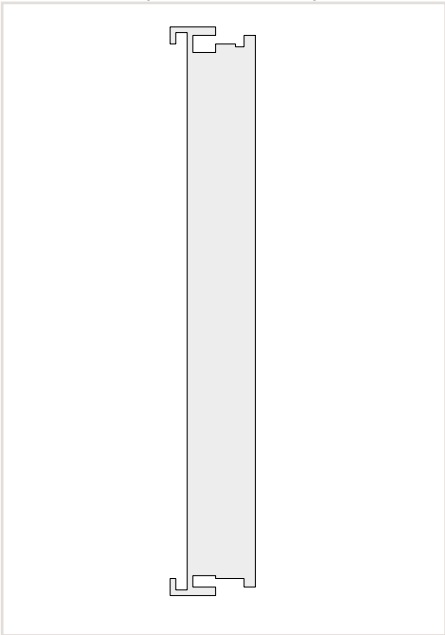
End Module

4.10



Figure: 750-600

End Module, optional: ext. Temperature



Item description
Version
Item no.

End Module	
	T
750-600	750-600/025-000

Technical Data
Ambient temperature (operation)
Dimensions W x H x D
Approvals
Data sheet and further information, see:

0 ... +55 °C	-20 ... +60 °C
12 x 69.8 x 100 mm	
CE,  Marine,  UL 508, ANSI/ISA,  ATEX/IECEx	
wago.com/750-600	

After the fieldbus node is assembled with the correct buscoupler and selected I/O modules, the end module is snapped onto the assembly. It completes the internal data circuit and ensures correct data flow.

-  Mini-WSB Quick Marking System
see Full Line Catalog, Volume 6
-  DIN rails and tool
see Section 11
-  Approvals and corresponding ratings,
see Page 522 or www.wago.com

750 XTR I/O-System

Contents

		Page
General Product Information		292
Interfaces and Types		293
Application and Installation Instructions		294
Standards and Rated Conditions for Railway Applications (EN 50155)		295
Standards and Rated Conditions		296
Item Number Key		297
Approvals		297
	Description	Item No.
	PFC200 XTR Controllers	
	PFC200 2ETH RS XTR	750-8202/040-000 66
	PFC200 2ETH RS XTR Tele	750-8202/040-001 66
	PFC200 2ETH RS CAN DPS XTR	750-8206/040-000 67
	750 XTR Controllers	
	Controller ETHERNET G3 SD XTR	750-880/040-000 92
	Controller ETHERNET G3 SD Tele XTR	750-880/040-001 92
	Controller CANopen M3 DSub XTR	750-838/040-000 93
	Fieldbus Couplers	
	FC PROFIBUS XTR	750-333/040-000 298
	FC ETHERNET G2 XTR	750-352/040-000 299
	Digital Input Modules	
	8DI 24 VDC 3ms 2-wire XTR	750-1415/040-000 301
	8DI 24 VDC 0.2ms 2-wire XTR	750-1416/040-000 301
	16DI 24 VDC 3ms XTR	750-1405/040-000 302
	2DI 60V DC 3ms XTR	750-429/040-001 302
	2DI 110V DC 3ms XTR	750-427/040-000 303
	2DI 220 VDC 3ms XTR	750-407/040-000 303
	Digital Output Modules	
	2DO 24 VDC 2A Diagn XTR	750-508/040-000 304
	8DO 24 VDC 0.5A 2-wire XTR	750-1515/040-000 304
	2DO 230 VAC 1A Relay2CO XTR	750-517/040-000 305
	Analog Input Modules	
	4AI 0-20mA SE XTR	750-453/040-000 306
	4AI 4-20mA SE XTR	750-455/040-000 306
	2AI 4-20mA Diff NE43 XTR	750-492/040-001 307
	4AI 0-10 VDC SE XTR	750-468/040-000 307
	4AI ±10 VDC SE XTR	750-457/040-000 307
	2/4AI RTD Adjust XTR	750-464/040-000 307
	2AI TC Adjust XTR	750-469/040-000 308
	3-PHASE POM 690VAC 1A XTR	750-495/040-000 309
	3-PHASE POM 690VAC 5A XTR	750-495/040-001 309
	3-PHASE POM 690VAC R.C. XTR	750-495/040-002 309
	Analog Output Modules	
	2AO 0/4-20mA 16Bit 6-18 VDC XTR	750-563/040-000 310
	4AO ±10 VDC XTR	750-557/040-000 311
	4AO 0-10 VDC XTR	750-559/040-000 311
	Communication Modules	
	RS232/485 Interface XTR	750-652/040-000 312
	Supply and Segment Modules	
	Power Supply 24 VDC XTR	750-602/040-000 313
	Power Supply 0-230 VAC/VDC XTR	750-612/040-000 313
	System Power Supply 24 VDC XTR	750-613/040-000 314
	Field Supply Filter 24 VDC HI XTR	750-624/040-001 315
	Supply Filter 24 VDC HI XTR	750-626/040-000 315
	Potential Distribution 16*24V XTR	750-1605/040-000 316
	Potential Distribution 16*0V XTR	750-1606/040-000 316
	Distance Module XTR	750-616/040-000 317
	End Module XTR	750-600/040-000 317

Accessories

Section 11

Marking and Mounting Accessories

750 XTR I/O-System

General Product Information

Taking it to the eXTReme — The Standard for 750 XTR

The WAGO 750 XTR I/O-SYSTEM is instantly recognizable by its dark gray modules. Profit from the unique added value this system brings to extreme environments or applications.

The WAGO 750 XTR I/O-SYSTEM features outstanding characteristics: It is extremely temperature-resistant, immune to interference, as well as insensitive to vibrations and impulse voltages.

This is what makes it the first choice for demanding applications including:

- Marine systems and onshore/offshore industry
- Renewable energy systems (wind turbines, solar systems and biogas plants)
- Transformer stations and power distribution systems
- Petrochemical industry
- Water and wastewater industry
- Custom machines
- Railway applications

Superior reliability in extreme climates

Automation systems are increasingly being located in outdoor and remote locations where components are directly affected by widely fluctuating temperature conditions such as wind turbines or transformer stations.

Regardless of freezing cold, extreme heat or high humidity, the WAGO 750 XTR I/O-SYSTEM is engineered for absolute dependability in virtually any weather. The XTR version of the WAGO 750 I/O-SYSTEM is unfazed by both freezing cold down to -40°C and scorching heat up to $+70^{\circ}\text{C}$. And this applies equally to both start-up and continual operation.

The maximum approved operating altitude of 5,000 m is another highlight. Even in the thin air of a mountain-top station, the system impressively demonstrates its high performance and availability.

eXTReme Evolution of the Tried and Tested

Using an industry-leading platform, the WAGO 750 XTR I/O-SYSTEM boasts the same proven benefits:

- Compact design: up to 16 channels on one terminal block width of 12 mm
- Easy to use
- CAGE CLAMP® spring pressure connection technology for vibration-proof, fast and maintenance-free connections
- Fieldbus independence due to its modular structure
- Clear identification with the WAGO WSB marking system

Additional Protection Against Interference Pulses

The WAGO 750 XTR I/O-SYSTEM provides greater isolation up to 5 kV of impulse voltage, lower EMC emission of interference and higher insensitivity to EMC interference. These strengths add up to trouble-free operation.

High Mechanical Performance

Automation systems must be particularly vibration-resistant, especially when installed close to vibration-prone and shock-generating system components. Powerful motors and power circuit breakers are just two examples from a wide range of applications. The WAGO 750 XTR I/O-SYSTEM also sets new standards here: With 5 g vibration resistance per DIN EN 60068-2-6 (acceleration: 50 m/s^2) and 15 g (150 m/s^2) shock resistance, as well as 25 g (250 m/s^2) continuous shock resistance per IEC 60068-2-27, the system is engineered for dependability — no matter what.

Count on long-lasting, trouble-free operation and industry-topping levels of safety — even in the most severe applications, such as tunnel boring machines!

Worldwide Approvals

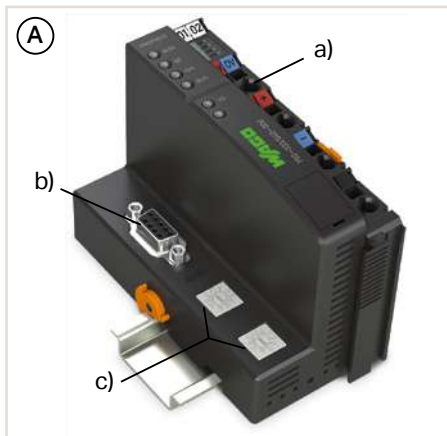
International approvals for industrial automation, shipbuilding and onshore/offshore applications guarantee worldwide use even under the harshest operating conditions, e.g., Germanischer Lloyd, Det Norske Veritas, American Bureau of Shipping, Korean Register of Shipping, Nippon Kaiji Kyokai, Registro Italiano Navale, Polski Rejestr Statkow.



Advantages:

- No need for air conditioning
 - Takes less space
 - Lower energy and maintenance costs
- Can be used in unshielded areas
- Maximum system uptime
- Install close to vibrating and shock-generating system components
- Vibration-proof, fast and maintenance-free CAGE CLAMP® connections

750 XTR I/O-System Interfaces and Types

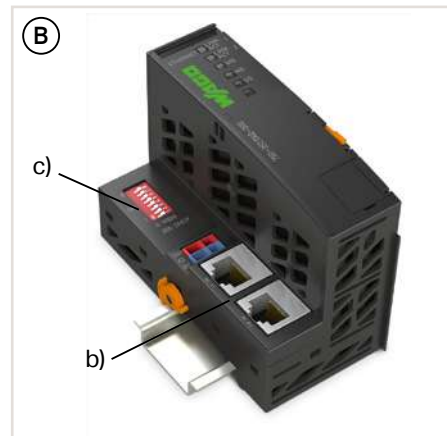


Housing Design Fieldbus Coupler (A)

- Including supply module (a) to power downstream I/O modules
- Technical differences on the connection level; fieldbus interface (b) and optional addressing switch (c)
- W x H x D (mm) 50.5 x 71.1 x 100

Housing Design Fieldbus Coupler ECO (B)

- Restriction on power supply and data width
- W x H x D (mm) 49.5 x 71.9 x 96.8



Housing Design 750 (C)

- 8 connection points (CAGE CLAMP®)
- W x H x D (mm) 12 x 67.8 x 100

Housing Design 750 (D)

- 16 connection points (push-in CAGE CLAMP®)
- W x H x D (mm) 12 x 69 x 100



Double-Width Housing Design (E)

Some modules are integrated into a double housing to address specific technological needs. Despite utilizing the same standardized housing, these modules are twice as wide.

- W x H x D (mm) 24 x 67.8 x 100

750 XTR I/O-System

Application and Installation Instructions



Attachment/release on the mounting rail



Secure, automatic connection of the data and electronics power supply by gold-plated pressure contacts



Service interface for configuring the fieldbus coupler; connectivity via configuration cable or radio adapter

5



Secure, automatic connection of the power supply by self-cleaning blade contacts

Notice:

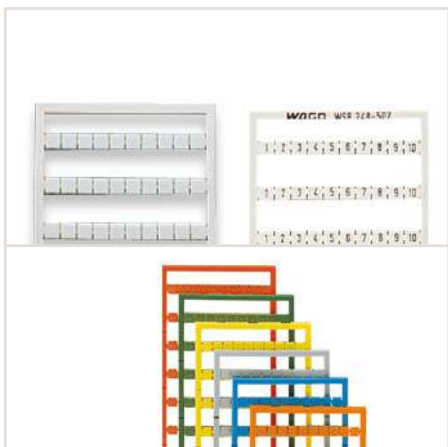
For some I/O modules, not all power jumper contacts are made! An I/O module with three power jumper contacts (e.g., 2-channel digital input) cannot be snapped into place behind an I/O module in which not every contact is made.

To increase electromagnetic compatibility (EMC), some components are connected to the DIN-rail by a discharge contact. The DIN-rail must always have a low-resistance connection to the ground potential.



Wide range of accessories available for EMC-compliant installation, including shield connection

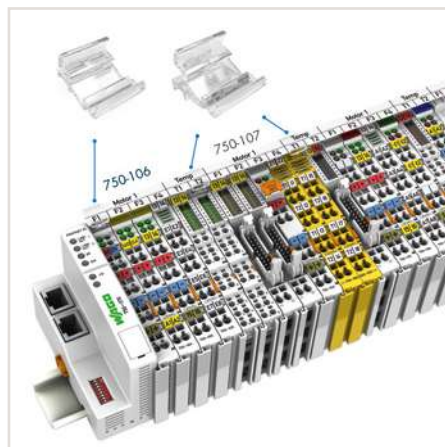
Marking Accessories



Mini-WSB quick marking system, blank, pre-marked and colored; suitable for all 750 I/O modules.



Marker carrier for one single I/O module; suitable for all 750 and 753 I/O modules; the marker carrier can be placed in the upper, Mini-WSB carrier plate.



Marker carrier for one I/O node; both versions (750-106 and 750-107) permit continuous marking regardless of the I/O module housing used.

750 XTR I/O-System

Application and Installation Instructions

Supply Modules

Power is always channeled to the internal electronics power supply by the fieldbus coupler. The power supply to the field-side supply is electrically isolated. The division enables a separate supply for sensors and actuators. The I/O modules' connections automatically lead to transferring the supply voltages. Bus supply modules with diagnostics enable additional monitoring of the power supply. This ensures a flexible, user-specific supply design for a station.

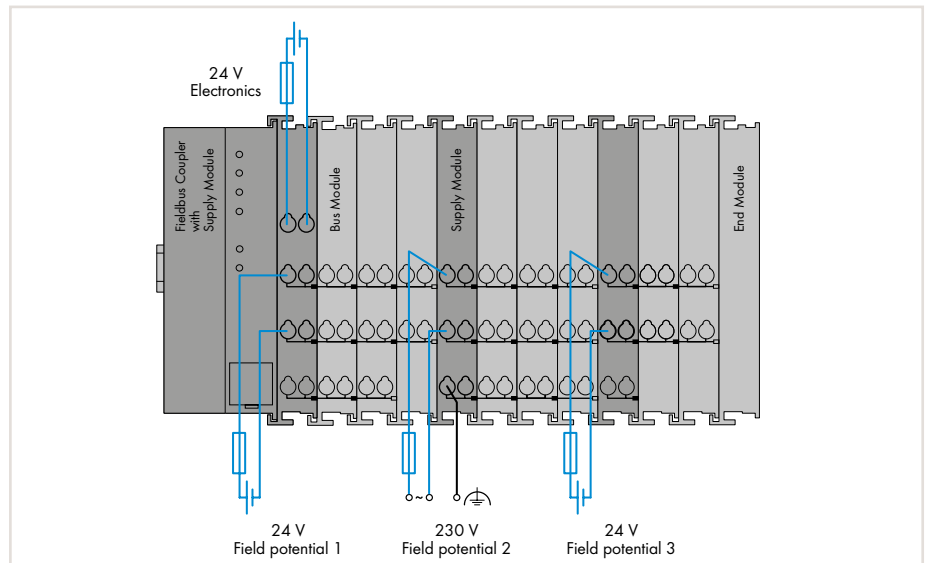
The current supply to the electronics is limited by a maximum value. This value depends on the fieldbus coupler used. If the sum of the internal current demand of all the I/O modules should exceed this value, an additional bus supply module is necessary. Even in this case, power supply to the field-side supply of 10 A may not be exceeded. However, different power supply modules allow a new power supply, formation of potential groups and the implementation of emergency stop concepts.

Interference-Free in Safety-Related Applications

To easily and safely perform cost-effective, centralized deactivation of complete actuator groups safely, the actuator's power supply can be switched off using a safety switching device. This can either be performed for each individual actuator or by turning off the power supply to a group of control outputs.

In the event of failure, ensure that no interference from other current or power circuits occurs — even when the control voltage is switched off — so the defined safety function properties (logic and time response) remain unchanged.

All modules are designed to provide interference-free safety functionality. These modules comply with safety requirements up to Category 4 of DIN EN ISO 13849-1:2007. The safety category and performance level depend solely on the safety components and their wiring.



Notice:

Interference-free WAGO I/O modules are not a component of the safety function and do not replace the safety switching device! When using the components in safety functions, the corresponding notes must be observed in the relevant manual.

Notes

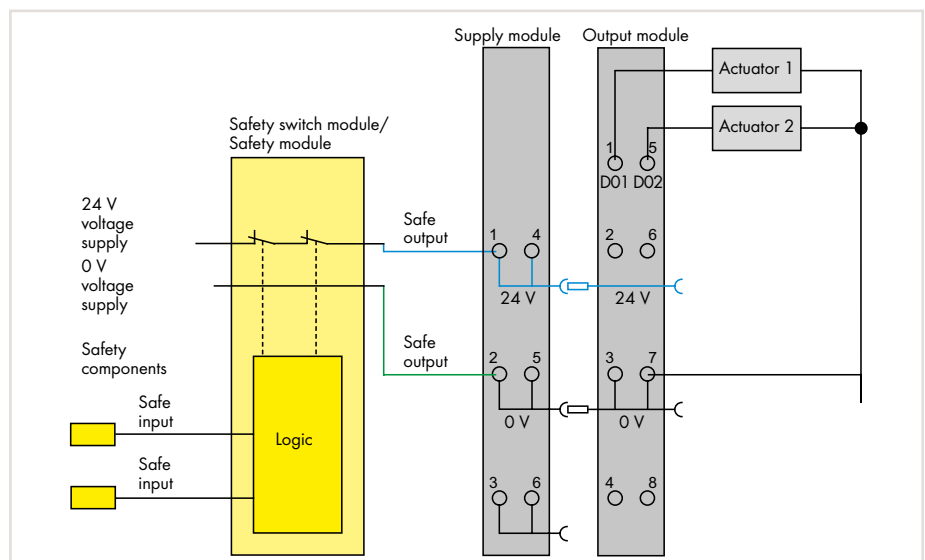
Additional steps must be implemented based on where the I/O-System is installed:

- Specific power and field-side power supply filters (750-624/040-001 or 750-626/040-000) are required for marine and onshore/offshore applications, as well as in telecontrol and rail technology.

Please refer to the manual for details about the power supply's design.

Mixed Operation:

Mixed operation (standard/XTR I/O modules) within a node is possible when groups of modules are electrically isolated on the field side, i.e., electrically isolated power supply. The combination may be useful, for example, when there are only increased requirements for dielectric strength and immunity to interference, but the ambient temperature is not critical.

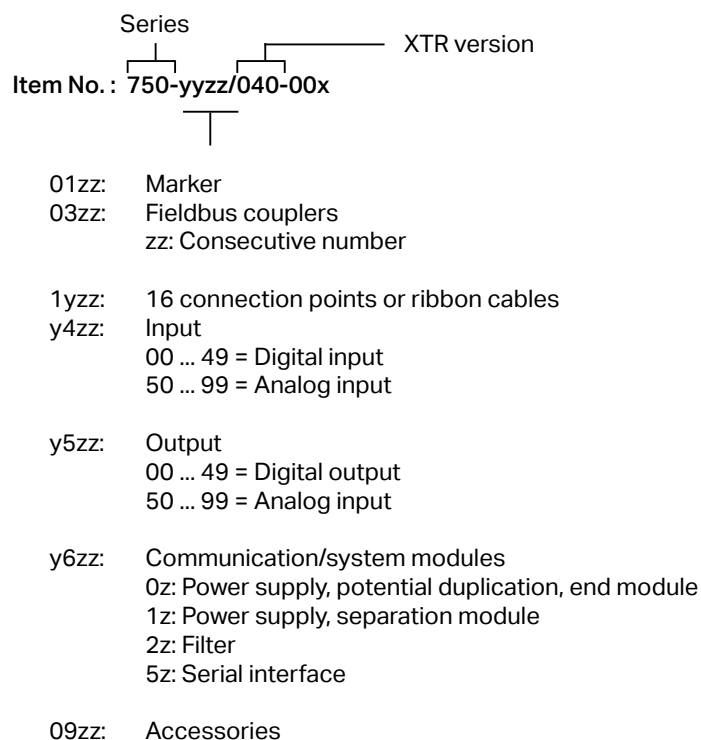


Example: Two-channel, double-pole power supply disconnection

750 XTR I/O-System

Item Number Key

Explanation of the components of an item number key



Approvals

Overview of the approvals in the article comparison in Section 12, Technical Appendix, or online under www.wago.com



Standards and Rated Conditions for Railway Applications (EN 50155)

Railway Applications (EN 50155)	complied class/standard
4.1 Rated Operating Conditions	
4.1.1 Altitude above sea level	AX (EN 50125-1)
4.1.2 Ambient operating temperature	TX
4.1.3 Shock and vibration	1A and 1B (EN 61373)
4.1.4 Relative humidity	95% (varnish coated PCBs)
5.1 Power Supply	
5.1.1.1 Power supply fluctuations	
Minimum voltage	0,725 x Un
Maximum voltage	1,3 x Un
5.1.1.2 Power supply interruption	S1
5.4 Surge, ESD, Burst Tests	EN 50121-3-2
5.5 EMC (Interference Emission, Interference Immunity)	EN 50121-3-2, EN 50121-4, -5

WAGO is a company certified according to the quality standard IRIS.

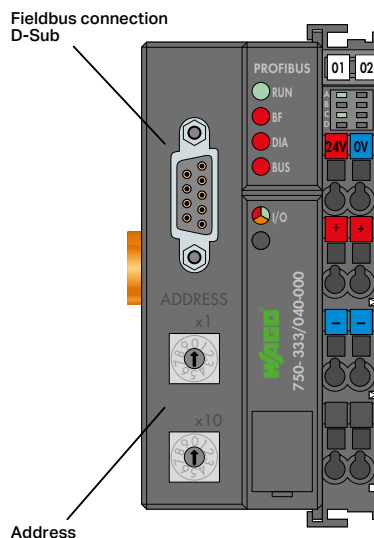
750 XTR I/O-System

Standards and Rated Conditions

General Specifications	
System supply voltage	24 VDC (–25 ... +30 %) Specified values for ambient temperature under laboratory conditions +15 °C... +35 °C. Derating for –40 ... +55 °C: 24 V (–25 ... +20 %)*. Derating for +55 ... +70 °C: 24 V (–25 ... +10 %)*. * Including 15 % residual ripple (lower limit –27.5 %)
Ambient temperature (operation)	–40 ... +70 °C
Ambient temperature (storage)	–40 ... +85 °C
Relative humidity	Max. 95 %, short-term condensation per Class 3K7 / IEC EN 60721-3-3 and E DIN 40046-721-3 (except wind-driven precipitation, water and ice formation)
Operating altitude	Without temperature derating: 0–2000 m; with temperature derating: 2000–5000 m (0.5 K/100 m); max.: 5000 m
Pollution degree	2 per IEC 61131-2
Dielectric strength	Per (EN 60870-2-1) • Modules ≤ 50 V: 510 VAC / 775 VDC; • Modules > 50 V: 2.5 kVAC / 3.5 kVDC Isolation: Rated impulse voltage • Modules ≤ 50 V: 1 kV (Class VW1 per EN 60870-2-1) • Modules > 50 V: 5 kV (Class VW3 per EN 60870-2-1) Surge: • Modules ≤ 50 V: 1 kV (L–L) / 2 kV (L–E) • Modules > 50 V: 2 kV (L–L) / 4 kV (L–E)
Vibration resistance	Per IEC 60068-2-6 (acceleration: 5 g), EN 60870-2-2, IEC 60721-3-1, -3, EN 50155, EN 61373
Shock resistance	Per IEC 60068-2-27 (15 g/11 ms/half-sine/1,000 shocks; 25 g/6 ms/1,000 shocks), EN 50155, EN 61373
EMC immunity to interference	EN 61000-6-1, EN 61000-6-2, EN 61131-2 Marine applications, EN 50121-3-2, EN 50121-4, -5, EN 60255-26, EN 60870-2-1 EN 61850-3, IEC 61000-6-5, IEEE 1613, VDEW: 1994
EMC emission of interference	EN 61000-6-3 and EN 61000-6-4, EN 61131-2 EN 60255-26, marine applications EN 60870-2-1 (industrial and residential areas) EN 61850-3 (industrial and residential areas) EN 50121-3-2, EN 50121-4, -5
Protection type	IP20
Mounting position	Horizontal (standing/lying) or vertical
Mounting type	On 35 mm DIN-rail
Housing material	Polycarbonate, polyamide 6.6
Exposure to pollutants	Per IEC 60068-2-42 and IEC 60068-2-43
Permissible SO ₂ contaminant concentration at a relative humidity < 75 %	25 ppm
Permissible H ₂ S contaminant concentration at a relative humidity < 75 %	10 ppm
Wire connection	CAGE CLAMP®
Conductor size; strip length for standard I/O modules and couplers: ECO fieldbus couplers:	0.08–2.5 mm ² / 28–14 AWG; 8–9 mm / 0.31–0.35 inch 0.08–1.5 mm ² / 28–16 AWG; 5–6 mm / 0.2–0.24 inch
Wire connection	Push-in CAGE CLAMP® (for I/O modules with 16 connection points)
Conductor size; strip length for I/O modules with 16 connection points:	0.25 ... 1.5 mm ² / 24 ... 16 AWG; 8 ... 9 mm / 0.31 ... 0.35 inch
Current carrying capacity of the power jumper contacts	10 A

Fieldbus Coupler PROFIBUS DP

2nd Generation, 12 MBd, extreme



Item description	FC PROFIBUS
Version	G2 12 MBd XTR
Item no.	750-333/040-000

Technical Data

Fieldbus	PROFIBUS
Protocols	PROFIBUS DP/V1
Connection technology: Fieldbus input/output	D-Sub 9 socket
Number of fieldbus nodes on master max.	96 with repeater
Transmission medium	Cu cable acc. to EN 50170
Baud rate	9.6 kBd ... 12 MBd
Number of I/O modules per node max.	63
Input and output process image (internal) max.	244 bytes
System supply voltage	24 VDC (–25 ... +30 %) Specified values for ambient temperatures under laboratory conditions +15 ... +35 °C. Derating for –40 ... +55 °C: 24 V (–25 ... +20 %)*. Derating for +55 ... +70 °C: 24 V (–25 ... +10 %)*.
Input current typ. at rated load (24 V)	500 mA
Current consumption, system supply	200 mA
Total current for system supply	1800 mA
Rated surge voltage	1 kV
Ambient temperature (operation)	–40 ... +70 °C
Dimensions W x H x D	50.5 x 71.1 x 100 mm
Approvals	CE, Marine, UL 508, ANSI/ISA
Data sheet and further information, see:	wago.com/750-333/040-000
Accessories	Item no.
GSD files	Download: www.wago.com

*Including 15 % residual ripple (lower limit –27.5 %)

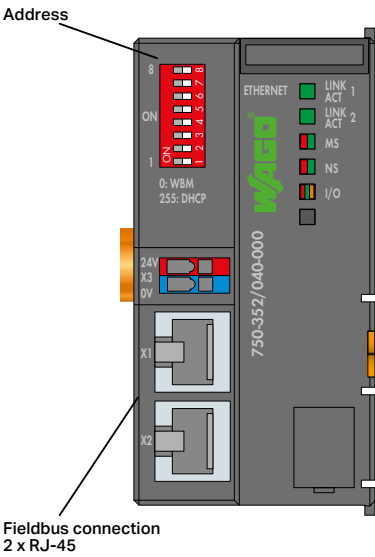
Mini-WSB Quick Marking System
see Full Line Catalog, Volume 6

DIN rails and tool
see Section 11

Approvals and corresponding ratings,
see Page 523 or www.wago.com

Fieldbus Coupler ETHERNET

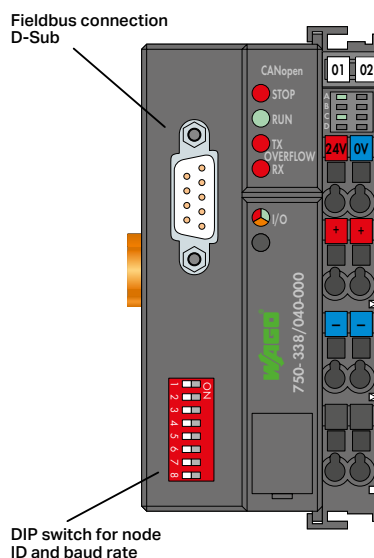
3rd Generation, extreme



Item description	FC ETHERNET
Version	G3 XTR
Item no.	750-352/040-000
Technical Data	
Fieldbus	EtherNet/IP, MODBUS/TCP
Protocols	EtherNet/IP, MODBUS/TCP (UDP), HTTP, BootP, DHCP, DNS, FTP, SNMP
Connection technology: Fieldbus input/output	2 x RJ-45
Bus segment length max.	100 m
Transmission medium	Twisted Pair S-UTP 100 Ω, Cat. 5
Baud rate	10/100 Mbit/s
Number of I/O modules per node max.	64
Input and output process image (internal) max.	1020 words
System supply voltage	24 VDC (–25 ... +30 %)
Input current typ. at rated load (24 V)	280 mA
Current consumption, system supply	450 mA
Total current for system supply	700 mA
Rated surge voltage	1 kV
Ambient temperature (operation)	–40 ... +70 °C
Dimensions W x H x D	49,5 x 71,9 x 96,8 mm
Approvals	CE,  Marine,  UL 508, ANSI/ISA
Data sheet and further information, see:	wago.com/750-352/040-000

Fieldbus Coupler CANopen

D-Sub, extreme



Item description

FC CANopen

Version

DSub XTR

Item no.

750-338/040-000

Technical Data

Fieldbus

CANopen

Connection technology: Fieldbus input/output

D-Sub 9 connector

Number of fieldbus nodes on master max.

110

Bus segment length max.

30–1000 m (depending on baud rate / cable)

Transmission medium

Shielded Cu cable 3 x 0.25 mm²

Baud rate

10 kBd ... 1 MBd

Number of I/O modules per node max.

64

Input and output process image (internal) max.

512 bytes

Number of PDOs

32 Tx / 32 Rx

Number of SDOs

2 SDO servers

Communication profile

DS-301 V4.01

Device profile

DS-401 V2.0,

Additional functions: Limit monitoring, flank-triggered PDOs, configurable response in the event of an error

24 VDC (–25 ... +30 %)

Specified values for ambient temperatures under laboratory conditions +15 ... +35 °C.

Derating for –40 ... +55 °C: 24 V (–25 ... +20 %)*.

Derating for +55 ... +70 °C: 24 V (–25 ... +10 %)*.

System supply voltage

Input current typ. at rated load (24 V)

500 mA

Current consumption, system supply

350 mA

Total current for system supply

1650 mA

Rated surge voltage

1 kV

Ambient temperature (operation)

–40 ... +70 °C

Dimensions W x H x D

50.5 x 71.1 x 100 mm

Approvals

CE, Marine, UL 508, ANSI/ISA

Data sheet and further information, see:

wago.com/750-338/040-000

Accessories

Item no.

EDS files

Download: www.wago.com

*Including 15 % residual ripple (lower limit –27.5 %)

 Mini-WSB Quick Marking System
see Full Line Catalog, Volume 6

 DIN rails and tool
see Section 11

 Approvals and corresponding ratings,
see Page 523 or www.wago.com

Digital Input, 24 VDC

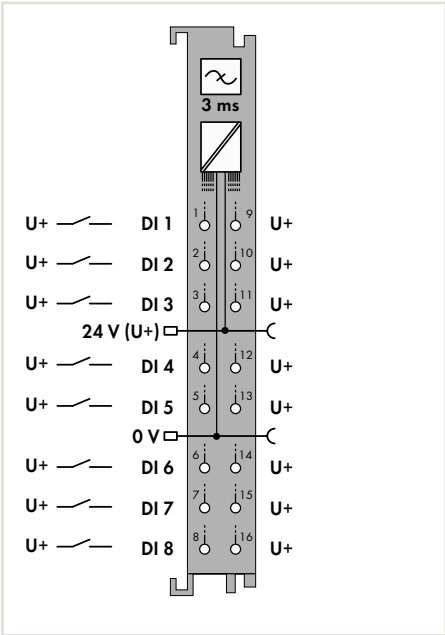


Figure: 750-1415/040-000

Item description	8DI
Version	24 VDC 3ms 2-wire XTR
Item no.	750-1415/040-000

Technical Data	
Number of digital inputs	8
Type of signal	24 VDC
Voltage range for signal (0)	-3 ... +5 VDC
Voltage range for signal (1)	11 ... 30 VDC
Sensor connection	2-conductor
Input characteristic	High-side switching
Input filter (digital)	3 ms
Input current per channel for signal (1) typ.	4.5 mA
Sensor supply voltage	24 VDC
Field supply voltage	24 VDC (-25 ... +30 %) Specified values for ambient temperatures under laboratory conditions +15 ... +35 °C. Derating for -40 ... +55 °C: 24 V (-25 ... +20 %)*. Derating for +55 ... +70 °C: 24 V (-25 ... +10 %)*.
Current consumption, system supply	6 mA
Rated surge voltage	1 kV
Internal data width	8 bits
Ambient temperature (operation)	-40 ... +70 °C
Dimensions W x H x D	12 x 69 x 100 mm
Approvals	CE,  Marine,  UL 508, ANSI/ISA
Data sheet and further information, see:	wago.com/750-1415/040-000

8-channel digital input; 24 VDC; 3 ms;
2-conductor connection; extreme

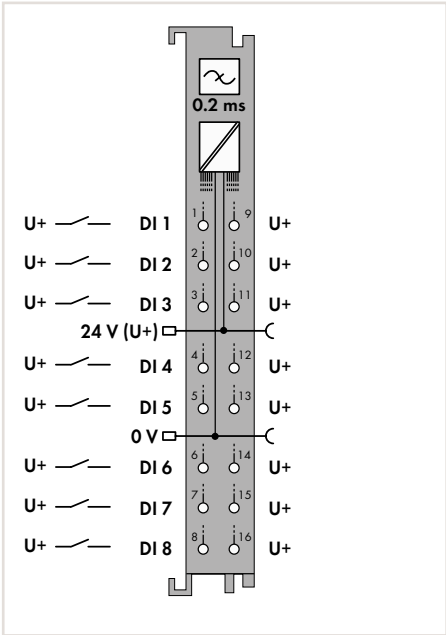


8DI
24 VDC 3ms 2-wire XTR
750-1415/040-000

Technical Data	
Number of digital inputs	8
Type of signal	24 VDC
Voltage range for signal (0)	-3 ... +5 VDC
Voltage range for signal (1)	11 ... 30 VDC
Sensor connection	2-conductor
Input characteristic	High-side switching
Input filter (digital)	3 ms
Input current per channel for signal (1) typ.	4.5 mA
Sensor supply voltage	24 VDC
Field supply voltage	24 VDC (-25 ... +30 %) Specified values for ambient temperatures under laboratory conditions +15 ... +35 °C. Derating for -40 ... +55 °C: 24 V (-25 ... +20 %)*. Derating for +55 ... +70 °C: 24 V (-25 ... +10 %)*.
Current consumption, system supply	6 mA
Rated surge voltage	1 kV
Internal data width	8 bits
Ambient temperature (operation)	-40 ... +70 °C
Dimensions W x H x D	12 x 69 x 100 mm
Approvals	CE,  Marine,  UL 508, ANSI/ISA
Data sheet and further information, see:	wago.com/750-1415/040-000

*Including 15 % residual ripple (lower limit -27.5 %)

8-channel digital input; 24 VDC; 0.2 ms;
2-conductor connection; extreme



8DI
24 VDC 0.2ms 2-wire XTR
750-1416/040-000

Technical Data	
Number of digital inputs	8
Type of signal	24 VDC
Voltage range for signal (0)	-3 ... +5 VDC
Voltage range for signal (1)	11 ... 30 VDC
Sensor connection	2-conductor
Input characteristic	High-side switching
Input filter (digital)	0.2 ms
Input current per channel for signal (1) typ.	4.5 mA
Sensor supply voltage	24 VDC
Field supply voltage	24 VDC (-25 ... +30 %) Specified values for ambient temperatures under laboratory conditions +15 ... +35 °C. Derating for -40 ... +55 °C: 24 V (-25 ... +20 %)*. Derating for +55 ... +70 °C: 24 V (-25 ... +10 %)*.
Current consumption, system supply	6 mA
Rated surge voltage	1 kV
Internal data width	8 bits
Ambient temperature (operation)	-40 ... +70 °C
Dimensions W x H x D	12 x 69 x 100 mm
Approvals	CE,  Marine,  UL 508, ANSI/ISA
Data sheet and further information, see:	wago.com/750-1416/040-000

*Including 15 % residual ripple (lower limit -27.5 %)

Digital Input, 24 VDC, 60 VDC, 110 VDC or 220 VDC

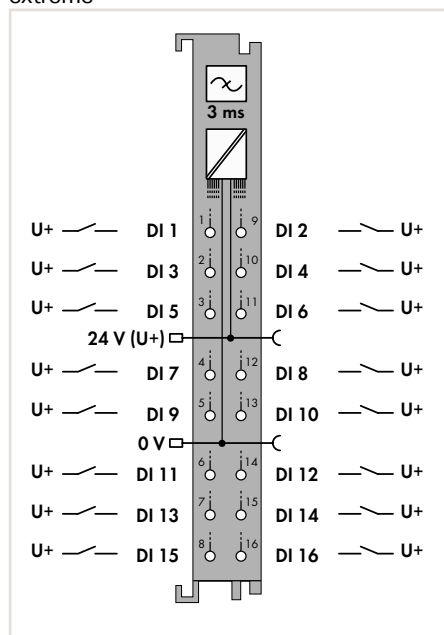


Figure: 750-1405/040-000

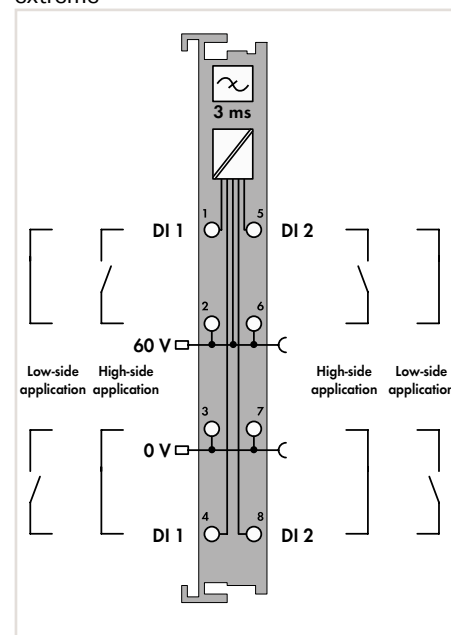


Figure: 750-429/040-001

16-channel digital input; 24 VDC; 3 ms; extreme



2-channel digital input; 60 VDC; 3 ms; extreme



Item description	16DI
Version	24 VDC 3ms XTR
Item no.	750-1405/040-000

Technical Data

Number of digital inputs	16
Type of signal	24 VDC
Voltage range for signal (0)	-3 ... +5 VDC
Voltage range for signal (1)	11 ... 30 VDC
Sensor connection	1-conductor
Input characteristic	High-side switching
Input filter (digital)	3 ms
Input current per channel for signal (1) typ.	2.3 mA
Sensor supply voltage	
Field supply voltage	

Item description	16DI
Version	24 VDC 3ms XTR
Item no.	750-1405/040-000

Number of digital inputs	16
Type of signal	24 VDC
Voltage range for signal (0)	-3 ... +5 VDC
Voltage range for signal (1)	11 ... 30 VDC
Sensor connection	1-conductor
Input characteristic	High-side switching
Input filter (digital)	3 ms
Input current per channel for signal (1) typ.	2.3 mA
Sensor supply voltage	
Field supply voltage	24 VDC (-25 ... +30 %) Specified values for ambient temperatures under laboratory conditions +15 ... +35 °C. Derating for -40 ... +55 °C: 24 V (-25 ... +20 %)*. Derating for +55 ... +70 °C: 24 V (-25 ... +10 %)*.
Current consumption, system supply	25 mA
Rated surge voltage	1 kV

Overvoltage category	

Internal data width	16 bits
Ambient temperature (operation)	-40 ... +70 °C
Dimensions W x H x D	12 x 69 x 100 mm

Approvals	CE, Marine, UL 508, ANSI/ISA
Data sheet and further information, see:	wago.com/750-1405/040-000

Item description	2DI
Version	60 VDC 3ms XTR
Item no.	750-429/040-001

Number of digital inputs	2
Type of signal	60 VDC
Voltage range for signal (0)	-7.5 ... +12 VDC
Voltage range for signal (1)	44 ... 75 VDC
Sensor connection	2-conductor
Input characteristic	High-side/low-side switching, configurable
Input filter (digital)	3 ms
Input current per channel for signal (1) typ.	2.9 mA
Sensor supply voltage	60 VDC
Field supply voltage	60 VDC (-25 ... +30 %); via power jumper contacts
Current consumption, system supply	2.5 mA
Rated surge voltage	5.0 kV (EN 60870-2-1 / Class VW3); 2.5 kV (UL 508); 2.5 kV (EN 60664-1 / up to 5,000 m above sea level)

Overvoltage category	Nominal voltage 60 V: IV (EN 60664-1 / 5,000 m above sea level)

Internal data width	2 bits
Ambient temperature (operation)	-40 ... +70 °C
Dimensions W x H x D	12 x 67.8 x 100 mm

Approvals	CE, Marine, UL 508, ANSI/ISA
Data sheet and further information, see:	wago.com/750-429/040-001

*Including 15 % residual ripple (lower limit -27.5 %)

Notice:

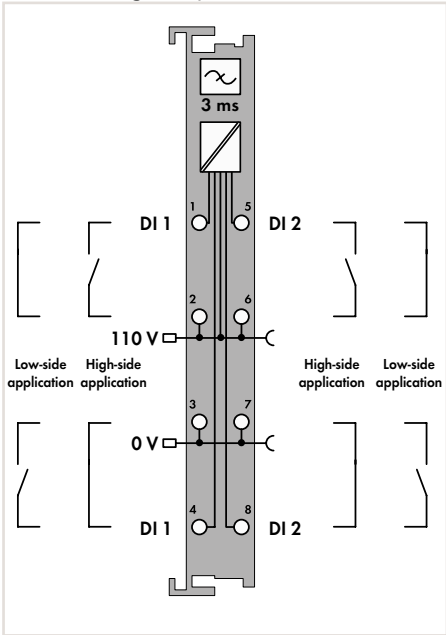
An additional bus supply module must be added for operation with 60 VDC!

Mini-WSB Quick Marking System
see Full Line Catalog, Volume 6

DIN rails and tool
see Section 11

Approvals and corresponding ratings,
see Page 523 or www.wago.com

2-channel digital input; 110 VDC, extreme



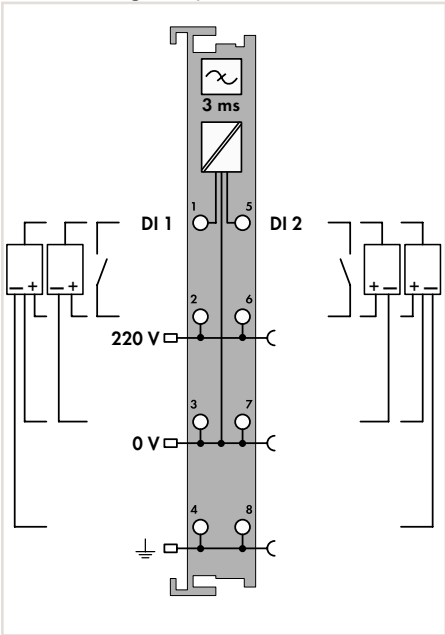
2DI
110 VDC XTR
750-427/040-000

2
110 VDC
-14 V ... +50 VDC
+70 V ... +143 VDC
2-conductor
High-side/low-side switching, configurable
3 ms
2.5 mA
110 VDC
110 VDC (-25 ... +30 %); via power jumper contacts

2.5 mA
5.0 kV (EN 60870-2-1 / Class VW3); 4.0 kV (UL 508); 4.0 kV (EN 60664-1 / up to 2,000 m above sea level); 2.5 kV (EN 60664-1 / > 2,000 m up to 5,000 m above sea level)
Nominal voltage 110 V: IV (EN 60664-1 / up to 2,000 m above sea level); III (EN 60664-1 / > 2,000 m up to 5,000 m above sea level)
2 bits
-40 ... +70 °C
12 x 67.8 x 100 mm
CE, Marine, UL 508, ANSI/ISA
wago.com/750-427/040-000

Notice:
An additional bus supply module must be added for operation with 110 VDC!

2-channel digital input; 220 VDC, extreme



2DI
220 VDC XTR
750-407/040-000

2
220 VDC
-3 V ... +100 VDC
160 V ... 286 VDC
2-conductor, 3-conductor, 4-conductor
High-side switching
3 ms
1.2 mA
220 VDC
220 VDC (-20 ... +25 %); via power jumper contacts

5 mA
5.0 kV (EN 60870-2-1 / Class VW3); 4.0 kV (UL 508); 4.0 kV (EN 60664-1 / up to 4,000 m above sea level); 2.5 kV (EN 60664-1 / > 4,000 m up to 5,000 m above sea level)
Nominal voltage 220 V: III (EN 60664-1 / up to 4,000 m above sea level); II (EN 60664-1 / > 4,000 m up to 5,000 m above sea level)
2 bits
-40 ... +70 °C
12 x 67.8 x 100 mm
CE, Marine, UL 508, ANSI/ISA
wago.com/750-407/040-000

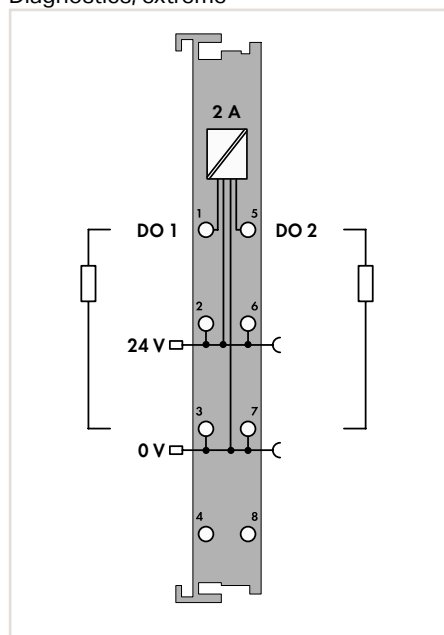
Notice:
An additional bus supply module must be added for operation with 220 VDC!

Digital Output, 24 VDC

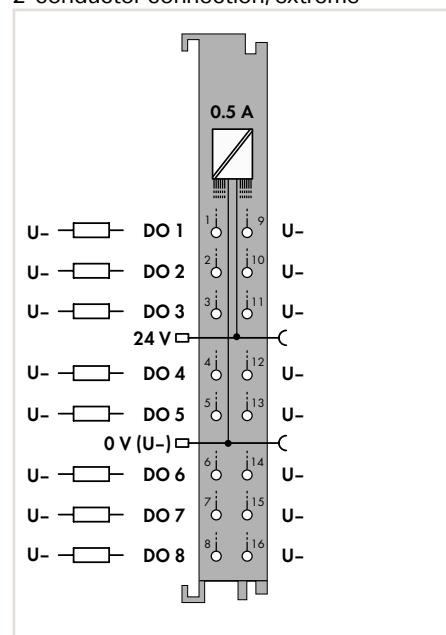


Figure: 750-508/040-000

2-channel digital output; 24 VDC; 2.0 A;
Diagnostics; extreme



8-channel digital output; 24 VDC; 0.5 A;
2-conductor connection; extreme



Item description	2DO
Version	24 VDC 2A Diagn XTR
Item no.	750-508/040-000

Technical Data

Number of digital outputs	2
Type of signal	24 VDC
Output characteristic	high-side switching
Output current per channel	2 A, short-circuit-protected
Load type	Resistive, inductive, lamps
Actuator connection	2-conductor, 3-conductor, 4-conductor
Switching frequency max.	1 kHz
Diagnostics	Open circuit, overload and short circuit
Field supply voltage	24 VDC (-25 ... +30 %) Specified values for ambient temperatures under laboratory conditions +15 ... +35 °C. Derating for -40 ... +55 °C: 24 V (-25 ... +20 %)*. Derating for +55 ... +70 °C: 24 V (-25 ... +10 %)*.

Current consumption, system supply	14 mA
Rated surge voltage	1 kV
Internal data width	2 bits in, 2 bits out
Ambient temperature (operation)	-40 ... +70 °C
Dimensions W x H x D	12 x 67.8 x 100 mm

Approvals	CE, UL, Marine, UL 508, ANSI/ISA
Data sheet and further information, see:	wago.com/750-508/040-000

*Including 15 % residual ripple (lower limit -27.5 %)

Item description	8DO
Version	24 VDC 0.5A 2-wire XTR
Item no.	750-1515/040-000

Number of digital outputs	8
Type of signal	24 VDC
Output characteristic	high-side switching
Output current per channel	0.5 A, short-circuit-protected
Load type	Resistive, inductive, lamps
Actuator connection	2-conductor
Switching frequency max.	1 kHz

Field supply voltage	24 VDC (-25 ... +30 %) Specified values for ambient temperatures under laboratory conditions +15 ... +35 °C. Derating for -40 ... +55 °C: 24 V (-25 ... +20 %)*. Derating for +55 ... +70 °C: 24 V (-25 ... +10 %)*.

Current consumption, system supply	20 mA
Rated surge voltage	1 kV
Internal data width	8 bits
Ambient temperature (operation)	-40 ... +70 °C
Dimensions W x H x D	12 x 69 x 100 mm

Approvals	CE, UL, Marine, UL 508, ANSI/ISA
Data sheet and further information, see:	wago.com/750-1515/040-000

*Including 15 % residual ripple (lower limit -27.5 %)

Mini-WSB Quick Marking System
see Full Line Catalog, Volume 6

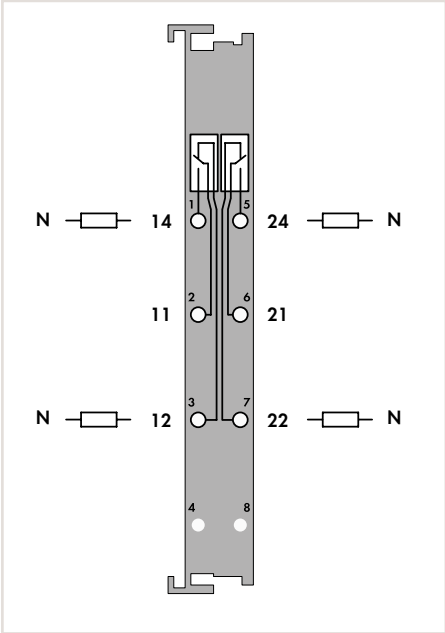
DIN rails and tool
see Section 11

Approvals and corresponding ratings,
see Page 523 or www.wago.com

Relay Output, 230 VAC



2-channel relay output; 230 VAC; 1.0 A;
Potential-free; 2 changeover contacts; extreme



Item description	2RO
Version	230 VAC 1A Relay2CO XTR
Item no.	750-517/040-000
Technical Data	
Number of digital outputs	2
Switching power max.	250 VAC, 300 VDC
Output switching design	2 changeover contacts, relay
Output characteristic	Potential-free
Switching current max.	1 A at 250 VAC / 40 VDC; 0.15 A at 300 VDC
Switching current min.	100 mA at 12 VDC
Actuator connection	1-conductor
Switching frequency max.	0.1 Hz
Mechanical life min.	5 x 10 ⁶
Electrical life min.	10 x 10 ⁵
Current consumption, system supply	90 mA
Rated surge voltage	5.0 kV (EN 60870-2-1 / Class VW3); 6.0 kV (UL 508); 6.0 kV (EN 60664-1 / up to 4,000 m above sea level); 4.0 kV (EN 60664-1 / > 4,000 m up to 5,000 m above sea level)
Overvoltage category	Nominal voltage 230 V: IV (EN 60664-1 / up to 4,000 m above sea level); III (EN 60664-1 / > 4,000 m up to 5,000 m above sea level)
Internal data width	2 bits
Ambient temperature (operation)	-40 ... +70 °C
Dimensions W x H x D	12 x 67.8 x 100 mm
Approvals	CE,  Marine,  UL 508, ANSI/ISA
Data sheet and further information, see:	wago.com/750-517/040-000

Analog Input, 0 ... 20 mA, 4 ... 20 mA, 0 ... 10 VDC or ± 10 VDC

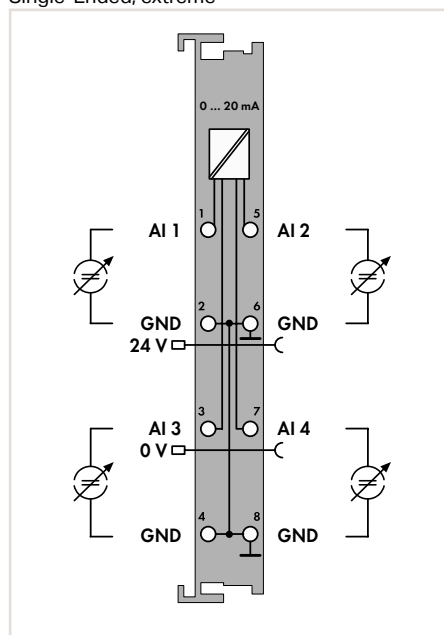


Figure: 750-453/040-000

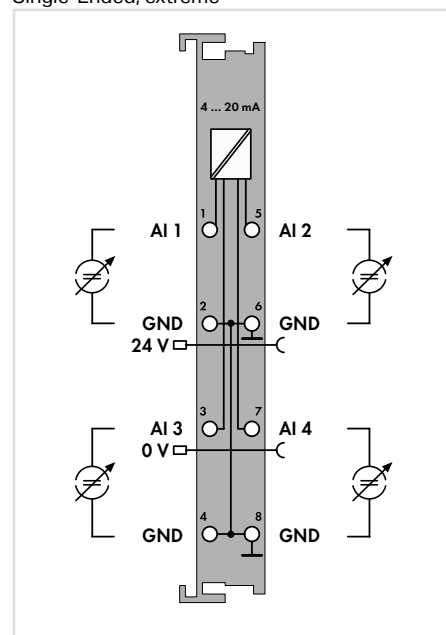


Figure: 750-468/040-000

4-channel analog input; 0 ... 20 mA;
Single-Ended; extreme



4-channel analog input; 4 ... 20 mA;
Single-Ended; extreme



Item description	4AI
Version	0-20mA SE XTR
Item no.	750-453/040-000

Technical Data

Number of analog inputs	4
Type of signal	0 ... 20 mA
Signal characteristic	single-ended
Resolution	12 bits
Conversion time	10 ms
Input resistance	< 100 Ω / 20 mA
Input voltage max.	
Measuring error (25 °C)	< ± 0.1 % of the largest measurement range
Temperature coefficient	< ± 0.01 % /K of the largest measurement range
System supply voltage	5 VDC via data contacts
Field supply voltage	24 VDC (-25 ... +30 %) Specified values for ambient temperatures under laboratory conditions +15 ... +35 °C. Derating for -40 ... +55 °C: 24 V (-25 ... +20 %)*. Derating for +55 ... +70 °C: 24 V (-25 ... +10 %)*.
Current consumption, system supply	65 mA
Rated surge voltage	1 kV
Data width	4 x 16 bits data, 4 x 8 bits control/status (optional)
Ambient temperature (operation)	-40 ... +70 °C
Dimensions W x H x D	12 x 67.8 x 100 mm
Approvals	CE, Marine, UL 508, ANSI/ISA
Data sheet and further information, see:	wago.com/750-453/040-000

4AI	
4-20mA SE XTR	
750-455/040-000	

Number of analog inputs	4
Type of signal	4 ... 20 mA
Signal characteristic	single-ended
Resolution	12 bits
Conversion time	10 ms
Input resistance	< 100 Ω / 20 mA
Input voltage max.	
Measuring error (25 °C)	< ± 0.1 % of the largest measurement range
Temperature coefficient	< ± 0.01 % /K of the largest measurement range
System supply voltage	5 VDC via data contacts
Field supply voltage	24 VDC (-25 ... +30 %) Specified values for ambient temperatures under laboratory conditions +15 ... +35 °C. Derating for -40 ... +55 °C: 24 V (-25 ... +20 %)*. Derating for +55 ... +70 °C: 24 V (-25 ... +10 %)*.
Current consumption, system supply	65 mA
Rated surge voltage	1 kV
Data width	4 x 16 bits data, 4 x 8 bits control/status (optional)
Ambient temperature (operation)	-40 ... +70 °C
Dimensions W x H x D	12 x 67.8 x 100 mm
Approvals	CE, Marine, UL 508, ANSI/ISA
Data sheet and further information, see:	wago.com/750-455/040-000

4AI	
4-20mA SE XTR	
750-455/040-000	

Number of analog inputs	4
Type of signal	4 ... 20 mA
Signal characteristic	single-ended
Resolution	12 bits
Conversion time	10 ms
Input resistance	< 100 Ω / 20 mA
Input voltage max.	
Measuring error (25 °C)	< ± 0.1 % of the largest measurement range
Temperature coefficient	< ± 0.01 % /K of the largest measurement range
System supply voltage	5 VDC via data contacts
Field supply voltage	24 VDC (-25 ... +30 %) Specified values for ambient temperatures under laboratory conditions +15 ... +35 °C. Derating for -40 ... +55 °C: 24 V (-25 ... +20 %)*. Derating for +55 ... +70 °C: 24 V (-25 ... +10 %)*.
Current consumption, system supply	65 mA
Rated surge voltage	1 kV
Data width	4 x 16 bits data, 4 x 8 bits control/status (optional)
Ambient temperature (operation)	-40 ... +70 °C
Dimensions W x H x D	12 x 67.8 x 100 mm
Approvals	CE, Marine, UL 508, ANSI/ISA
Data sheet and further information, see:	wago.com/750-455/040-000

*Including 15 % residual ripple (lower limit -27.5 %)

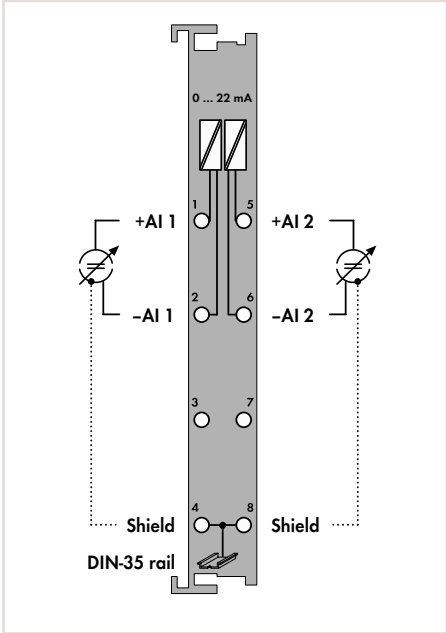
*Including 15 % residual ripple (lower limit -27.5 %)

Mini-WSB Quick Marking System
see Full Line Catalog, Volume 6

DIN rails and tool
see Section 11

Approvals and corresponding ratings,
see Page 523 or www.wago.com

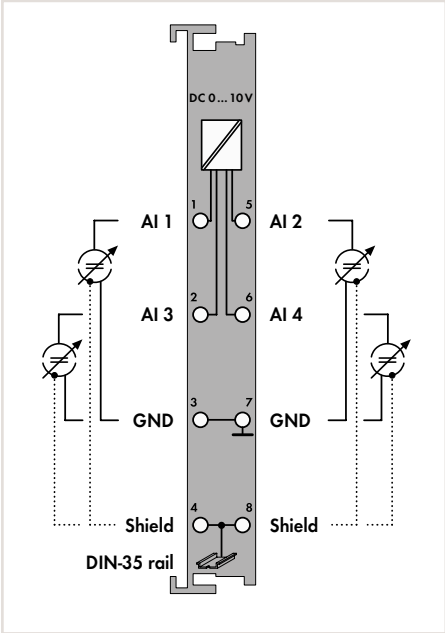
2-channel analog input; 4 ... 20 mA;
Differential input; NE43; extreme



2AI
4-20mA Diff NE43 XTR
750-492/040-001

2
3.8 mA ... 20.5 mA (NE43)
differential
13 bits
1 ms
< 270 Ω / 20 mA
< ± 0.1 % of the largest measurement range
< ± 0.01 % /K of the largest measurement range
5 VDC via data contacts
80 mA
1 kV
2 x 16 bits data, 2 x 8 bits control/status (optional)
-40 ... +70 °C
12 x 67.8 x 100 mm
CE, Marine, UL 508, ANSI/ISA
wago.com/750-492/040-001

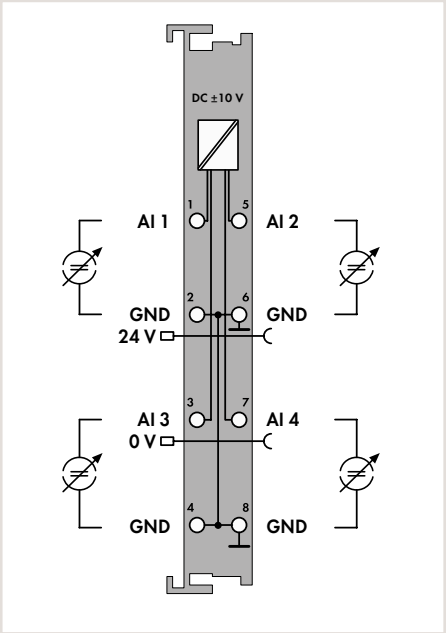
4-channel analog input; 0 ... 10 VDC;
Single-Ended; extreme



4AI
0-10 VDC SE XTR
750-468/040-000

4
0 ... 10 V
single-ended
12 bits
4 ms
133 kΩ
35 V
< ± 0.2 % of the largest measurement range
< ± 0.01 % /K of the largest measurement range
5 VDC via data contacts
60 mA
1 kV
4 x 16 bits data, 4 x 8 bits control/status (optional)
-40 ... +70 °C
12 x 67.8 x 100 mm
CE, Marine, UL 508, ANSI/ISA
wago.com/750-468/040-000

4-channel analog input; ±10 VDC;
Single-Ended; extreme



4AI
±10 VDC SE XTR
750-457/040-000

4
±10 V
single-ended
12 bits
10 ms
> 100 kΩ
± 40 V
< ± 0.1 % of the largest measurement range
< ± 0.01 % /K of the largest measurement range
5 VDC via data contacts
24 VDC (-25 ... +30 %)
Specified values for ambient temperatures under laboratory conditions +15 ... +35 °C.
Derating for -40 ... +55 °C: 24 V (-25 ... +20 %)*.
Derating for +55 ... +70 °C: 24 V (-25 ... +10 %)*.
65 mA
1 kV
4 x 16 bits data, 4 x 8 bits control/status (optional)
-40 ... +70 °C
12 x 67.8 x 100 mm
CE, Marine, UL 508, ANSI/ISA
wago.com/750-457/040-000

*Including 15 % residual ripple (lower limit -27.5 %)

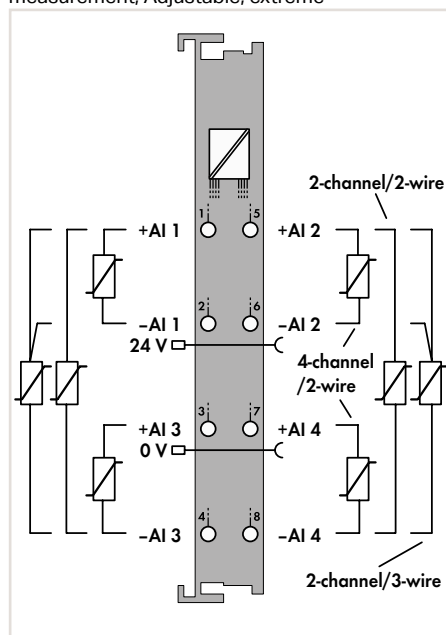
Analog Input, for Resistance Sensors or Thermocouple



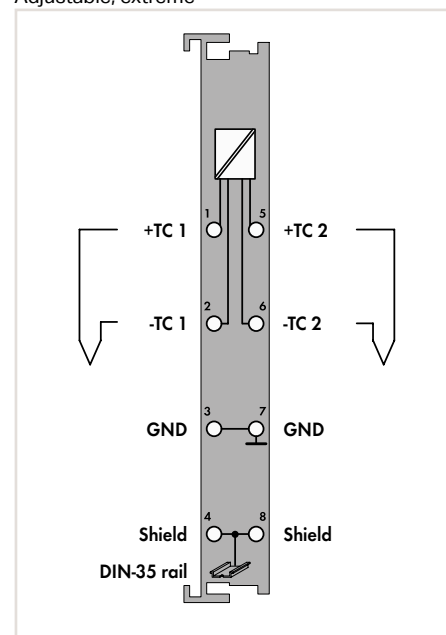
Figure: 750-464/040-000

Figure: 750-469/040-000

2/4-channel analog input; Resistance measurement; Adjustable; extreme



2-channel analog input; Thermocouple; Adjustable; extreme



Item description
Version
Item no.

2/4AI
RTD Adjust XTR
750-464/040-000

2AI
TC Adjust XTR
750-469/040-000

Technical Data

Number of analog inputs
Type of signal

2/4
Pt100 (Default), Pt200, Pt500, Pt1000 (IEC 751), Ni100, Ni1000 (DIN 43760), Ni120 (Minco), Ni1000 (TK 5000), 2-channel operation: Potentiometer, Resistance measurement 10 ... 5000 Ω, 10 ... 1200 Ω

2
configurable: Type K, J, E, S, T, L, N, U, B, R; -30 ... +30 mV, -60 ... +60 mV, -120 ... +120 mV

Sensor connection
Temperature range

2-conductor, 3-conductor
-200 ... +850 °C (Pt100 ... Pt1000), -60 ... +300 °C (Ni 100, Ni 1000), -60 ... +250 °C (Ni 1000 TK5000), -80 ... +260 °C (Ni 120)

2-conductor
depending on sensor

Resolution
Conversion time
Measuring current typ.
Measuring error (25 °C)

0.1 °C
320 ms
≤ 350 μA
≤ 1 K in the entire temp. range, ≤ 0,5 K in the restricted temp. range (-30 ... +120 °C, Pt 1000)
≤ 20 ppm/K, typ. ≤ 15 ppm/K

0.1 °C
320 ms
<± 6 K (voltage input)
<± 2 K, cold junction compensation <± 4 K)

Temperature coefficient
Cold junction compensation
System supply voltage
Field supply voltage

5 VDC via data contacts
24 VDC (-25 ... +30 %)
Specified values for ambient temperatures under laboratory conditions +15 ... +35 °C. Derating for -40 ... +55 °C: 24 V (-25 ... +20 %)*. Derating for +55 ... +70 °C: 24 V (-25 ... +10 %)*.

<± 0.2 K/K
integrated or external
5 VDC via data contacts

Current consumption, system supply
Rated surge voltage
Data width

50 mA
1 kV
4 (2) x 16 bits data, 4 (2) x 8 bits control/status (optional)

65 mA
1 kV
2 x 16 bits data, 2 x 8 bits control/status (optional)

Ambient temperature (operation)
Dimensions W x H x D

-40 ... +70 °C
12 x 67.8 x 100 mm

-40 ... +70 °C
12 x 67.8 x 100 mm

Approvals
Data sheet and further information, see:

CE, Marine, UL 508, ANSI/ISA
wago.com/750-464/040-000

CE, Marine, UL 508, ANSI/ISA
wago.com/750-469/040-000

*Including 15 % residual ripple (lower limit -27.5 %)

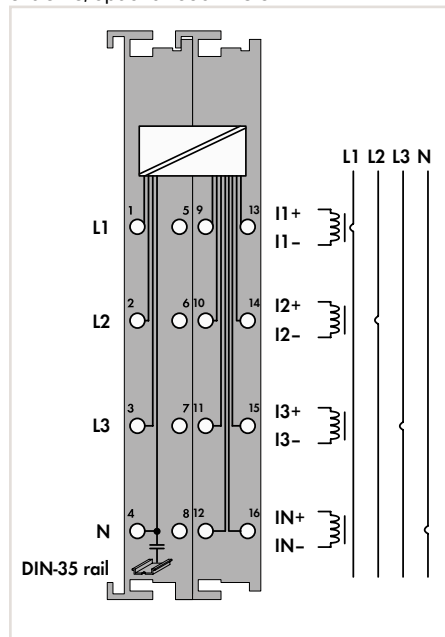
Mini-WSB Quick Marking System see Full Line Catalog, Volume 6
DIN rails and tool see Section 11
Approvals and corresponding ratings, see Page 523 or www.wago.com

Analog Input, for 3-Phase Power Measurement

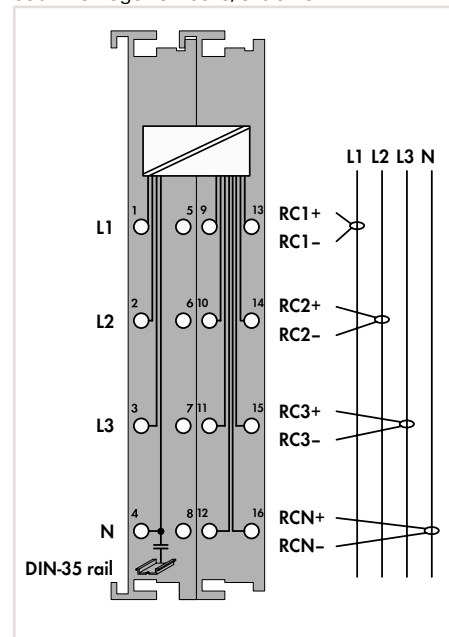


Figure: 750-495/040-000

3-Phase Power Measurement; 690 VAC 1 A;
extreme; optional: 690 VAC 5 A



3-Phase Power Measurement;
690 VAC Rogowski coils; extreme



Item description	3-PHASE POM	
Version	690VAC 1A XTR	690VAC 5A XTR
Item no.	750-495/040-000	750-495/040-001

Technical Data

Type of signal	3-Phase Power Measurement
Measured values	current, voltage, active power, apparent power, reactive power, energy, frequency, cos phi, harmonic analysis (up to the 41st harmonic), THD, current measurement in the neutral conductor and other
Number of measurement inputs	7 (3 voltage measurement inputs, 4 differential current measurement inputs)
Rated surge voltage	$U_{LN} = 400 \text{ V AC}$, $U_{LL} = 690 \text{ V AC}$
Input resistance voltage path typ.	1429 kΩ
Measuring current max.	1 A
Input resistance current path typ.	22 mΩ
Resolution	24 bits
Measuring error (25 °C)	AC current/voltage: ± 0,5 % of the largest measurement range
Frequency range, power supply frequency	45 ... 65 Hz
Frequency range, harmonics analysis	0 ... 3300 Hz
Max. operating frequency	15.9 kHz
System supply voltage	5 VDC via data contacts
Current consumption, system supply	100 mA
Rated surge voltage	5.0 kV (EN 60870-2-1 / Class VW3); 6.0 kV (UL 508); 6.0 kV (EN 60664-1 / up to 4,000 m above sea level); 4.0 kV (EN 60664-1 / > 4,000 m up to 5,000 m above sea level)
Overvoltage category	Nominal voltage 400 V/690 V in a 3-phase system: III (EN 60664-1 / up to 4,000 m above sea level); II (EN 60664-1 / > 4,000 m up to 5,000 m above sea level)
Data width	2 x 128 bits data, 2 x 64 bits control/status
Ambient temperature (operation)	-40 ... +70 °C
Dimensions W x H x D	24 x 67.8 x 100 mm
Approvals	CE, Marine
Data sheet and further information, see:	wago.com/750-495/040-000
Accessories	Item no.
Plug-In and Split-Core Current Transformers	see Full Line Catalog, Volume 4
Rogowski Coils RT500/RT2000	

Item description	3-PHASE POM	
Version	690VAC 1A XTR	690VAC 5A XTR
Item no.	750-495/040-000	750-495/040-001

Type of signal	3-Phase Power Measurement
Measured values	current, voltage, active power, apparent power, reactive power, energy, frequency, cos phi, harmonic analysis (up to the 41st harmonic), THD, current measurement in the neutral conductor and other
Number of measurement inputs	7 (3 voltage measurement inputs, 4 differential current measurement inputs)
Rated surge voltage	$U_{LN} = 277 \text{ V AC}$, $U_{LL} = 480 \text{ V AC}$
Input resistance voltage path typ.	1429 kΩ
Measuring current max.	5 A
Input resistance current path typ.	5 mΩ
Resolution	24 bits
Measuring error (25 °C)	AC current/voltage: ± 0,5 % of the largest measurement range
Frequency range, power supply frequency	45 ... 65 Hz
Frequency range, harmonics analysis	0 ... 3300 Hz
Max. operating frequency	15.9 kHz
System supply voltage	5 VDC via data contacts
Current consumption, system supply	100 mA
Rated surge voltage	5.0 kV (EN 60870-2-1 / Class VW3); 6.0 kV (UL 508); 6.0 kV (EN 60664-1 / up to 4,000 m above sea level); 4.0 kV (EN 60664-1 / > 4,000 m up to 5,000 m above sea level)
Overvoltage category	Nominal voltage 400 V/690 V in a 3-phase system: III (EN 60664-1 / up to 4,000 m above sea level); II (EN 60664-1 / > 4,000 m up to 5,000 m above sea level)
Data width	2 x 128 bits data, 2 x 64 bits control/status
Ambient temperature (operation)	-40 ... +70 °C
Dimensions W x H x D	24 x 67.8 x 100 mm
Approvals	CE, Marine
Data sheet and further information, see:	wago.com/750-495/040-001

Item no.	see Full Line Catalog, Volume 4

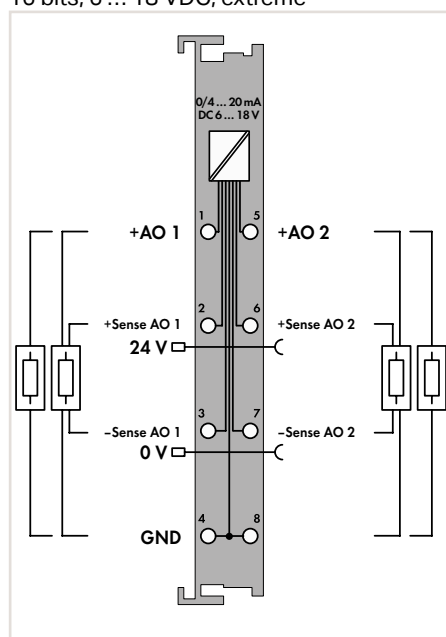
Item description	3-PHASE POM	
Version	690VAC R.C. XTR	
Item no.	750-495/040-002	

Type of signal	3-Phase Power Measurement
Measured values	current, voltage, active power, apparent power, reactive power, energy, frequency, cos phi, harmonic analysis (up to the 41st harmonic), THD, current measurement in the neutral conductor and other
Number of measurement inputs	7 (3 voltage measurement inputs, 4 differential current measurement inputs)
Rated surge voltage	$U_{LN} = 277 \text{ V AC}$, $U_{LL} = 480 \text{ V AC}$
Input resistance voltage path typ.	1429 kΩ
Measuring current max.	
Input resistance current path typ.	
Resolution	24 bits
Measuring error (25 °C)	AC current/voltage: ± 0,5 % of the largest measurement range
Frequency range, power supply frequency	45 ... 65 Hz
Frequency range, harmonics analysis	0 ... 3300 Hz
Max. operating frequency	15.9 kHz
System supply voltage	5 VDC via data contacts
Current consumption, system supply	100 mA
Rated surge voltage	5.0 kV (EN 60870-2-1 / Class VW3); 6.0 kV (UL 508); 6.0 kV (EN 60664-1 / up to 4,000 m above sea level); 4.0 kV (EN 60664-1 / > 4,000 m up to 5,000 m above sea level)
Overvoltage category	Nominal voltage 400 V/690 V in a 3-phase system: III (EN 60664-1 / up to 4,000 m above sea level); II (EN 60664-1 / > 4,000 m up to 5,000 m above sea level)
Data width	2 x 128 bits data, 2 x 64 bits control/status
Ambient temperature (operation)	-40 ... +70 °C
Dimensions W x H x D	24 x 67.8 x 100 mm
Approvals	CE, Marine
Data sheet and further information, see:	wago.com/750-495/040-002

Item no.	see Full Line Catalog, Volume 4

Analog Output, adjustable 0/4 ... 20 mA, 6 ... 18 VDC

2-channel analog output; 0/4 ... 20 mA;
16 bits; 6 ... 18 VDC; extreme



Item description	2AO
Version	0/4-20mA 16Bit 6-18 VDC XTR
Item no.	750-563/040-000
Technical Data	
Number of analog outputs	2
Type of signal	0 ... 20 mA, 4 ... 20 mA, 6 ... 18 V
Load impedance	> 1.8 kΩ (voltage output), < 500 Ω (current output)
Resolution	16 bits
Conversion time	5 ms
Measuring error (25 °C)	< ± 0.05 % of largest measurement range
Temperature coefficient	< ± 100 ppm
System supply voltage	24 VDC (min. ... +30 %), via power jumper contacts. Specified values for ambient temperatures under laboratory conditions: +15 ... +35 °C. Derating for -40 ... +55 °C: 24 V (min. ... +20 %)*; Derating for +55 ... +70 °C: 24 V (min. ... +10 %)*; min. voltage range: 21.6 V; min. current range: 20.4 V
Current consumption, system supply	80 ... 110 mA
Rated surge voltage	1 kV
Data width	2 x 16 bits data, 2 x 8 bits control/status (optional)
Ambient temperature (operation)	-40 ... +70 °C
Dimensions W x H x D	12 x 67.8 x 100 mm
Approvals	CE, UL, Marine, UL 508, ANSI/ISA
Data sheet and further information, see:	wago.com/750-563/040-000

*Including 15 % residual ripple (lower limit -27.5 %)

Mini-WSB Quick Marking System
see Full Line Catalog, Volume 6

DIN rails and tool
see Section 11

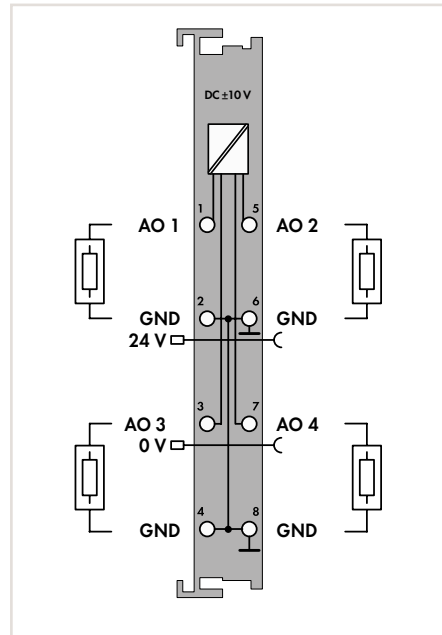
Approvals and corresponding ratings,
see Page 523 or www.wago.com

Analog Output, ± 10 VDC or 0 ... 10 VDC

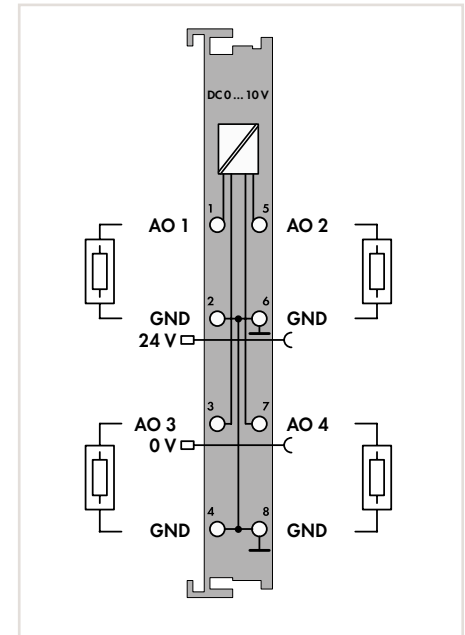


Figure: 750-557/040-000

2-channel analog output; ± 10 VDC;
extreme



2-channel analog output; 0 ... 10 VDC;
extreme



Item description	4AO
Version	± 10 V DC XTR
Item no.	750-557/040-000

Technical Data

Number of analog outputs	4
Type of signal	± 10 V
Load impedance	$> 5 \text{ k}\Omega$
Resolution	12 bits
Conversion time	10 ms
Measuring error (25 °C)	$< \pm 0.1 \%$ of largest measurement range
Temperature coefficient	$< \pm 0.01 \%$ /K of largest measurement range
System supply voltage	5 VDC via data contacts
Field supply voltage	24 VDC ($-25 \dots +30 \%$) Specified values for ambient temperatures under laboratory conditions $+15 \dots +35 \text{ }^\circ\text{C}$. Derating for $-40 \dots +55 \text{ }^\circ\text{C}$: 24 V ($-25 \dots +20 \%$)*. Derating for $+55 \dots +70 \text{ }^\circ\text{C}$: 24 V ($-25 \dots +10 \%$)*.
Current consumption, system supply	125 mA
Rated surge voltage	1 kV
Datenbreite	4 x 16 bits data, 4 x 8 bits control/status (optional)
Ambient temperature (operation)	$-40 \dots +70 \text{ }^\circ\text{C}$
Dimensions W x H x D	12 x 67.8 x 100 mm
Approvals	CE, UL 508, ANSI/ISA
Data sheet and further information, see:	wago.com/750-557/040-000

4AO	
± 10 V DC XTR	
750-557/040-000	

4AO	
0-10V DC XTR	
750-559/040-000	

4	
0 ... 10 V	
$> 5 \text{ k}\Omega$	
12 bits	
10 ms	
$< \pm 0.1 \%$ of largest measurement range	
$< \pm 0.01 \%$ /K of largest measurement range	
5 VDC via data contacts	
24 VDC ($-25 \dots +30 \%$) Specified values for ambient temperatures under laboratory conditions $+15 \dots +35 \text{ }^\circ\text{C}$. Derating for $-40 \dots +55 \text{ }^\circ\text{C}$: 24 V ($-25 \dots +20 \%$)*. Derating for $+55 \dots +70 \text{ }^\circ\text{C}$: 24 V ($-25 \dots +10 \%$)*.	
125 mA	
1 kV	
4 x 16 bits data, 4 x 8 bits control/status (optional)	
$-40 \dots +70 \text{ }^\circ\text{C}$	
12 x 67.8 x 100 mm	
CE, UL 508, ANSI/ISA	
wago.com/750-559/040-000	

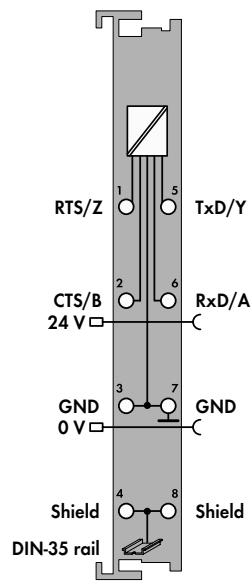
*Including 15 % residual ripple (lower limit -27.5%)

*Including 15 % residual ripple (lower limit -27.5%)

RS-232/485 Serial Interface



RS-232/485 Serial Interface; extreme



Item description	RS232/485 Interface
Version	XTR
Item no.	750-652/040-000
Technical Data	
Type of signal	RS-232 / RS-422 / RS-485
Transmission channels	1 TxD / 1 RxD, full-duplex, half-duplex
Baud rate	9600 baud (default setting), 300 baud ... 115200 baud
Parity	None/Odd/Even
Number of data bits	7/8, adjustable
Number of stop bits	1/2, adjustable
Buffer	2560 bytes for reception / 512 bytes for transmission
System supply voltage	24 VDC (–25 ... +30 %) Specified values for ambient temperatures under laboratory conditions +15 ... +35 °C. Derating for –40 ... +55 °C: 24 V (–25 ... +20 %)*. Derating for +55 ... +70 °C: 24 V (–25 ... +10 %)*.
Current consumption, system supply	85 mA
Rated surge voltage	1 kV
Internal data width	8, 24 or 48 bytes (parametrizable)
Ambient temperature (operation)	–40 ... +70 °C
Dimensions W x H x D	12 x 67.8 x 100 mm
Approvals	CE, UL, Marine, UL 508, ANSI/ISA
Data sheet and further information, see:	wago.com/750-652/040-000

*Including 15 % residual ripple (lower limit –27.5 %)

Mini-WSB Quick Marking System
see Full Line Catalog, Volume 6

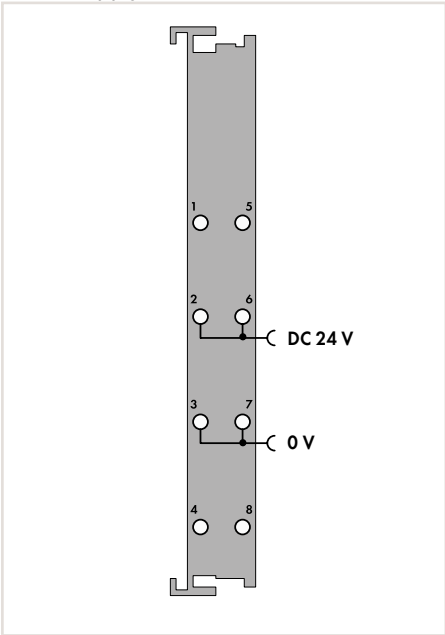
DIN rails and tool
see Section 11

Approvals and corresponding ratings,
see Page 523 or www.wago.com

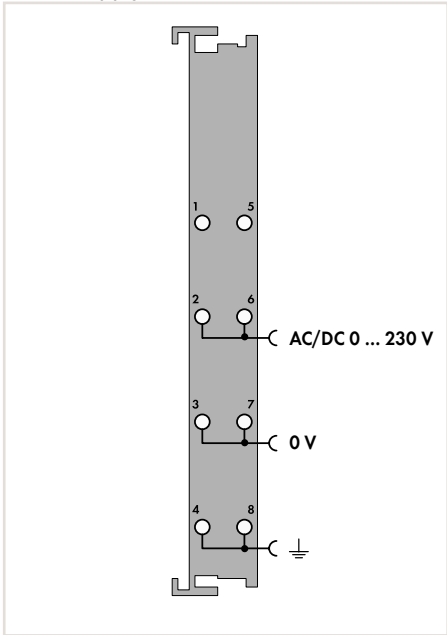
Power Supply, 24 VDC or 0 ... 230 V AC/DC



Power Supply; 24 VDC; extreme



Power Supply; 0 ... 230 V AC/DC; extreme



Item description
Version
Item no.

Power Supply
24 VDC XTR
750-602/040-000

Power Supply
0-230 VAC/VDC XTR
750-612/040-000

Technical Data	
System supply voltage	
Field supply voltage	
Power jumper contact current carrying capacity	
Rated surge voltage	
Overvoltage category	
Ambient temperature (operation)	
Dimensions W x H x D	
Approvals	
Data sheet and further information, see:	

24 VDC (–25 ... +30 %) Specified values for ambient temperatures under laboratory conditions +15 ... +35 °C. Derating for –40 ... +55 °C: 24 V (–25 ... +20 %)*. Derating for +55 ... +70 °C: 24 V (–25 ... +10 %)*.
24 VDC, via power jumper contacts
10 A
1 kV
–40 ... +70 °C
12 x 67.8 x 100 mm
CE, Marine, UL 508, ANSI/ISA
wago.com/750-602/040-000

0 ... 230 V AC/DC (–20 ... +25 %), via power jumper contacts
10 A
5.0 kV (EN 60870-2-1 / Class VW3); 6.0 kV (UL 508); 6.0 kV (EN 60664-1 / up to 4,000 m above sea level); 4.0 kV (EN 60664-1 / > 4,000 m up to 5,000 m above sea level)
Nominal voltage 230 V: IV (EN 60664-1 / up to 4,000 m above sea level); III (EN 60664-1 / > 4,000 m up to 5,000 m above sea level)
–40 ... +70 °C
12 x 67.8 x 100 mm
CE, Marine, UL 508, ANSI/ISA
wago.com/750-612/040-000

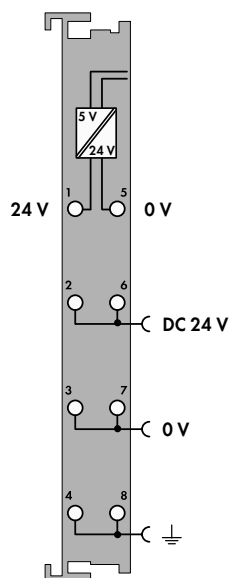
*Including 15 % residual ripple (lower limit –27.5 %)

This I/O module is used to provide the applied supply voltage to the field devices connected to the downstream I/O modules.

This I/O module is used to provide the applied supply voltage to the field devices connected to the downstream I/O modules.

System Power Supply, 24 VDC

System Power Supply; 24 VDC; extreme



Item description

Version

Item no.

System Power Supply

24 VDC XTR

750-613/040-000

Technical Data

System supply voltage

24 VDC (–25 ... +30 %)
Specified values for ambient temperatures under laboratory conditions +15 ... +35 °C.
Derating for –40 ... +55 °C: 24 V (–25 ... +20 %)*.
Derating for +55 ... +70 °C: 24 V (–25 ... +10 %)*.

Input current typ. at rated load (24 V)

500 mA

Total current for system supply

2000 mA

Field supply voltage

24 VDC, via power jumper contacts

Power jumper contact current carrying capacity

10 A

Rated surge voltage

1 kV

Ambient temperature (operation)

–40 ... +70 °C

Dimensions W x H x D

12 x 67.8 x 100 mm

Approvals

CE, Marine, UL 508, ANSI/ISA

Data sheet and further information, see:

wago.com/750-613/040-000

*Including 15 % residual ripple (lower limit –27.5 %)

This I/O module is used to provide the applied supply voltage to the field devices connected to the downstream I/O modules. It also stands as an additional system supply for large nodes, to cover the power demands of the I/O modules themselves.

Mini-WSB Quick Marking System
see Full Line Catalog, Volume 6

DIN rails and tool
see Section 11

Approvals and corresponding ratings,
see Page 523 or www.wago.com

Filter module for field-side power supply (surge) or supply filter

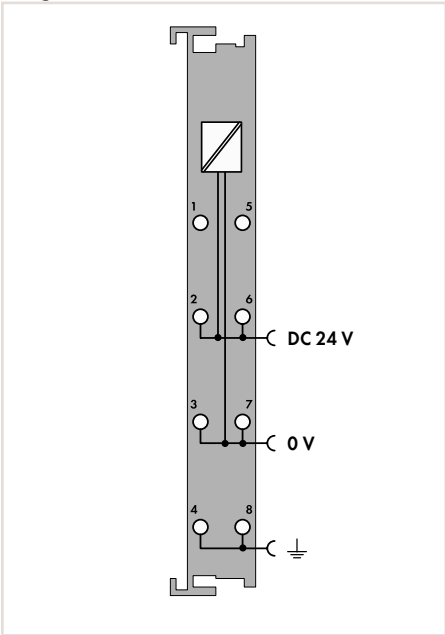


Figure: 750-624/040-001

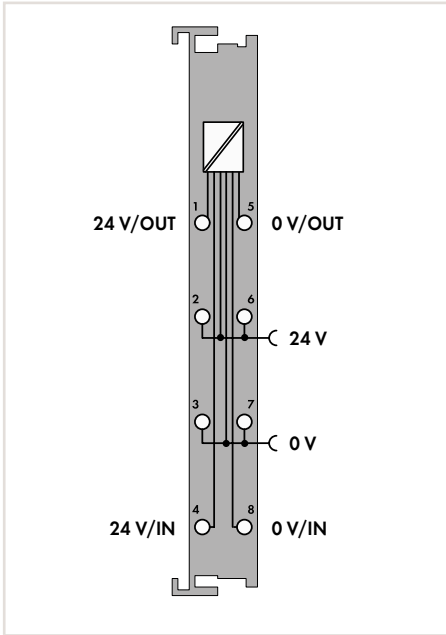


Figure: 750-626/040-000

Filter module for field-side power supply (surge); 24 VDC; extreme



Supply Filter; 24 VDC; Higher isolation, extreme



Item description
Version
Item no.

Field Supply Filter
24 VDC XTR
750-624/040-001

Supply Filter
24 VDC HI XTR
750-626/040-000

Technical Data	
System supply voltage	
Current via system voltage max.	
Field supply voltage	
Power jumper contact current carrying capacity	
Rated surge voltage	
Usage	
Ambient temperature (operation)	
Dimensions W x H x D	
Approvals	
Data sheet and further information, see:	

24 VDC (–25 ... +30 %) Specified values for ambient temperatures under laboratory conditions +15 ... +35 °C. Derating for –40 ... +55 °C: 24 V (–25 ... +20 %)*. Derating for +55 ... +70 °C: 24 V (–25 ... +10 %)*.
24 VDC, via power jumper contacts
10 A
1 kV
In marine and onshore/offshore applications, as well as in telecontrol and rail technology
–40 ... +70 °C
12 x 67.8 x 100 mm
CE, Marine, UL 508, ANSI/ISA
wago.com/750-624/040-001

24 VDC (–25 ... +30 %) Specified values for ambient temperatures under laboratory conditions +15 ... +35 °C. Derating for –40 ... +55 °C: 24 V (–25 ... +20 %)*. Derating for +55 ... +70 °C: 24 V (–25 ... +10 %)*.
1,5 A
24 VDC, via power jumper contacts
10 A
1 kV
In marine and onshore/offshore applications, as well as in telecontrol and rail technology
–40 ... +70 °C
12 x 67.8 x 100 mm
CE, Marine, UL 508, ANSI/ISA
wago.com/750-626/040-000

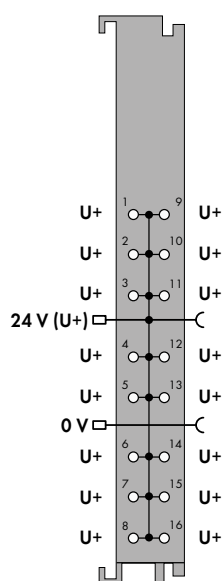
*Including 15 % residual ripple (lower limit –27.5 %)

Potential Distribution

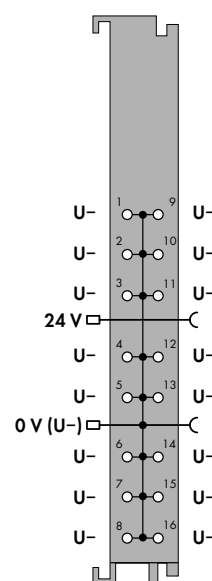


Figure: 750-1605/040-000

Potential Distribution, 16-way 24 V, extreme



Potential Distribution, 16-way 0 V, extreme



Item description
Version
Item no.

Potential Distribution
16*24V XTR
750-1605/040-000

Potential Distribution
16*0V XTR
750-1606/040-000

Technical Data

System supply voltage
Power jumper contact current carrying capacity
Rated surge voltage
Ambient temperature (operation)
Dimensions W x H x D
Approvals
Data sheet and further information, see:

24 VDC (–25 ... +30 %)
Specified values for ambient temperatures under laboratory conditions +15 ... +35 °C.
Derating for –40 ... +55 °C: 24 V (–25 ... +20 %)*.
Derating for +55 ... +70 °C: 24 V (–25 ... +10 %)*.
10 A
1 kV
–40 ... +70 °C
12 x 69.8 x 100 mm
CE, Marine, UL 508, ANSI/ISA
wago.com/750-1605/040-000

24 VDC (–25 ... +30 %)
Specified values for ambient temperatures under laboratory conditions +15 ... +35 °C.
Derating for –40 ... +55 °C: 24 V (–25 ... +20 %)*.
Derating for +55 ... +70 °C: 24 V (–25 ... +10 %)*.
10 A
1 kV
–40 ... +70 °C
12 x 69.8 x 100 mm
CE, Marine, UL 508, ANSI/ISA
wago.com/750-1606/040-000

*Including 15 % residual ripple (lower limit –27.5 %)

*Including 15 % residual ripple (lower limit –27.5 %)

Mini-WSB Quick Marking System
see Full Line Catalog, Volume 6

DIN rails and tool
see Section 11

Approvals and corresponding ratings,
see Page 523 or www.wago.com

Distance Module or End Module

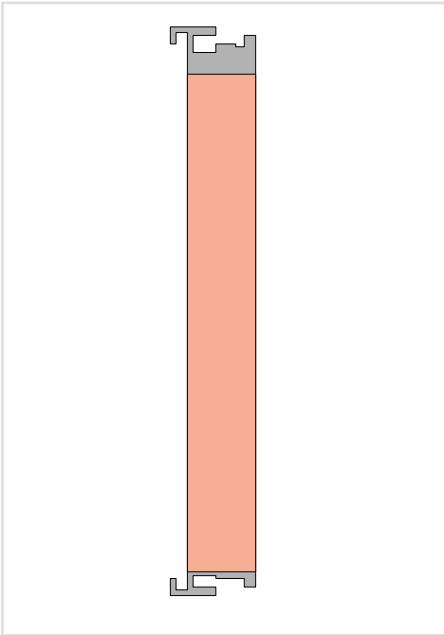


Figure: 750-616/040-000

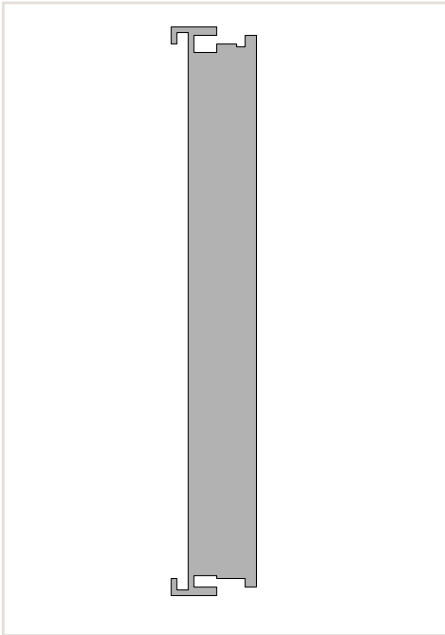


Figure: 750-600/040-000

Distance Module, extreme



End Module, extreme



Item description	Distance Module	End Module
Version	XTR	XTR
Item no.	750-616/040-000	750-600/040-000

Technical Data

Ambient temperature (operation)	-40 ... +70 °C	-40 ... +70 °C
Dimensions W x H x D	12 x 69.8 x 100 mm	12 x 67.8 x 100 mm

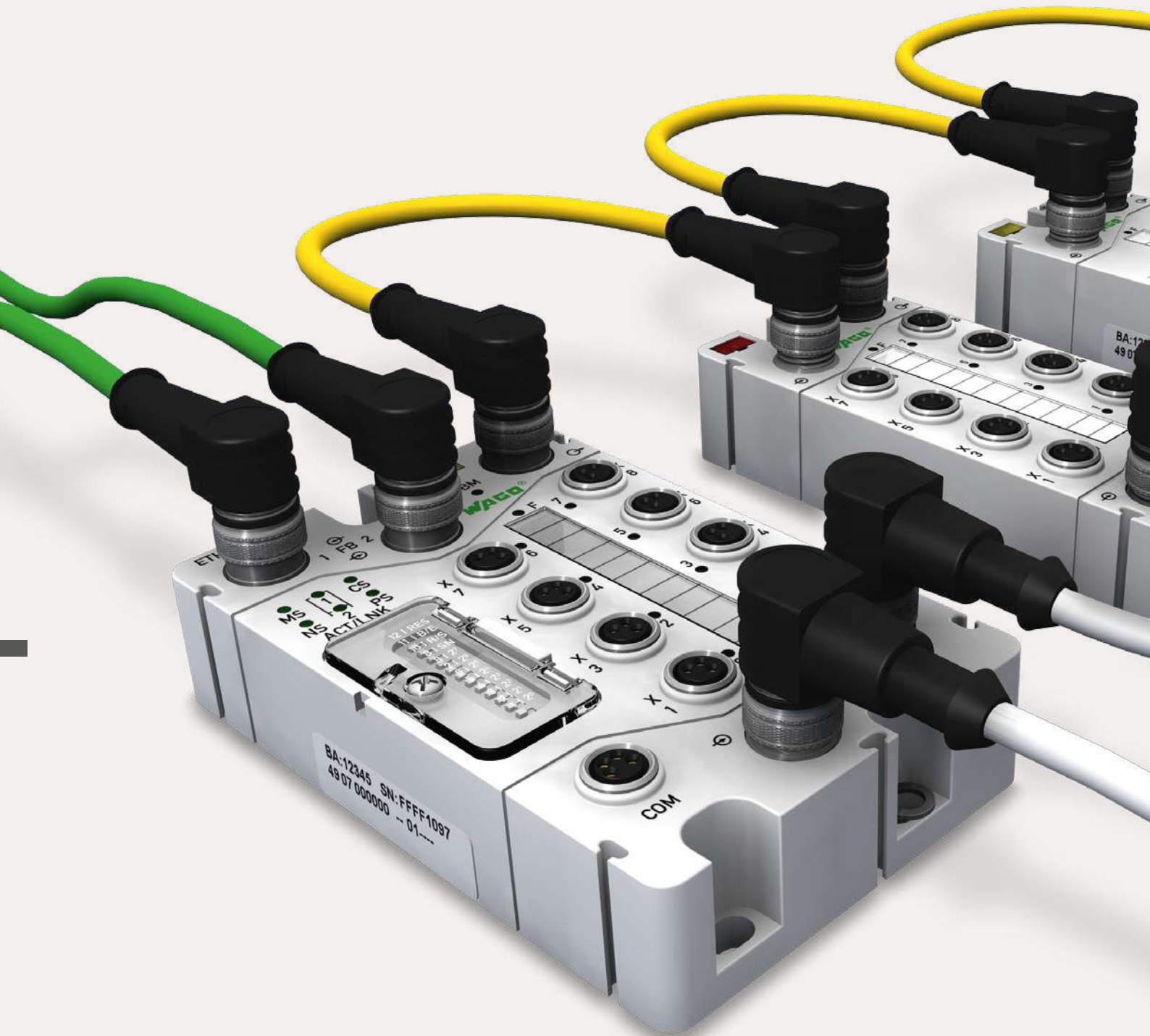
Approvals

CE,  Marine,  UL 508, ANSI/ISA	CE,  Marine,  UL 508, ANSI/ISA

Data sheet and further information, see:

wago.com/750-616/040-000	wago.com/750-600/040-000

 A separation module visually divides a fieldbus node into sections. Note: Operation of the adjacent I/O modules requires a supply module. After the fieldbus node is assembled with the correct buscoupler and selected I/O modules, the end module is snapped onto the assembly. It completes the internal data circuit and ensures correct data flow. |



SPEEDWAY I/O-System

750 and 753 I/O-System

- Highly versatile
- More than 500 modules available
- Functional safety
- Ex i

750 XTR I/O-System

For demanding applications in which the following are critical:

- Extreme temperature stability
- Immunity to electromagnetic interference and impulse voltages
- Vibration and shock resistance

SPEEDWAY I/O-System

- Uncompromising protection, even in the harshest environments outside the switch cabinet
- Degree of protection: IP67
- Fully encapsulated

◀ ◀ Section 4

◀ Section 5

SPEEDWAY I/O-System

Contents

			Page
	General Product Information		320
	Item Number Key		321
	Interfaces and Types		322
	Application and Installation Instructions		324
	Standards and Rated Conditions		326
	Approvals		327
	Description	Item No.	IF: Interference-Free
	Fieldbus Couplers	FC PROFINET 8DI 24VDC	767-1201 328
		FC PROFIBUS 8DI 24VDC	767-1101 329
		FC ETHERNET 8DI 24VDC	767-1301 330
		FC sercos 8DI 24VDC	767-1311 331
		FC DeviceNet 8DI 24VDC	767-1401 332
		FC CANopen 8DI 24VDC	767-1501 333
	Digital Input Modules (DI)	8DI 24 VDC 8xM8	767-3801 334
		8DI 24 VDC LSS 8xM8	767-3803 334
		8DI 24 VDC 4xM12	767-3802 335
		8DI 24 VDC LSS 4xM12	767-3804 335
		8DI 24 VDC 8xM12	767-3805 336
		8DI 24 VDC HS 4xM12	767-3806 337
	Digital Output Modules (DO)	8DO 24 VDC 0.5A 8xM8	767-4801 767-4801/000-800 338
		8DO 24 VDC 2A 8xM8	767-4803 767-4803/000-800 338
		8DO 24 VDC 0.5A LSS 8xM8	767-4805 339
		8DO 24 VDC 0.5A 4xM12	767-4802 767-4802/000-800 340
		8DO 24 VDC 2A 4xM12	767-4804 767-4804/000-800 340
		8DO 24 VDC 0.5A LSS 4xM12	767-4806 341
		8DO 24 VDC 0.5A 8xM12	767-4807 767-4807/000-800 342
		8DO 24 VDC 0.1A HS 4xM12	767-4808 343
	Digital Input/Output Modules (DIO)	8DIO 24 VDC 0.5A 8xM8	767-5801 767-5801/000-800 344
		8DIO 24 VDC 0.5A 4xM12	767-5802 767-5802/000-800 345
		8DIO 24 VDC 0.5A 8xM12	767-5803 767-5803/000-800 346
		4DIO 24 VDC 0.2A HS 4xM12	767-5401 347
	Analog Input Modules (AI)	4AI U/I 4xM12	767-6401 348
		4AI RTD 4xM12	767-6402 349
		4AI TC 4xM12	767-6403 349
	Analog Output Modules (AO)	4AO U/I 4xM12	767-7401 350
	Function and Technology Modules	TTL Inc. Encoder/ SSI 4xM12	767-5201 351
		HTL-Inc. Encoder/ Counter 4xM12	767-5202 352
	Communication Modules	RS232/422/485 Interface 4xM12	767-5203 353
		RS232/485 Movilink Interface 4xM12	767-5204 354
	Supply Modules	Power Divider 1xM23 + 6xM12	767-9101 355
	Accessories		
		Marking and Mounting Accessories	356
		S-bus, supply, PROFIBUS, ETHERNET, sercos, CANopen and DeviceNet cables	358
		Configurable connectors	370

SPEEDWAY I/O-System

General Product Information

For Cabinet-Free Data Acquisition

Where discrete wiring was previously required, fieldbuses now communicate between controller, system and machine.

Depending on the application, cabinet-free automation systems help minimize costs for planning, start-up and maintenance.

In addition to requiring a high degree of protection, a robust design and standardized connection technology, there is an increasing demand for advanced IP67 features that were once reserved only for IP20 systems, including:

- Real-time capable (isochronous data acquisition/output)
- Parameterizable
- Diagnostic capable
- Upgradable

Connect the switch cabinet directly to the field level without sacrificing functionality — SPEEDWAY perfectly tailors machines to meet specific, decentralized needs. Configuration is both easy and flexible, with changes made safely and quickly (plug & play).

Uncompromising Protection, Even in the Harshest Environments

Every module utilizes IP67-grade protection and robust construction. These fully encapsulated modules safeguard system operation, even when subjected to temperature extremes and prolonged periods of vibration. When combined, these robust design elements ensure long-term electronic circuit protection. Additionally, moisture cannot penetrate the units to cause damage (e.g., hairline cracks).

Segmented electromagnetic shielding consisting of a metalized housing and shield plating guarantees optimal electromagnetic compatibility within the housing. Potential interferences are directly discharged via the modules' attachments to the machine or system. Even in sub-zero temperatures, the WAGO SPEEDWAY I/O SYSTEM performs reliably.

Modular Design

WAGO 767 SPEEDWAY is a fieldbus-independent modular IP67 I/O system. It is linked via a fieldbus coupler with a higher-level controller. The fieldbus coupler already has digital inputs. An integrated system bus interface connects to other I/O modules.

Fieldbus couplers and I/O modules can be extensively parameterized, allowing direct field-side acquisition and transmission of signals depending on the application needs.

Up to:

- 64 I/O modules per station
- 8 channels per module
- 520 channels per station
- 50 m between two modules
- 500 m total extension per station

Ergonomic Design

Standardized M8, M12 and M23 connections (metal design) ensure easy and safe wiring. The fieldbus, system bus, power supply and sensors/actuators are connected via several coded connectors. This streamlined approach prevents wiring errors.

To accommodate custom marking, the modules have marking strips and a WMB plate. Both the LEDs and marking field are uniquely assigned to the connection.

Flexible Assembly

The modules can be directly mounted on machines. Extensive engineering ensures compliance with standardized specifications from CNOMO guidelines regarding the spacing of assembly drill holes that are often used in passive distributor or sensor/actuator boxes. Adapters for both rail- and machine-mount brackets are also available.

Exceptional Degrees of Freedom

Featuring update capability, the SPEEDWAY I/O-System makes it easy to update fieldbus couplers and I/O module firmware to incorporate new functions. Integrated system parameter handling stores and loads parameter settings and checks that the replacement module is correct when installed.

With option handling, variable I/O station configurations, which can occur when tools are changed in a machining center, can be implemented without engineering via PROFIBUS.

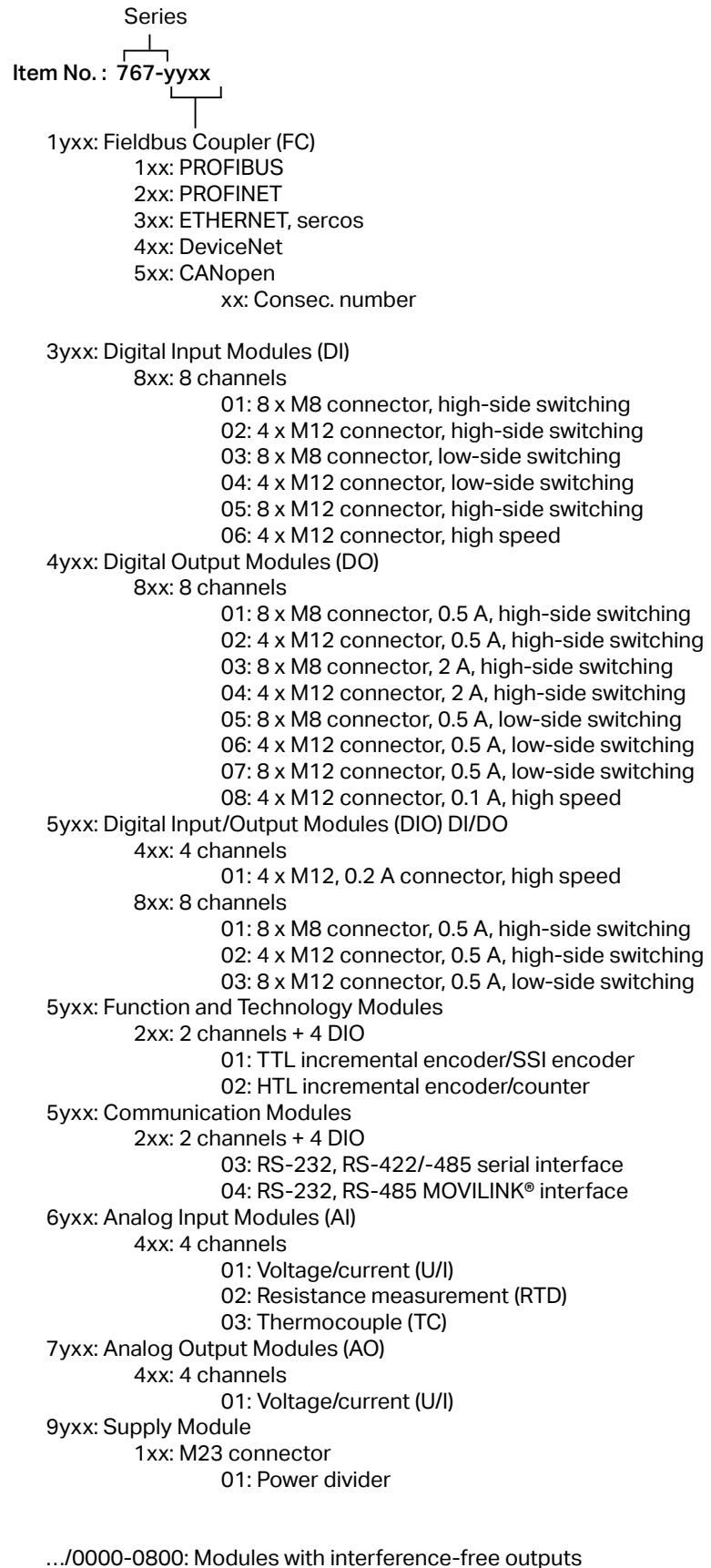
Advantages:

- Fully encapsulated for harsh environmental conditions
- Fieldbus-independent — Support all standard fieldbus protocols & ETHERNET standards
- Real-time capability up to isochronous mode for selected ETHERNET-based fieldbuses
- Exclusive use of standard pluggable connectors
- Flexible mounting options

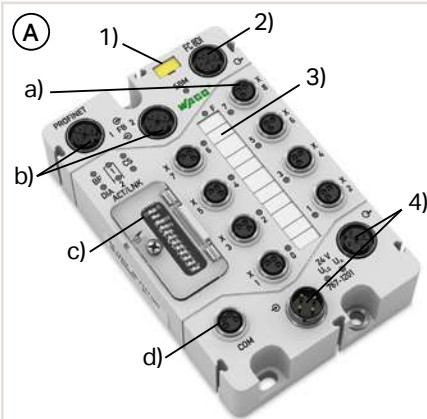
SPEEDWAY I/O-System

Item Number Key

Explanation of the components of an item number key



SPEEDWAY I/O-System Interfaces and Types



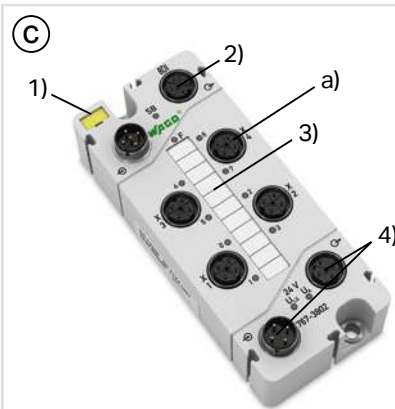
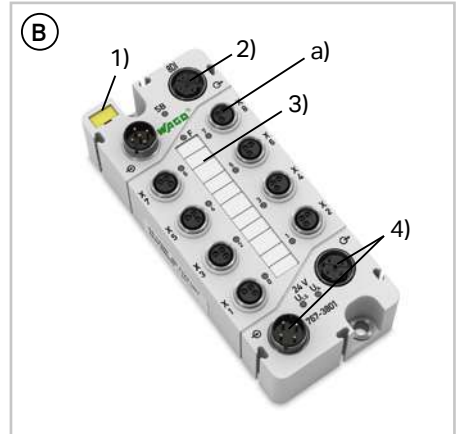
- (1) WMB module marking
(2) M12 system bus connection
(3) Sensor/actuator marking
(4) M12 supply connections

Housing Design Fieldbus Coupler (A)

- M8 sensor/actuator connections (a)
- M12 fieldbus connections (b)
- Control panel (c)
- Service connection M8 (d)
- W x H x D (mm) 75 x 35.7 x 117

Housing Design 8 x M8 I/O Module (B)

- M8 sensor/actuator connections (a)
- W x H x D (mm) 50 x 35.7 x 117

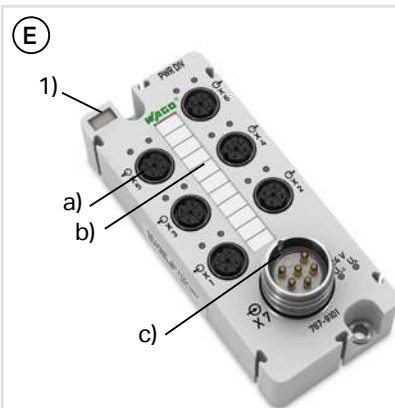
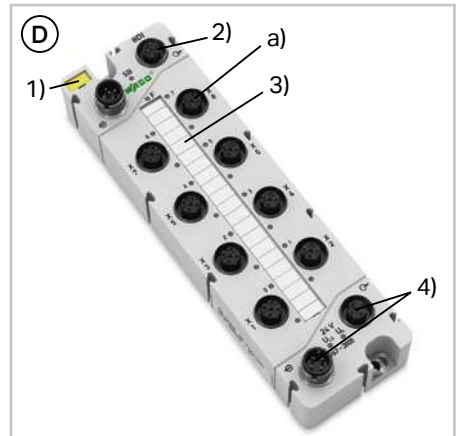


Housing Design 4 x M12 I/O Module (C)

- Sensor/actuator connections M12 (a)
- W x H x D (mm) 50 x 35.7 x 117

Housing Design 8 x M12 I/O Module (D)

- Sensor/actuator connections M12 (a)
- W x H x D (mm) 50 x 35.7 x 170

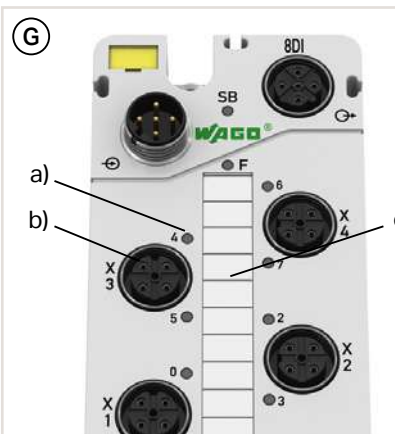
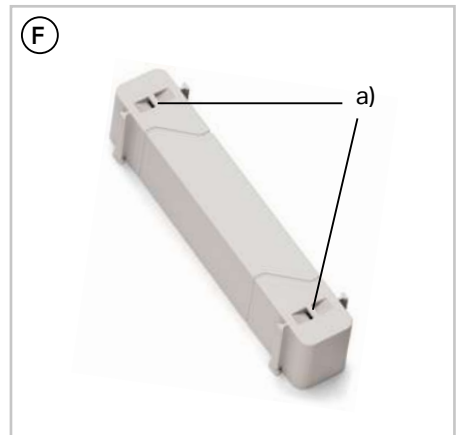


Power Divider Housing Design (E)

- Supply outputs M12 (a)
- Supply output marking (b)
- Supply input M23 (c)
- W x H x D (mm) 50 x 35.7 x 117

Spacer Module (F)

- Cable tie mounts (a)
- W x H x D (mm) 20 x 25 x 117



Signaling (G)

- Per channel 1–2 LEDs (a)
- Unique assignment to the connector (b)
- Unique assignment to the marking (c)

Degree of Protection (H)

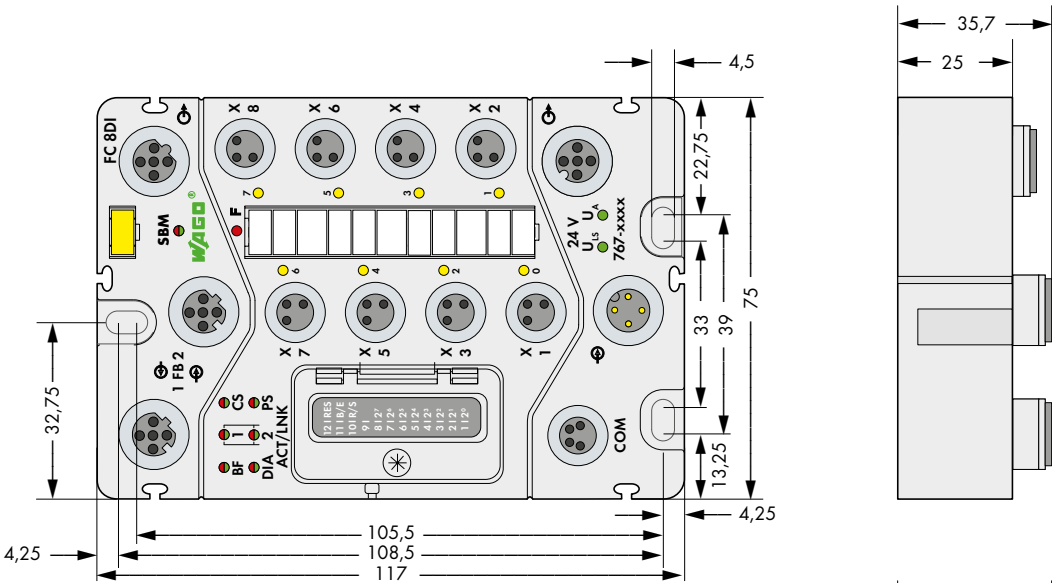
- All modules are fully encapsulated
- Degree of protection: IP67
- Printing on back of module details pin assignment



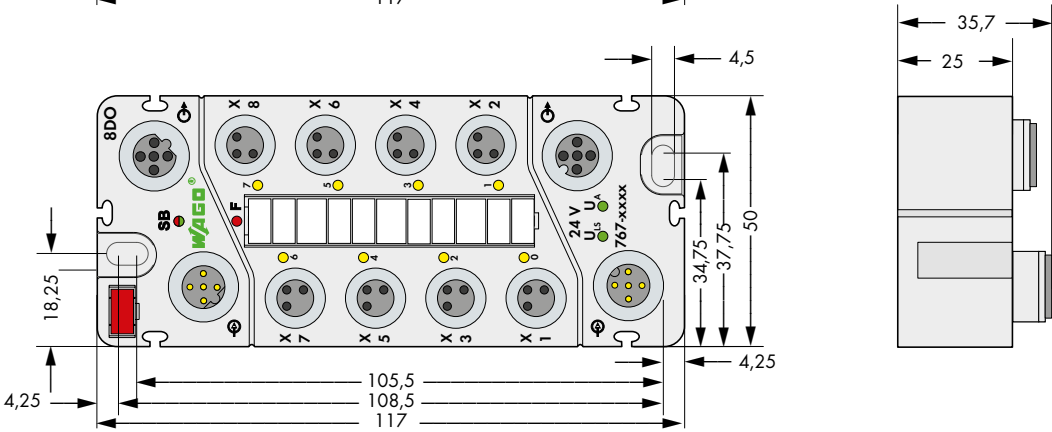
SPEEDWAY I/O-System

Interfaces and Types

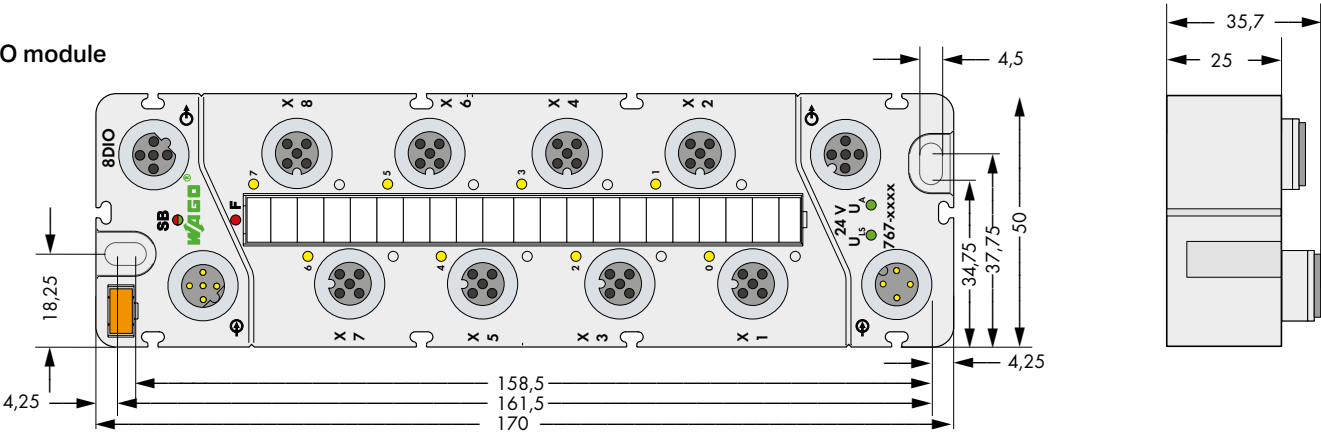
Fieldbus couplers



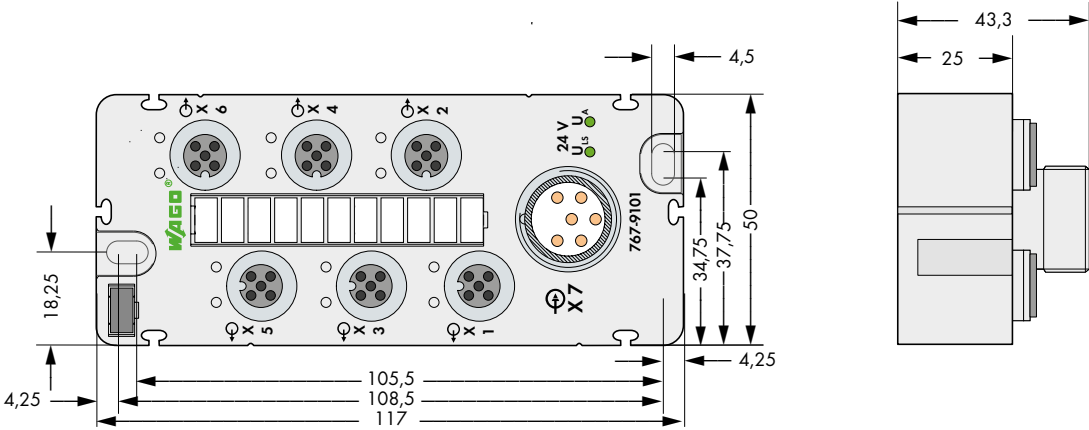
I/O module



I/O module



Power divider



SPEEDWAY I/O-System

Application and Installation Instructions



(A) Carrier rail adapter
(B) Profile rail adapter
Available for fieldbus couplers and I/O modules as accessories



(C) Various versions of drag chain compatible, pre-assembled cables for power supply, system bus, fieldbus and separate pluggable connectors available as accessories!
(D) Cable marking via marker sleeves in different lengths for various core diameters (211 Series)



SPEEDWAY I/O-System

Standards and Rated Conditions

General Specifications

System supply voltage	24 VDC (–25 ... +30 %)
Ambient temperature (operation)	–25 °C ... +60 °C; temperature change 3 K/s
Ambient temperature (storage)	–40 ... +85 °C
Relative humidity	5 ... 95 %, without condensation
Operating altitude	–1000 ... 2000 m; air pressure 1080 ... 795 hPa
Altitude at storage/transport	–1000 ... 3500 m; air pressure 1080 ... 660 hPa
Free fall	≤ 1 m per EN 61131-2
Pollution degree	3 per IEC 60664 (IEC 61131)
Protection class	III per IEC 60536 (VDE 0106, Part 1)
Vibration resistance	5 g acc. IEC 60068-2-6
Shock resistance	Short-term: 50 g/11 ms/half-sine acc. IEC 60068-2-27 Long-term: 30 g/6 ms/half-sine acc. IEC 60068-2-29
EMC immunity to interference	EN 61000-6-2
EMC emission of interference	EN 61000-6-4
Protection type	IP67 (NEMA 6&6P) per DIN 40050 (EN 60529)
Mounting position	Any
Housing material	Polyamide (PA), light gray (RAL7035); Makrolon (address switch cover), transparent; Flammability per UL94-V0; halogen, silicon-free Potting: Polyurethane (PUR), halogen/silicon-free
UV resistance	1,000 h UV continuous light per DIN EN ISO 4892-2B
Maximum contaminant concentration	SO ₂ < 0.5 ppm; H ₂ S < 0.1 ppm
Current carrying capacity (supply connections)	Max. 8 A (ULS: 4 A; UA: 4 A)
Isolation	500 V system/supply

SPEEDWAY I/O-System

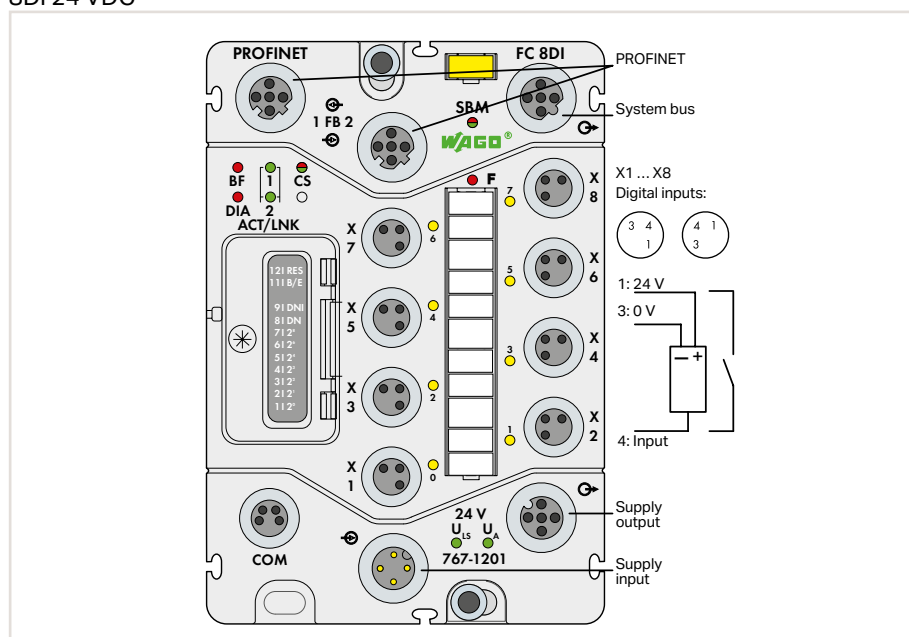
Approvals

Overview of the approvals in the article comparison in Section 12, Technical Appendix, or online under www.wago.com



Fieldbus Coupler PROFINET IO

8DI 24 VDC



Item description

Version

Item no.

FC PROFINET

8DI 24VDC

767-1201

Technical Data

Fieldbus

PROFINET IO features

Protocols

Connection technology: Fieldbus input/output

Input and output process image (internal) max.

System/field supply voltage

Current consumption, system/field supply

Connection technology: System/field supply

Number of digital inputs

Type of signal

Input characteristic

Sensor connection

Input wiring

Input filter (digital)

Input current per channel for signal (1) typ.

Connection technology: Inputs

Field supply voltage

Current consumption, field supply

Number of expendable modules

Connection technology: System bus

Dimensions W x H x D

Approvals

Data sheet and further information, see:

Accessories

GSDML file

DTM (Device Type Manager)

Carrier rail adapter

Profile adapter

M12 protective cap

M12 protective cap (plug)

Spacer module

Fieldbus/system bus/power supply cable
see Page 358 ... 375

Approvals and corresponding ratings,
see Page 524 or www.wago.com

PROFINET IO

Integrated Switch

PROFINET IO (conformity class B),
DCP, LLDP, SNMP, Shared Device

Socket M12, 4 poles, D coded

1024 bytes

24 VDC (–25 ... +30 %), Logic and sensors (U_{LS})

125 mA + sensors (max. 400 mA)

Socket M12, 4 poles, A coded

8

24 VDC

Type 1, acc. to IEC 61131-2

2-conductor, 3-conductor

High-side switching

0,1/ 0,5/ 3/15/20 ms/Filter off; adjustable

2.8 mA

Socket M8, 3 poles

24 VDC (–25 ... +30 %); Actuators (U_A), only for power supply transmission

5 mA, Actuators

64

Socket M12, 5 poles, B coded

75 x 35.7 x 117 mm

CE, UL 508, ATEX/IECEx

www.wago.com/767-1201

Item no.

Download: www.wago.comDownload: www.wago.com

767-121

356

767-123

356

767-8102

357

767-8103

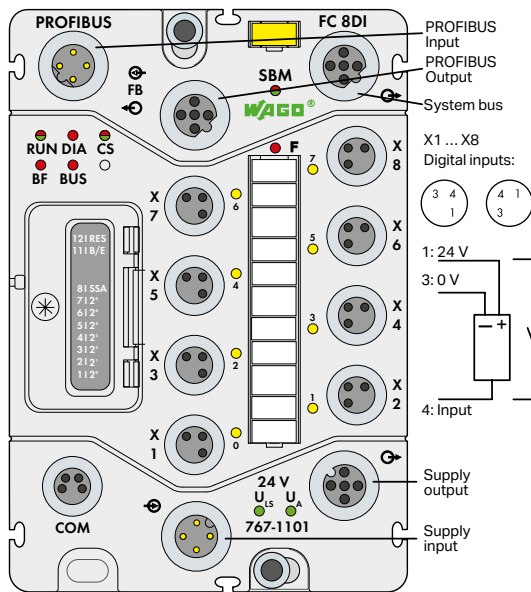
357

767-111

356

Fieldbus Coupler PROFIBUS DP

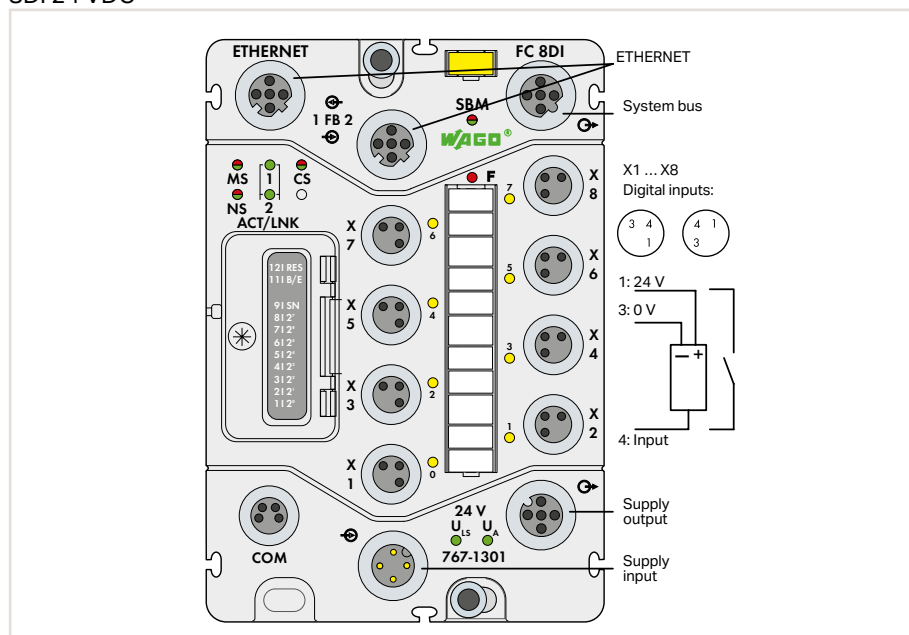
8DI 24 VDC



Item description	FC PROFIBUS	
Version	8DI 24VDC	
Item no.	767-1101	
Technical Data		
Fieldbus	PROFIBUS	
Protocols	PROFIBUS DP/V1	
Connection technology: Fieldbus input/output	Socket M12, 4 poles, B coded	
Baud rate	9.6 kBd ... 12 MBd	
Input and output process image (internal) max.	244 bytes	
System/field supply voltage	24 VDC (–25 ... +30 %), Logic and sensors (U _{LS})	
Current consumption, system/field supply	110 mA + sensors (max. 400 mA)	
Connection technology: System/field supply	Socket M12, 4 poles, A coded	
Number of digital inputs	8	
Type of signal	24 VDC	
Input characteristic	Type 1, acc. to IEC 61131-2	
Sensor connection	2-conductor, 3-conductor	
Input wiring	High-side switching	
Input filter (digital)	0,1/ 0,5/ 3 /15 /20 ms/Filter off; adjustable	
Input current per channel for signal (1) typ.	2.8 mA	
Connection technology: Inputs	Socket M8, 3 poles	
Field supply voltage	24 VDC (–25 ... +30 %); Actuators (U _A), only for power supply transmission	
Current consumption, field supply	5 mA, Actuators	
Number of expendable modules	63	
Connection technology: System bus	Socket M12, 5 poles, B coded	
Dimensions W x H x D	75 x 35.7 x 117 mm	
Approvals	CE,  ,  UL 508,  ATEX/IECEX	
Data sheet and further information, see:	wago.com/767-1101	
Accessories	Item no.	Page
GSD file	Download: www.wago.com	
DTM (Device Type Manager)	Download: www.wago.com	
Carrier rail adapter	767-121	356
Profile adapter	767-123	356
M12 protective cap	767-8102	357
M12 protective cap (plug)	767-8103	357
Spacer module	767-111	356

Fieldbus Coupler ETHERNET

8DI 24 VDC



Item description

Version

Item no.

FC ETHERNET

8DI 24VDC

767-1301

Technical Data

Fieldbus	EtherNet/IP, MODBUS/TCP
Protocols	MODBUS/TCP (UDP), EtherNet/IP
Connection technology: Fieldbus input/output	Socket M12, 4 poles, D coded
Baud rate	10/100 Mbit/s
Input and output process image (internal) max.	2048 bytes
System/field supply voltage	24 VDC (–25 ... +30 %), Logic and sensors (U_{LS})
Current consumption, system/field supply	125 mA + sensors (max. 400 mA)
Connection technology: System/field supply	Socket M12, 4 poles, A coded
Number of digital inputs	8
Type of signal	24 VDC
Input characteristic	Type 1, acc. to IEC 61131-2
Sensor connection	2-conductor, 3-conductor
Input wiring	High-side switching
Input filter (digital)	0,1/ 0,5/ 3 /15 /20 ms/Filter off; adjustable
Input current per channel for signal (1) typ.	2.8 mA
Connection technology: Inputs	Socket M8, 3 poles
Field supply voltage	24 VDC (–25 ... +30 %); Actuators (U_A), only for power supply transmission
Current consumption, field supply	5 mA, Actuators
Number of expendable modules	64
Connection technology: System bus	Socket M12, 5 poles, B coded
Dimensions W x H x D	75 x 35.7 x 117 mm
Approvals	CE, UL 508, ATEX/IECEx
Data sheet and further information, see:	wago.com/767-1301

Accessories

DTM (Device Type Manager)

Carrier rail adapter

Profile adapter

M12 protective cap

M12 protective cap (plug)

Spacer module

Fieldbus/system bus/power supply cable
see Page 358 ... 375

IP67 Cables and Connectors
see Section 11

Approvals and corresponding ratings,
see Page 524 or www.wago.com

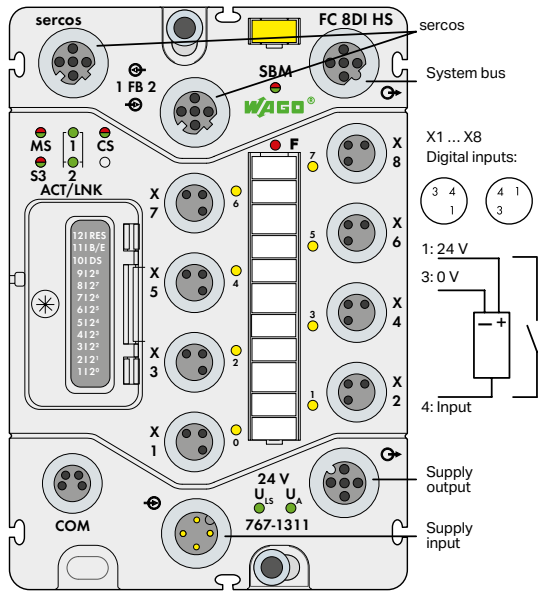
Item no.

Download: www.wago.com

Item no.	Page
767-121	356
767-123	356
767-8102	357
767-8103	357
767-111	356

Fieldbus Coupler sercos

8DI 24 VDC



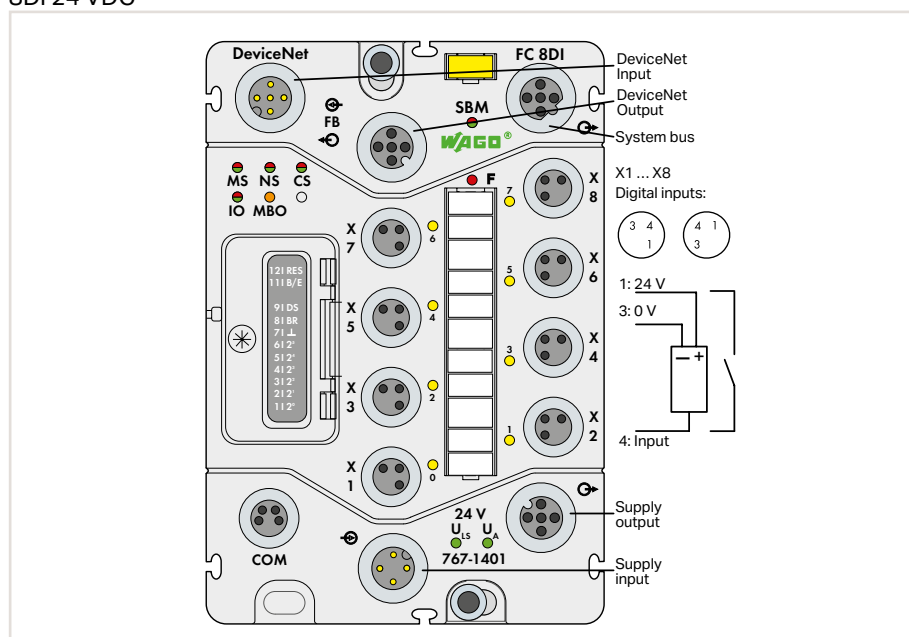
Item description	FC sercos
Version	8DI 24VDC
Item no.	767-1311

Technical Data	
Fieldbus	sercos
Protocols	sercos v1.1.2, TCP/IP, FTP, HTTP
Connection technology: Fieldbus input/output	Socket M12, 4 poles, D coded
Baud rate	100 Mbit/s, full-duplex
Input and output process image (internal) max.	2048 bytes
System/field supply voltage	24 VDC (–25 ... +30 %), Logic and sensors (U_{LS})
Current consumption, system/field supply	140 mA + sensors (max. 400 mA)
Connection technology: System/field supply	Socket M12, 4 poles, A coded
Number of digital inputs	8
Type of signal	24 VDC
Input characteristic	Type 1, acc. to IEC 61131-2
Sensor connection	2-conductor, 3-conductor
Input wiring	High-side switching
Input filter (digital)	0,1/ 0,5/ 3 /15 /20 ms/Filter off; adjustable
Input current per channel for signal (1) typ.	2.8 mA
Connection technology: Inputs	Socket M8, 3 poles
Field supply voltage	24 VDC (–25 ... +30 %); Actuators (U_A), only for power supply transmission
Current consumption, field supply	5 mA, Actuators
Number of expendable modules	64
Connection technology: System bus	Socket M12, 5 poles, B coded
Dimensions W x H x D	75 x 35.7 x 117 mm
Approvals	CE, UL 508, ATEX/IECEx
Data sheet and further information, see:	wago.com/767-1311

Accessories	Item no.	Page
SDDML file	Download: www.wago.com	
DTM (Device Type Manager)	Download: www.wago.com	
Carrier rail adapter	767-121	356
Profile adapter	767-123	356
M12 protective cap	767-8102	357
M12 protective cap (plug)	767-8103	357
Spacer module	767-111	356

Fieldbus Coupler DeviceNet

8DI 24 VDC



Item description

FC DeviceNet

Version

8DI 24VDC

Item no.

767-1401

Technical Data

Fieldbus	DeviceNet
Connection technology: Fieldbus input/output	Socket M12, 5 poles, A coded
Baud rate	125/ 250/ 500 kbit/s
Input and output process image (internal) max.	2048 bytes
System/field supply voltage	24 VDC (–25 ... +30 %), Logic and sensors (U_{LS})
Current consumption, system/field supply	80 mA + sensors (max. 400 mA)
Connection technology: System/field supply	Socket M12, 4 poles, A coded
Number of digital inputs	8
Type of signal	24 VDC
Input characteristic	Type 1, acc. to IEC 61131-2
Sensor connection	2-conductor, 3-conductor
Input wiring	High-side switching
Input filter (digital)	0,1/ 0,5/ 3 /15 /20 ms/Filter off; adjustable
Input current per channel for signal (1) typ.	2.8 mA
Connection technology: Inputs	Socket M8, 3 poles
Field supply voltage	24 VDC (–25 ... +30 %); Actuators (U_A), only for power supply transmission
Current consumption, field supply	5 mA, Actuators
Number of expendable modules	64
Connection technology: System bus	Socket M12, 5 poles, B coded
Dimensions W x H x D	75 x 35.7 x 117 mm
Approvals	CE, UL 508, ATEX/IECEX
Data sheet and further information, see:	wago.com/767-1401

Accessories

EDS file
DTM (Device Type Manager)
Carrier rail adapter
Profile adapter
M12 protective cap
M12 protective cap (plug)
Spacer module

Fieldbus/system bus/power supply cable
see Page 358 ... 375

IP67 Cables and Connectors
see Section 11

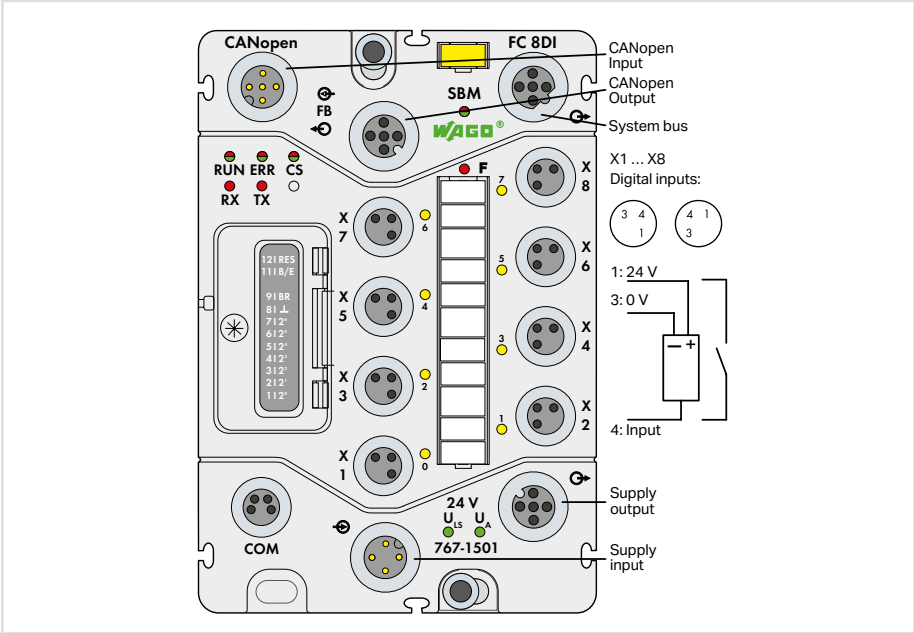
Approvals and corresponding ratings,
see Page 524 or www.wago.com

Item no.	Page
Download: www.wago.com	
Download: www.wago.com	
767-121	356
767-123	356
767-8102	357
767-8103	357
767-111	356

Fieldbus Coupler CANopen



8DI 24 VDC



Item description	FC CANopen
Version	8DI 24VDC
Item no.	767-1501

Technical Data	
Fieldbus	CANopen
Device profile	DS 401 V2.0
Protocols	CANopen acc. to DS-301 V4.01
Connection technology: Fieldbus input/output	Socket M12, 5 poles, A coded
Baud rate	125/ 250/ 500 kbit/s
Input and output process image (internal) max.	512 bytes
System/field supply voltage	24 VDC (–25 ... +30 %), Logic and sensors (U _{LS})
Current consumption, system/field supply	85 mA + sensors (max. 400 mA)
Connection technology: System/field supply	Socket M12, 4 poles, A coded
Number of digital inputs	8
Type of signal	24 VDC
Input characteristic	Type 1, acc. to IEC 61131-2
Sensor connection	2-conductor, 3-conductor
Input wiring	High-side switching
Input filter (digital)	0,1/ 0,5/ 3 /15 /20 ms/Filter off; adjustable
Input current per channel for signal (1) typ.	2.8 mA
Connection technology: Inputs	Socket M8, 3 poles
Field supply voltage	24 VDC (–25 ... +30 %); Actuators (U _A), only for power supply transmission
Current consumption, field supply	5 mA, Actuators
Number of expendable modules	64
Connection technology: System bus	Socket M12, 5 poles, B coded
Dimensions W x H x D	75 x 35.7 x 117 mm
Approvals	CE, UL 508, ATEX/IECEx
Data sheet and further information, see:	wago.com/767-1501

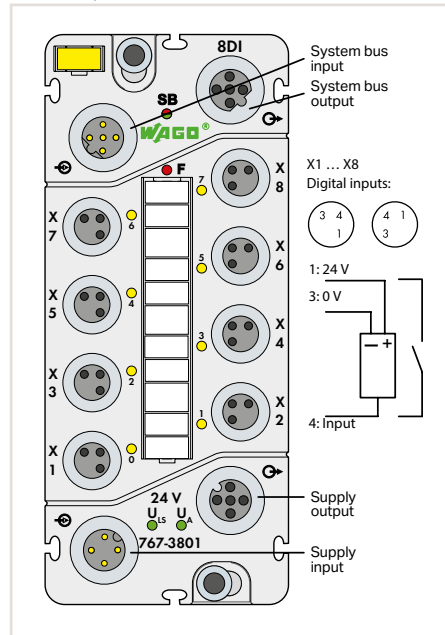
Accessories	Item no.	Page
EDS file	Download: www.wago.com	
DTM (Device Type Manager)	Download: www.wago.com	
Carrier rail adapter	767-121	356
Profile adapter	767-123	356
M12 protective cap	767-8102	357
M12 protective cap (plug)	767-8103	357
Spacer module	767-111	356

8-channel digital input, 8 x M8

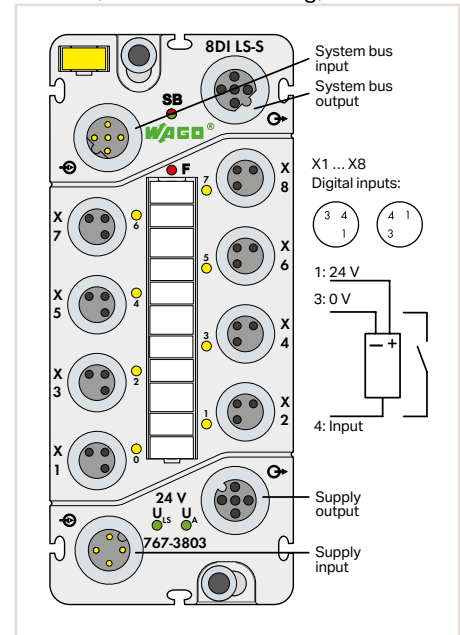


Figure: 767-3801

24 VDC, 8 x M8



24 VDC, Low-side switching, 8 x M8



Item description	8DI	8DI
Version	24 VDC 8xM8	24 VDC LSS 8xM8
Item no.	767-3801	767-3803
Technical Data		
Number of digital inputs	8	8
Type of signal	24 VDC	24 VDC
Input characteristic	Type 2, acc. to IEC 61131-2	"0": (U _{LS} - 5 V) ... U _{LS} ; "1": -3 V ... (U _{LS} - 11 V)
Sensor connection	2-conductor, 3-conductor	2-conductor, 3-conductor
Input wiring	High-side switching	Low-side switching
Input filter (digital)	0.1/ 0.5/ 3 /15 /20 ms/Filter off; adjustable	0.1/ 0.5/ 3 /15 /20 ms/Filter off; adjustable
Input current per channel for signal (1) typ.	7.3 mA	7 mA
Connection technology: Inputs	Socket M8, 3 poles	Socket M8, 3 poles
System/field supply voltage	24 VDC (–25 ... +30 %), Logic und sensors (U _{LS})	24 VDC (–25 ... +30 %), Logic und sensors (U _{LS})
Current consumption, system/field supply	40 mA + sensors (max. 400 mA)	40 mA + sensors (max. 400 mA)
Connection technology: System/field supply	Socket M12, 4 poles, A coded	Socket M12, 4 poles, A coded
Field supply voltage	24 VDC (–25 ... +30 %); Actuators (U _A), only for power supply transmission	24 VDC (–25 ... +30 %); Actuators (U _A), only for power supply transmission
Current consumption, field supply	5 mA, Actuators	5 mA, Actuators
Connection technology: System bus	Socket M12, 5 poles, B coded	Socket M12, 5 poles, B coded
Dimensions W x H x D	50 x 35.7 x 117 mm	50 x 35.7 x 117 mm
Approvals	CE,  UL 508,  ATEX/IECEX	CE,  UL 508,  ATEX/IECEX
Data sheet and further information, see:	wago.com/767-3801	wago.com/767-3803
Accessories		
	Item no.	Page
Marking strip	767-101	357
Marking pen	210-110	357
Spacer module	767-111	356
Carrier rail adapter	767-122	356
Profile adapter	767-124	356
M8 protective cap	756-8101	357
M12 protective cap	767-8102	357
M12 protective cap (plug)	767-8103	357

	Item no.	Page
767-101	357	
210-110	357	
767-111	356	
767-122	356	
767-124	356	
756-8101	357	
767-8102	357	
767-8103	357	

System bus/power supply cable
see Page 358 ... 375

IP67 Cables and Connectors
see Section 11

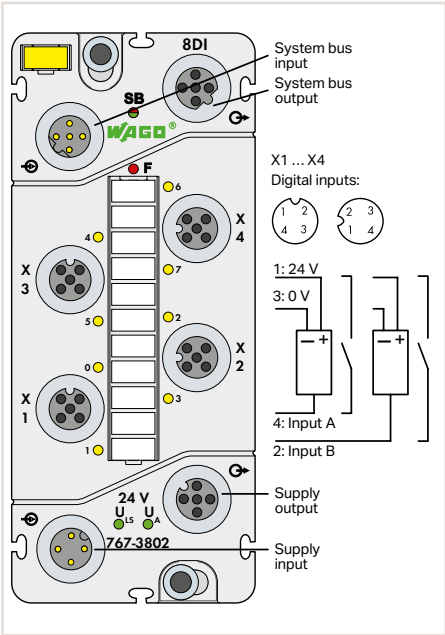
Approvals and corresponding ratings,
see Page 524 or www.wago.com

8-channel digital input, 4 x M12

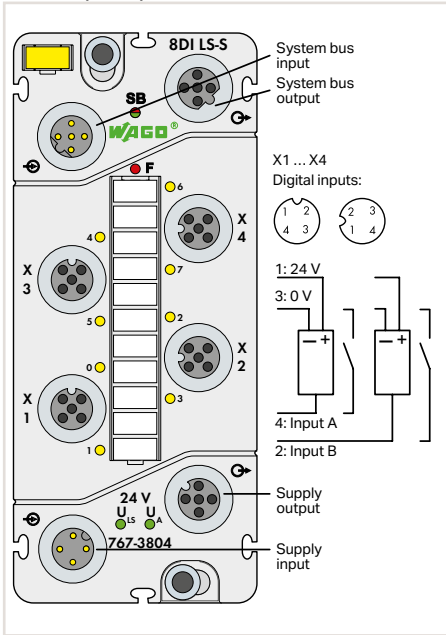


Figure: 767-3802

24 VDC, 4 x M12, two outputs per connector



24 VDC, Low-side switching, 4 x M12, two outputs per connector



Item description	8DI
Version	24 VDC 4xM12
Item no.	767-3802

Technical Data	
Number of digital inputs	8
Type of signal	24 VDC
Input characteristic	Type 2, acc. to IEC 61131-2
Sensor connection	2-conductor, 3-conductor
Input wiring	High-side switching
Input filter (digital)	0.1/ 0.5/ 3 /15 /20 ms/Filter off; adjustable
Input current per channel for signal (1) typ.	7.3 mA
Connection technology: Inputs	Socket M12, 4 poles, A coded
System/field supply voltage	24 VDC (–25 ... +30 %), Logic und sensors (U _{LS})
Current consumption, system/field supply	40 mA + sensors (max. 400 mA)
Connection technology: System/field supply	Socket M12, 4 poles, A coded
Field supply voltage	24 VDC (–25 ... +30 %); Actuators (U _A), only for power supply transmission
Current consumption, field supply	5 mA, Actuators
Connection technology: System bus	Socket M12, 5 poles, B coded
Dimensions W x H x D	50 x 35.7 x 117 mm
Approvals	
Data sheet and further information, see:	

Accessories	
Marking strip	
Marking pen	
Spacer module	
Carrier rail adapter	
Profile adapter	
M12 protective cap	
M12 protective cap (plug)	

8DI
24 VDC 4xM12
767-3802

Item no.	Page
767-102	357
210-110	357
767-111	356
767-122	356
767-124	356
756-8102	357
767-8103	357

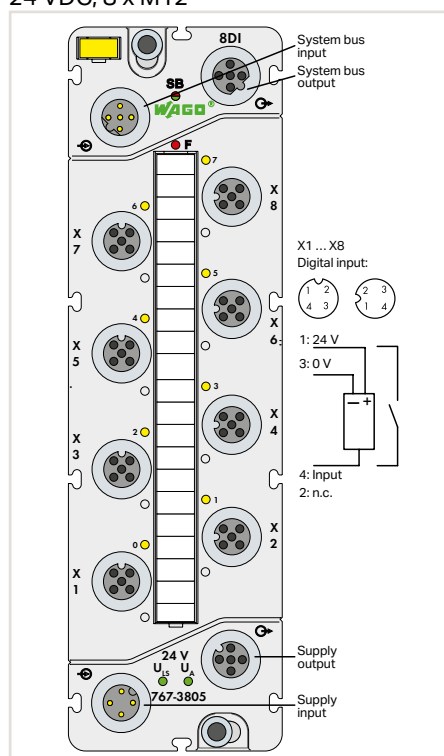
8DI
24 VDC LSS 4xM12
767-3804

Item no.	Page
767-102	357
210-110	357
767-111	356
767-122	356
767-124	356
756-8102	357
767-8103	357

8-channel digital input, 8 x M12



24 VDC, 8 x M12



Item description

Version

Item no.

8DI

24 VDC 8xM12

767-3805

Technical Data

Number of digital inputs	8
Type of signal	24 VDC
Input characteristic	Type 2, acc. to IEC 61131-2
Sensor connection	2-conductor, 3-conductor
Input wiring	High-side switching
Input filter (digital)	0.1/ 0.5/ 3 /15 /20 ms/Filter off; adjustable
Input current per channel for signal (1) typ.	7.3 mA
Connection technology: Inputs	Socket M12, 4 poles, A coded
System/field supply voltage	24 VDC (-25 ... +30 %), Logic und sensors (U _{LS})
Current consumption, system/field supply	40 mA + sensors (max. 400 mA)
Connection technology: System/field supply	Socket M12, 4 poles, A coded
Field supply voltage	24 VDC (-25 ... +30 %); Actuators (U _A), only for power supply transmission
Current consumption, field supply	5 mA, Actuators
Connection technology: System bus	Socket M12, 5 poles, B coded
Dimensions W x H x D	50 x 35.7 x 170 mm
Approvals	CE, UL 508, ATEX/IECEX
Data sheet and further information, see:	wago.com/767-3805

Accessories

Item no.	Page
Marking strip	357
Marking pen	357
Carrier rail adapter	356
Profile adapter	356
M12 protective cap	357
M12 protective cap (plug)	357

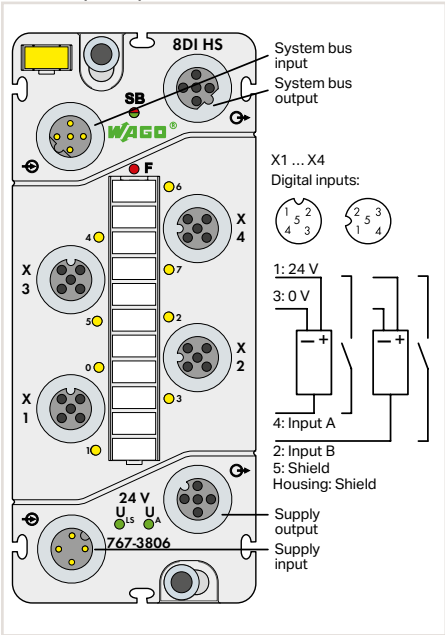
System bus/power supply cable
see Page 358 ... 375

IP67 Cables and Connectors
see Section 11

Approvals and corresponding ratings,
see Page 524 or www.wago.com

8-channel digital input, High-speed

24 VDC, High-Speed, 4 x M12,
two outputs per connector



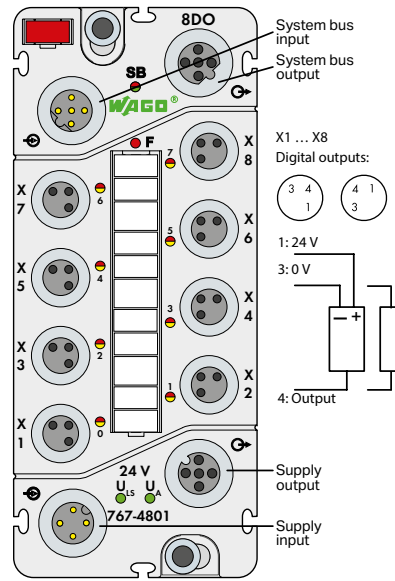
Item description	8DI	
Version	24 VDC HS 4xM12	
Item no.	767-3806	
Technical Data		
Number of digital inputs	8	
Type of signal	24 VDC	
Input characteristic	Type 2, acc. to IEC 61131-2	
Sensor connection	2-conductor, 3-conductor	
Input wiring	High-side switching	
Input filter (digital)	10/ 25/ 50/ 100/ 200 µs/ 1/ 3 ms/Filter off; adjustable	
Input current per channel for signal (1) typ.	2.8 mA	
Connection technology: Inputs	Socket M12, 5 poles, A coded	
System/field supply voltage	24 VDC (–25 ... +30 %), Logic und sensors (U _{LS})	
Current consumption, system/field supply	45 mA + sensors (max. 1.0 A)	
Connection technology: System/field supply	Socket M12, 4 poles, A coded	
Field supply voltage	24 VDC (–25 ... +30 %); Actuators (U _A), only for power supply transmission	
Current consumption, field supply	5 mA, Actuators	
Connection technology: System bus	Socket M12, 5 poles, B coded	
Dimensions W x H x D	50 x 35.7 x 117 mm	
Approvals	CE,  UL 508,  ATEX/IECEX	
Data sheet and further information, see:	wago.com/767-3806	
Accessories		
Marking strip	767-102	357
Marking pen	210-110	357
Spacer module	767-111	356
Carrier rail adapter	767-122	356
Profile adapter	767-124	356
M12 protective cap	756-8102	357
M12 protective cap (plug)	767-8103	357

8-channel digital output, 8 x M8

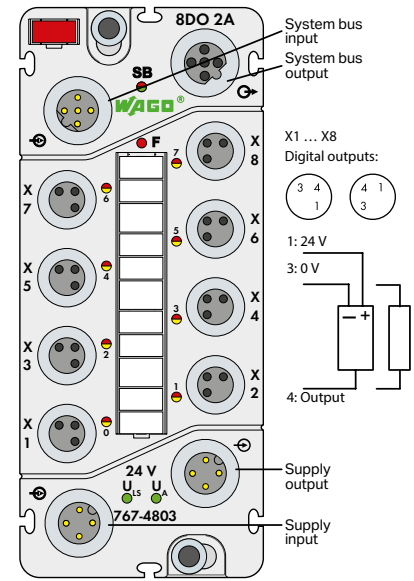
24 VDC, 0.5 A, 8 x M8,
optional: Interference-free



Figure: 767-4801



24 VDC, 2.0 A, 8 x M8,
optional: Interference-free



Item description		8DO	
Version		24 VDC 0.5A 8xM8	24 VDC 0.5A IF 8xM8
Item no.		767-4801	767-4801/000-800
Technical Data			
Interference-free for safety function applications			•
Number of digital outputs		8	
Type of signal		24 VDC	
Output characteristic		High-side switching	
Output current per channel		0.5 A (max. 0.6 A), short-circuit/overload proof	
Load type		Resistive, inductive, lamps	
Actuator connection		2-conductor, 3-conductor	
Switching frequency max.		Inductive load approx. 20 Hz, resistive load approx. 500 Hz, lamp load approx. 500 Hz	
Connection technology: Outputs		Socket M8, 3 poles	
System/field supply voltage		24 VDC (–25 ... +30 %), Logic and sensors (U _{LS})	
Current consumption, system/field supply		45 mA (only logic part)	
Connection technology: System/field supply		Socket M12, 4 poles, A coded	
Field supply voltage		24 VDC (–25 ... +30 %), Actuators (U _A)	
Current consumption, field supply		25 mA + actuators	
Connection technology: System bus		Socket M12, 5 poles, B coded	
Dimensions W x H x D		50 x 35.7 x 117 mm	
Approvals		CE, UL 508, ATEX/IECEx	
Data sheet and further information, see:		wago.com/767-4801	
Accessories		Item no.	Page
Marking strip		767-101	357
Marking pen		210-110	357
Spacer module		767-111	356
Carrier rail adapter		767-122	356
Profile adapter		767-124	356
M8 protective cap		756-8101	357
M12 protective cap		767-8102	357
M12 protective cap (plug)		767-8103	357

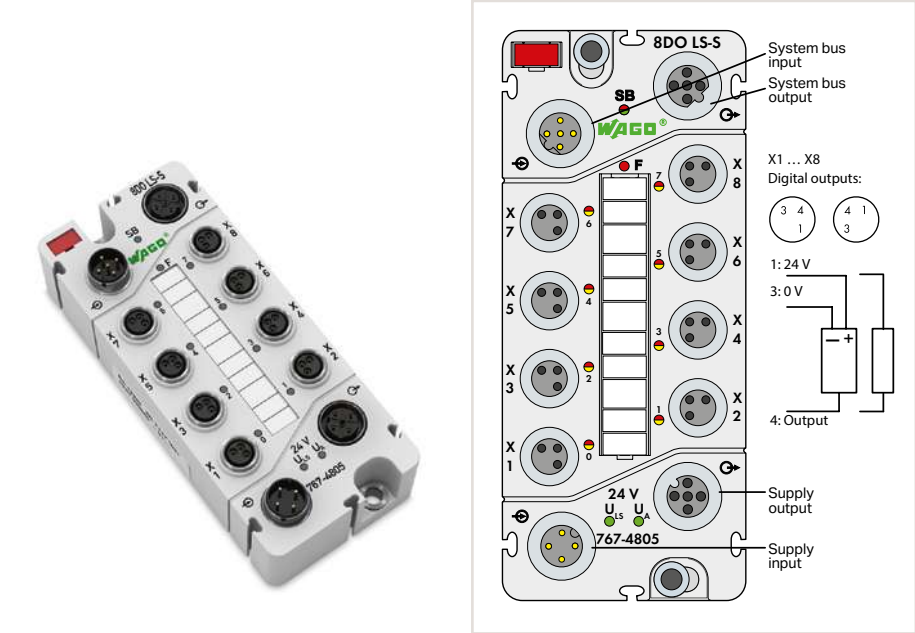
System bus/power supply cable
see Page 358 ... 375

IP67 Cables and Connectors
see Section 11

Approvals and corresponding ratings,
see Page 524 or www.wago.com

8-channel digital output, Low-side switching, 8 x M8

24 VDC, 0.5 A, Low-side switching,
8 x M8



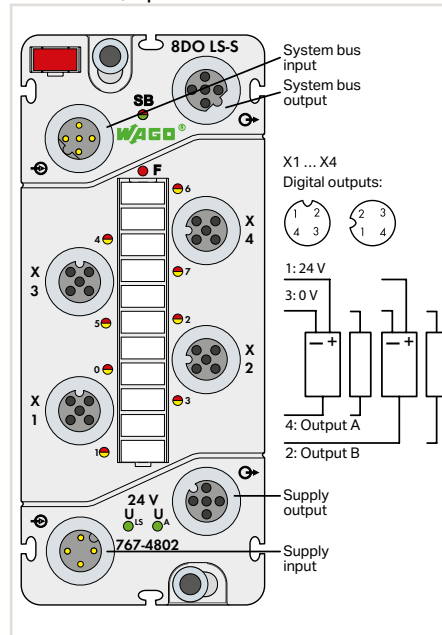
Item description	8DO	
Version	24 VDC 0.5A LSS 8xM8	
Item no.	767-4805	
Technical Data		
Number of digital outputs	8	
Type of signal	24 VDC	
Output characteristic	Low-side switching	
Output current per channel	0.5 A (max. 0.6 A), short-circuit/overload proof	
Load type	Resistive, inductive, lamps	
Actuator connection	2-conductor, 3-conductor	
Switching frequency max.	Inductive load approx. 20 Hz, resistive load approx. 500 Hz, lamp load approx. 500 Hz	
Connection technology: Outputs	Socket M8, 3 poles	
System/field supply voltage	24 VDC (–25 ... +30 %), Logic und sensors (U _{LS})	
Current consumption, system/field supply	40 mA (only logic part)	
Connection technology: System/field supply	Socket M12, 4 poles, A coded	
Field supply voltage	24 VDC (–25 ... +30 %), Actuators (U _A)	
Current consumption, field supply	20 mA + actuators	
Connection technology: System bus	Socket M12, 5 poles, B coded	
Dimensions W x H x D	50 x 35.7 x 117 mm	
Approvals	CE,  UL 508,  ATEX/IECEX	
Data sheet and further information, see:	wago.com/767-4805	
Accessories		
Marking strip	Item no.	Page
Marking pen	767-101	357
Spacer module	210-110	357
Carrier rail adapter	767-111	356
Profile adapter	767-122	356
M8 protective cap	767-124	356
M12 protective cap	756-8101	357
M12 protective cap (plug)	767-8102	357
	767-8103	357

8-channel digital output, 4 x M12

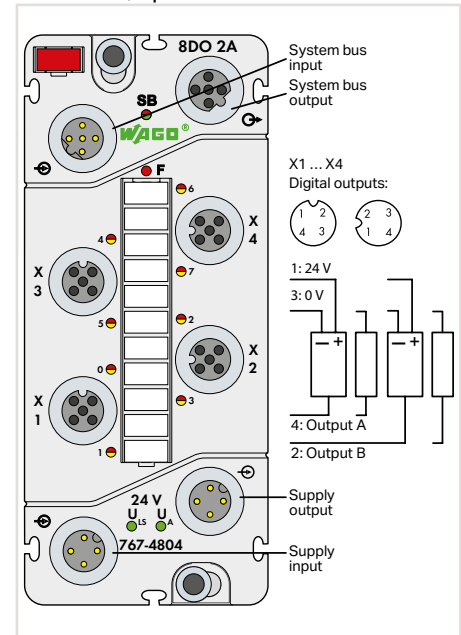
24 VDC, 0.5 A, 4 x M12, two outputs per connector, optional: Interference-free



Figure: 767-4802



24 VDC, 2.0 A, 4 x M12, two outputs per connector, optional: Interference-free



Item description		8DO	
Version		24 VDC 0.5A 4xM12	24 VDC 0.5A IF 4xM12
Item no.		767-4802	767-4802/000-800
Technical Data			
Interference-free for safety function applications		•	
Number of digital outputs		8	
Type of signal		24 VDC	
Output characteristic		High-side switching	
Output current per channel		0.5 A (max. 0.6 A), short-circuit/overload proof	
Load type		Resistive, inductive, lamps	
Actuator connection		2-conductor, 3-conductor	
Switching frequency max.		Inductive load approx. 20 Hz, resistive load approx. 500 Hz, lamp load approx. 500 Hz	
Connection technology: Outputs		Socket M12, 4 poles, A coded	
System/field supply voltage		24 VDC (–25 ... +30 %), Logic and sensors (U _{LS})	
Current consumption, system/field supply		45 mA (only logic part)	
Connection technology: System/field supply		Socket M12, 4 poles, A coded	
Field supply voltage		24 VDC (–25 ... +30 %), Actuators (U _A)	
Current consumption, field supply		25 mA + actuators	
Connection technology: System bus		Socket M12, 5 poles, B coded	
Dimensions W x H x D		50 x 35.7 x 117 mm	
Approvals		CE, UL 508, ATEX/IECEx	
Data sheet and further information, see:		wago.com/767-4802	
Accessories		Item no.	Page
Marking strip		767-102	357
Marking pen		210-110	357
Spacer module		767-111	356
Carrier rail adapter		767-122	356
Profile adapter		767-124	356
M12 protective cap		756-8102	357
M12 protective cap (plug)		767-8103	357

8DO			
24 VDC 2.0A 4xM12	24 VDC 2.0A IF 4xM12		
767-4804	767-4804/000-800		
•			
8			
24 VDC			
High-side switching			
2.0 A (max. 2.4 A), short-circuit/overload proof			
Resistive, inductive, lamps			
2-conductor, 3-conductor			
Inductive load approx. 20 Hz, resistive load approx. 500 Hz, lamp load approx. 500 Hz			
Socket M12, 4 poles, A coded			
24 VDC (–25 ... +30 %), Logic and sensors (U _{LS})			
45 mA (only logic part)			
Socket M12, 4 poles, A coded			
24 VDC (–25 ... +30 %), Actuators (U _A)			
55 mA + actuators			
Socket M12, 5 poles, B coded			
50 x 35.7 x 117 mm			
CE, UL 508, ATEX/IECEx			
wago.com/767-4804			
Item no.	Page		
767-102	357		
210-110	357		
767-111	356		
767-122	356		
767-124	356		
756-8102	357		
767-8103	357		

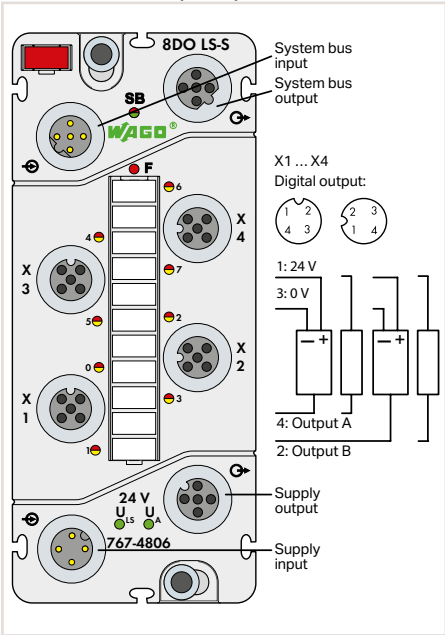
System bus/power supply cable
see Page 358 ... 375

IP67 Cables and Connectors
see Section 11

Approvals and corresponding ratings,
see Page 524 or www.wago.com

8-channel digital output, Low-side switching, 4 x M12

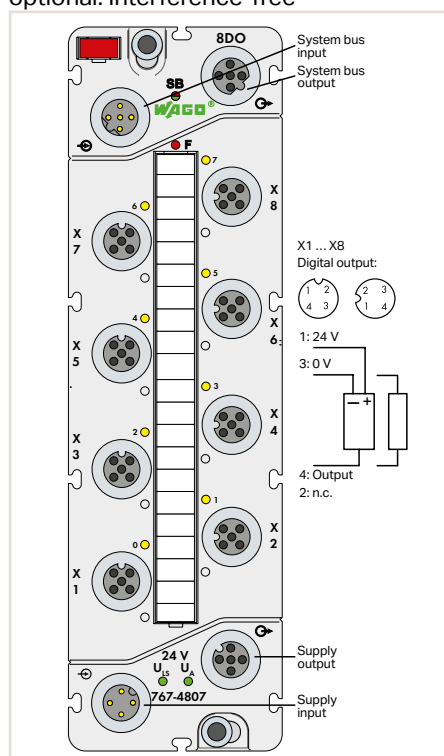
24 VDC, 0.5 A, Low-side switching,
4 x M12, two outputs per connector



Item description	8DO	
Version	24 VDC 0.5A LSS 4xM12	
Item no.	767-4806	
Technical Data		
Number of digital outputs	8	
Type of signal	24 VDC	
Output characteristic	Low-side switching	
Output current per channel	0.5 A (max. 0.6 A), short-circuit/overload proof	
Load type	Resistive, inductive, lamps	
Actuator connection	2-conductor, 3-conductor	
Switching frequency max.	Inductive load approx. 20 Hz, resistive load approx. 500 Hz, lamp load approx. 500 Hz	
Connection technology: Outputs	Socket M12, 4 poles, A coded	
System/field supply voltage	24 VDC (–25 ... +30 %), Logic und sensors (U _{LS})	
Current consumption, system/field supply	40 mA (only logic part)	
Connection technology: System/field supply	Socket M12, 4 poles, A coded	
Field supply voltage	24 VDC (–25 ... +30 %), Actuators (U _A)	
Current consumption, field supply	20 mA + actuators	
Connection technology: System bus	Socket M12, 5 poles, B coded	
Dimensions W x H x D	50 x 35.7 x 117 mm	
Approvals	CE,  UL 508,  ATEX/IECEX	
Data sheet and further information, see:	wago.com/767-4806	
Accessories		
Marking strip	Item no.	Page
Marking pen	767-102	357
Spacer module	210-110	357
Carrier rail adapter	767-111	356
Profile adapter	767-122	356
M12 protective cap	767-124	356
M12 protective cap (plug)	756-8102	357
	767-8103	357

8-channel digital output, 8 x M12

24 VDC, 0.5 A, 8 x M12,
optional: Interference-free



Item description

Version

Item no.

8DO

24 VDC 0.5A 8xM12

767-4807

24 VDC 0.5A IF 8xM12

767-4807/000-800

Technical Data

Interference-free for safety function applications

Number of digital outputs

Type of signal

Output characteristic

Output current per channel

Load type

Actuator connection

Switching frequency max.

Connection technology: Outputs

System/field supply voltage

Current consumption, system/field supply

Connection technology: System/field supply

Field supply voltage

Current consumption, field supply

Connection technology: System bus

Dimensions W x H x D

Approvals

Data sheet and further information, see:

Accessories

Marking strip

Marking pen

Carrier rail adapter

Profile adapter

M12 protective cap

M12 protective cap (plug)

System bus/power supply cable
see Page 358 ... 375

IP67 Cables and Connectors
see Section 11

Approvals and corresponding ratings,
see Page 524 or www.wago.com

8

24 VDC

High-side switching

0.5 A (max. 0.6 A), short-circuit/overload proof

Resistive, inductive, lamps

2-conductor, 3-conductor

Inductive load approx. 20 Hz, resistive load approx.
500 Hz, lamp load approx. 500 Hz

Socket M12, 4 poles, A coded

24 VDC (–25 ... +30 %), Logic und sensors (U_{LS})

45 mA (only logic part)

Socket M12, 4 poles, A coded

24 VDC (–25 ... +30 %), Actuators (U_A)

25 mA + actuators

Socket M12, 5 poles, B coded

50 x 35.7 x 170 mm

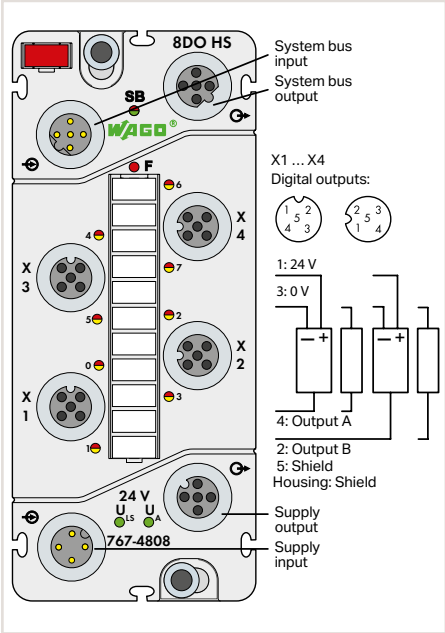
CE, UL 508, ATEX/IECEx

wago.com/767-4807

Item no.	Page
767-104	357
210-110	357
767-125	356
767-126	356
756-8102	357
756-8103	357

8-channel digital output, High-Speed

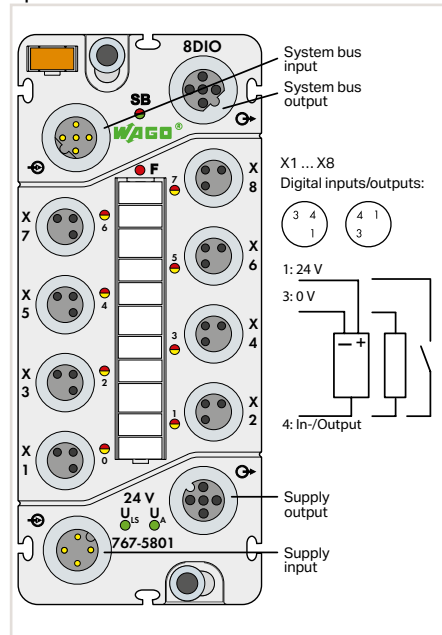
24 VDC, 0,1 A, High-Speed, 4 x M12,
two outputs per connector



Item description	8DO	
Version	24 VDC 0.1A HS 4xM12	
Item no.	767-4808	
Technical Data		
Number of digital outputs	8	
Type of signal	24 VDC	
Output characteristic	High-side switching	
Output current per channel	0.1 A, short-circuit/overload proof	
Load type	Resistive, inductive, lamps	
Actuator connection	2-conductor, 3-conductor	
Switching frequency max.	≤ 1 µs	
Connection technology: Outputs	Socket M12, 5 poles, A coded	
System supply voltage	24 VDC (–25 ... +30 %), Logic und sensors (U _{LS})	
Current consumption, field supply	40 mA + actuator supply (≤ 1 A) + load	
Connection technology: System supply	Socket M12, 4 poles, A coded	
System/field supply voltage	24 VDC (–25 ... +30 %), Actuators (U _A)	
Current consumption, system/field supply	35 mA (only logic part)	
Connection technology: System/field supply	Socket M12, 5 poles, B coded	
Dimensions W x H x D	50 x 35.7 x 117 mm	
Approvals	CE,  UL 508,  ATEX/IECEX	
Data sheet and further information, see:	wago.com/767-4808	
Accessories		
Marking strip	767-102	357
Marking pen	210-110	357
Spacer module	767-111	356
Carrier rail adapter	767-122	356
Profile adapter	767-124	356
M12 protective cap	756-8102	357
M12 protective cap (plug)	756-8103	357

8-channel digital input/output, 8 x M8

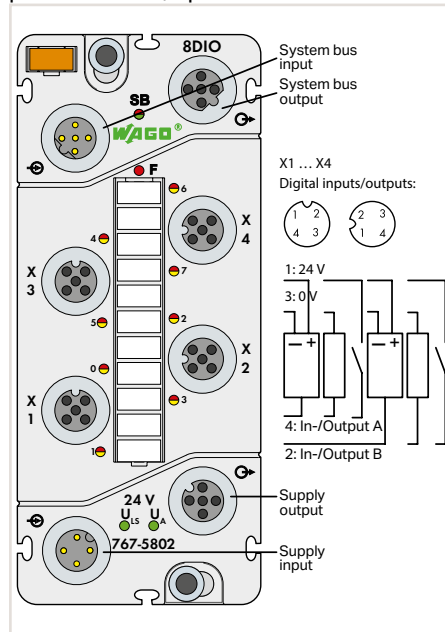
24 VDC, 0.5 A, 8 x M8,
optional: Interference-free



Item description		8DIO	
Version	24 VDC 0.5A 8xM8	24 VDC 0.5A IF 8xM8	
Item no.	767-5801	767-5801/000-800	
Technical Data			
Interference-free for safety function applications		●	
Number of digital inputs		8	
Type of signal		24 VDC	
Input characteristic		Type 2, acc. to IEC 61131-2	Type 1, acc. to IEC 61131-2
Sensor connection		2-conductor, 3-conductor	
Input filter (digital)		0.1/ 0.5/ 3 /15 /20 ms/Filter off; adjustable	
Input current per channel for signal (1) typ.		7.0 mA	3.0 mA
Number of digital outputs		8	
Output characteristic		High-side switching	
Output current per channel		0.5 A (max. 0.6 A), short-circuit/overload proof	
Load type		Resistive, inductive, lamps	
Actuator connection		2-conductor, 3-conductor	
Switching frequency max.		Inductive load approx. 20 Hz, resistive load approx. 500 Hz, lamp load approx. 500 Hz	
Connection technology: Inputs/Outputs		Socket M8, 3 poles	
System/field supply voltage		24 VDC (–25 ... +30 %), Logic und sensors (U _{LS})	
Current consumption, system/field supply		45 mA (only logic part)	
Connection technology: System/field supply		Socket M12, 4 poles, A coded	
Field supply voltage		24 VDC (–25 ... +30 %), Actuators (U _A)	
Current consumption, field supply		75 mA + sensors/actuators (max. 800 mA) + load	
Connection technology: System bus		Socket M12, 5 poles, B coded	
Dimensions W x H x D		50 x 35.7 x 117 mm	
Approvals			
Data sheet and further information, see:		CE,  UL 508,  ATEX/IECEx wago.com/767-5801	
Accessories		Item no.	Page
Marking strip		767-101	357
Marking pen		210-110	357
Spacer module		767-111	356
Carrier rail adapter		767-122	356
Profile adapter		767-124	356
M8 protective cap		756-8101	357
M12 protective cap		756-8102	357
M12 protective cap (plug)		756-8103	357

8-channel digital input/output, 4 x M12

24 VDC, 0.5 A, 4 x M12, two inputs/outputs per connector, optional: Interference-free



Item description	8DIO	
Version	24 VDC 0.5A 4xM12	24 VDC 0.5A IF 4xM12
Item no.	767-5802	767-5802/000-800

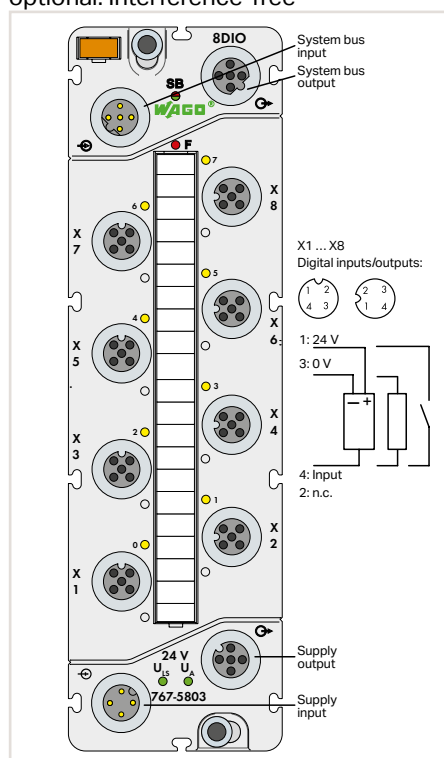
Technical Data

Interference-free for safety function applications	●	
Number of digital inputs	8	
Type of signal	24 VDC	
Input characteristic	Type 2, acc. to IEC 61131-2	Type 1, acc. to IEC 61131-2
Sensor connection	2-conductor, 3-conductor	
Input filter (digital)	0.1/ 0.5/ 3 /15 /20 ms/Filter off; adjustable	
Input current per channel for signal (1) typ.	7.0 mA	3.0 mA
Number of digital outputs	8	
Output characteristic	High-side switching	
Output current per channel	0.5 A (max. 0.6 A), short-circuit/overload proof	
Load type	Resistive, inductive, lamps	
Actuator connection	2-conductor, 3-conductor	
Switching frequency max.	Inductive load approx. 20 Hz, resistive load approx. 500 Hz, lamp load approx. 500 Hz	
Connection technology: Inputs/Outputs	Socket M12, 4 poles, A coded	
System/field supply voltage	24 VDC (-25 ... +30 %), Logic und sensors (U _{LS})	
Current consumption, system/field supply	45 mA (only logic part)	
Connection technology: System/field supply	Socket M12, 4 poles, A coded	
Field supply voltage	24 VDC (-25 ... +30 %), Actuators (U _A)	
Current consumption, field supply	75 mA + sensors/actuators (max. 800 mA) + load	
Connection technology: System bus	Socket M12, 5 poles, B coded	
Dimensions W x H x D	50 x 35.7 x 117 mm	
Approvals	CE, UL 508, ATEX/IECEx	
Data sheet and further information, see:	wago.com/767-5802	

Accessories	Item no.	Page
Marking strip	767-102	357
Marking pen	210-110	357
Spacer module	767-111	356
Carrier rail adapter	767-122	356
Profile adapter	767-124	356
M12 protective cap	756-8102	357
M12 protective cap (plug)	756-8103	357

8-channel digital input/output, 8 x M12

24 VDC, 0,5 A, 8 x M12,
optional: Interference-free



Item description

Version

Item no.

8DIO

24 VDC 0.5A 8xM12

767-5803

24 VDC 0.5A IF 8xM12

767-5803/000-800

Technical Data

Interference-free for safety function applications

Number of digital inputs

Type of signal

Input characteristic

Sensor connection

Input filter (digital)

Input current per channel for signal (1) typ.

Number of digital outputs

Output characteristic

Output current per channel

Load type

Actuator connection

Switching frequency max.

Connection technology: Inputs/Outputs

System/field supply voltage

Current consumption, system/field supply

Connection technology: System/field supply

Field supply voltage

Current consumption, field supply

Connection technology: System bus

Dimensions W x H x D

Approvals

Data sheet and further information, see:

		●
		8
		24 VDC
Type 2, acc. to IEC 61131-2	Type 1, acc. to IEC 61131-2	
		2-conductor, 3-conductor
		0.1/ 0.5/ 3 / 15 / 20 ms/Filter off; adjustable
		7.0 mA
		3.0 mA
		8
		High-side switching
		0.5 A (max. 0.6 A), short-circuit/overload proof
		Resistive, inductive, lamps
		2-conductor, 3-conductor
		Inductive load approx. 20 Hz, resistive load approx. 500 Hz, lamp load approx. 500 Hz
		Socket M12, 4 poles, A coded
		24 VDC (-25 ... +30 %), Logic und sensors (U _{LS})
		45 mA (only logic part)
		Socket M12, 4 poles, A coded
		24 VDC (-25 ... +30 %), Actuators (U _A)
		75 mA + sensors/actuators (max. 800 mA) + load
		Socket M12, 5 poles, B coded
		50 x 35.7 x 117 mm
		CE, UL 508, ATEX/IECEx
		wago.com/767-5803

Accessories

Marking strip

Marking pen

Carrier rail adapter

Profile adapter

M12 protective cap

M12 protective cap (plug)

Item no.

767-104

210-110

767-125

767-126

756-8102

756-8103

Page

357

357

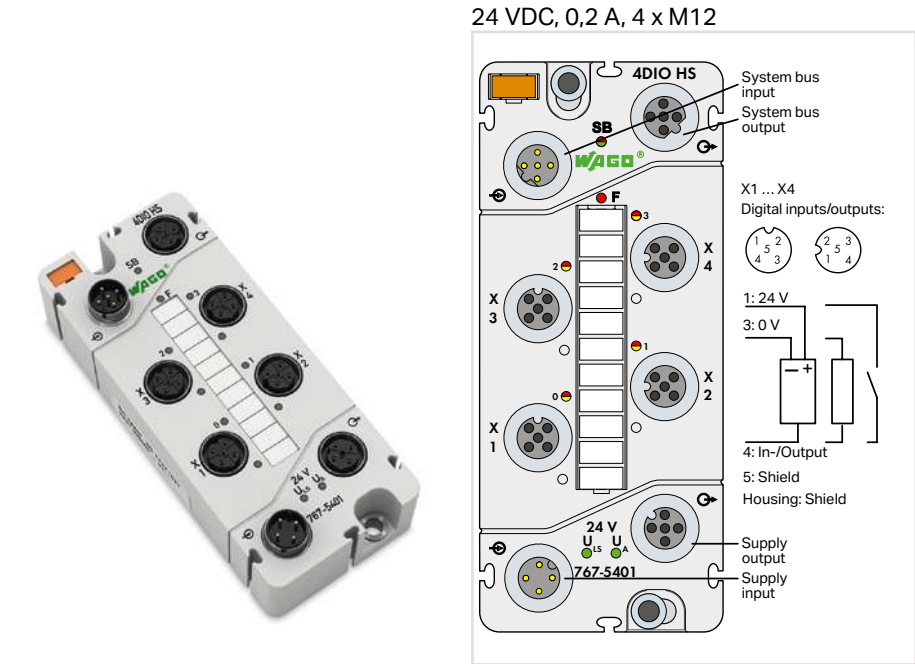
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357

357

4-channel digital input/output, High-speed



Item description	4DIO
Version	24 VDC 0.5A 4xM12
Item no.	767-5401

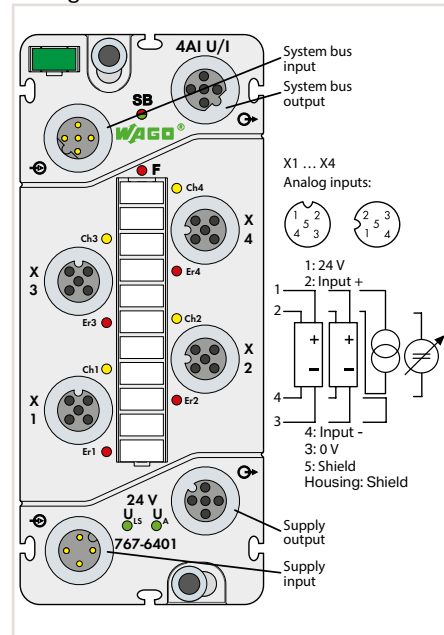
Technical Data	
Number of digital inputs	4
Type of signal	24 VDC
Input characteristic	Type 1, acc. to IEC 61131-2
Sensor connection	2-conductor, 3-conductor
Input filter (digital)	10/ 25/ 50/ 100/ 200 µs/ 1/ 3 ms/Filter off; adjustable
Input current per channel for signal (1) typ.	2.9 mA
Number of digital outputs	4
Output characteristic	High-side switching
Output current per channel	0.2 A, short-circuit/overload proof
Load type	Resistive, inductive, lamps
Actuator connection	2-conductor, 3-conductor
Switching frequency max.	≤ 1 µs
Connection technology: Inputs/Outputs	Socket M12, 5 poles, A coded
System/field supply voltage	24 VDC (–25 ... +30 %), Logic und sensors (U _{LS})
Current consumption, system/field supply	40 mA (only logic part)
Connection technology: System/field supply	Socket M12, 4 poles, A coded
Field supply voltage	24 VDC (–25 ... +30 %), Actuators (U _A)
Current consumption, field supply	30 mA + sensors/actuators (max. 1000 mA) + load
Connection technology: System bus	Socket M12, 5 poles, B coded
Dimensions W x H x D	50 x 35.7 x 117 mm
Approvals	CE, UL 508, ATEX/IECEX
Data sheet and further information, see:	wago.com/767-5401

Accessories	Item no.	Page
Marking strip	767-102	357
Marking pen	210-110	357
Spacer module	767-111	356
Carrier rail adapter	767-122	356
Profile adapter	767-124	356
M12 protective cap	756-8102	357
M12 protective cap (plug)	756-8103	357

4-channel analog input



Voltage/Current



Item description	4AI
Version	U/I
Item no.	767-6401

Technical Data

Number of analog inputs	4
Type of signal	0 ... 20 mA, 0 ... 22 mA (NE43), 4 ... 20 mA, ± 20 mA, 0 ... 10 V, ± 10 V
Signal characteristic	Differential inputs
Input impedance	$AI(U) \geq 100 \text{ k}\Omega$, $AI(I) \leq 200 \Omega$ at 20 mA
Resolution	2-conductor, 3-conductor, 4-conductor
Conversion time	1 ms
Measuring error (25 °C)	$\leq \pm 0.2 \%$ of the largest measurement range
Temperature coefficient	$\leq 100 \text{ ppm/K}$ of the largest measurement range
Connection technology: Inputs	Socket M12, 5 poles, A coded
System/field supply voltage	24 VDC ($-25 \dots +30 \%$), Logic and sensors (U_{LS})
Current consumption, system/field supply	50 mA + sensors (max. 400 mA)
Connection technology: System/field supply	Socket M12, 4 poles, A coded
Field supply voltage	24 VDC ($-25 \dots +30 \%$); Actuators (U_A), only for power supply transmission
Current consumption, field supply	5 mA, Actuators
Connection technology: System bus	Socket M12, 5 poles, B coded
Dimensions W x H x D	50 x 35.7 x 117 mm
Approvals	CE, UL 508, ATEX/IECEx
Data sheet and further information, see:	wago.com/767-6401

Accessories

Accessories	Item no.	Page
Marking strip	767-102	357
Marking pen	210-110	357
Spacer module	767-111	356
Carrier rail adapter	767-122	356
Profile adapter	767-124	356
M12 protective cap	756-8102	357
M12 protective cap (plug)	756-8103	357

System bus/power supply cable
see Page 358 ... 375

IP67 Cables and Connectors
see Section 11

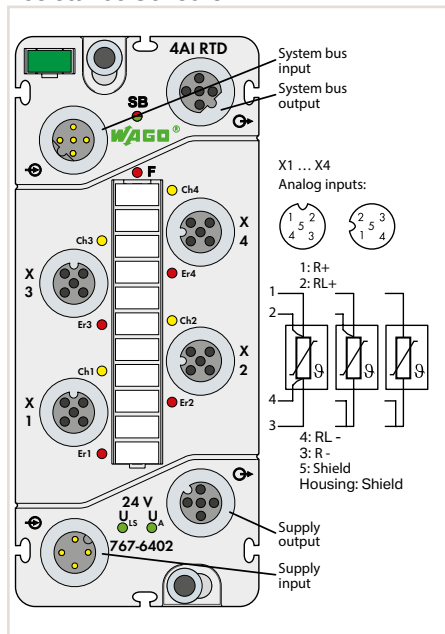
Approvals and corresponding ratings,
see Page 524 or www.wago.com

4-channel analog input

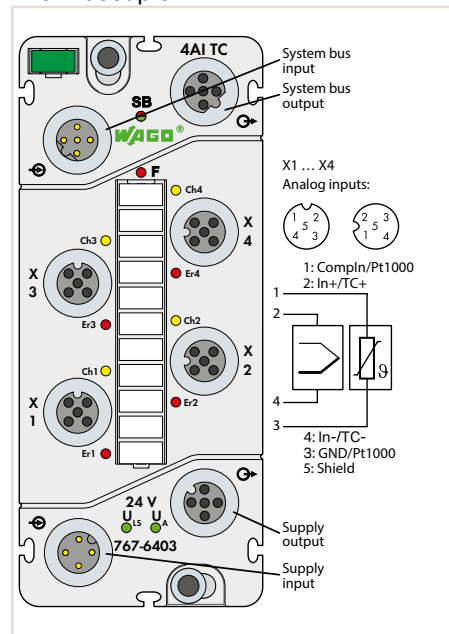


Figure: 767-6402

Resistance Sensors



Thermocouple



Item description	4AI
Version	RTD
Item no.	767-6402

Technical Data

Number of analog inputs	4
Type of signal	Resistance thermometer: Pt100, Pt200, Pt500, Pt1000, Ni100, Ni120, Ni1000; Resistors: 1 kΩ, 4 kΩ; Potentiometer: 0 ... 100 % (1 kΩ, 4 kΩ)

Sensor connection	2-conductor, 3-conductor, 4-conductor
Temperature range	-200 ... + 850 °C (Pt), -60 ... +250 °C (Ni)
Resolution	0.05 °C, 0.05 Ω, 0.25 Ω, 0.005 %
Conversion time	1 / Input sampling frequency (s)
Measuring error (25 °C)	± 0.1 % of the largest measurement range

Temperature coefficient	± 0.001 % of the largest measurement range/ K
Connection technology: Inputs	Socket M12, 5 poles, A coded
System/field supply voltage	24 VDC (-25 ... +30 %), Logic und sensors (U _{LS})
Current consumption, system/field supply	40 mA
Connection technology: System/field supply	Socket M12, 4 poles, A coded
Field supply voltage	24 VDC (-25 ... +30 %); Actuators (U _A), only for power supply transmission

Current consumption, field supply	4 mA, Actuators
Connection technology: System bus	Socket M12, 5 poles, B coded
Dimensions W x H x D	50 x 35.7 x 117 mm

Approvals	CE, UL 508, ATEX/IECEx
Data sheet and further information, see:	wago.com/767-6402

Accessories	Item no.	Page
Compensation connector	767-102	357
Marking strip	210-110	357
Marking pen	767-111	356
Spacer module	767-122	356
Carrier rail adapter	767-124	356
Profile adapter	756-8102	357
M12 protective cap	756-8103	357
M12 protective cap (plug)		

4AI	4
RTD	Resistance thermometer: Pt100, Pt200, Pt500, Pt1000, Ni100, Ni120, Ni1000; Resistors: 1 kΩ, 4 kΩ; Potentiometer: 0 ... 100 % (1 kΩ, 4 kΩ)
767-6402	2-conductor, 3-conductor, 4-conductor

Resistance thermometer: Pt100, Pt200, Pt500, Pt1000, Ni100, Ni120, Ni1000; Resistors: 1 kΩ, 4 kΩ; Potentiometer: 0 ... 100 % (1 kΩ, 4 kΩ)	-200 ... + 850 °C (Pt), -60 ... +250 °C (Ni)
2-conductor, 3-conductor, 4-conductor	0.05 °C, 0.05 Ω, 0.25 Ω, 0.005 %
	1 / Input sampling frequency (s)
	± 0.1 % of the largest measurement range
	± 0.001 % of the largest measurement range/ K
	Socket M12, 5 poles, A coded
	24 VDC (-25 ... +30 %), Logic und sensors (U _{LS})
	40 mA
	Socket M12, 4 poles, A coded
	24 VDC (-25 ... +30 %); Actuators (U _A), only for power supply transmission
	4 mA, Actuators
	Socket M12, 5 poles, B coded
	50 x 35.7 x 117 mm

± 0.001 % of the largest measurement range/ K	CE, UL 508, ATEX/IECEx
Socket M12, 5 poles, A coded	wago.com/767-6402
24 VDC (-25 ... +30 %), Logic und sensors (U _{LS})	
40 mA	
Socket M12, 4 poles, A coded	
24 VDC (-25 ... +30 %); Actuators (U _A), only for power supply transmission	
4 mA, Actuators	
Socket M12, 5 poles, B coded	
50 x 35.7 x 117 mm	

Item no.	Page
767-102	357
210-110	357
767-111	356
767-122	356
767-124	356
756-8102	357
756-8103	357

4AI	4
TC	Thermocouples: Type B, C, E, J, K, N, R, S, T; Voltage sensors: ± 36 mV, ± 72 mV, ± 145 mV, ± 290 mV
767-6403	2-conductor

Thermocouples: Type B, C, E, J, K, N, R, S, T; Voltage sensors: ± 36 mV, ± 72 mV, ± 145 mV, ± 290 mV	depending on sensor; -100 ... +1.800 °C
2-conductor	0.1 °C or 0.01 mV (voltage sensor)
	6 ... 360 ms
	< ± 1 K (Type K); cold junction compensation* < ± 1 K
	± 0.05 K/K (Type K)
	Socket M12, 5 poles, A coded
	24 VDC (-25 ... +30 %), Logic und sensors (U _{LS})
	40 mA
	Socket M12, 4 poles, A coded
	24 VDC (-25 ... +30 %); Actuators (U _A), only for power supply transmission
	5 mA, Actuators
	Socket M12, 5 poles, B coded
	50 x 35.7 x 117 mm

± 0.05 K/K (Type K)	CE, UL 508, ATEX/IECEx
Socket M12, 5 poles, A coded	wago.com/767-6403
24 VDC (-25 ... +30 %), Logic und sensors (U _{LS})	
40 mA	
Socket M12, 4 poles, A coded	
24 VDC (-25 ... +30 %); Actuators (U _A), only for power supply transmission	
5 mA, Actuators	
Socket M12, 5 poles, B coded	
50 x 35.7 x 117 mm	

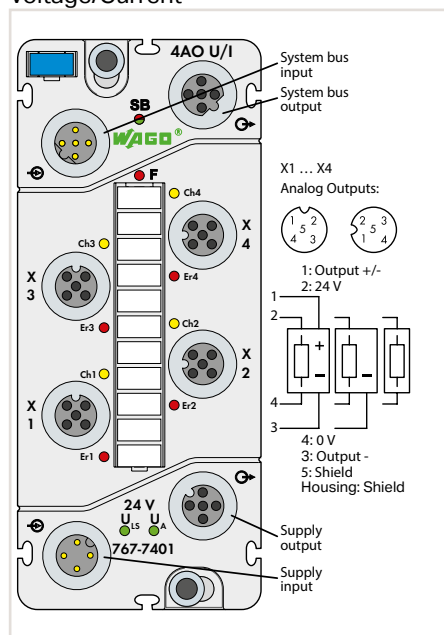
Item no.	Page
756-9207/050-000	374
767-102	357
210-110	357
767-111	356
767-122	356
767-124	356
756-8102	357
756-8103	357

*Cold-junction compensation via a pre-assembled connector

4-channel analog output



Voltage/Current



Item description	4AO
Version	U/I
Item no.	767-7401

Technical Data

Number of analog outputs	4
Type of signal	0 ... 20 mA, 4 ... 20 mA, ± 20 mA, 0 ... 10 V, ± 10 V
Load impedance	$\leq 500 \Omega$ (current), $\geq 5 \text{ k}\Omega$ (voltage)
Resolution	15-bit unipolar, 16-bit bipolar
Conversion time	1 ms
Measuring error (25 °C)	$\leq \pm 0.2 \%$ of largest measurement range
Temperature coefficient	$\leq 100 \text{ ppm/K}$ of largest measurement range
Connection technology: Outputs	Socket M12, 5 poles, A coded
System/field supply voltage	24 VDC ($-25 \dots +30 \%$), Logic und sensors (U_{LS})
Current consumption, system/field supply	28 mA (only logic part)
Connection technology: System/field supply	Socket M12, 4 poles, A coded
Field supply voltage	24 VDC ($-25 \dots +30 \%$), Actuators (U_A)
Current consumption, field supply	34 mA + actuators
Connection technology: System bus	Socket M12, 5 poles, B coded
Dimensions W x H x D	50 x 35.7 x 117 mm
Approvals	CE, UL 508, ATEX/IECEx
Data sheet and further information, see:	wago.com/767-7401

Accessories

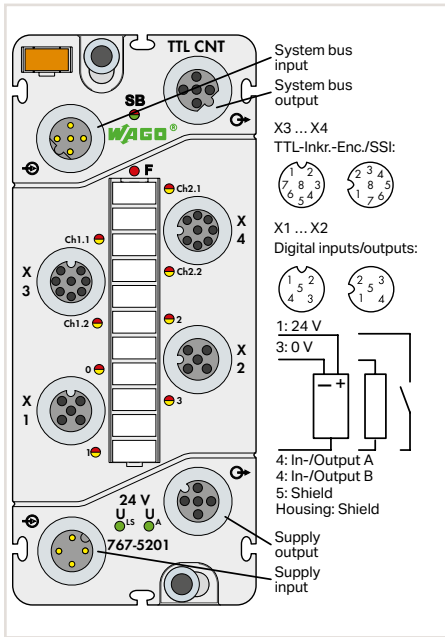
Item no.	Page
Marking strip	357
Marking pen	357
Spacer module	356
Carrier rail adapter	356
Profile adapter	356
M12 protective cap	357
M12 protective cap (plug)	357

 System bus/power supply cable
see Page 358 ... 375

 IP67 Cables and Connectors
see Section 11

 Approvals and corresponding ratings,
see Page 524 or www.wago.com

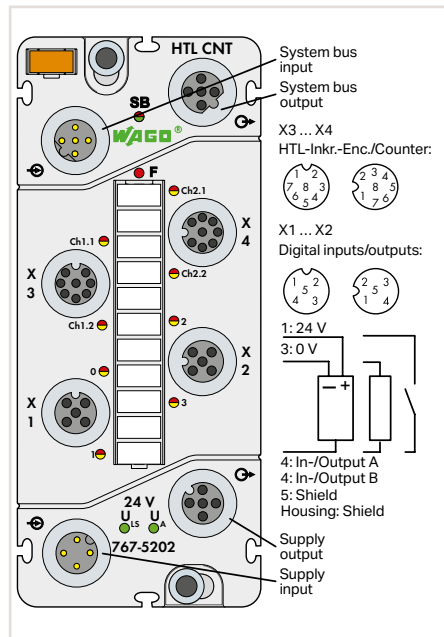
TTL Incremental Encoder/SSI Transmitter



Item description		TTL Inc. Encoder/ SSI	
Item no.		767-5201	
Technical Data			
Number of inputs		2	
Encoder connection		A, Al, B, Bl, C, Cl (Incremental encoder); D+, D-, CL+, CL (SSI encoder)	
Sensor supply		5 V/24 V, max. 300 mA	
Signal input/output		Differential signal RS-422	
Method of conversion (SSI)		Binary/Gray	
Counter resolution (Inc.)		32 bits	
Operating frequency (Inc.)/ Baud rate (SSI)		1 MHz / up to 2 MHz	
Connection technology: Incr. Encoder/SSI Encoder		Socket M12, 8 poles, shielded, A coded	
Number of digital inputs		4	
Type of signal		24 VDC	
Input characteristic		Type 3, acc. to IEC 61131-2	
Sensor connection		2-conductor, 3-conductor	
Number of digital outputs		4	
Output current per channel		0,1 A, short-circuit/overload proof (thermal shutdown)	
Actuator connection		2-conductor, 3-conductor	
Connection technology: Inputs/Outputs		Socket M12, 5 poles, shielded, A coded	
System/field supply voltage		24 VDC (–25 ... +30 %), Logic und sensors (U _{LS})	
Current consumption, system/field supply		50 mA	
Connection technology: System/field supply		Socket M12, 4 poles, A coded	
Field supply voltage		24 VDC (–25 ... +30 %), Actuators (U _A)	
Current consumption, field supply		25 mA + actuators (max. 800 mA)	
Connection technology: System bus		Socket M12, 5 poles, B coded	
Dimensions W x H x D		50 x 35.7 x 117 mm	
Approvals		CE, UL 508, ATEX/IECEX	
Data sheet and further information, see:		wago.com/767-5201	
Accessories		Item no.	Page
Marking strip		767-102	357
Marking pen		210-110	357
Spacer module		767-111	356
Carrier rail adapter		767-122	356
Profile adapter		767-124	356
M12 protective cap		756-8102	357
M12 protective cap (plug)		756-8103	357

- Configurable functions:
- Online simulation, diagnostics
 - Incremental encoder: Evaluation, filter
 - SSI encoder: Data width/length, transmission rate
 - Cam: Upper/lower value, output
 - Pulse-width modulation: Pulse duty factor, frequency
 - Digital I/Os: Operating mode, filter, substitute value strategy

HTL Incremental Encoder/Counter Interface



Item description

Item no.

HTL-Inc. Encoder/ Counter

767-5202

Technical Data

Number of inputs	2
Encoder connection	A, A _V , B, B _V , C, C _V (Incremental encoder)
Sensor supply	5 V/24 V, max. 300 mA
Signal input	HTL, differential/single-ended
Counter resolution (Inc.)	32 bits
Operating frequency (Inc.)/Counter frequency	250 kHz
Counter input	24 VDC
Power supply (Counter)	max. 300 mA
Connection technology: Incr. encoder/Counter	Socket M12, 8 poles, shielded, A coded
Number of digital inputs	4
Type of signal	24 VDC
Input characteristic	Type 3, acc. to IEC 61131-2
Sensor connection	2-conductor, 3-conductor
Number of digital outputs	4
Output current per channel	0,1 A, short-circuit/overload proof
Actuator connection	2-conductor, 3-conductor
Connection technology: Inputs/Outputs	Socket M12, 5 poles, shielded, A coded
System/field supply voltage	24 VDC (–25 ... +30 %), Logic und sensors (U _S)
Current consumption, system/field supply	50 mA
Connection technology: System/field supply	Socket M12, 4 poles, A coded
Field supply voltage	24 VDC (–25 ... +30 %), Actuators (U _A)
Current consumption, field supply	25 mA + actuators (max. 800 mA)
Connection technology: System bus	Socket M12, 5 poles, B coded
Dimensions W x H x D	50 x 35.7 x 117 mm
Approvals	CE, UL 508, ATEX/IECEX
Data sheet and further information, see:	wago.com/767-5202

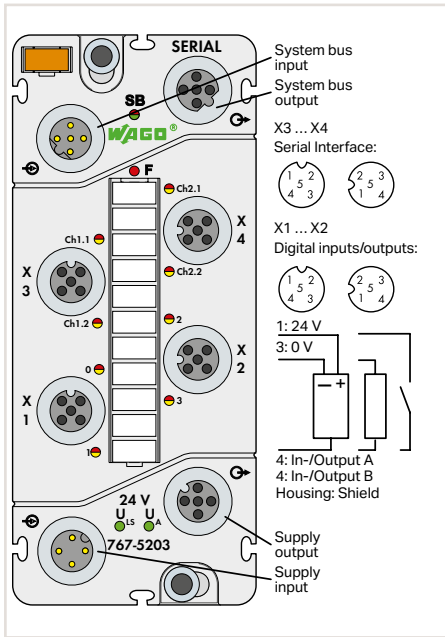
Accessories

Item no.	Page
767-102	357
210-110	357
767-111	356
767-122	356
767-124	356
756-8102	357
756-8103	357

Configurable functions:

- Online simulation, diagnostics
- Incremental encoder: Evaluation, filter
- Counter: Gate, direction, gate time, preset
- Cam: Upper/lower value, output
- Pulse-width modulation: Pulse duty factor, frequency
- Digital I/Os: Operating mode, filter, substitute value strategy

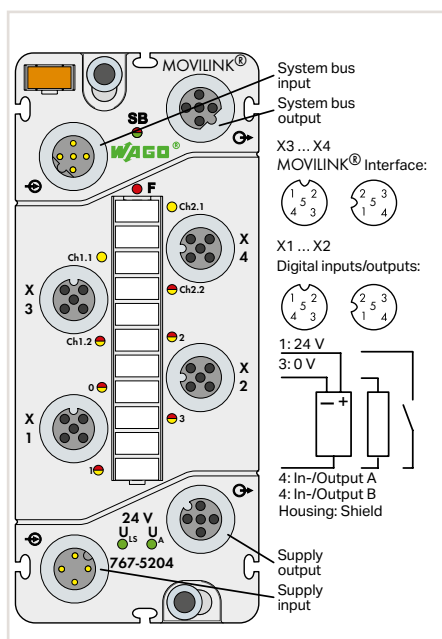
RS-232/422/485 Serial Interface



Item description	RS232/422/485 Interface	
Item no.	767-5203	
Technical Data		
Type of signal	RS-232/422/485	
Transmission channels	1 Rx/D / 1 Tx/D (full-/half-duplex)	
Baud rate	300 ... 115.200 Baud	
Parity	None/Odd/Even	
Number of data bits	7/8, adjustable	
Number of stop bits	1/2, adjustable	
Buffer	4 KB (In); 4 KB (Out)	
Connection technology: Interface	Socket M12, 5 poles, shielded, A coded	
Number of digital inputs	4	
Type of signal	24 VDC	
Input characteristic	Type 2, acc. to IEC 61131-2	
Sensor connection	2-conductor, 3-conductor	
Input filter (digital)	0.1/ 0.5/ 3 /15 /20 ms/Filter off; adjustable	
Input current per channel for signal (1) typ.	7.3 mA	
Number of digital outputs	4	
Output current per channel	0.5 A (max. 0.6 A), short-circuit/overload proof	
Actuator connection	2-conductor, 3-conductor	
Connection technology: Inputs/Outputs	Socket M12, 5 poles, shielded, A coded	
System/field supply voltage	24 VDC (–25 ... +30 %), Logic und sensors (U _{LS})	
Current consumption, system/field supply	75 mA + sensors (max. 400 mA)	
Connection technology: System/field supply	Socket M12, 4 poles, A coded	
Field supply voltage	24 VDC (–25 ... +30 %), Actuators (U _A)	
Current consumption, field supply	25 mA + actuators 2.4 A (4 x 600 mA)	
Connection technology: System bus	Socket M12, 5 poles, B coded	
Dimensions W x H x D	50 x 35.7 x 117 mm	
Approvals	CE,  ,  UL 508,  ATEX/IECEx	
Data sheet and further information, see:	wago.com/767-5203	
Accessories		
RS-422/-485 Termination M12	Item no.	Page
Marking strip	756-9218/050-000	374
Marking pen	767-102	357
Spacer module	210-110	357
Carrier rail adapter	767-111	356
Profile adapter	767-122	356
M12 protective cap	767-124	356
M12 protective cap (plug)	756-8102	357
	756-8103	357

- Configurable functions:
- Online simulation, diagnostics
 - Serial interface: Operating mode, baud rate, data bits, parity, stop bits, flow-control
 - Digital I/Os: Operating mode, input filter, inversion, substitute value strategy, manual mode

MOVILINK® Interface (RS-232, RS-485)



Item description

Item no.

RS232/485 Movilink Interface

767-5204

Technical Data

Type of signal
Transmission channels
Baud rate
Protocols
MOVILINK operating mode
Connection technology: Interface
Number of digital inputs
Type of signal
Input characteristic
Sensor connection
Input filter (digital)
Input current per channel for signal (1) typ.
Number of digital outputs
Output current per channel
Actuator connection
Connection technology: Inputs/Outputs
System/field supply voltage
Current consumption, system/field supply
Connection technology: System/field supply
Field supply voltage
Current consumption, field supply
Connection technology: System bus
Dimensions W x H x D
Approvals
Data sheet and further information, see:

RS-232/485
1 Rx/D / 1 Tx/D (full-/half-duplex)
9.600 Bd ... 57.600 Bd
MOVILINK®
Easy Modus/Mailbox Modus
Socket M12, 5 poles, shielded, A coded
4
24 VDC
Type 2, acc. to IEC 61131-2
2-conductor, 3-conductor
0.1/ 0.5/ 3 /15 /20 ms/Filter off; adjustable
7.3 mA
4
0.5 A (max. 0.6 A), short-circuit/overload proof (thermal disconnection)
2-conductor, 3-conductor
Socket M12, 5 poles, shielded, A coded
24 VDC (-25 ... +30 %), Logic und sensors (U _{LS})
75 mA
Socket M12, 4 poles, A coded
24 VDC (-25 ... +30 %), Actuators (U _A)
25 mA + Sensors (max. 400 mA) + Actuators 2.4 A (4 x 600 mA)
Socket M12, 5 poles, B coded
50 x 35.7 x 117 mm
CE, UL 508, ATEX/IECEX
wago.com/767-5204

The module is used to actuate drives from SEW Eurodrive via the serial MOVILINK® interface.

Configurable functions:

- Online simulation, diagnostics
- MOVILINK® interface: Operating mode, Type, Braud rate
- Digitale I/Os: Operating mode, input filter, inversion, substitute value strategy, manual mode

MOVILINK is a registered trademark of SEW Eurodrive GmbH & Co KG

Accessories

RS-422/-485 Termination M12
Marking strip
Marking pen
Spacer module
Carrier rail adapter
Profile adapter
M12 protective cap
M12 protective cap (plug)

Item no.	Page
756-9218/050-000	374
767-102	357
210-110	357
767-111	356
767-122	356
767-124	356
756-8102	357
756-8103	357

Power Divider



Item description
Item no.

Power Divider
767-9101

The power distribution connector is used to distribute supply voltage to several modules.

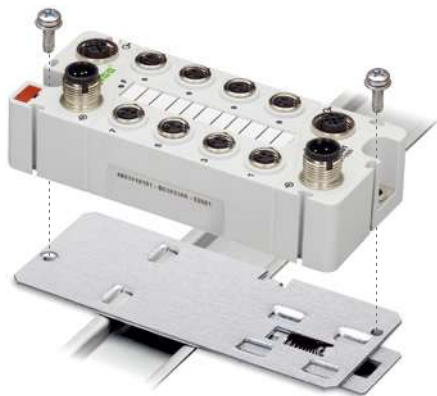
Technical Data	
System supply voltage	24 VDC (–25 ... +30 %)
Current consumption, system supply	4 mA
Field supply voltage	24 VDC (–25 ... +30 %), Logic und sensors (U _{LS})
Current consumption, field supply	4 mA
Connection technology: Supply	Plug M23, 6 poles*
Current carrying capacity module	max. 24 A (U _{LS} max. 8 A, U _A max. 16 A)*
No. of outputs	6
Current carrying capacity connector	max. 8 A (U _{LS} : 4 A, U _A : 4 A)*
Connection technology: System supply	Socket M12, 4 poles, A coded*
Isolation	500 VDC U _{LS} /U _A
Dimensions W x H x D	50 x 43.3 x 117 mm
Approvals	CE, UL 508
Data sheet and further information, see:	wago.com/767-9101

Accessories	Item no.	Page
Marking strip	767-103	357
Marking pen	210-110	357
Spacer module	767-111	356
Carrier rail adapter	767-122	356
Profile adapter	767-124	356
M12 protective cap	756-8102	357
M23 protective cap	756-8104	357

*Derating must be observed!

-  System bus/power supply cable
see Page 358 ... 375
-  IP67 Cables and Connectors
see Section 11
-  Approvals and corresponding ratings,
see Page 524 or www.wago.com

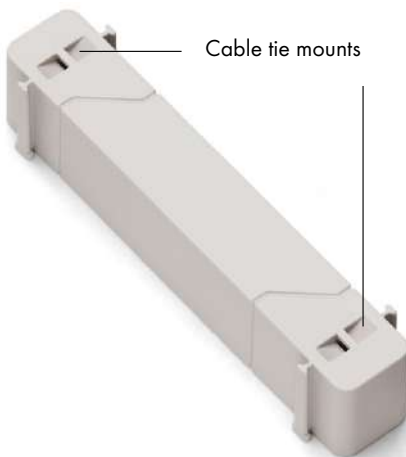
Accessories



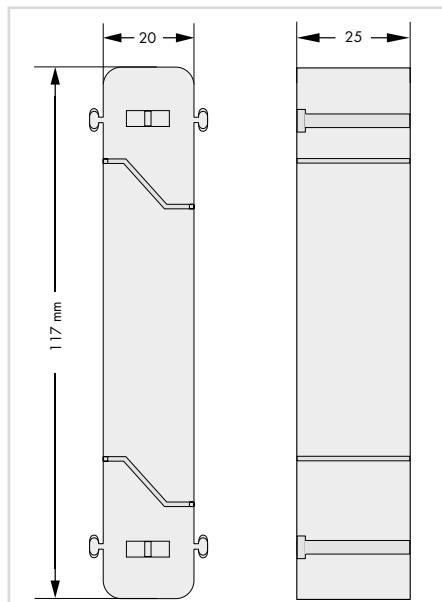
Carrier rail adapter		
	Item No.	Pack. Unit
Carrier rail adapter, for couplers/progr. couplers	767-121	1
Carrier rail adapter, for I/O and power distribution modules	767-122	1
Carrier rail adapter, for I/O module 8 x M12	767-125	1



Profile adapter		
	Item No.	Pack. Unit
Profile adapter, for couplers/progr. couplers	767-123	1
Profile adapter, for I/O and power distribution modules	767-124	1
Profile adapter, for I/O module 8 x M12	767-126	1



Cable tie mounts



Spacer module		
	Item No.	Pack. Unit
	767-111	1

Accessories



Marking strip		
	Item No.	Pack. Unit
Marking strip, 8xM8	767-101	100
Marking strip, 4xM12	767-102	100
Marking strip, for power distribution modules	767-103	100
Marking strip, 8 x M12	767-104	100
Marking strip, 9.9 mm wide, 50 m roll	757-901/000-050	1

Marking pen		
	Item No.	Pack. Unit
for permanent marking	210-110	1

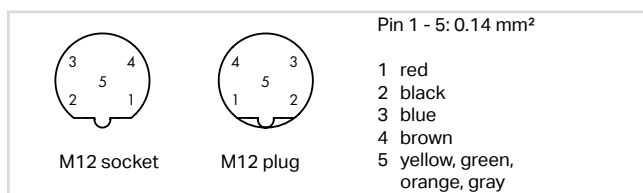
Protective caps (for unused sockets)		
	Item No.	Pack. Unit
M8 protective cap	756-8101	10
M12 protective cap	756-8102	10

Protective caps (for unused plugs)		
	Item No.	Pack. Unit
M12 protective cap	756-8103	1

Protective caps (for unused plugs)		
	Item No.	Pack. Unit
M23 protective cap	756-8104	1

Locking clip (protects pre-assembled connectors from tool-free disconnection)		
	Item No.	Pack. Unit
Locking clip, M8	756-8301	10
Locking clip, M12	756-8302	10

System bus cable for drag chain



Connection technology	M12 socket/plug, B coded
Operating voltage	≤ 60 V
Operating current	4 A
Rated surge voltage	1.5 kV
Suitable for drag chain applications	≥ 5 Mio. bending cycles
Ambient temperature (operation) moved	0 ... +50 °C
Protection type	IP67
Cable diameter	6.8 mm

System bus cable for drag chain, M12 socket, straight, B coded

	Item No.	Pack. Unit
M12 socket, straight, 2 m	756-1501/060-020	1
M12 socket, straight, 5 m	756-1501/060-050	1
M12 socket, straight, 10 m	756-1501/060-100	1
M12 socket, straight, 20 m	756-1501/060-200	1

System bus cable for drag chain, M12 socket, right angle, B coded

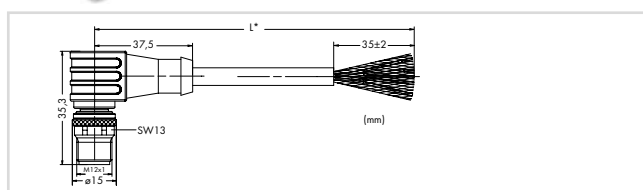
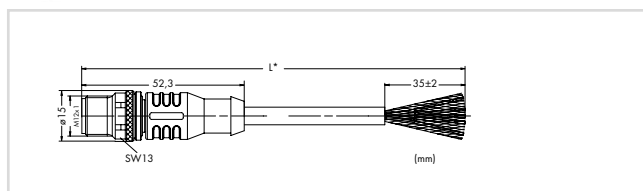
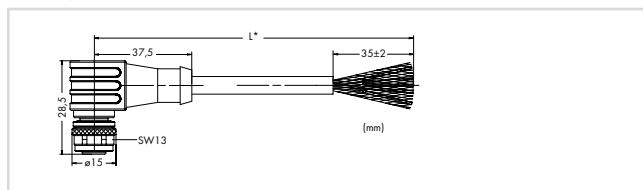
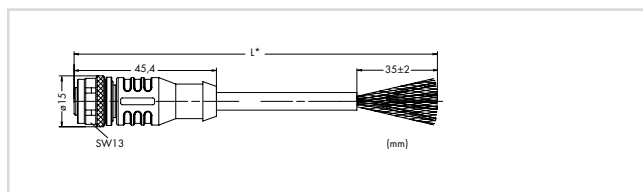
	Item No.	Pack. Unit
M12 socket, right angle, 2 m	756-1502/060-020	1
M12 socket, right angle, 5 m	756-1502/060-050	1
M12 socket, right angle, 10 m	756-1502/060-100	1
M12 socket, right angle, 20 m	756-1502/060-200	1

System bus cable for drag chain, M12 plug, straight, B coded

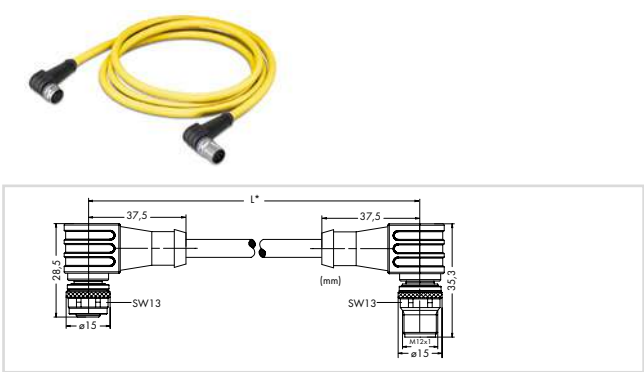
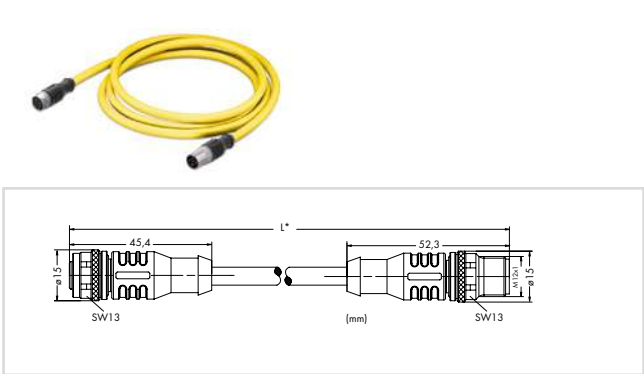
	Item No.	Pack. Unit
M12 plug, straight, 2 m	756-1503/060-020	1
M12 plug, straight, 5 m	756-1503/060-050	1
M12 plug, straight, 10 m	756-1503/060-100	1
M12 plug, straight, 20 m	756-1503/060-200	1

System bus cable for drag chain, M12 plug, right angle, B coded

	Item No.	Pack. Unit
M12 plug, right angle, 2 m	756-1504/060-020	1
M12 plug, right angle, 5 m	756-1504/060-050	1
M12 plug, right angle, 10 m	756-1504/060-100	1
M12 plug, right angle, 20 m	756-1504/060-200	1



System bus cable for drag chain

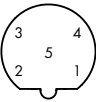
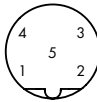


System bus cable for drag chain, M12 socket – M12 plug, straight, B coded		
	Item No.	Pack. Unit
M12 socket, straight, M12 plug, straight, 0,2 m	756-1505/060-002	1
M12 socket, straight, M12 plug, straight, 0,3 m	756-1505/060-003	1
M12 socket, straight, M12 plug, straight, 0,5 m	756-1505/060-005	1
M12 socket, straight, M12 plug, straight, 1 m	756-1505/060-010	1
M12 socket, straight, M12 plug, straight, 2 m	756-1505/060-020	1
M12 socket, straight, M12 plug, straight, 5 m	756-1505/060-050	1
M12 socket, straight, M12 plug, straight, 10 m	756-1505/060-100	1
M12 socket, straight, M12 plug, straight, 20 m	756-1505/060-200	1
M12 socket, straight, M12 plug, straight, 50 m	756-1505/060-500	1

System bus cable for drag chain, M12 socket – M12 plug, right angle, B coded		
	Item No.	Pack. Unit
M12 socket, right angle, M12 plug, right angle, 0,2 m	756-1506/060-002	1
M12 socket, right angle, M12 plug, right angle, 0,3 m	756-1506/060-003	1
M12 socket, right angle, M12 plug, right angle, 0,5 m	756-1506/060-005	1
M12 socket, right angle, M12 plug, right angle, 1 m	756-1506/060-010	1
M12 socket, right angle, M12 plug, right angle, 2 m	756-1506/060-020	1
M12 socket, right angle, M12 plug, right angle, 5 m	756-1506/060-050	1
M12 socket, right angle, M12 plug, right angle, 10 m	756-1506/060-100	1
M12 socket, right angle, M12 plug, right angle, 20 m	756-1506/060-200	1
M12 socket, right angle, M12 plug, right angle, 50 m	756-1506/060-500	1

System bus cable for drag chain		
	Item No.	Pack. Unit
25 m	756-1500/000-250	1
50 m	756-1500/000-500	1
100 m	756-1500/000-1000	1

System bus cable

		Pin 1 - 5: 0.14 mm ²
M12 socket	M12 plug	1 white/blue
		2 blue
		3 white/orange
		4 orange
		5 white/green, green, white/brown, brown

Connection technology	M12 socket/plug, B coded
Operating voltage	≤ 60 V
Operating current	4 A
Rated surge voltage	1.5 kV
Ambient temperature (operation)	-25 ... +60 °C
Protection type	IP67
Cable diameter	6 mm

System bus cable, M12 socket, straight, B coded

	Item No.	Pack. Unit
M12 socket, straight, 2 m	756-1301/060-020	1
M12 socket, straight, 5 m	756-1301/060-050	1
M12 socket, straight, 10 m	756-1301/060-100	1
M12 socket, straight, 20 m	756-1301/060-200	1

System bus cable, M12 socket, right angle, B coded

	Item No.	Pack. Unit
M12 socket, right angle, 2 m	756-1302/060-020	1
M12 socket, right angle, 5 m	756-1302/060-050	1
M12 socket, right angle, 10 m	756-1302/060-100	1
M12 socket, right angle, 20 m	756-1302/060-200	1

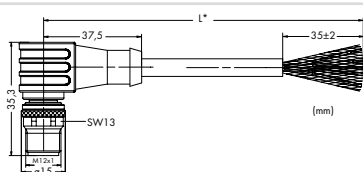
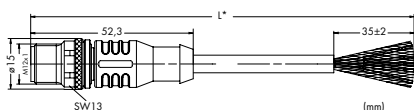
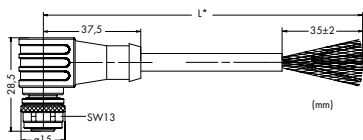
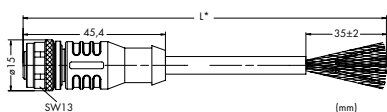
System bus cable, M12 plug, straight, B coded

	Item No.	Pack. Unit
M12 plug, straight, 2 m	756-1303/060-020	1
M12 plug, straight, 5 m	756-1303/060-050	1
M12 plug, straight, 10 m	756-1303/060-100	1
M12 plug, straight, 20 m	756-1303/060-200	1

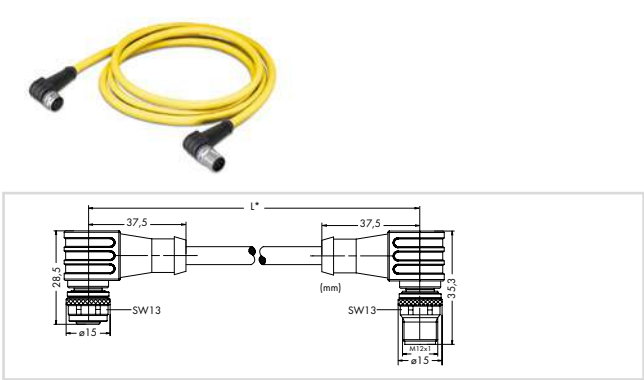
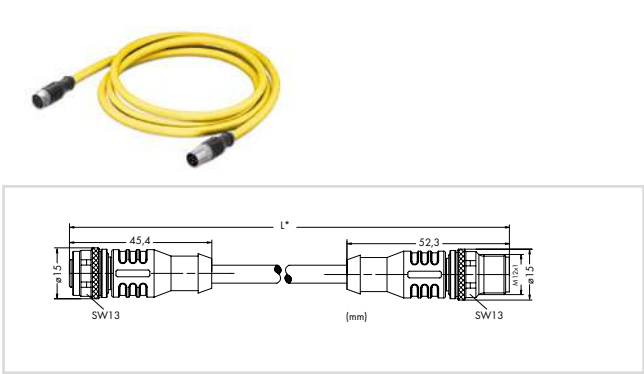
System bus cable, M12 plug, right angle, B coded

	Item No.	Pack. Unit
M12 plug, right angle, 2 m	756-1304/060-020	1
M12 plug, right angle, 5 m	756-1304/060-050	1
M12 plug, right angle, 10 m	756-1304/060-100	1
M12 plug, right angle, 20 m	756-1304/060-200	1

6



System bus cable

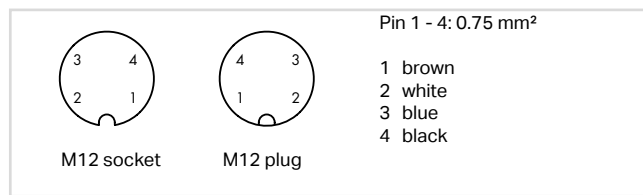


System bus cable, M12 socket – M12 plug, straight, B coded		
	Item No.	Pack. Unit
M12 socket, straight, M12 plug, straight, 0.2 m	756-1305/060-002	1
M12 socket, straight, M12 plug, straight, 0.3 m	756-1305/060-003	1
M12 socket, straight, M12 plug, straight, 0.5 m	756-1305/060-005	1
M12 socket, straight, M12 plug, straight, 1 m	756-1305/060-010	1
M12 socket, straight, M12 plug, straight, 2 m	756-1305/060-020	1
M12 socket, straight, M12 plug, straight, 3 m	756-1305/060-030	1
M12 socket, straight, M12 plug, straight, 5 m	756-1305/060-050	1
M12 socket, straight, M12 plug, straight, 7 m	756-1305/060-070	1
M12 socket, straight, M12 plug, straight, 10 m	756-1305/060-100	1
M12 socket, straight, M12 plug, straight, 20 m	756-1305/060-200	1
M12 socket, straight, M12 plug, straight, 50 m	756-1305/060-500	1

System bus cable, M12 socket – M12 plug, right angle, B coded		
	Item No.	Pack. Unit
M12 socket, right angle, M12 plug, right angle, 0.2 m	756-1306/060-002	1
M12 socket, right angle, M12 plug, right angle, 0.3 m	756-1306/060-003	1
M12 socket, right angle, M12 plug, right angle, 0.5 m	756-1306/060-005	1
M12 socket, right angle, M12 plug, right angle, 1 m	756-1306/060-010	1
M12 socket, right angle, M12 plug, right angle, 2 m	756-1306/060-020	1
M12 socket, right angle, M12 plug, right angle, 3 m	756-1306/060-030	1
M12 socket, right angle, M12 plug, right angle, 5 m	756-1306/060-050	1
M12 socket, right angle, M12 plug, right angle, 7 m	756-1306/060-070	1
M12 socket, right angle, M12 plug, right angle, 10 m	756-1306/060-100	1
M12 socket, right angle, M12 plug, right angle, 20 m	756-1306/060-200	1
M12 socket, right angle, M12 plug, right angle, 50 m	756-1306/060-500	1

System bus cable		
	Item No.	Pack. Unit
25 m	756-1300/000-250	1
50 m	756-1300/000-500	1
100 m	756-1300/000-1000	1

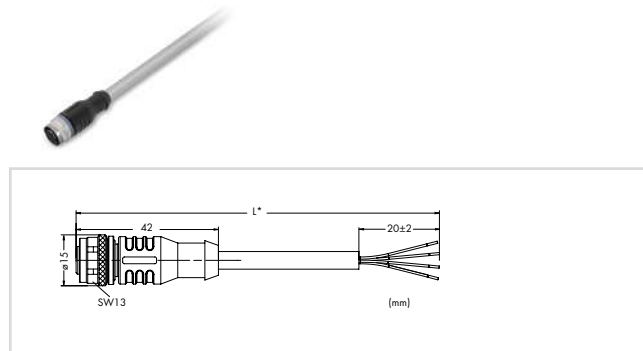
Power cable



Connection technology	M12 socket/plug, A coded
Operating voltage	250 V AC/DC
Operating current	4 A
Rated surge voltage	2.5 kV
Suitable for drag chain applications	≥ 4 Mio. bending cycles
Ambient temperature (operation) moved	-30 ... +80 °C
Protection type	IP67
Cable diameter	6.2 mm ±0.2

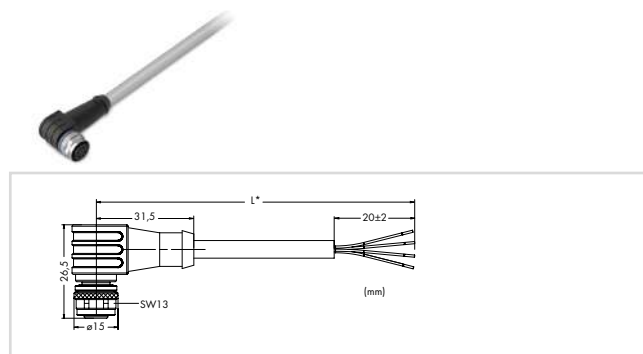
Power cable, M12 socket, straight, A coded

	Item No.	Pack. Unit
M12 socket, straight, 2 m	756-3101/040-020	1
M12 socket, straight, 5 m	756-3101/040-050	1
M12 socket, straight, 10 m	756-3101/040-100	1
M12 socket, straight, 20 m	756-3101/040-200	1



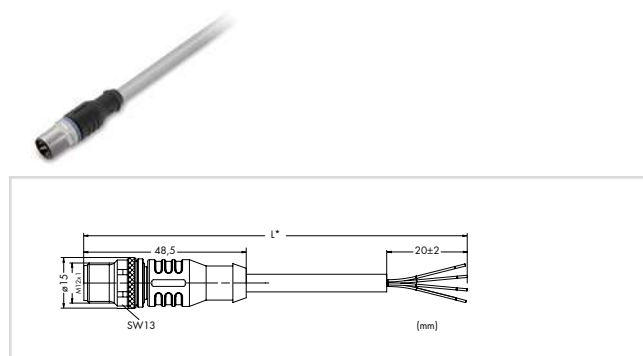
Power cable, M12 socket, right angle, A coded

	Item No.	Pack. Unit
M12 socket, right angle, 2 m	756-3102/040-020	1
M12 socket, right angle, 5 m	756-3102/040-050	1
M12 socket, right angle, 10 m	756-3102/040-100	1
M12 socket, right angle, 20 m	756-3102/040-200	1



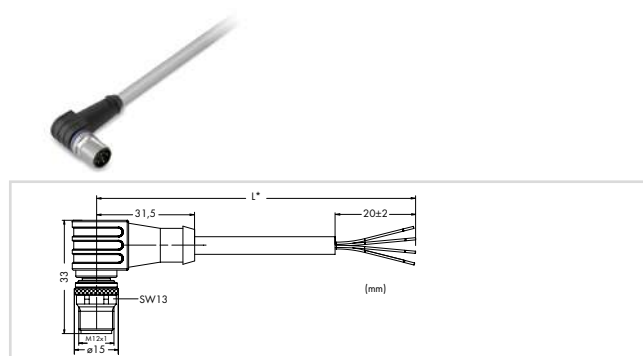
Power cable, M12 plug, straight, A coded

	Item No.	Pack. Unit
M12 plug, straight, 2 m	756-3103/040-020	1
M12 plug, straight, 5 m	756-3103/040-050	1
M12 plug, straight, 10 m	756-3103/040-100	1
M12 plug, straight, 20 m	756-3103/040-200	1

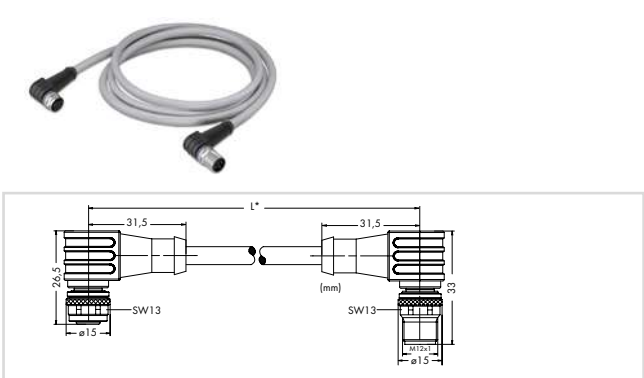
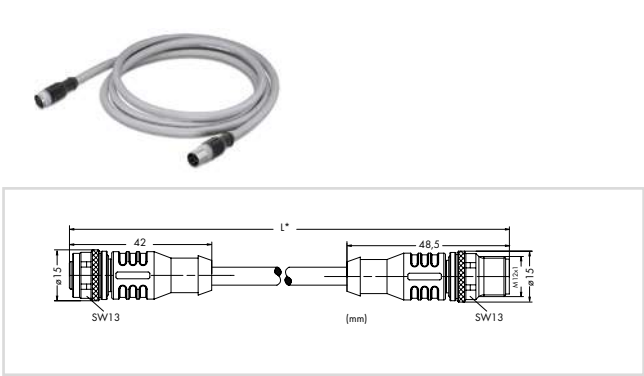


Power cable, M12 plug, right angle, A coded

	Item No.	Pack. Unit
M12 plug, right angle, 2 m	756-3104/040-020	1
M12 plug, right angle, 5 m	756-3104/040-050	1
M12 plug, right angle, 10 m	756-3104/040-100	1
M12 plug, right angle, 20 m	756-3104/040-200	1



Power cable

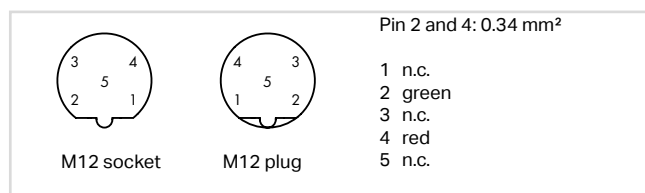


Power cable, M12 socket – M12 plug, straight, A coded		
	Item No.	Pack. Unit
M12 socket, straight, M12 plug, straight, 0.2 m	756-3105/040-002	1
M12 socket, straight, M12 plug, straight, 0.3 m	756-3105/040-003	1
M12 socket, straight, M12 plug, straight, 0.5 m	756-3105/040-005	1
M12 socket, straight, M12 plug, straight, 1 m	756-3105/040-010	1
M12 socket, straight, M12 plug, straight, 2 m	756-3105/040-020	1
M12 socket, straight, M12 plug, straight, 3 m	756-3105/040-030	1
M12 socket, straight, M12 plug, straight, 5 m	756-3105/040-050	1
M12 socket, straight, M12 plug, straight, 7 m	756-3105/040-070	1
M12 socket, straight, M12 plug, straight, 10 m	756-3105/040-100	1
M12 socket, straight, M12 plug, straight, 20 m	756-3105/040-200	1

Power cable, M12 socket – M12 plug, right angle, A coded		
	Item No.	Pack. Unit
M12 socket, right angle, M12 plug, right angle, 0.2 m	756-3106/040-002	1
M12 socket, right angle, M12 plug, right angle, 0.3 m	756-3106/040-003	1
M12 socket, right angle, M12 plug, right angle, 0.5 m	756-3106/040-005	1
M12 socket, right angle, M12 plug, right angle, 1 m	756-3106/040-010	1
M12 socket, right angle, M12 plug, right angle, 2 m	756-3106/040-020	1
M12 socket, right angle, M12 plug, right angle, 3 m	756-3106/040-030	1
M12 socket, right angle, M12 plug, right angle, 5 m	756-3106/040-050	1
M12 socket, right angle, M12 plug, right angle, 7 m	756-3106/040-070	1
M12 socket, right angle, M12 plug, right angle, 10 m	756-3106/040-100	1
M12 socket, right angle, M12 plug, right angle, 20 m	756-3106/040-200	1

Power cable		
	Item No.	Pack. Unit
25 m	756-3100/000-250	1
50 m	756-3100/000-500	1
100 m	756-3100/000-1000	1

PROFIBUS cable



Connection technology	M12 socket/plug, B coded
Operating voltage	≤ 300 V
Operating current	4 A
Rated surge voltage	≥ 2 kV
Suitable for drag chain applications	≥ 1 Mio. bending cycles
Ambient temperature (operation) moved	-25 ... +60 °C
Protection type	IP67
Cable diameter	7.6 mm ±0.3

PROFIBUS cable, M12 socket, straight, B coded

	Item No.	Pack. Unit
M12 socket, straight, 2 m	756-1101/060-020	1
M12 socket, straight, 5 m	756-1101/060-050	1
M12 socket, straight, 10 m	756-1101/060-100	1
M12 socket, straight, 20 m	756-1101/060-200	1

PROFIBUS cable, M12 socket, right angle, B coded

	Item No.	Pack. Unit
M12 socket, right angle, 2 m	756-1102/060-020	1
M12 socket, right angle, 5 m	756-1102/060-050	1
M12 socket, right angle, 10 m	756-1102/060-100	1
M12 socket, right angle, 20 m	756-1102/060-200	1

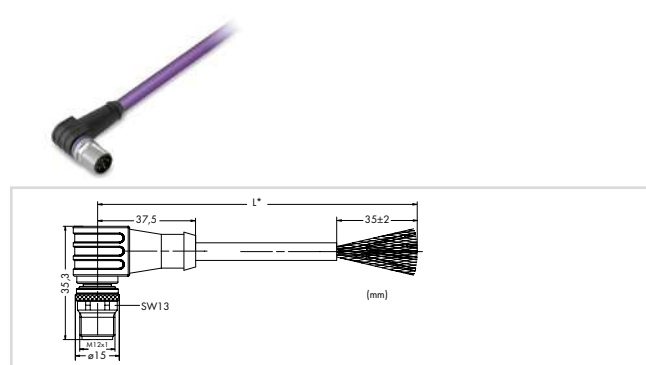
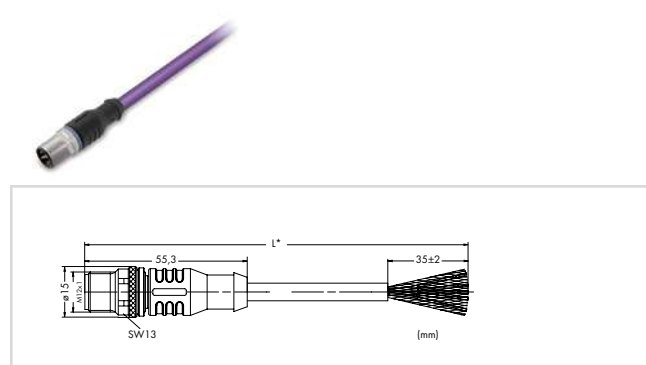
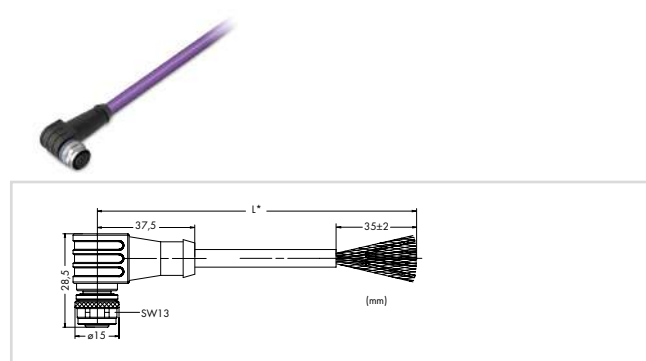
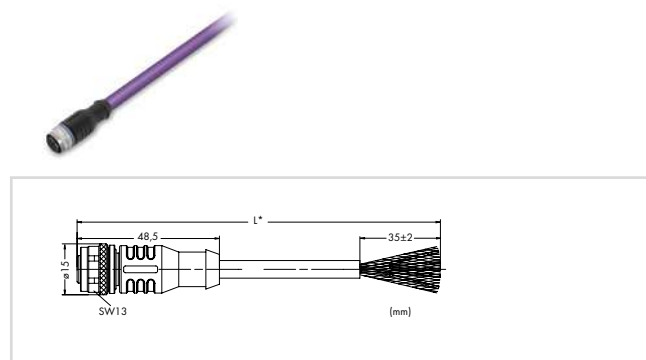
PROFIBUS cable, M12 plug, straight, B coded

	Item No.	Pack. Unit
M12 plug, straight, 2 m	756-1103/060-020	1
M12 plug, straight, 5 m	756-1103/060-050	1
M12 plug, straight, 10 m	756-1103/060-100	1
M12 plug, straight, 20 m	756-1103/060-200	1

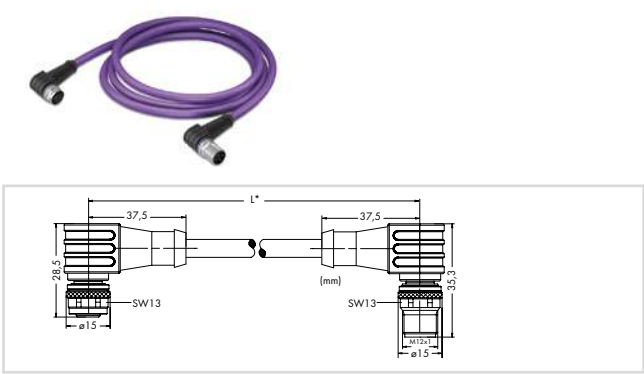
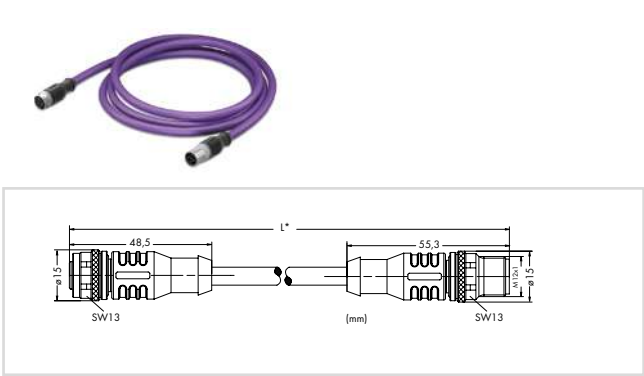
PROFIBUS cable, M12 plug, right angle, B coded

	Item No.	Pack. Unit
M12 plug, right angle, 2 m	756-1104/060-020	1
M12 plug, right angle, 5 m	756-1104/060-050	1
M12 plug, right angle, 10 m	756-1104/060-100	1
M12 plug, right angle, 20 m	756-1104/060-200	1

6



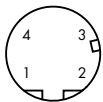
PROFIBUS cable



PROFIBUS cable, M12 socket – M12 plug, straight, B coded		
	Item No.	Pack. Unit
M12 socket, straight, M12 plug, straight, 2 m	756-1105/060-020	1
M12 socket, straight, M12 plug, straight, 5 m	756-1105/060-050	1
M12 socket, straight, M12 plug, straight, 10 m	756-1105/060-100	1
M12 socket, straight, M12 plug, straight, 20 m	756-1105/060-200	1

PROFIBUS cable, M12 socket – M12 plug, right angle, B coded		
	Item No.	Pack. Unit
M12 socket, right angle, M12 plug, right angle, 2 m	756-1106/060-020	1
M12 socket, right angle, M12 plug, right angle, 5 m	756-1106/060-050	1
M12 socket, right angle, M12 plug, right angle, 10 m	756-1106/060-100	1
M12 socket, right angle, M12 plug, right angle, 20 m	756-1106/060-200	1

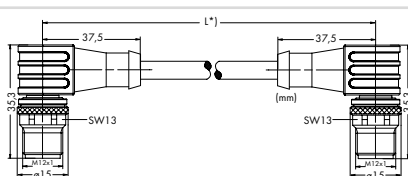
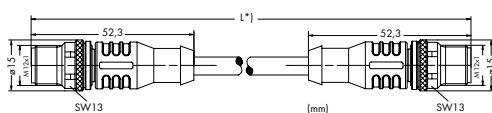
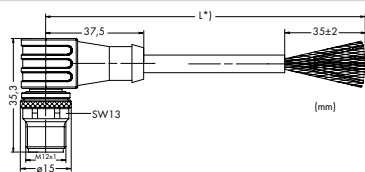
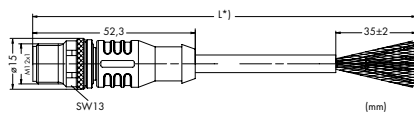
ETHERNET/PROFINET cable



M12 plug

Pin 1 - 4: 0.34 mm²

- 1 yellow
- 2 white
- 3 orange
- 4 blue



Connection technology	M12 plug, D coded
Operating voltage	250 V
Operating current	4 A
Rated surge voltage	2 kV
Suitable for drag chain applications	≥ 3 Mio. bending cycles
Ambient temperature (operation) moved	-40 ... +70 °C
Protection type	IP67
Cable diameter	6.5 mm ±0.2

ETHERNET/PROFINET cable, M12 plug, straight, D coded

	Item No.	Pack. Unit
M12 plug, straight, 2 m	756-1201/060-020	1
M12 plug, straight, 5 m	756-1201/060-050	1
M12 plug, straight, 10 m	756-1201/060-100	1
M12 plug, straight, 20 m	756-1201/060-200	1

ETHERNET/PROFINET cable, M12 plug, right angle, D coded

	Item No.	Pack. Unit
M12 plug, right angle, 2 m	756-1202/060-020	1
M12 plug, right angle, 5 m	756-1202/060-050	1
M12 plug, right angle, 10 m	756-1202/060-100	1
M12 plug, right angle, 20 m	756-1202/060-200	1

ETHERNET/PROFINET cable, M12 plug – M12 plug, straight, D coded

	Item No.	Pack. Unit
M12 plug, straight, M12 plug, straight, 2 m	756-1203/060-020	1
M12 plug, straight, M12 plug, straight, 5 m	756-1203/060-050	1
M12 plug, straight, M12 plug, straight, 10 m	756-1203/060-100	1
M12 plug, straight, M12 plug, straight, 20 m	756-1203/060-200	1

ETHERNET/PROFINET cable, M12 plug – M12 plug, right angle, D coded

	Item No.	Pack. Unit
M12 plug, right angle, M12 plug, right angle, 2 m	756-1204/060-020	1
M12 plug, right angle, M12 plug, right angle, 5 m	756-1204/060-050	1
M12 plug, right angle, M12 plug, right angle, 10 m	756-1204/060-100	1
M12 plug, right angle, M12 plug, right angle, 20 m	756-1204/060-200	1

sercos cable



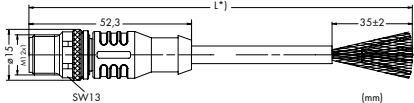
M12 plug

Pin 1 - 4: 0.34 mm²

- 1 yellow
- 2 white
- 3 orange
- 4 blue

Connection technology	M12 plug, D coded
Operating voltage	250 V
Operating current	4 A
Rated surge voltage	2 kV
Suitable for drag chain applications	≥ 3 Mio. bending cycles
Ambient temperature (operation) moved	-40 ... +70 °C
Protection type	IP67
Cable diameter	6.5 mm ±0.2

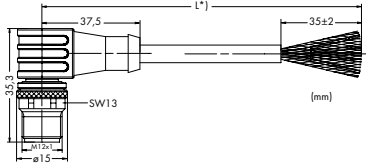




Technical drawing of straight sercos cable with dimensions: SW13, 52.3, L*, 35±2 (mm), ø 15.

sercos cable, M12 plug, straight, D coded		
	Item No.	Pack. Unit
M12 plug, straight, 2 m	756-1601/060-020	1
M12 plug, straight, 5 m	756-1601/060-050	1
M12 plug, straight, 10 m	756-1601/060-100	1
M12 plug, straight, 20 m	756-1601/060-200	1

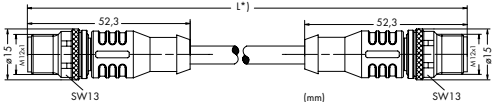




Technical drawing of right angle sercos cable with dimensions: 37.5, L*, 35±2 (mm), SW13, 52.3, ø 15.

sercos cable, M12 plug, right angle, D coded		
	Item No.	Pack. Unit
M12 plug, right angle, 2 m	756-1602/060-020	1
M12 plug, right angle, 5 m	756-1602/060-050	1
M12 plug, right angle, 10 m	756-1602/060-100	1
M12 plug, right angle, 20 m	756-1602/060-200	1

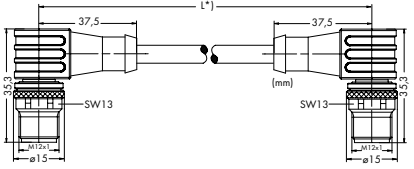




Technical drawing of straight sercos cable with dimensions: SW13, 52.3, L*, 35±2 (mm), ø 15.

sercos cable, M12 plug – M12 plug, straight, D coded		
	Item No.	Pack. Unit
M12 plug, straight, M12 plug, straight, 2 m	756-1603/060-020	1
M12 plug, straight, M12 plug, straight, 5 m	756-1603/060-050	1
M12 plug, straight, M12 plug, straight, 10 m	756-1603/060-100	1
M12 plug, straight, M12 plug, straight, 20 m	756-1603/060-200	1

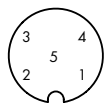




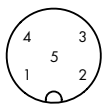
Technical drawing of right angle sercos cable with dimensions: 37.5, L*, 35±2 (mm), SW13, 52.3, ø 15.

sercos cable, M12 plug – M12 plug, right angle, D coded		
	Item No.	Pack. Unit
M12 plug, right angle, M12 plug, right angle, 2 m	756-1604/060-020	1
M12 plug, right angle, M12 plug, right angle, 5 m	756-1604/060-050	1
M12 plug, right angle, M12 plug, right angle, 10 m	756-1604/060-100	1
M12 plug, right angle, M12 plug, right angle, 20 m	756-1604/060-200	1

CANopen/DeviceNet cable



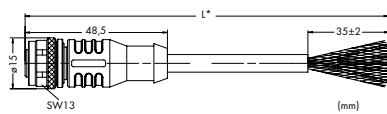
M12 socket



M12 plug

Pin 2 and 3: 0.38 mm²
Pin 4 and 5: 0.67 mm²

- 1 Shield
- 2 red
- 3 black
- 4 white
- 5 blue



Connection technology	M12 socket/ plug, A coded
Operating voltage	≤ 300 V
Operating current	4 A
Rated surge voltage	2 kV
Suitable for drag chain applications	≥ 5 Mio. bending cycles
Ambient temperature (operation) moved	-40 ... +80 °C
Protection type	IP67
Cable diameter	6.9 mm ±0.3

CANopen/DeviceNet cable, M12 socket, straight, A coded

	Item No.	Pack. Unit
M12 socket, straight, 2 m	756-1401/060-020	1
M12 socket, straight, 5 m	756-1401/060-050	1
M12 socket, straight, 10 m	756-1401/060-100	1
M12 socket, straight, 20 m	756-1401/060-200	1

CANopen/DeviceNet cable, M12 socket, right angle, A coded

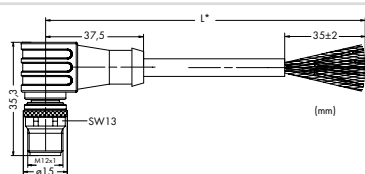
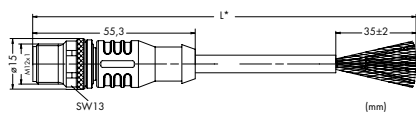
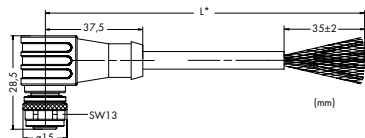
	Item No.	Pack. Unit
M12 socket, right angle, 2 m	756-1402/060-020	1
M12 socket, right angle, 5 m	756-1402/060-050	1
M12 socket, right angle, 10 m	756-1402/060-100	1
M12 socket, right angle, 20 m	756-1402/060-200	1

CANopen/DeviceNet cable, M12 plug, straight, A coded

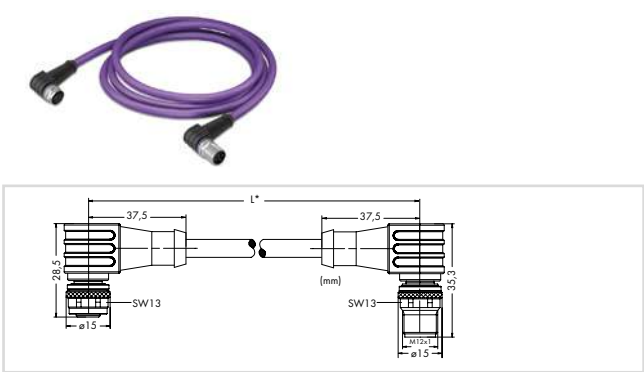
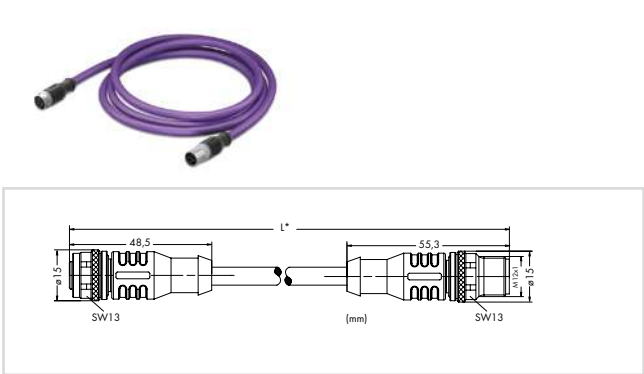
	Item No.	Pack. Unit
M12 plug, straight, 2 m	756-1403/060-020	1
M12 plug, straight, 5 m	756-1403/060-050	1
M12 plug, straight, 10 m	756-1403/060-100	1
M12 plug, straight, 20 m	756-1403/060-200	1

CANopen/DeviceNet cable, M12 plug, right angle, A coded

	Item No.	Pack. Unit
M12 plug, right angle, 2 m	756-1404/060-020	1
M12 plug, right angle, 5 m	756-1404/060-050	1
M12 plug, right angle, 10 m	756-1404/060-100	1
M12 plug, right angle, 20 m	756-1404/060-200	1



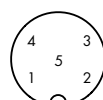
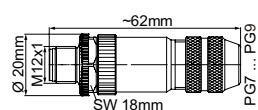
CANopen/DeviceNet cable



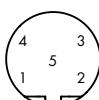
CANopen/DeviceNet cable, M12 socket – M12 plug, straight, A coded		
	Item No.	Pack. Unit
M12 socket, straight, M12 plug, straight, 2 m	756-1405/060-020	1
M12 socket, straight, M12 plug, straight, 5 m	756-1405/060-050	1
M12 socket, straight, M12 plug, straight, 10 m	756-1405/060-100	1
M12 socket, straight, M12 plug, straight, 20 m	756-1405/060-200	1

CANopen/DeviceNet cable, M12 socket – M12 plug, right angle, A coded		
	Item No.	Pack. Unit
M12 socket, right angle, M12 plug, right angle, 2 m	756-1406/060-020	1
M12 socket, right angle, M12 plug, right angle, 5 m	756-1406/060-050	1
M12 socket, right angle, M12 plug, right angle, 10 m	756-1406/060-100	1
M12 socket, right angle, M12 plug, right angle, 20 m	756-1406/060-200	1

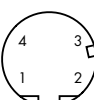
Configurable shielded connectors



A coded



B coded



D coded

Conductor size
 Ø 6 ... 8 mm
 screw clamp connection:
 0.14 ... 0.75 mm²
 spring clamp connection:
 0.14 ... 0.5 mm²

M12 plug, straight

Fitted pluggable connector, 5-pole shielded, M12 plug, straight A coded, Spring

Item No.

Pack. Unit

756-9207/060-000

1

Fitted pluggable connector, 5-pole shielded, M12 plug, straight B coded, Spring

756-9401/060-000

1

Fitted pluggable connector, 5-pole shielded, M12 plug, straight B coded, Screw

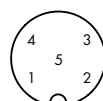
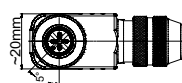
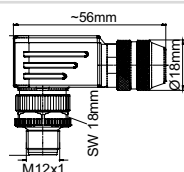
756-9411/060-000

1

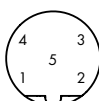
Fitted pluggable connector, 4-pole shielded, M12 plug, straight D coded, Spring

756-9501/060-000

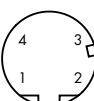
1



A coded



B coded



D coded

Conductor size
 Ø 6 ... 8 mm
 screw clamp connection:
 0.14 ... 0.75 mm²
 spring clamp connection:
 0.14 ... 0.5 mm²

M12 plug, right angle

Fitted pluggable connector, 5-pole shielded, M12 plug, right angle A coded, Spring

Item No.

Pack. Unit

756-9211/060-000

1

Fitted pluggable connector, 5-pole shielded, M12 plug, right angle B coded, Spring

756-9403/060-000

1

Fitted pluggable connector, 5-pole shielded, M12 plug, right angle B coded, Screw

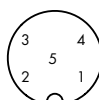
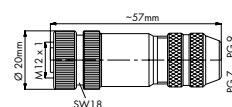
756-9413/060-000

1

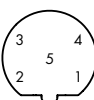
Fitted pluggable connector, 4-pole shielded, M12 plug, right angle D coded, Spring

756-9501/040-000

1



A coded



B coded

Conductor size
 Ø 6 ... 8 mm
 screw clamp connection:
 0.14 ... 0.75 mm²
 spring clamp connection:
 0.14 ... 0.5 mm²

M12 socket, straight

Fitted pluggable connector, 5-pole shielded, M12 socket, straight A coded, Spring

Item No.

Pack. Unit

756-9208/060-000

1

Fitted pluggable connector, 5-pole shielded, M12 socket, straight B coded, Spring

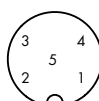
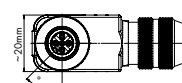
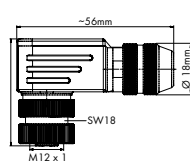
756-9402/060-000

1

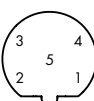
Fitted pluggable connector, 5-pole shielded, M12 socket, straight B coded, Screw

756-9412/060-000

1



A coded



B coded

Conductor size
 Ø 6 ... 8 mm
 screw clamp connection:
 0.14 ... 0.75 mm²
 spring clamp connection:
 0.14 ... 0.5 mm²

M12 socket, right angle

Fitted pluggable connector, 5-pole shielded, M12 socket, right angle A coded, Spring

Item No.

Pack. Unit

756-9210/060-000

1

Fitted pluggable connector, 5-pole shielded, M12 socket, right angle B coded, Spring

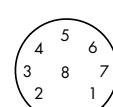
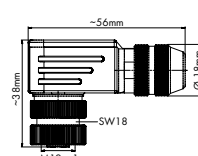
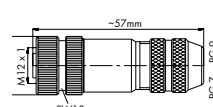
756-9404/060-000

1

Fitted pluggable connector, 5-pole shielded, M12 socket, right angle B coded, Screw

756-9414/060-000

1



8-pole

Conductor size
 Ø 6 ... 8 mm/
 0.14 ... 0.50 mm²

M12 socket, straight and right angle

Fitted pluggable connector, 8-pole shielded, M12 socket, straight, Screw

Item No.

Pack. Unit

756-9211/090-000

1

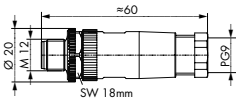
Fitted pluggable connector, 8-pole shielded, M12 socket, right angle, Screw

756-9214/090-000

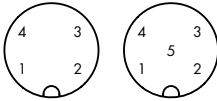
1

Configurable connectors with PG9 thread





Technical drawing of the M12 plug, straight connector. Dimensions include: overall length ≈ 60 mm, M12 thread section length ≈ 20 mm, and a hex key (SW) size of 18 mm for the PG9 thread section.

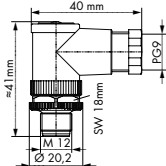


Terminal diagrams for the M12 plug, straight connector. The 4-pole version shows terminals 1, 2, 3, and 4. The 5-pole version shows terminals 1, 2, 3, 4, and 5.

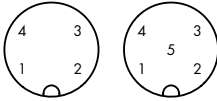
Conductor size
Ø 6 ... 8 mm
screw clamp connection:
0.25 ... 0.75 mm²
spring clamp connection:
0.14 ... 0.5 mm²

M12 plug, straight	Item No.	Pack. Unit
Fitted pluggable connector, 4-pole, M12 plug, straight A coded, Screw	756-9203/040-000	1
Fitted pluggable connector, 5-pole, M12 plug, straight A coded, Spring	756-9203/050-000	1





Technical drawing of the M12 plug, right angle connector. Dimensions include: overall length 40 mm, M12 thread section length ≈ 41 mm, and a hex key (SW) size of 18 mm for the PG9 thread section.

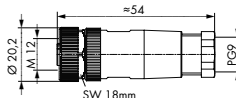


Terminal diagrams for the M12 plug, right angle connector. The 4-pole version shows terminals 1, 2, 3, and 4. The 5-pole version shows terminals 1, 2, 3, 4, and 5.

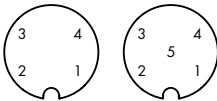
Conductor size
Ø 6 ... 8 mm
screw clamp connection:
0.25 ... 0.75 mm²
spring clamp connection:
0.14 ... 0.5 mm²

M12 plug, right angle	Item No.	Pack. Unit
Fitted pluggable connector, 4-pole, M12 plug, right angle A coded, Screw	756-9206/040-000	1
Fitted pluggable connector, 5-pole, M12 plug, right angle A coded, Spring	756-9206/050-000	1





Technical drawing of the M12 socket, straight connector. Dimensions include: overall length ≈ 54 mm, M12 thread section length ≈ 20.2 mm, and a hex key (SW) size of 18 mm for the PG9 thread section.

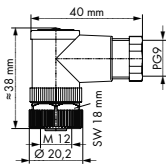


Terminal diagrams for the M12 socket, straight connector. The 4-pole version shows terminals 1, 2, 3, and 4. The 5-pole version shows terminals 1, 2, 3, 4, and 5.

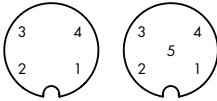
Conductor size
Ø 6 ... 8 mm
screw clamp connection:
0.25 ... 0.75 mm²
spring clamp connection:
0.14 ... 0.5 mm²

M12 socket, straight	Item No.	Pack. Unit
Fitted pluggable connector, 4-pole, M12 socket, straight A coded, Screw	756-9213/040-000	1
Fitted pluggable connector, 5-pole, M12 socket, straight A coded, Spring	756-9213/050-000	1





Technical drawing of the M12 socket, right angle connector. Dimensions include: overall length 40 mm, M12 thread section length ≈ 38 mm, and a hex key (SW) size of 18 mm for the PG9 thread section.

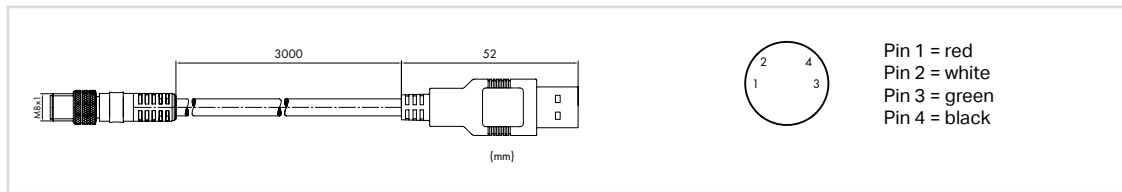


Terminal diagrams for the M12 socket, right angle connector. The 4-pole version shows terminals 1, 2, 3, and 4. The 5-pole version shows terminals 1, 2, 3, 4, and 5.

Conductor size
Ø 6 ... 8 mm
screw clamp connection:
0.25 ... 0.75 mm²
spring clamp connection:
0.14 ... 0.5 mm²

M12 socket, right angle	Item No.	Pack. Unit
Fitted pluggable connector, 4-pole, M12 socket, right angle A coded, Screw	756-9216/040-000	1
Fitted pluggable connector, 5-pole, M12 socket, right angle A coded, Spring	756-9216/050-000	1

USB communication cable, terminating resistors, T-piece



USB communication cable

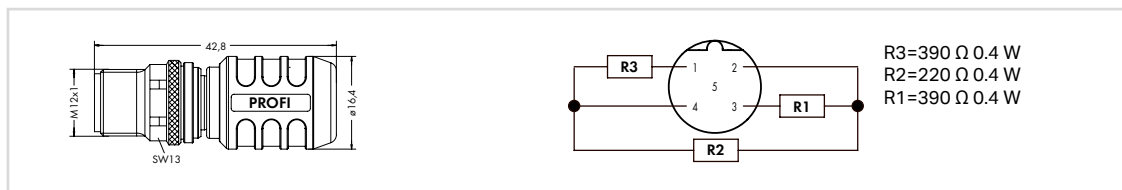
	Item No.	Pack. Unit
USB communication cable, M8 plug, straight, USB Typ A plug, straight, 3 m	756-4101/042-030	1



System bus terminating plug

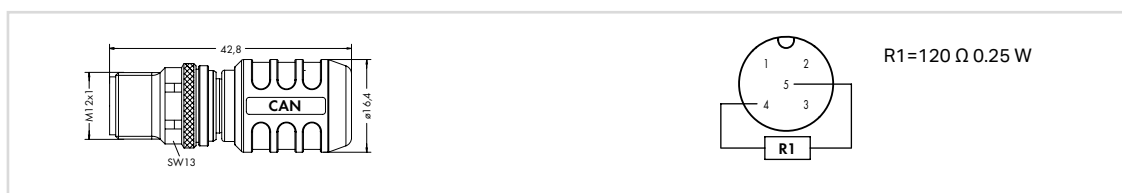
	Item No.	Pack. Unit
M12 system bus terminating plug, B coded, straight	756-9409/060-000	1

6



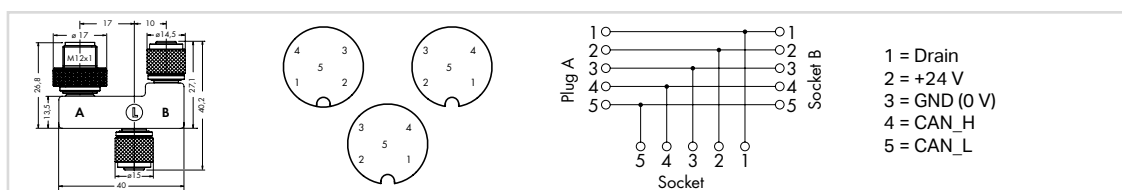
PROFIBUS terminating plug

	Item No.	Pack. Unit
M12 PROFIBUS terminating plug, B coded, straight	756-9405/060-000	1



CANopen, DeviceNet terminating plug

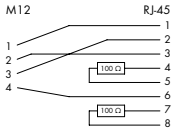
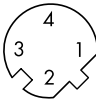
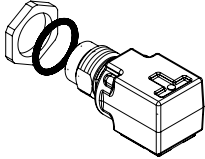
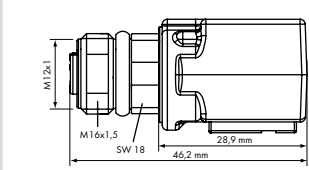
	Item No.	Pack. Unit
M12 CANopen, DeviceNet terminating plug, A coded, straight	756-9209/060-000	1



DeviceNet drop T-piece

	Item No.	Pack. Unit
M12 DeviceNet drop T-piece	756-9303/050-000	1

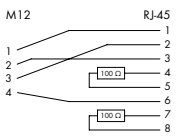
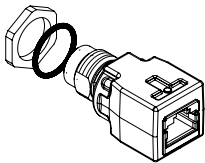
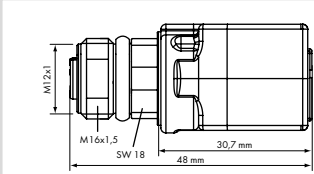
ETHERNET, PROFINET accessories



Adapter, right angle, M12 socket, D coded/RJ-45 socket

Item No.	Pack. Unit
756-9503/040-000	1

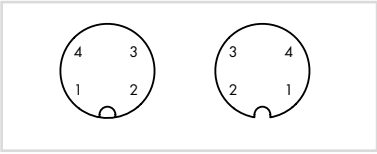
Adapter, right angle, M12 socket, D coded/RJ-45 socket (also ideally suited for control cabinet feedthrough applications or connecting IP67/IP20 components)



Adapter, straight, M12 socket, D coded/RJ-45 socket

Item No.	Pack. Unit
756-9504/040-000	1

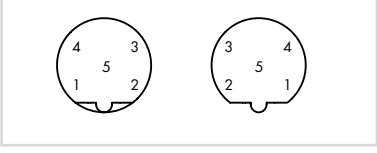
Adapter, straight, M12 socket, D coded/RJ-45 socket (also ideally suited for control cabinet feed-through applications) or connecting IP67/IP20 components)



M12 socket / M12 plug, A coded

Item No.	Pack. Unit
756-9217/050-000	1

M12 panel feed-through connectors, A coded

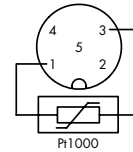
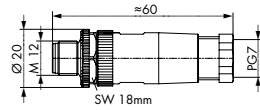


M12 socket / M12 plug, B coded

Item No.	Pack. Unit
756-9406/050-000	1

M12 panel feed-through connectors, B coded

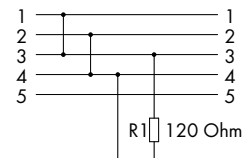
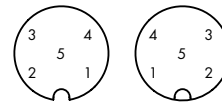
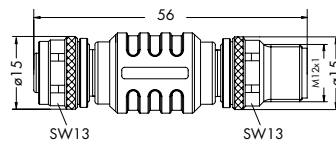
M12 termination and M23 configurable connectors



Conductor size
Ø 6 ... 8 mm /
0.14 - 0.5 mm²

Compensation connector, M12 plug, for 767-6403 Thermocoupler Module (Pt1000 sensor integrated)

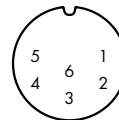
	Item No.	Pack. Unit
Compensation connector, M12 plug, straight, 5 poles, spring clamp technology	756-9207/050-000	1



Termination M12

	Item No.	Pack. Unit
RS-422/-485 Termination M12	756-9218/050-000	1

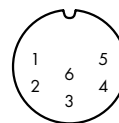
6



Conductor size
Ø 6.5 ... 10.5 mm / max. 2.5 mm²

M23 plug

	Item No.	Pack. Unit
Fitted pluggable connector, 6-pole, M23 plug, straight, Solder	756-9601/060-000	1
Fitted pluggable connector, 6-pole, M23 plug, right angle, Solder	756-9602/060-000	1



Conductor size
Ø 6.5 ... 10.5 mm / max. 2.5 mm²

M23 socket

	Item No.	Pack. Unit
Fitted pluggable connector, 6-pole, M23 socket, straight, Solder	756-9603/060-000	1
Fitted pluggable connector, 6-pole, M23 socket, right angle, Solder	756-9604/060-000	1



M23 assembly key

	Item No.	Pack. Unit
M23 assembly key	756-8201	1

Torque Wrench M8 and M12, Assembly kit



Assembly kit for 756 Series IP67 cable assemblies and pluggable connectors with hex nut, consists of:

- Tool kit
- Torque screwdriver with adjustable torque (window scale)
- Adjustment tool for changing the torque
- Socket wrench SW9 (for M8 cable assemblies)
- Socket wrench SW13 (for M12 cable assemblies)

A torque specification of 0.6 Nm for M8 connectors and 1.0 Nm for M12 connectors is required for 756 Series cables and connectors.

6

Torque Wrench M8 and M12			Torque range		0.4 ... 1 Nm ±6 %
			Material		
			Handle	Polypropylene (PP) for hard zone, thermoplastic elastomers (TPE) for soft zone	
			Allen key	Polyamide (PA), fiber-glassreinforced; chromium-vanadiummolybdenum steel (CrMoV) (1.2381)	
			Adjustment tools	Cellulose acetate; chromiumvanadium-molybdenum steel (CrMoV) (1.2381)	
			Color	black	
			Standards/specifications	EN ISO 6789; BS EN 26789; ASME B107.14.M	

Torque Wrench M8 and M12		
Item No.	Pack.	Unit
206-701	1	



Industrial Switches

Industrial switches

- Copper cables
- Fiber optic cables
- Ring redundancy

Industrial Switches

Contents

	Page				
General Product Information					378
Interfaces and Types					379
Versions					379
Application and Installation Instructions					380
Item Number Key					381
Standards and Rated Conditions					381
Approvals					381
	Managed	No. of Ports	Medium	Item No.	
		5	100Base-TX	852-101	382
		8	100Base-TX	852-102	382
		8/2	100Base-TX/ 100Base-FX	852-103	383
		8	1000Base-T	852-1102	384
	x	8/2	100Base-TX/ 1000Base-SX/LX	852-303	385
	x	8/4	1000Base-T/ 1000Base-SX/LX	852-1305	385
		5	100Base-TX	852-111	386
		8	100Base-TX	852-112	386
		5	1000Base-T	852-1111	387
		8	1000Base-T	852-1112	387
Accessories					
	SFP module, mounting carrier				388

Industrial switches

General Product Information

Always the Right Solution

WAGO's range of switches ensures the scalability of your ETHERNET network infrastructure, while providing outstanding electrical and mechanical characteristics. These robust devices are designed for industrial use and they are fully compliant with IEEE 802.3, IEEE 802.3u, IEEE 802.3ab.

Combinable with Fiber Optic Conductors

ETHERNET via fiber-optic cables offers a multitude of advantages for industrial applications. High immunity to interference, electrical isolation and long ranges up to 80 km are extremely beneficial characteristics — and all are compatible with the IT world!

Scaled Offering

Unmanaged and managed switches in various designs are available for high-end applications. Our ECO switches are ideal for cost-sensitive applications that do not require technical features such as redundancy. They are ideally suited for small- to medium-sized networks.

Modular Expandability

Exchangeable SPF modules can be used to adapt WAGO switches for various fiber optic cables and the necessary distances and fibers.

There are SFP modules for multimode and single mode fiber optic cables for ranges up to 80 km. With the optimum combination of copper and fiber optic cables, you are equipped for a multitude of requirements.

Web-Based Management

WAGO's fully managed switches have integrated Web-based management. Any Web browser can be used to configure the switch.

Integrated Function Monitoring

For monitoring and error reporting, the managed switch has configurable functions such as e-mail alarm and SNMP traps. In addition, all switches except for ECO versions can monitor individual ports or the power supply via a potential-free alarm contact. A DIP switch is used to configure this function.

Availability, Redundancy

Select industrial switches have several options to build redundant network structures and to guarantee secure communication even when connections are faulty:

- "Rapid Spanning Tree" per IEEE 802.1w compatible with IT standard
- Jetring — a simple ring protocol with a switching time of < 300 ms
- Xpress Ring — fast ring protocol switching time < 20 ms
- ERPSv2 per ITU-T standard switching time < 50 ms

In addition to redundancy of the communication link, a redundant power supply is integrated into the switches that can be monitored using an alarm relay. Thus, if the power supply fails, communication is not interrupted.

Different Operating Modes

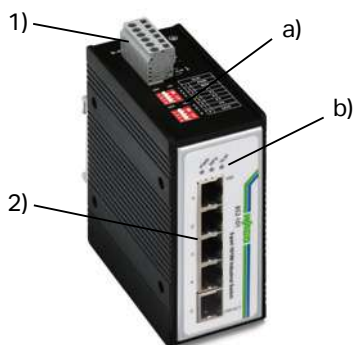
The unmanaged switches are ideally suited for direct plug-and-play use. Managed switches are available for applications where IP filtering or further interpretation of telegrams is required for the application.

Advantages:

- Adaptable to different transmission media
- Automatic adaptation to
 - Speed (auto-negotiation)
 - Wiring (auto-crossover, MDI/MDIX)
- Optional redundancy
- Larger supply voltage range

Industrial switches Interfaces and Types

Ⓐ



Power Supply (1)
Technologically related differences on
the connection level (2)

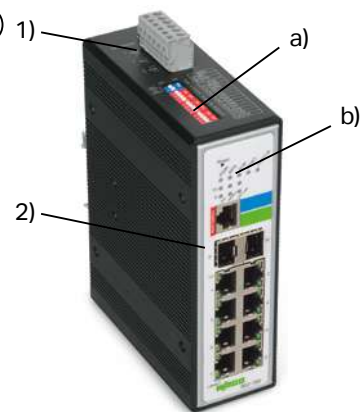
Housing Design (A)

- DIP switch for configuration (a)
- Diagnostic LEDs (b)
- W x H* x D (mm) 50 x 120 x 105

Housing Design (B)

- DIP switch for configuration (a)
- Diagnostic LEDs (b)
- W x H* x D (mm) 50 x 120 x 162

Ⓑ



Ⓒ



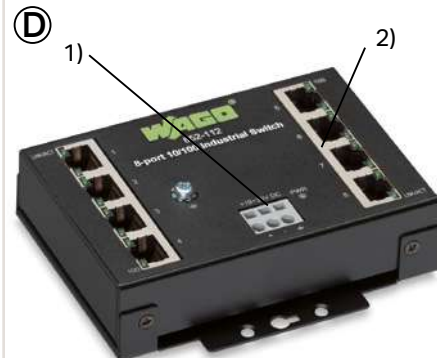
Housing Design ECO (C)

- W x H* x D (mm) 23.4 x 73.8 x 109.2
- 35 mm DIN-rail or wall-mount

Housing Design ECO (D)

- W x H* x D (mm) 109.2 x 23.4 x 73.8
- 35 mm DIN-rail or wall-mount
- * Height from upper edge of DIN-rail

Ⓓ



Ⓔ



Housing Design (E)

- SFP module for connecting fiber optic cables
- LC connector
- W x H x D (mm) 13.4 x 13.3 x 56.6

Versions



Extended Temperature Range

Industrial automation technology is typically operated in temperatures ranging from 0 ... 55 °C. However, there are applications that require an extended temperature range. Nearly all switches and SFP modules are available for an extended temperature range of -40 °C ... +70 °C.

Industrial switches

Application and Installation Instructions

Increasing Availability through Media Redundancy

A primary reason for the success of ETHERNET communication in automation technology is that redundant mechanisms exist and uptime can be increased. This is accomplished by duplicating components and lines so that defects, such as a broken cable, no longer cause communication to fail. However, this requires complex algorithms that detect errors and determine alternative paths without causing loops or rings in the network — and this is performed with the shortest possible downtime. WAGO provides select switches with corresponding features.

Rapid Spanning Tree

- Is a standardized protocol for determining the shortest path.
- Is used in any complex topologies to disable redundant paths.
- Determines the best alternative paths during a connection interruption and activates the required paths.
- Typically requires one to three seconds to switch.

Jetring

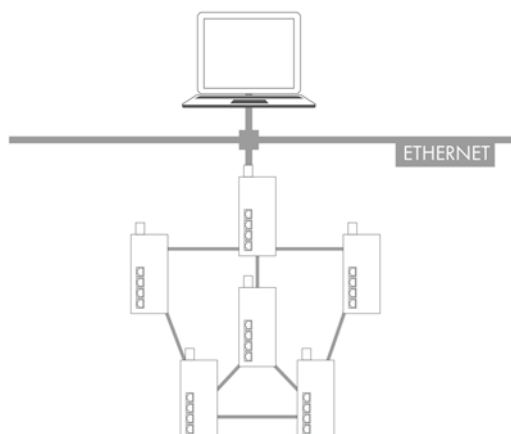
- Is a special ring protocol which does not need any special configuration.
- Automatically assigns a switch as the “master”; disables those network connections that would lead to loop and automatically switches over in case of failure.
- Typically requires approx. 300 ms to switch.
- Can be operated in “Fast Aging Mode” in connection with specific ETHERNET couplers/controllers for fast switching.

Xpress Ring

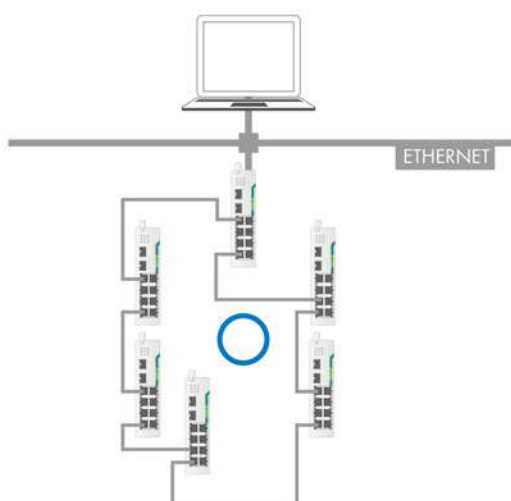
- Requires that all nodes in the ring support the protocol.
- Requires an explicit configuration of the connections.
- Requires less than 20 ms to switch.
- Is suitable as a protocol in redundant coupled ring systems (coupling ring).

ERPSv2 Ring

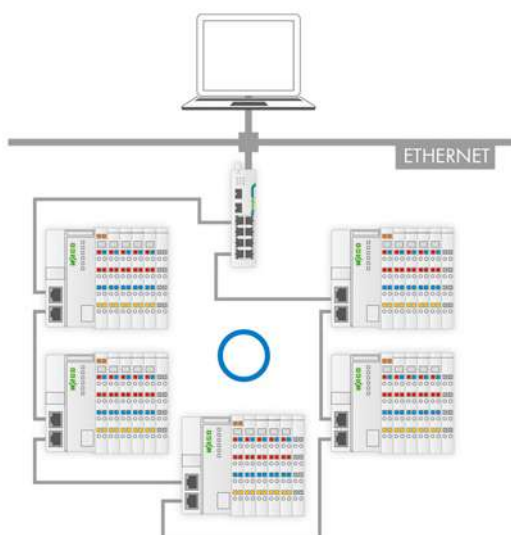
- Enables complex network structures, each with 6 rings per switch.
- Requires < 50 ms to switch.



Example: Complex topology



Example: Simple ring topology

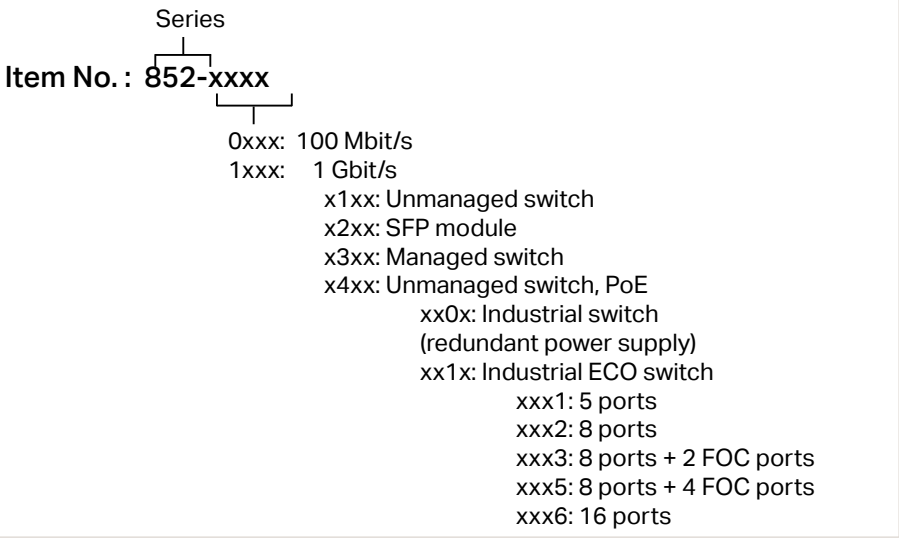


Example: Simple ring topology with 750-881 in “Fast Aging Mode”

Industrial switches

Item Number Key

Explanation of the components of an item number key



Standards and Rated Conditions

General Specifications	
Packet throughput per port	10 Mbps port: 14,880 packages per second (pps) 100 Mbps port: 148,800 packages per second (pps) 1000 Mbps port: 1,488,000 packages per second (pps)
Ambient temperature (operation)	−40 ... +70 °C
Ambient temperature (storage)	−40 ... +80 °C
Relative humidity	95 % non-condensing
Vibration resistance	4 g per IEC 60068-2-6
Shock resistance	15 g per IEC 60068-2-27
EMC immunity to interference	EN 61000-6-2
EMC emission of interference	EN 61000-6-4
Degree of protection	IP30
Mounting type	On 35 mm DIN-rail, ECO version also for wall mounting
Mounting position	Any

Approvals

Overview of the approvals in the article comparison in Section 12, Technical Appendix, or online under www.wago.com

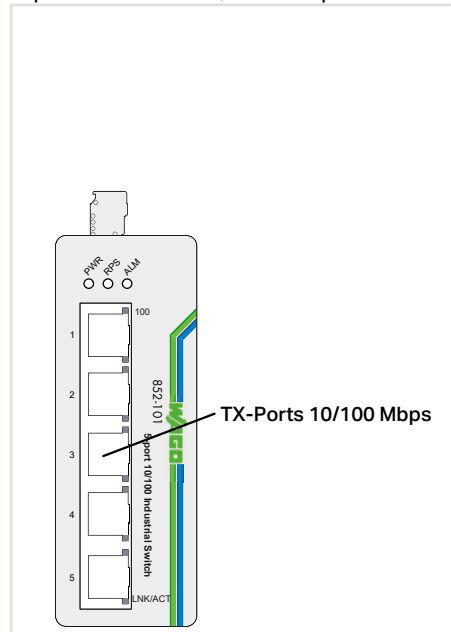


Industrial Switches

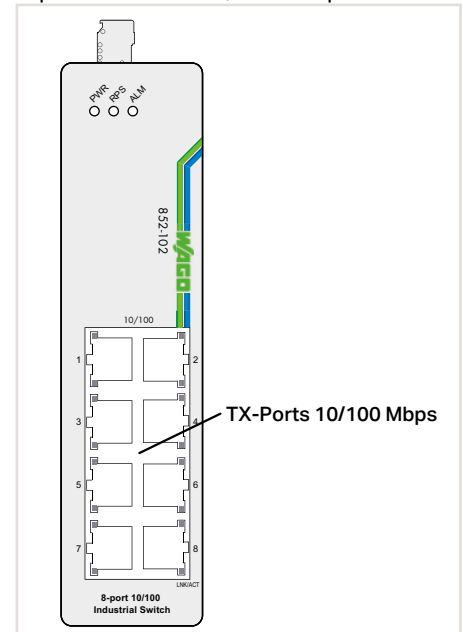


Figure: 852-101

5-port 100Base-TX, ext. Temperature



8-port 100Base-TX, ext. Temperature



Item description

Switch

Version

5Port T

Item no.

852-101

Technical Data

Switching mode

Store-and-Forward, non-blocking

No. of ports, copper

5 x 100Base-TX

Profiles supported

IEEE 802.3 10Base-T
IEEE 802.3u 100Base-TX
IEEE 802.3x Flow Control

Redundancy functions

Redundant DC power supply

Configuration

DIP switch for signal contact

Diagnostics

Signal contact

MAC table (large)

2000 addresses

Jumbo frame size

1536 bytes

Supply voltage

9 ... 48 VDC

Power consumption

4 W

ESD (contact/air discharge)

8 KV / 15 KV

Connection technology: Communication

5 x RJ-45

Ambient temperature (operation)

-40 ... +70 °C

Dimensions W x H x D

50 x 120 x 105 mm

Approvals

CE, UL 508

Data sheet and further information, see:

wago.com/852-101

Switch

8Port T

852-102

Store-and-Forward, non-blocking

8 x 100Base-TX

IEEE 802.3 10Base-T
IEEE 802.3u 100Base-TX
IEEE 802.3x Flow Control

Redundant DC power supply

DIP switch for signal contact

Signal contact

2000 addresses

1516 bytes

9 ... 48 VDC

5.3 W

8 KV / 15 KV

8 x RJ-45

-40 ... +70 °C

50 x 120 x 162 mm

CE, UL 508

wago.com/852-102

SFP Modules
see Page 388

DIN rails and tool
see Section 11

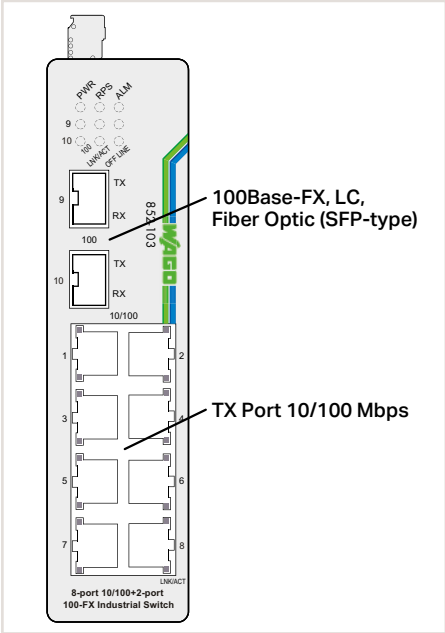
Approvals and corresponding ratings,
see Page 525 or www.wago.com

Industrial Switches



Figure: 852-103

8-port 100Base-TX, 2 x 100Base-FX,
ext. Temperature



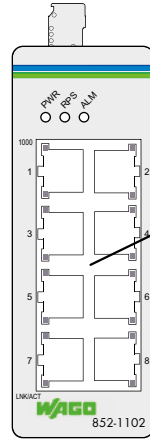
Item description	Switch
Version	8Port 2FOC T
Item no.	852-103
Technical Data	
Switching mode	Store-and-Forward, non-blocking
No. of ports, copper	8 x 100Base-TX
No. of ports, FOC	2 x 100Base-FX
Profiles supported	IEEE 802.3 10Base-T IEEE 802.3u 100Base-TX/FX IEEE 802.3x Flow Control
Redundancy functions	Redundant DC power supply
Configuration	DIP switch for signal contact
Diagnostics	Signal contact
MAC table (large)	2000 addresses
Jumbo frame size	1536 bytes
Supply voltage	9 ... 48 VDC
Power consumption	6.1 W
ESD (contact/air discharge)	8 KV / 15 KV
Connection technology: Communication	8 x RJ-45, 2 x SFP
Ambient temperature (operation)	-40 ... +70 °C
Dimensions W x H x D	50 x 120 x 162 mm
Approvals	CE, UL 508
Data sheet and further information, see:	wago.com/852-103

Industrial Switches

8-port 1000Base-T, ext. Temperature



Figure: 852-1102



Item description	Switch
Version	8Port Gb T
Item no.	852-1102
Technical Data	
Switching mode	Store-and-Forward, non-blocking
No. of ports, copper	8 x 1000Base-T
Profiles supported	IEEE 802.3 10Base-T IEEE 802.3u 100Base-TX IEEE 802.3ab 1000Base-T IEEE 802.3x Flow Control IEEE 802.3az Energy Efficient Ethernet IEEE 802.1p Class of Service Profinet CC-A
Redundancy functions	Redundant DC power supply
Configuration	DIP switch for signal contact
Diagnostics	Signal contact
MAC table (large)	8000 addresses
Jumbo frame size	9 kB
Supply voltage	9 ... 57 VDC
Power consumption	6 W
ESD (contact/air discharge)	8 KV / 15 KV
Connection technology: Communication	8 x RJ-45
Ambient temperature (operation)	-40 ... +70 °C
Dimensions W x H x D	50 x 120 x 105 mm
Approvals	CE, UL 508*
Data sheet and further information, see:	wago.com/852-1102

*pending

SFP Modules
see Page 388

DIN rails and tool
see Section 11

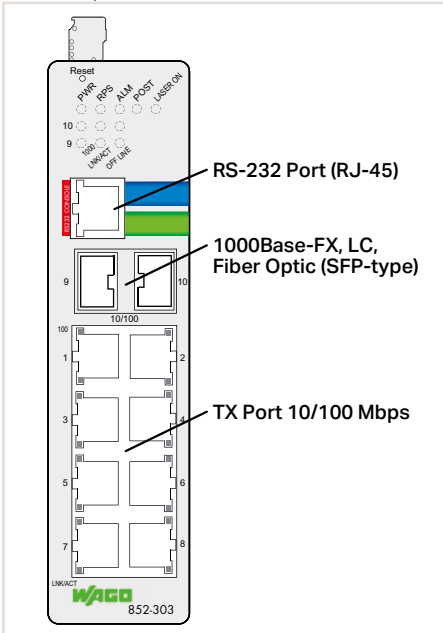
Approvals and corresponding ratings,
see Page 525 or www.wago.com

Industrial Managed Switches

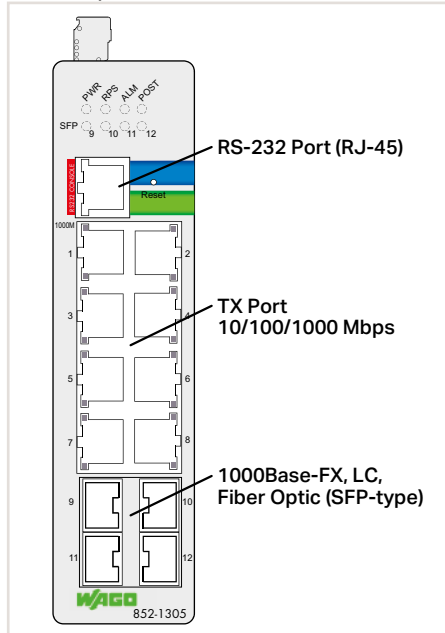


Figure: 852-303

8-port 100Base-TX, 2 x 1000Base-FX, ext. Temperature



8-port 1000Base-T, 4 x 1000Base-FX, ext. Temperature



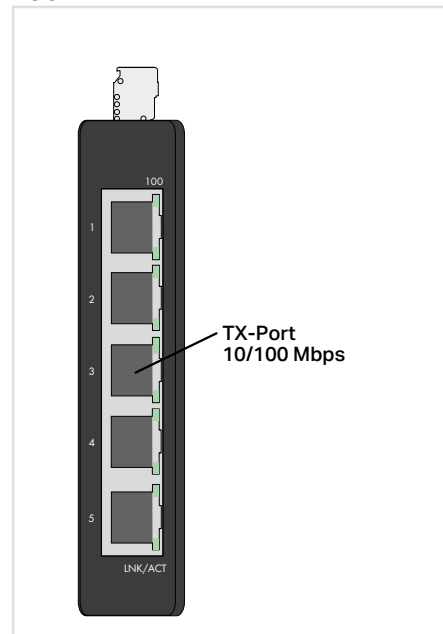
Item description	Managed Switch	Managed Switch
Version	8Port 2FOC Gb T	8Port Gb 4FOC Gb T
Item no.	852-303	852-1305
Technical Data		
Switching mode	Store-and-Forward, non-blocking	Store-and-Forward, non-blocking
No. of ports, copper	8 x 100Base-TX	8 x 1000Base-T
No. of ports, FOC	2 x 100Base-FX / 1000Base-SX/LX	4 x 1000Base-SX/LX
Profiles supported	IEEE 802.3 10Base-T IEEE 802.3u 100Base-TX/FX IEEE 802.3z 1000Base-SX/LX IEEE 802.3x Flow Control IEEE 802.3w RSTP IEEE 802.1q VLAN Tagging IEEE 802.1ab LLDP IEEE 802.1p Class of Service IEEE 802.1x Port Authentication ITU-T G.8032 ERPSv2	IEEE 802.3 10Base-T IEEE 802.3u 100Base-TX IEEE 802.3ab 1000Base-T IEEE 802.3z 1000Base-SX/LX IEEE 802.3x Flow Control IEEE 802.3w RSTP IEEE 802.1q VLAN Tagging IEEE 802.1ab LLDP IEEE 802.1p Class of Service IEEE 802.1x Port Authentication ITU-T G.8032 ERPSv2
Redundancy functions	Redundant DC power supply, STP, RSTP, MSTP, Je-tring < 300 ms, XPRESS ring < 20 ms, Dual homing < 20 ms, Dual ring, ERPSv2 < 50 ms, LCAP	Redundant DC power supply, STP, RSTP, MSTP, Je-tring < 300 ms, XPRESS ring < 20 ms, Dual homing < 20 ms, Dual ring, ERPSv2 < 50 ms, LCAP
Configuration	DIP switch for signal contact, Web-based CLI, SNMPv1/v2/v3	DIP switch for signal contact, Web-based CLI, SNMPv1/v2/v3
Diagnostics	Signal contact, MODBUS/TCP, port status, port statistics, port load, traffic monitor, SFP information, syslog, mail alarm, SNMP traps	Signal contact, MODBUS/TCP, port status, port statistics, port load, traffic monitor, SFP information, syslog, mail alarm, SNMP traps
MAC table (large)	16000 addresses	16000 addresses
Jumbo frame size	10 kB	10 kB
Supply voltage	12 ... 60 VDC	12 ... 60 VDC
Power consumption	12 W	12 W
ESD (contact/air discharge)	8 KV / 15 KV	8 KV / 15 KV
Connection technology: Communication	8 x RJ-45, 2 x SFP, 1 x RJ-45 (RS-232)	8 x RJ-45, 4 x SFP, 1 x RJ-45 (RS-232)
Communication standards	IEEE802.3x (in full duplex mode)	IEEE802.3x (in full duplex mode)
Ambient temperature (operation)	-40 ... +70 °C	-40 ... +70 °C
Dimensions W x H x D	50 x 120 x 162 mm	50 x 120 x 162 mm
Approvals	CE, DNV	CE, DNV
Data sheet and further information, see:	wago.com/852-303	wago.com/852-1305

Industrial Switches (ECO)

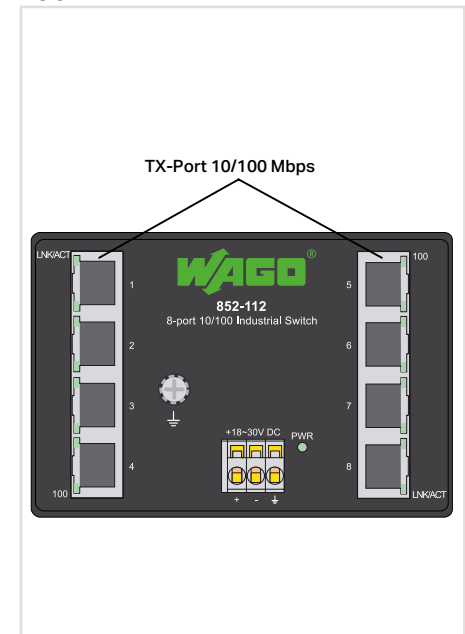


Figure: 852-111

5-port 100Base-TX, ext. Temperature, ECO



8-port 100Base-TX, ext. Temperature, ECO



Item description	Switch		Switch
Version	5Port T ECO		8Port T ECO
Item no.	852-111		852-112
Technical Data			
Switching mode	Store-and-Forward, non-blocking		Store-and-Forward, non-blocking
No. of ports, copper	5 x 100Base-TX		8 x 100Base-TX
Profiles supported	IEEE 802.3 10Base-T IEEE 802.3u 100Base-TX IEEE 802.3x Flow Control		IEEE 802.3 10Base-T IEEE 802.3u 100Base-TX IEEE 802.3x Flow Control
MAC table (large)	2000 addresses		2000 addresses
Jumbo frame size	1536 bytes		1536 bytes
Supply voltage	18 ... 30 VDC		18 ... 30 VDC
Power consumption	3 W		3 W
ESD (contact/air discharge)	4 kV / 8 kV		4 kV / 8 kV
Connection technology: Communication	5 x RJ-45		8 x RJ-45
Ambient temperature (operation)	-40 ... +70 °C		-40 ... +70 °C
Dimensions W x H x D	24 x 74 x 110 mm		110 x 24 x 74 mm
Approvals	CE,  , DNV (only with DNV attachment adapter),  UL 508		CE,  ,  UL 508
Data sheet and further information, see:	wago.com/852-111		wago.com/852-112
Accessories	Item no.	Page	
DNV mounting adapter	852-9101	389	

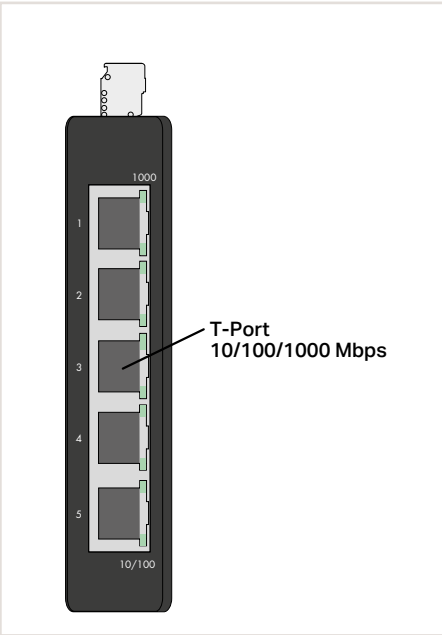
DIN rails and tool
see Section 11

Approvals and corresponding ratings,
see Page 525 or www.wago.com

Industrial Switches (ECO)

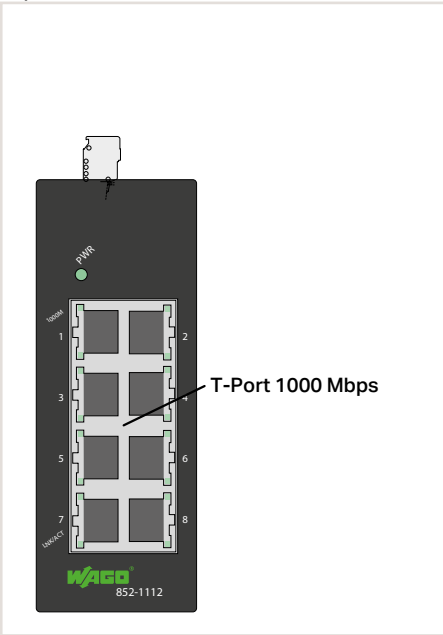


5-port 1000Base-T, ext. Temperature, ECO



T-Port 10/100/1000 Mbps

8-port 1000Base-T, ECO



T-Port 1000 Mbps

Figure: 852-1112

Item description	Switch	Switch
Version	5Port Gb T ECO	8Port Gb ECO
Item no.	852-1111	852-1112

Technical Data

Switching mode	Store-and-Forward, non-blocking	Store-and-Forward, non-blocking
No. of ports, copper	5 x 1000Base-T	8 x 1000Base-T
Profiles supported	IEEE 802.3 10Base-T IEEE 802.3u 100Base-TX IEEE 802.3ab 1000Base-T IEEE 802.3x Flow Control IEEE 802.1p Class of Service Profinet CC-A	IEEE 802.3 10Base-T IEEE 802.3u 100Base-TX IEEE 802.3ab 1000Base-T IEEE 802.3x Flow Control IEEE 802.3az Energy Efficient Ethernet IEEE 802.1p Class of Service Profinet CC-A
MAC table (large)	8000 addresses	8000 addresses
Jumbo frame size	9 kB	9 kB
Supply voltage	9 ... 48 VDC	9 ... 57 VDC
Power consumption	3 W	6 W
ESD (contact/air discharge)	4 kV / 8 kV	8 kV / 15 kV
Connection technology: Communication	5 x RJ-45	8 x RJ-45
Ambient temperature (operation)	-40 ... +70 °C	0 ... +60 °C
Dimensions W x H x D	24 x 74 x 110 mm	50 x 100 x 116 mm
Approvals	CE, DNV (only with DNV attachment adapter), UL 508*	CE, UL 508*
Data sheet and further information, see:	wago.com/852-1111	wago.com/852-1112

Accessories	Item no.	Page
DNV mounting adapter	852-9101	389

*pending

*pending

Automation Technology

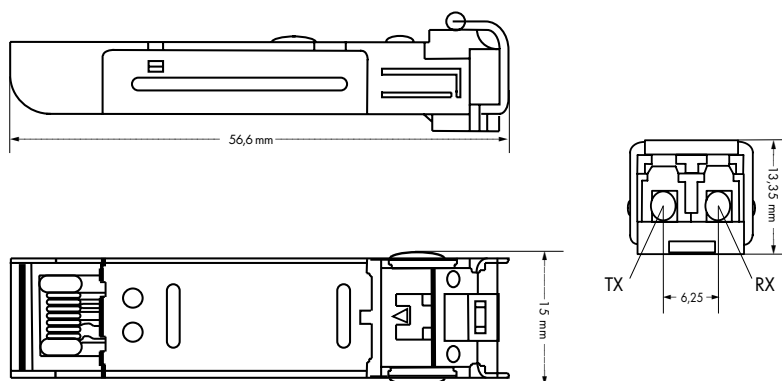
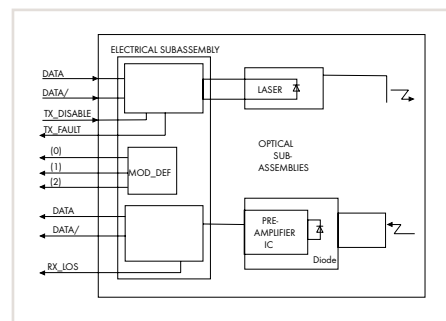
387

Industrial Switches – Accessories

SFP Modules

Features:

- Duplex LC optical connector
- Small Form-Factor Pluggable (SFP) industry-standard design
- Compliant with Fast ETHERNET standard and Gigabit ETHERNET standard IEEE802.3z
- Differential LVPECL inputs and outputs
- Power supply: 3.3 V
- TTL signal detect indicator
- Hot-pluggable capability



SFP Module 100BASE, FX Multi-mode
1310 nm LC, 2 km,
optional: ext. Temperature

Item description	SFP-Module 100BASE	
Version	FX 2km	FX 2km T
Item no.	852-201/107-002	852-201/040-002
Technical Data		
Wavelength	1310 nm	
Multimode fiber	62.5/125 µm, 50/125 µm	
Maximum lengths	2000 m	
Laser type	Laser class 1 per EN 60825-1	
Other		
Ambient temperature (operation)	0 ... +60 °C	-40 ... +70 °C
Dimensions W x H x D	13.4 x 13.3 x 56.6 mm	
Data sheet and further information, see:	wago.com/852-201	

SFP Module 1000BASE, SX Multi-mode
850 nm LC, 0.55 km, ext. Temperature,
Digital Diagnostics Monitoring

Item description	SFP-Module 1000BASE	
Version	SX 0.55km T DDM	
Item no.	852-1200	
Technical Data		
Wavelength	850 nm	
Multimode fiber	62.5/125 µm, 50/125 µm	
Maximum lengths	300 m, 550 m	
Laser type	Laser class 1 per EN 60825-1	
Other	Supports Digital Diagnostics Monitoring	
Ambient temperature (operation)	-40 ... +85 °C	
Dimensions W x H x D	13.4 x 13.3 x 56.6 mm	
Data sheet and further information, see:	wago.com/852-1200	

SFP Module 100BASE, LX Single-mode
1310 nm LC, 30 km

Item description	SFP-Module 100BASE	
Version	LX 30km	
Item no.	852-201/107-030	
Technical Data		
Wavelength	1310 nm	
Single-mode fiber	9/125 µm	
Maximum lengths	30000 m	
Laser type	Laser class 1 per EN 60825-1	
Other		
Ambient temperature (operation)	0 °C ... +60 °C	
Dimensions W x H x D	13.4 x 13.3 x 56.6 mm	
Data sheet and further information, see:	wago.com/852-201	

SFP Module 1000BASE, LX Single-mode
1310 nm LC, 10 km, optional: 80 km, ext.
Temperature, Digital Diagnostics Monitoring

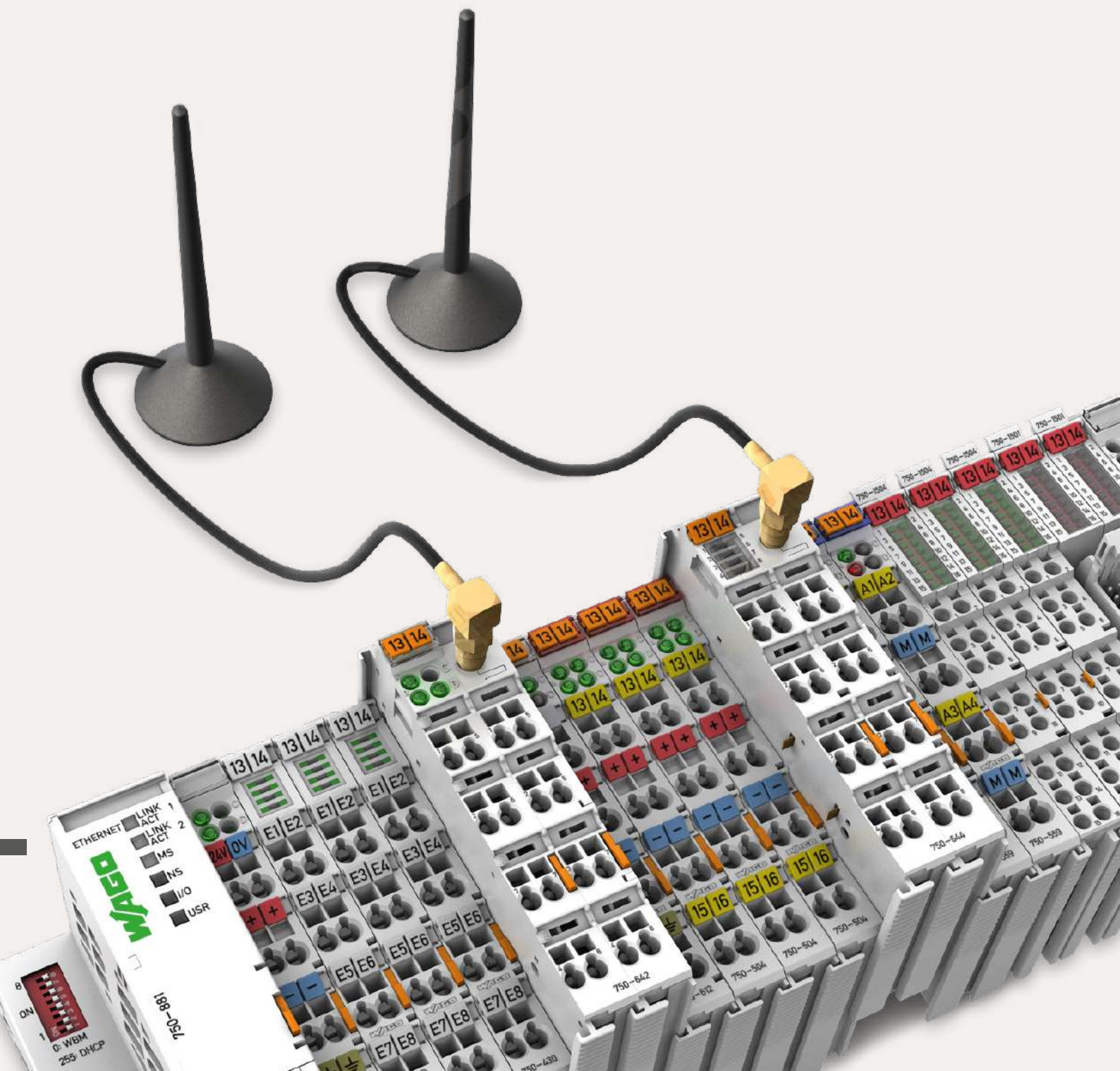
Item description	SFP-Module 1000BASE	
Version	LX 10km T DDM	ZX 80km T DDM
Item no.	852-1210	852-1280
Technical Data		
Wavelength	1310 nm	1550 nm
Single-mode fiber	9/125 µm	
Maximum lengths	10000 m	80000 m
Laser type	Laser class 1 per EN 60825-1	
Other	Supports Digital Diagnostics Monitoring	
Ambient temperature (operation)	-40 ... +85 °C	
Dimensions W x H x D	13.4 x 13.3 x 56.6 mm	
Data sheet and further information, see:	wago.com/852-1210	wago.com/852-1280

Industrial Switches – Accessories
DNV mounting adapter, ship approval



Item description
Item no.
Technical Data
Dimensions W x H x D
Weight
Data sheet and further information, see:

DNV Carrier Rail Adapter Switches
852-9101
20 x 9.6 x 102.2 mm
32.8 g
wago.com/852-9101



Radio Technology

Radio Technology

- Bluetooth®
- WLAN
- EnOcean®

TO-PASS® Telecontrol Technology

For applications that go beyond site boundaries

- Telecontrol technology based on GSM/GPRS

Section 9 ►

Radio Technology – *Bluetooth®*, WLAN and EnOcean® Components

Contents

			Page
	General Product Information		392
	Interfaces and Types		393
	Description	Item No.	
	<i>Bluetooth®</i> Application and Installation Instructions		394
	 750 I/O-System, Communication Modules, <i>Bluetooth®</i> /RF Transceiver	750-644	396
	 <i>Bluetooth®</i> ETHERNET Gateway	758-915	397
	 <i>Bluetooth®</i> Module, RS-232, IP67	757-801	398
	 WAGO Radio Adapter	750-921	399
	WLAN Application and Installation Instructions		400
	 WLAN ETHERNET Gateway		401
	• 2.4 GHz • 5 GHz	758-916 758-917	
	EnOcean® Application and Installation Instructions		402
	 750 I/O System, Communication Modules, Radio Receiver Module	750-642	403
	 Radio Transmitter, EnOcean® easyfit PTM 250		404
	• 2-Channel Lighting Control • 4-Channel Lighting Control • 2-Channel Blind Control • 4-Channel Blind Control	758-940/001-000 758-940/003-000 758-940/002-000 758-940/004-000	
	Accessories		
	Antennas		405

Radio Technology

General Product Information

Wireless Technology in the Industrial Environment

Wireless technology can support wired applications or enable completely new applications. In mobile or movable systems, wireless technology is the first choice when greater distances or obstacles must be overcome. It is an alternative for applications in which wired solutions are not economical or technically feasible.

Various wireless technologies can be used depending on the application.



Bluetooth® — Robust, Flexible, High-Performance

Well-known in consumer electronics, *Bluetooth®* technology is also well-suited to industrial use with its internationally approved frequency range, a very robust transmission technology (frequency hopping), real-time response and a range of up to 1000 m. It makes wireless process data communication between two stations possible (point-to-point communication), and also enables the setup of a piconet in which a *Bluetooth®* master can communicate with up to seven slaves, e.g., decentralized mobile sensors.

In addition, *Bluetooth®* can be used as the radio system for commissioning.

Features:

- Secure transmission (encrypted)
- AFH (Adaptive Frequency Hopping)
- Adaptive transmission power
- Uses the license-free 2.4 GHz frequency band

GPRS for Remote Connections

For applications that go beyond site boundaries, *TO-PASS®* telecontrol technology provides the right solution. More detailed information on *TO-PASS®* is available in Section 9.



WLAN — Full IT Integration

WLAN makes it easy to set up a wireless transmission link for ETHERNET protocols. This can be standard ETHERNET protocols, e.g., for communication between a smartphone and automation components. Industrial fieldbus protocols such as PROFINET, MODBUS/TCP or Ethernet/IP can also be used to link mobile equipment with stationary equipment. Ranges up to 400 m are possible depending on the transmission technology used.

EnOcean® — The Radio Standard in Building Automation



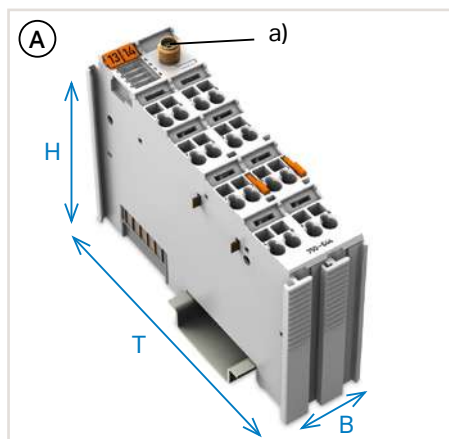
enocean®

Wireless switches and sensors based on EnOcean® technology harvest available energy to power themselves, e.g., kinetic energy from actuating a switch or sensors powered by ambient light. This energy harvesting completely eliminates maintenance of the radio transmitter at a range of up to 300 m in open air (30 m in buildings).

Advantages:

- Branch and application-specific — always the right radio system
- Industrial design: High-performance, rugged and safe
- Tightly integrated into WAGO automation technology

Radio Technology Interfaces and Types



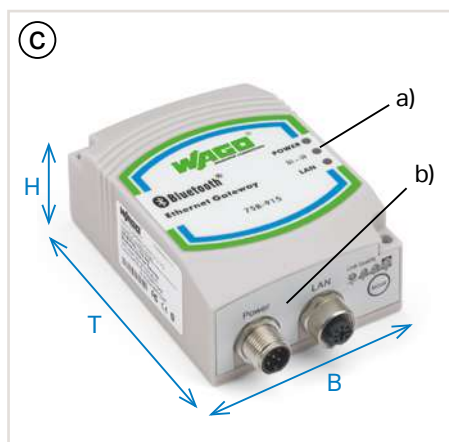
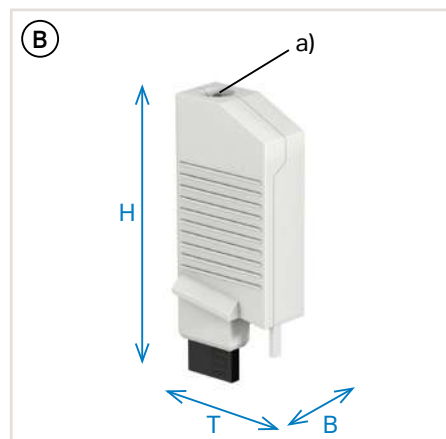
Communication Module for I/O-System (A)

- Can be used with the products:
 - Programmable fieldbus controllers (PFC)
 - Fieldbus couplers (FC) 750 I/O-System
- Antenna connection (a)
- W x H x D (mm) 24 x 72 x 100, approx. 6.5 mm of excess length with antenna socket

Radio Adapter (B)

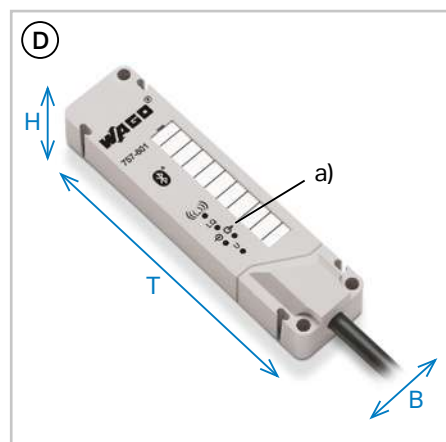
- Can be used with the products:
 - PFC, PFC 750 XTR Series, FC, FC 750 XTR Series
 - JUMPFLEX® Signal Conditioners, 2857 + 857 Series

- Integrated antenna
- Diagnostic LED (a)
- W x H x D (mm) 15 x 50 x 19



ETHERNET Gateway (C)

- Integrated converter from ETHERNET protocols to radio technology
- Integrated antenna
- Diagnostic LEDs (a)
- Connections with M12 pluggable connectors (b)
- Degree of protection: IP65
- W x H x D (mm) 66 x 36.2 x 91



RS-232, IP67 Module (D)

- Bluetooth® / RS-232 converter
- Diagnostic LEDs (a)
- Connecting cable
- Degree of protection: IP67
- W x H x D (mm) 30 x 20 x 117



Contact Units (GE)

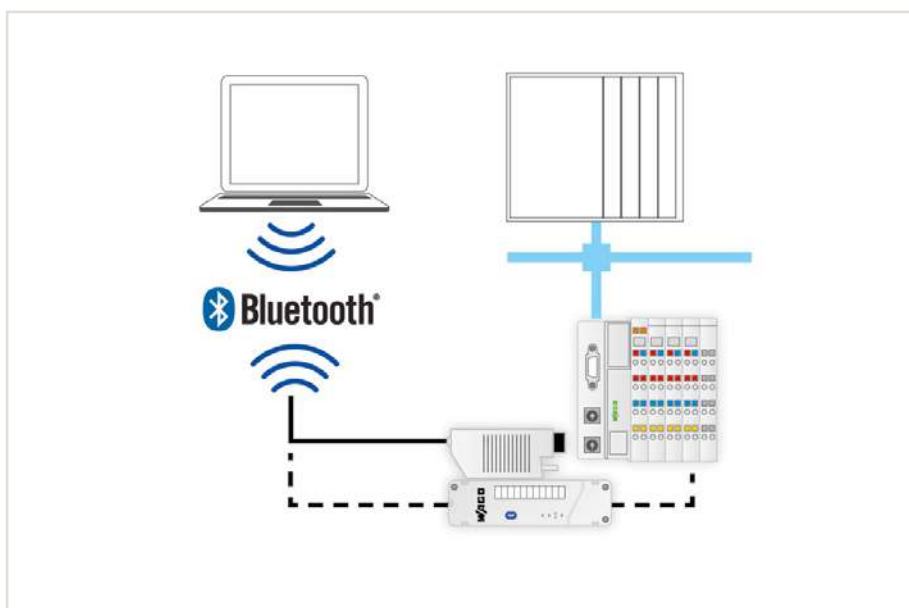
- Universal contact units for standard switch series in building automation
- Compatible with manufacturer programs from BERKER, GIRA, JUNG, MERTEN

Bluetooth® Wireless Technology

Application and Installation Instructions

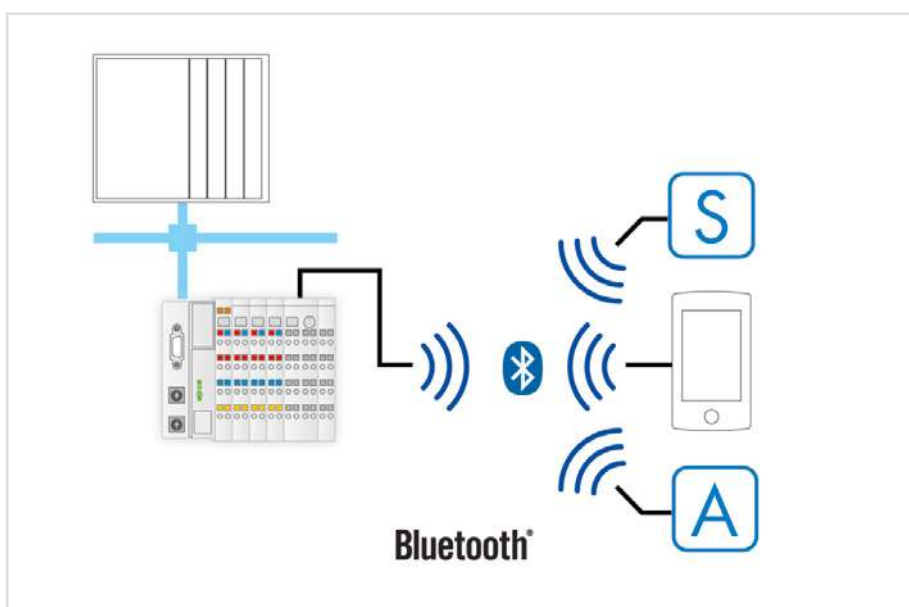
Wireless engineering

- Commissioning, maintenance
- For connecting WAGO software on a PC/notebook to a product's service interface
- Programmable fieldbus controllers
- Programmable XTR Fieldbus Controller
- 750 I/O-System Fieldbus Coupler
- 750 XTR I/O-System Fieldbus Coupler
- Temporary installation via compact Bluetooth® adapter
- Permanent installation with high degree of protection



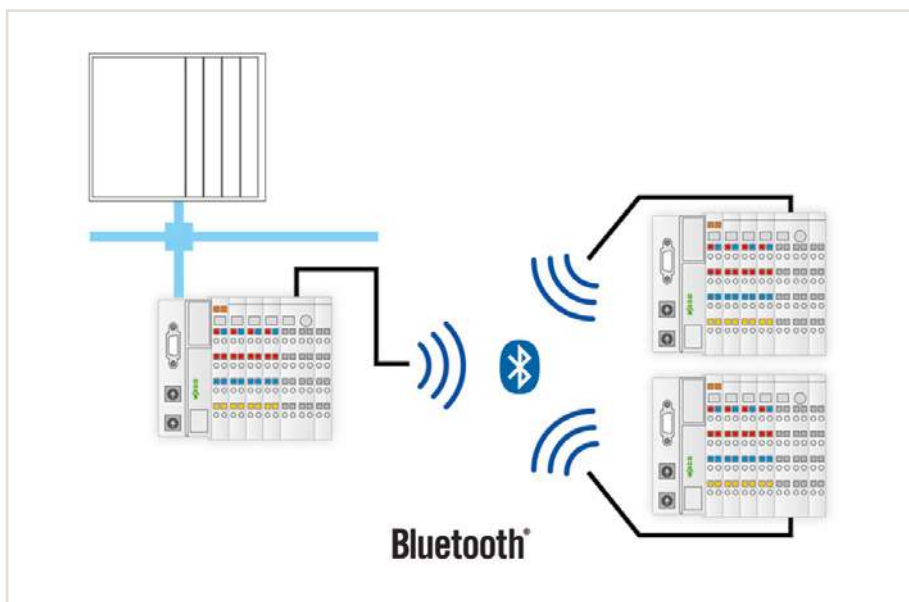
Integration of Mobile Sensors/Actuators

- Data exchange between up to eight modules
- Radio transmitter/receiver in the I/O module
- Operation on
 - Programmable fieldbus controllers
 - Fieldbus couplers
- Range: Up to 1000 m in open air



Connect Mobile Systems and Exchange Data Between Two or More Stations

- Fieldbus-independent coupling of I/O stations (up to eight) or programmable fieldbus controllers
- E.g., for coupling a mobile unit with a stationary basic system
- Or for wireless data exchange between several stations over long distances
- Process data coupling
- Range: Up to 1000 m in open air

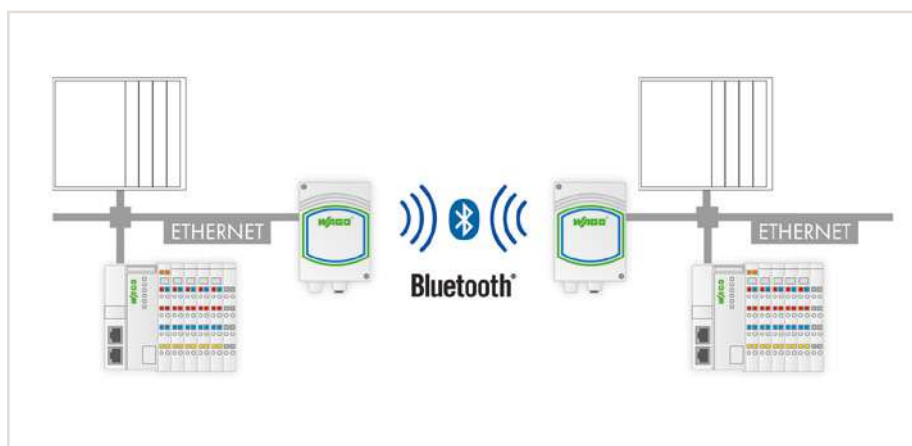


Bluetooth® Wireless Technology

Application and Installation Instructions

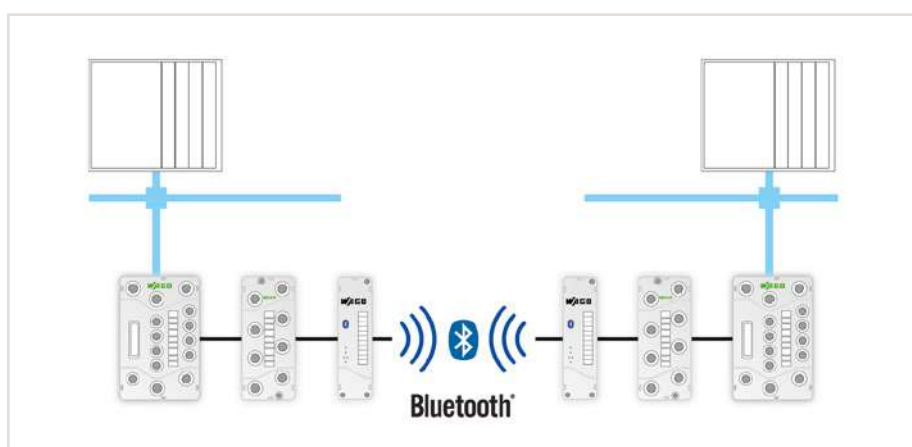
Tunneling ETHERNET Fieldbuses

- Point-to-point connection (between two nodes), e.g., for connecting mobile units to a central controller or for connecting stationary stations
- Tunneling PROFINET, MODBUS/TCP, ETHERNET/IP, etc., via Bluetooth® wireless technology
- Process data coupling
- Range: Up to 300 m in open air



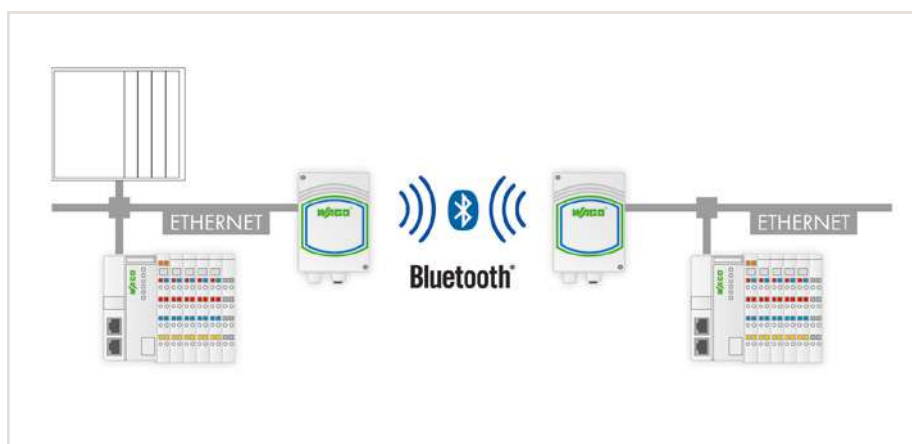
Connect Mobile Systems (IP67)

- Fieldbus-independent coupling of I/O stations or programmable fieldbus controllers
- E.g., for coupling a mobile unit with a stationary basic system
- Process data coupling
- Range: Up to 100 m in open air



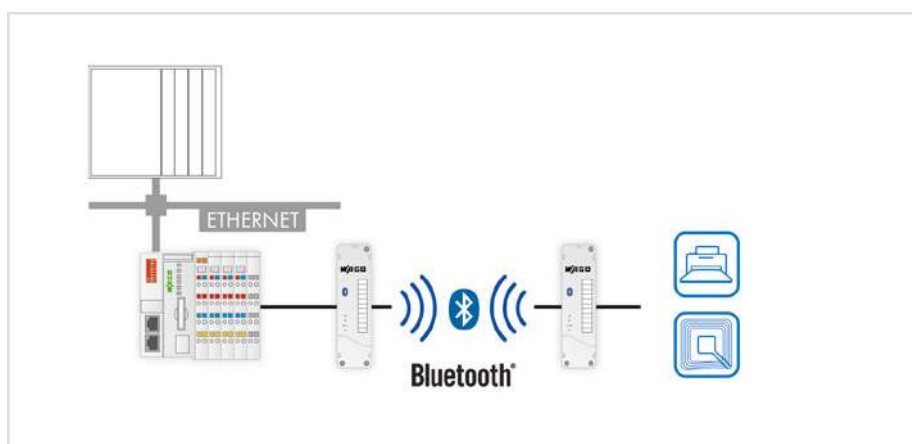
Coupling Mobile Systems

- Tunneling ETHERNET telegrams via Bluetooth® wireless technology
- Point-to-point connection, e.g., for coupling a mobile unit with a stationary basic system
- Process data coupling
- Range: Up to 300 m in open air



Wirelessly connect to serial devices

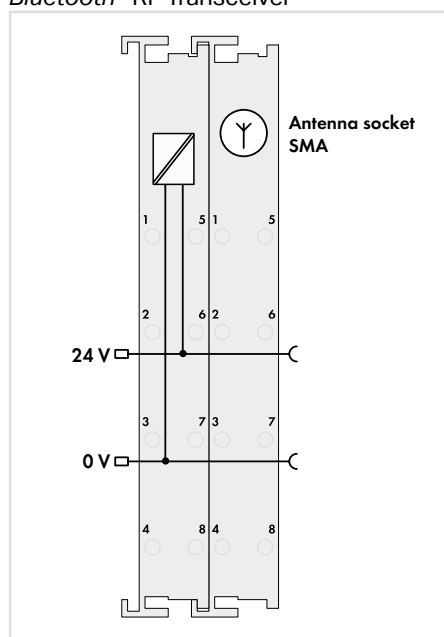
- Coupling of standard devices with RS-232 interface
- E.g., a printer to a mobile unit controlled by a stationary basic system
- Or to a portable RFID reader
- Range: Up to 100 m in open air



Bluetooth® RF Transceiver



Bluetooth® RF Transceiver



Item description

Item no.

Bluetooth® RF-Transceiver

750-644

Technical Data

Antenna	External via SMA socket
Radio technology	Bluetooth® 2.0 + EDR
Topology	Piconet (1 master, max. 7 slaves)
Profiles	SPP, PAN
Frequency band	ISM band, 2402 ... 2480 MHz
Transmitter power	Up to 20 dBm (Bluetooth® Class 1)
Receiver sensitivity	-94 dBm
Transmission range	Max. 1000 m free field, 100 m within buildings*
Power supply (Bluetooth®)	24 VDC via power jumper contacts
Current consumption, system supply	20 mA
System supply voltage	5 VDC via data contacts
Internal data width	Configurable to 12, 24, 48 bytes, including 1 control/status byte
Diagnostics (via visual indicator)	Device status, connection status (radio connection quality, signal strength, interference)
Diagnostics (via process image)	Device status, connection status (radio connection quality, signal strength, interference), time monitoring
EMC immunity to interference	acc. to EN 61000-6-2
EMC emission of interference	acc. to EN 61000-6-3
Ambient temperature (operation)	0 ... +55 °C
Dimensions W x H x D	24 x 72 x 100 mm
Approvals	FCC approval (this device complies with Part 15 of FCC rules), Bluetooth® approval, CE, UL 508, ANSI/ISA, ATEX/IECEx
Data sheet and further information, see:	wago.com/750-644

Accessories

External antenna

Item no.	Page
758-912	405

The *Bluetooth®* Transceiver enables wireless exchange of process data with up to seven other devices using *Bluetooth®* 2.0 radio technology. Interoperability with *Bluetooth®* devices is provided via the *Bluetooth®* PAN and SPP profiles and is not restricted to any one manufacturer.

The module's extended diagnostic functions include cyclic and acyclic state information. For quick on-site diagnostics, main information on operational status and radio connection is also displayed via 8 LEDs.

* The specifications only apply when the antenna listed as an accessory is used. The maximum range in the field decreases with use in buildings and changes depending on the building materials used and the spatial geometry. Therefore range specifications within buildings can only represent typical values which can normally be reached. More detailed information is available in the manual.

Software WAGO-I/O-PRO V2.3, WAGO-I/O-CHECK, see Section 1

Approvals and corresponding ratings, see Page 521 or www.wago.com

Bluetooth® ETHERNET Gateway



Power connector:

M12 plug, A-coded



- 1: Vin + (DC 9 ... 30 V)
- 2: External Trigger Ground
- 3: Vin GND (0 V)
- 4: External Trigger + (DC 9 ... 30 V)
- 5: n.c.

ETHERNET connector:

M12 socket, D-coded



- 1: Transmit +
- 2: Receive +
- 3: Transmit -
- 4: Receive -

Item description	Bluetooth® ETHERNET Gateway
Item no.	758-915
Technical Data	
Radio technology	Bluetooth® 2.0
Topology	Peer-to-peer connection
Profiles supported	Generic Access Profile (GAP), Personal Area Networking Profile (PANU, NAP)
Frequency band	ISM band, 2402 ... 2480 MHz
Transmission range	Up to 400 m (Class 1)*
Antenna	Integrated
Power supply	24 VDC
Voltage range	9 ... 30 VDC
Connections	- ETHERNET: M12 connector, D-coded; - Supply: M12 connector, A-coded
Configuration	Simple, push-button operation and Web-based management
Number of inputs	1 (trigger input)
Ambient temperature (operation)	-30 ... +65 °C
Dimensions W x H x D	66 x 36.2 x 91 mm
Protection type	IP65
EMC immunity to interference	acc. to EN 61000-6-2
EMC emission of interference	acc. to EN 61000-6-3
Approvals	R&TTE (Europe), FCC/CFR 47 part 15, IC (Industrie Canada), C E
Data sheet and further information, see:	wago.com/758-915

* The maximum range in the field decreases with use in buildings and changes depending on the building materials used and the spatial geometry. Therefore range specifications within buildings can only represent typical values which can normally be reached. More detailed information is available in the manual.

The *Bluetooth®* ETHERNET gateway simplifies creation of a wireless transmission link for ETHERNET protocols (e.g., PROFINET, MODBUS/TCP, Ethernet/IP).

The gateway is used as a cable substitute to create a robust, industry-proven *Bluetooth®* 2.0 link between two automation devices. IP65 degree of protection and an internal circularly polarized antenna allow it to be used even in harsh industrial environments. Simple, push-button operation provides very fast connection between two *Bluetooth®* ETHERNET gateways. Additional settings can be made via Web-based management.

Bluetooth® Adaptive Frequency Hopping (AFH) and "Low Emission Mode™" provide excellent coexistence with other wireless systems, such as WLAN.

Note:

Two *Bluetooth®* ETHERNET gateways are required to establish a peer-to-peer connection.

Bluetooth® Module



Item description	Bluetooth® Module
Version	RS-232, IP67
Item no.	757-801
Technical Data	
Version	Bluetooth® 2.1
Radio	Class 1 / max. 100 m*
Antenna	Integrated
Frequency range	ISM band, 2402 ... 2483 MHz
Type of communication	Peer-to-peer connection
Profiles supported	Serial Port Profile (SPP)
Security encryption	Bluetooth® security mode 4 "Secure Simple Pairing" 128-bit encryption
Baud rate	9600 ... 115200 bit/s
Power supply	+24 VDC
Display	Five LEDs
Mounting	Screw mount
Connections	RS-232
Ambient temperature (operation)	-20 ... +60 °C (static); -5 ... +60 °C (moving)
Dimensions W x H x D	30 x 20 x 117 mm
Protection type	IP67
EMC immunity to interference	acc. to EN 61000-6-2
EMC emission of interference	acc. to EN 61000-6-3
Connecting cable	Cable length: 5 m
Approvals	Bluetooth® approval, CE
Data sheet and further information, see:	wago.com/757-801

WAGO's 757-801 *Bluetooth®* Module wirelessly connects a serial interface to external *Bluetooth®* devices (e.g., PCs/notebooks with *Bluetooth®*). Data is exchanged via *Bluetooth®* SPP (Serial Port Profile).

Substitute cabling between two serial devices by automatically restoring the outgoing wireless connection (e.g., to a second *Bluetooth®* module). High protection class provides enhanced, wireless *Bluetooth®* module's installation outside of control cabinets.

Diagnostic LEDs signal the quality of the wireless connection and communication via the RS232 interface.

* The maximum range in the field decreases with use in buildings and changes depending on the building materials used and the spatial geometry. Therefore range specifications within buildings can only represent typical values which can normally be reached. More detailed information is available in the manual.

Bluetooth® Adapter



Item description	
Item no.	
Technical Data	
Range	
Data transfer rate	
Frequency range	
Type of communication	
Profiles supported	
Version	
Radio	
Antenna	
Connections	
Configuration	
Function	
LED	
Security encryption	
Ambient temperature (operation)	
Dimensions W x H x D	
Approvals	
Data sheet and further information, see:	

Bluetooth® Adapter	
750-921	
	30 m free field (Class 2)*
	9600 ... 115000 bit/s
	ISM band, 2402 ... 2483 MHz
	Peer-to-peer connection
	Serial Port Profile (SPP)
	Bluetooth® 2.1
	Class 2
	Integrated
	4-pole service connector
	AT commands, e.g., via hyperterminal
	Master or slave
	Operating mode
	128-bit encryption
	-20 ... +60 °C
	15 x 50 x 19 mm
	Bluetooth® approval, CE
	wago.com/750-921

The *Bluetooth®* Adapter wirelessly connects a notebook computer with *Bluetooth®* functionality to the service interface of the fieldbus coupler/ controller. It also provides an active connection to a programmable fieldbus controller. As a cable substitute, the *Bluetooth®* Adapter allows communication between two controllers, as well as between fieldbus couplers/controllers via WAGO software tools. The adapter is supplied via the service interface and, therefore, via the power supply of the fieldbus coupler/controller.

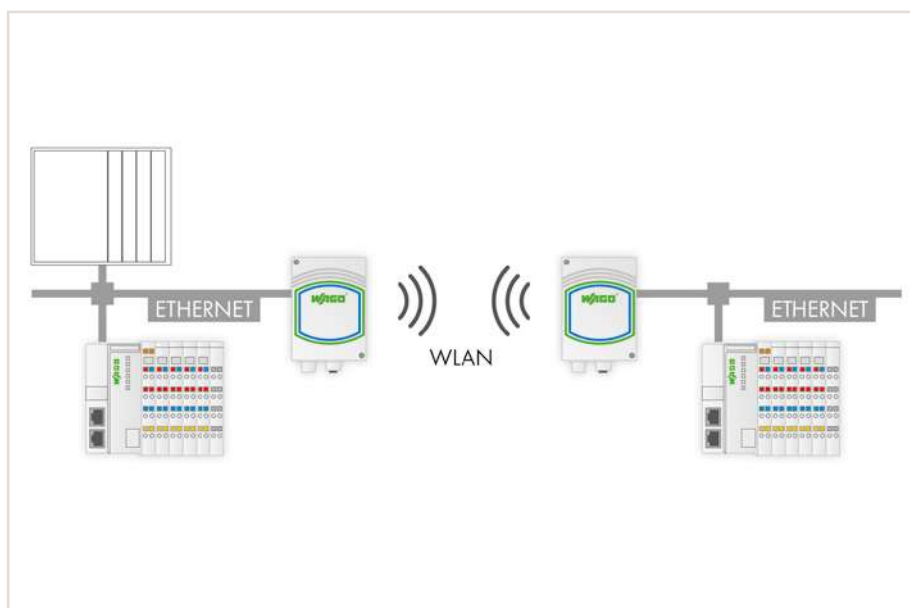
* The maximum range in the field decreases with use in buildings and changes depending on the building materials used and the spatial geometry. Therefore range specifications within buildings can only represent typical values which can normally be reached. More detailed information is available in the manual.

WLAN Wireless Technology

Application and Installation Instructions

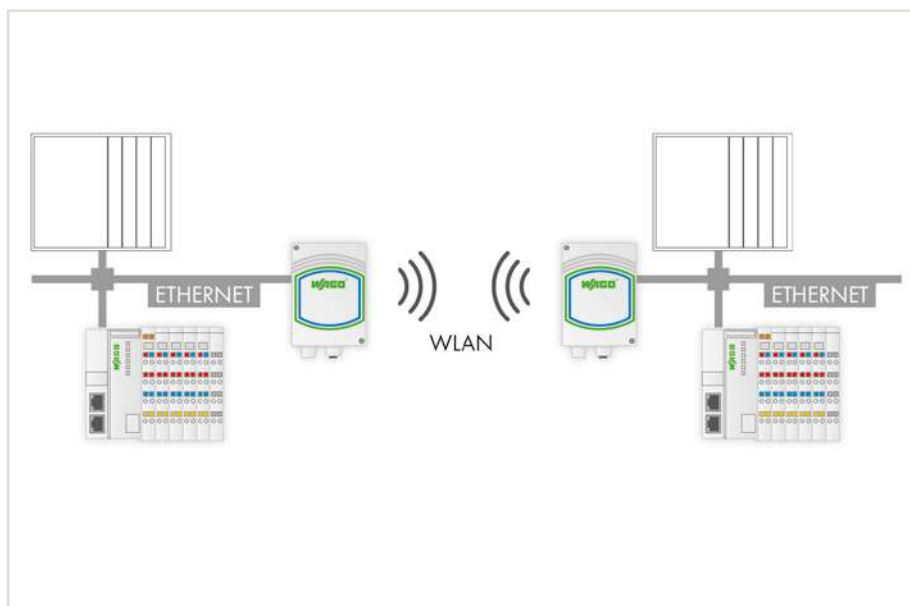
Connect Mobile Systems

- Peer-to-peer connection (between two nodes), e.g., for coupling a mobile unit with a stationary basic system
- Tunneling ETHERNET telegrams via WLAN wireless technology
- Process data coupling
- Range: Up to 400 m in open air (2.4 GHz frequency band)
- Range: Up to 200 m in open air (5 GHz frequency band)



Tunneling ETHERNET Fieldbuses

- Peer-to-peer connection (between two nodes), e.g., for connecting mobile units to a central controller
- Tunneling PROFINET, MODBUS/TCP, Ethernet/IP, etc., via WLAN wireless technology
- Process data coupling
- Range: Up to 400 m in open air (2.4 GHz frequency band)
- Range: Up to 200 m in open air (5 GHz frequency band)



WLAN ETHERNET Gateway



Power connector:
M12 plug, A-coded



- 1: Vin + (DC 9 ... 30 V)
- 2: External Trigger Ground
- 3: Vin GND (0 V)
- 4: External Trigger + (DC 9 ... 30 V)
- 5: n.c.

ETHERNET connector:
M12 socket, D-coded



- 1: Transmit +
- 2: Receive +
- 3: Transmit -
- 4: Receive -

Item description	WLAN ETHERNET Gateway	
Version	2.4 GHz IP65	5 GHz IP65
Item no.	758-916	758-917
Technical Data		
Radio technology	IEEE 802.11 bgn	IEEE 802.11 an
Topology	Peer-to-peer connection	
Security authentication	Open, shared, WPA/WPA2 PSK, LEAP, PEAP	
Security encryption	None, WEP64, WEP128, TKIP, AES/CCMP	
Frequency band	ISM band, 2.4 GHz	ISM band, 5 GHz
Transmission range	Up to 400 m*	Up to 200 m*
Antenna	Inside	
Power supply	24 VDC	
Connections	- ETHERNET: M12 connector, D-coded, - Supply: M12 connector, A-coded	
Configuration	Simple, push-button operation and Web-based management	
Number of inputs	1 (trigger input 9–30 VDC)	
Ambient temperature (operation)	–30 ... +65 °C	
Dimensions W x H x D	66 x 36.2 x 91 mm	
Protection type	IP65	
EMC immunity to interference	Per EN 61000-6-2	
EMC emission of interference	Per EN 61000-6-3	
Approvals	R&TTE (Europe), FCC/CFR 47 part 15, IC (Industry Canada), C E	
Data sheet and further information, see:	wago.com/758-916	wago.com/758-917

WAGO WLAN ETHERNET Gateways simplify creation of a wireless transmission link for ETHERNET protocols (e.g., PROFINET, MODBUS/TCP, Ethernet/IP). The gateway is used as a cable substitute to create a robust, industry-proven WLAN link between two automation devices. IP65 degree of protection and an internal circularly polarized antenna allow it to be used even in harsh industrial environments. Simple, push-button operation provides very fast connection between two WLAN ETHERNET Gateways. Additional settings can be made via Web-based management.

Note:
Two WLAN ETHERNET Gateways of the same type are required to establish a peer-to-peer connection.

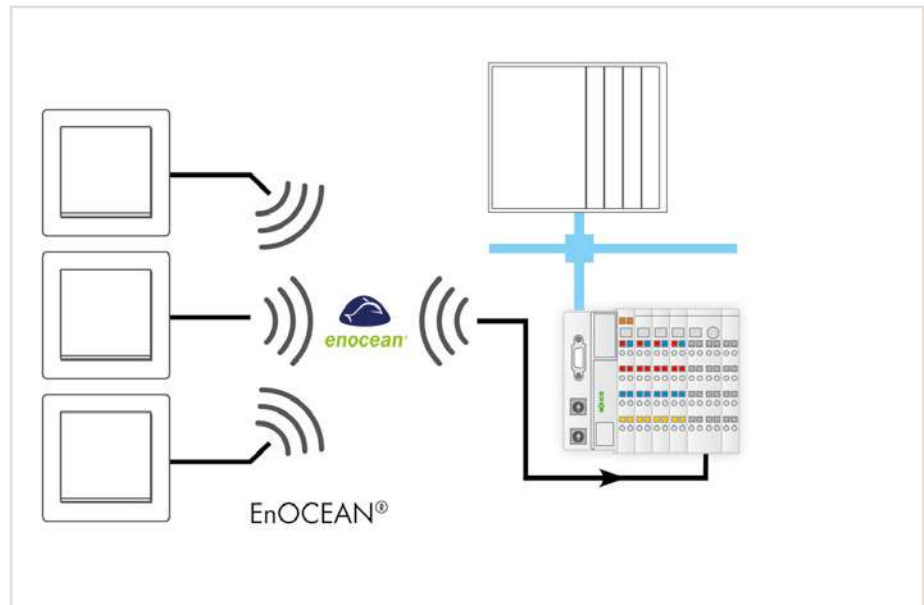
* The maximum range in the field decreases with use in buildings and changes depending on the building materials used and the spatial geometry. Therefore range specifications within buildings can only represent typical values which can normally be reached. More detailed information is available in the manual.

EnOcean® Radio Technology

Application and Installation Instructions

Integration into the WAGO-I/O-SYSTEM

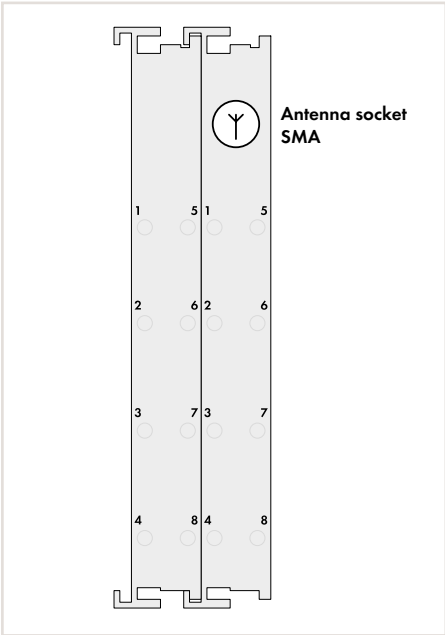
- Receiver in the I/O module
- Operation on
 - Programmable fieldbus controllers
 - Fieldbus couplers
- Range: Up to 300 m in open air, approx. 30 m in buildings



Radio Receiver EnOcean



Radio Receiver EnOcean



Item description	
Item no.	
Technical Data	
Antenna	
Frequency band	
Transmission range	
Transmission protocol (radio telegram)	
System supply voltage	
Current consumption, system supply	
Internal data width	
EMC immunity to interference	
EMC emission of interference	
Ambient temperature (operation)	
Dimensions W x H x D	
Approvals	
Data sheet and further information, see:	
Accessories	
External antenna	

Radio Receiver EnOcean	
750-642	
External via SMA socket	
868.3 MHz	
Up to 300 m in open field (30 m typical in buildings, see manual)*	
EnOcean	
5 VDC via data contacts	
80 mA	
1 x 24 bits in/out (3 bytes user data), 1 x 8 bits control/status	
acc. to EN 61000-6-2	
acc. to EN 61000-6-3	
0 ... +55 °C	
24 x 72 x 100 mm	
CE,  Marine,  UL 508, ANSI/ISA,  ATEX/ IECEX	
wago.com/750-642	

Item no.	Page
758-910	405

* The maximum range in the field decreases with use in buildings and changes depending on the building materials used and the spatial geometry. Therefore range specifications within buildings can only represent typical values which can normally be reached. More detailed information is available in the manual.

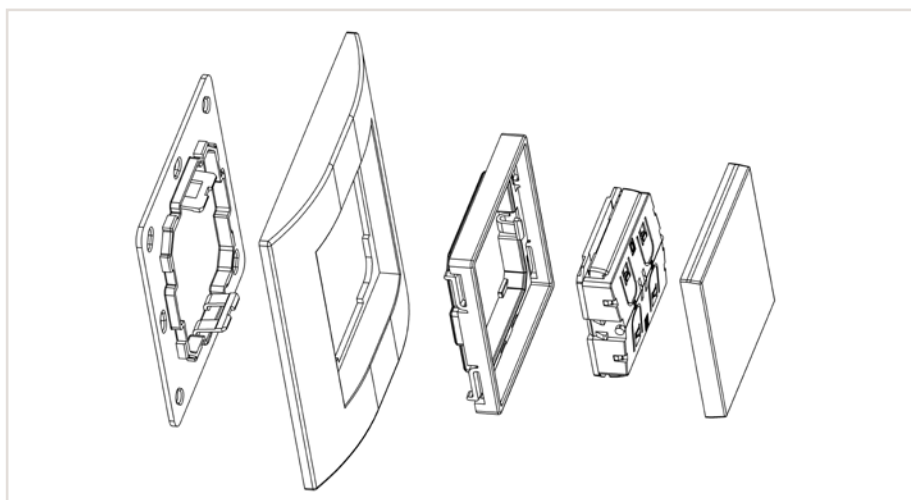
This radio receiver receives radio telegrams from maintenance-free, battery-less and wireless switches and sensors based on EnOcean radio technology.

The energy required for switch or sensor operation is produced by converting one type of energy (heat, solar or mechanical energy) into usable electrical energy.

The LED (RSSI) indicates a sufficient input level.

Preprogrammed function blocks for WAGO Controllers make integration easy.

EnOcean® easyfit PTM 250 Radio Transmitter



Item description

Version

Item no.

EnOcean easyfit PTM 250

2-channel light

758-940/001-000

4-channel light

758-940/003-000

2-channel roller blind

758-940/002-000

4-channel roller blind

758-940/004-000

Technical Data

Integrated radio transmitter

Radio technology

Range

Antenna

Total installation height

Dimensions of rocker / frame cut-out / center plate

Assembly

Color

Rocker switch variant

Relative humidity

Ambient temperature (operation)

Compatibility

Approvals

Data sheet and further information, see:

EnOcean PTM 200

EnOcean 868 MHz, RPS type 2

300 m free field, 30 m typical within buildings*

Integrated

14 mm (frame lies directly on surface)

50 x 50 mm / 55 x 55 mm / 71 x 71 mm

Flat on surface, glued (double-sided mounting film enclosed) or screwed

Pure white

Rocker switch with neutral middle position

Series rocker switches

Rocker switch with neutral middle position

Series rocker switches

95 % non condensing

-25 ... + 65 °C

BERKER, GIRA, JUNG, MERTEN

R&TTE, CE

wago.com/758-940

PTM 250 is a universal, extremely flat function switch insert with maintenance-free energy generator. The universal switch insert fits in numerous frame programs from various installation material suppliers. The base plate can be glued or screwed into position for easy attachment to glass as well as plaster. Integration into the frame is similar to universal inserts for antenna sockets.

Delivered without frame; frames must be ordered separately from the desired manufacturer program

* The maximum range in the field decreases with use in buildings and changes depending on the building materials used and the spatial geometry. Therefore range specifications within buildings can only represent typical values which can normally be reached. More detailed information is available in the manual.

External Antenna



Item description	External Antenna	External Antenna
Version	GSM 900/1800	WLAN/Bluetooth® 2.4 GHz
Item no.	758-910	758-912
Technical Data		
Frequency band	870 ... 960 MHz; 1710 ... 1880 MHz	2400 ... 2485 MHz
VSWR	< 1.5	
Gain	0 dB	2 dBi
Max. power	20 W	
Cable length	250 cm	250 cm
Connector	SMA right angle plug + ferrite bead	SMA angled plug
Data sheet and further information, see:	wago.com/758-910	wago.com/758-912

Notes on operating the antenna with WAGO EnOcean radio receivers:
The antenna is to be mounted on a plate measuring at least 25 x 25 cm.
The distance of interfering sources to the antenna and antenna line must be at least 30 cm and the free space between the antenna and the next wall must be at least 35 cm.
The antenna cable should, under no circumstances, be bent sharply, since irreversible damage may result to the antenna line (RG174 bending radius > 15 mm).



TO-PASS® Telecontrol Technology

Controller

- Fieldbus controllers for telecontrol technology

Radio Technology

- Bluetooth®
- WLAN
- EnOcean®

TO-PASS® Telecontrol Technology

For applications that go beyond site boundaries

- Telecontrol technology based on GSM/GPRS

◀ ◀ Section 3

◀ Section 8

TO-PASS® Telecontrol Technology

Contents

			Page
	General Product Information		408
	Versions		409
	Item Number Key		410
	Interfaces and Types		411
	Application and Installation Instructions		412
	Standards and Rated Conditions		413
	Approvals		413
	TO-PASS® Telecontrol Module, Compact	Description	Item No.
		Compact	761-110
		Compact 2AI	761-111
		Compact Web	761-112
		Compact 2AI Web	761-113
		Compact 2AI RS485 MODBUS Web	761-114
		Compact	761-210
		Compact 8AI Elog/Dlog	761-214
		Compact 8AI RS232 MODBUS Web	761-216
		Compact 8AI RS485 MODBUS Web	761-217
	TO-PASS® Mobile	Mobile	761-314
		RS-232 MODBUS Mobile Web	761-316
	TO-PASS® Outdoor	Outdoor	761-9009
	Accessories		
	Antenna accessory, USB adapter, serial cable, accumulator		420

TO-PASS® Telecontrol Technology

General Product Information

From Fault Detector to Intelligent Telecontrol PLC

The TO-PASS® product series makes it possible to monitor remote objects even in harsh environmental conditions at any time. The devices use the GSM mobile radio network and can communicate wirelessly without data lines or radio links.

Data can be sent to a user-selected destination, e.g., the WAGO Web portal, and easily accessed from any browser. Remote access ensures a high degree of system uptime, while simultaneously relieving service personnel from the burden of performing time-consuming, on-site inspections. With an appropriate GSM service provider contract, wireless connection is more efficient and cost-effective than a standard wired connection. TO-PASS® Compact modules can be commissioned via configuration tool without programming knowledge, serving as a convenient gateway into wireless communication and telecontrol technology.

Application: Error Message Monitoring

Error messages are recorded locally and reported via SMS, e-mail or fax. Conversely, outputs can be connected via SMS.

Application: Cyclic Monitoring

Process data is recorded cyclically, transmitted over the Web via GPRS and saved centrally. All options for analysis and further processing including engagement in the process are available.

Application: Detection and Object Tracking

Using GPS, TO-PASS® Mobile makes it possible to capture position and process values. This permits tracking of personnel and vehicles, trip monitoring, fleet management and much more.

Application: Intelligent Telecontrol PLC

The combination of intelligent data preprocessing with integration into the central TO-PASS® data storage provides optimal scalability for comprehensive support of even the most complex applications.

Data Collection/Distribution via Web Portal

The TO-PASS® Web Portal is an adaptive portal capable of identifying, saving in its own databank and independently visualizing values from the TO-PASS® Compact modules — no programming required. It makes it easy to view and manage data in a Web browser on the Internet.

Remote Parameterization

All TO-PASS® devices can also be configured remotely using the CSD service of the GSM network.

Integrated Position Determination

An integrated GPS receiver allows TO-PASS® Mobile devices to detect position within 20 meters and to manage this together with the actual process values. This can be helpful, for example, to record compliance of a cold chain for food transport on land and at sea without interruption.

High Degree of Protection

TO-PASS® Outdoor makes it possible to use the telecontrol modules even under difficult environmental conditions. The enclosure protects against moisture. An integrated UPS bridges power failures and can also, for example, send an error message. The option of integrating enclosure heating extends the unit's operating temperature range, opening it up to additional applications, such as wind power plants. Solar operation also ensures stand-alone use.

Approvals

TO-PASS® devices have a broad range of approvals for worldwide telephone networks. That means unrestricted applicability throughout the European Union. There are also approvals for Croatia, Turkey, Singapore, USA, Canada and Mexico. Approvals for other countries are available on request.

Advantages:

- Very easy to use
- Versions for different requirements
- Parameterization without programming knowledge
- Great coverage and availability of the GSM network
- Data collection/distribution via Web portal
- Low ongoing mobile radio costs
- Optional: High degree of protection

TO-PASS® Telecontrol Technology

Versions

TO-PASS® Compact (A)

- Compact telecontrol modules
- With integrated GSM modem
- With integrated I/Os in different configurations
- Message dispatch via SMS, e-mail, fax or over the phone
- Switching of outputs via SMS

TO-PASS® Compact, Event/Process Memory Option (A)

- Same as above
- Also local storage of all status changes
- Also local storage of all process values (cyclic, settable)

(A)



TO-PASS® Compact, Web Option (B)

- Same as above
- Additional GPRS: Permanent online connection to the process
- Allows cyclic data transmission to the TO-PASS® Web Portal
- Allows cyclic data transmission to a controller with a fixed IP address that receives and further processes the data using the TO-PASS® Web Connector (see Application Notes)
- Allows cyclic data transmission to any PC with a fixed IP address equipped with the TO-PASS® communication protocol.

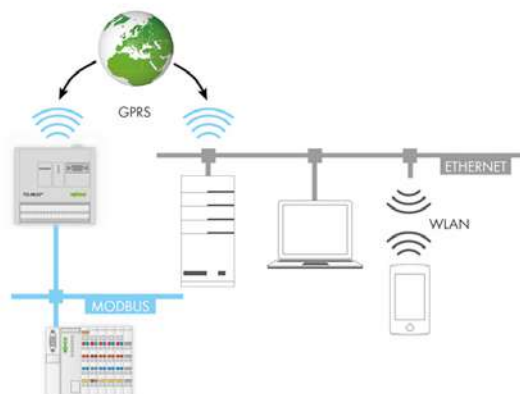
(B)



TO-PASS® Compact, MODBUS option (C)

- Same as above
- Additional option for reading in data via MODBUS, e.g., from the WAGO 750 I/O-SYSTEM
- Connection via RS-232 or RS-485 depending on the version

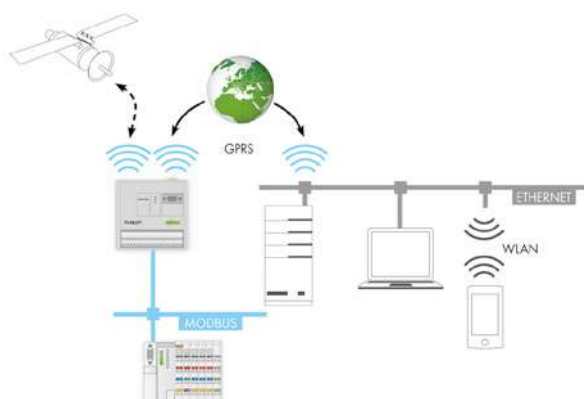
(C)



TO-PASS® Mobile (D)

- Like TO-PASS® Compact
- Additional option for position determination via GPS

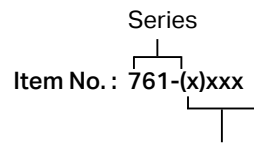
(D)



TO-PASS® Telecontrol Technology

Item Number Key

Explanation of the components of an item number key



1xx: Compact telecontrol module with 4DI, 4DO

2xx: Compact telecontrol module with 8DI, 4DO, 8AI, 2AO

3xx: Mobile telecontrol module with 4AI

x10: standard

x11: Additional 2 AI

x12: Additional Web option

x13: Additional 2 AI + Web option

114: Additional 2 AI + Web option + MODBUS RS-485

214: Additional event logger, data logger option

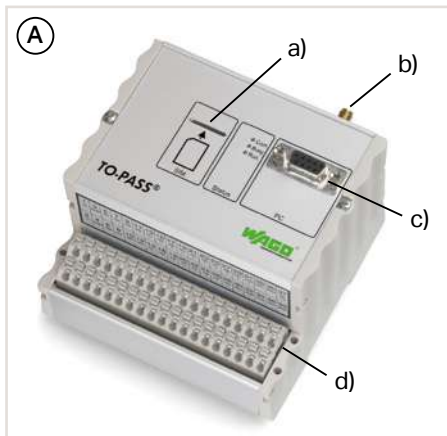
x16: Additional Web option + MODBUS RS-232

x17: Additional Web option + MODBUS RS-232

9009: Outdoor unit (without telecontrol module)

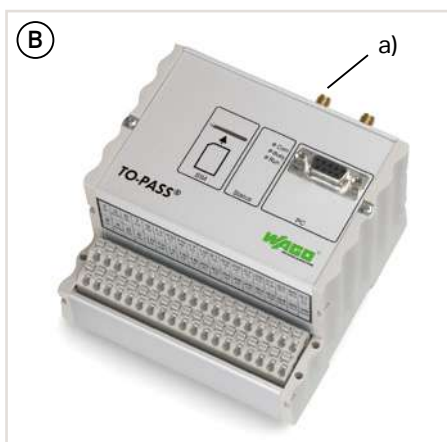
TO-PASS® Telecontrol Technology

Interfaces and Types



TO-PASS® Compact (A)

- Slot for SIM card (a)
- Antenna connection (b)
- RS-232/485 serial interface (c)
- I/O connection level (d)
- W x H x D (mm) 109 x 105 x 78
- Height from upper edge of DIN-rail



TO-PASS® Mobile (B)

- Like TO-PASS® Compact
- Additional antenna connection for GPS receivers (a)



TO-PASS® Outdoor (C)

- Compact unit for mounting telecontrol modules in an IP66 enclosure
- Integrated GSM antenna
- 230 VAC supply voltage
- Power failure protection by batteries
- Option: Temperatures down to -4 °C are possible with built-in heater
- Also available for self-sustaining solar operation
- W x H x D (mm) 280 x 130 x 310 incl. cable grips

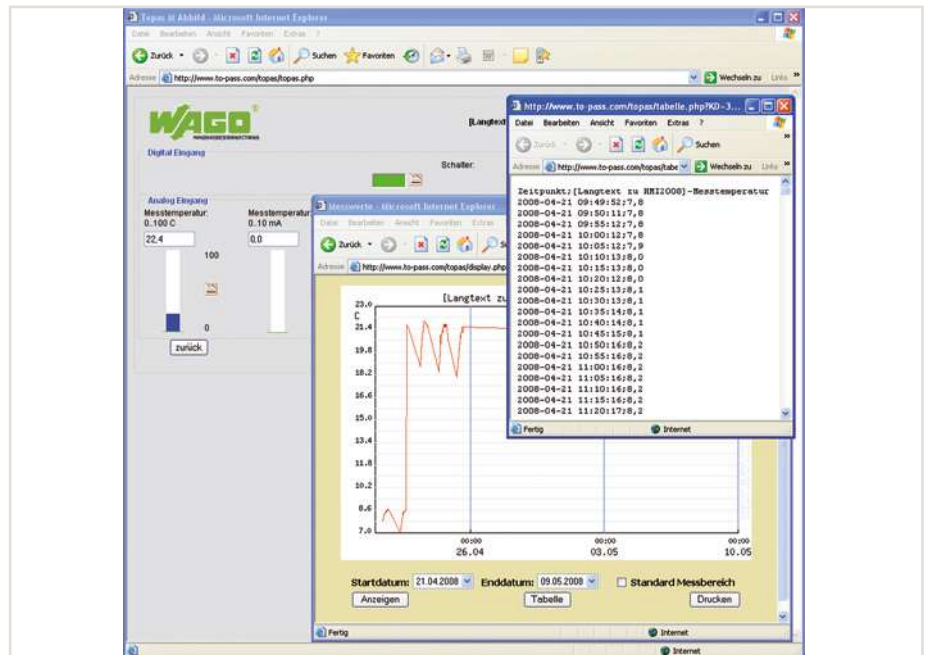
TO-PASS® Telecontrol Technology Application and Installation Instructions

Manage Data with TO-PASS® Web Portal

The TO-PASS® Compact and TO-PASS® Mobile device versions with Web functionality are able to transmit data cyclically to a central Webserver. The process image (i.e., states and values of all digital and analog inputs) is transmitted to the Webserver with a time stamp at a variably configurable interval and then stored in a database. Standard data loggers and the cumbersome process of reading out data are no longer necessary.

The TO-PASS® Web Portal can be used as a Webserver.

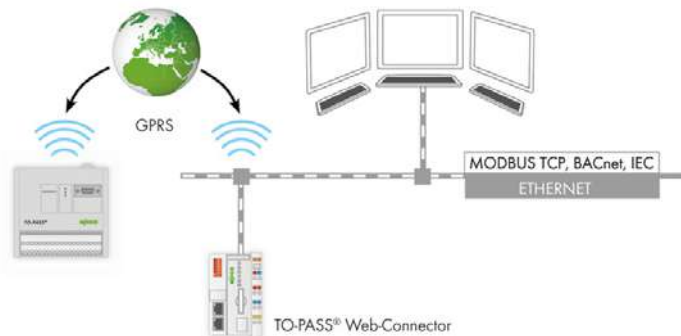
In addition to simple data storage, it provides password-protected visualization with current process data representation and chart recorder for measured value history. Controlling and managing your data is simplified by using an Internet browser via www.to-pass.com. More information on the TO-PASS® Web Portal is available in Section 1.



Application: TO-PASS® Web Portal as a central Webserver with evaluation function

Forward Data with TO-PASS® Web Connector

The TO-PASS® Web Connector function block is available for easy integration of fault detectors in the control system. Error and event messages are transmitted by GPRS data string via HTTP to a WAGO controller with a fixed IP address. These in turn are capable of passing the data to a central control system via different communication protocols (e.g., MODBUS TCP, BACnet, IEC telecontrol protocols). Refer to Section 3 for suitable controllers.

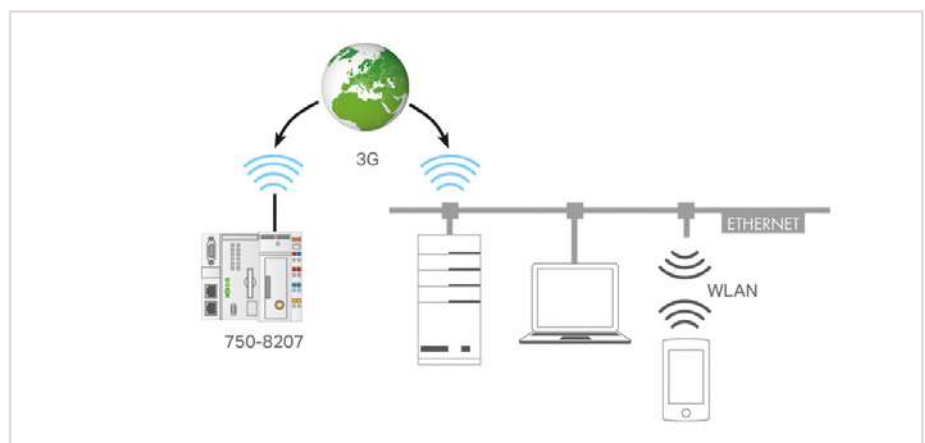


Application: TO-PASS® Web Connector as a link between local data and control system

Intelligent, Decentral Data Preprocessing

The controller with integrated mobile modem is recommended for telecontrol tasks requiring on-site control. Prepared function blocks are available for communication with the TO-PASS® Web Portal. These intelligent telecontrol stations can also be fully integrated in the TO-PASS® infrastructure for seamlessly adapting into the application environment.

Information on WAGO 750 I/O-SYSTEM controllers is available in Section 3.



Application: Controller with WAGO 750 I/O-SYSTEM as a data logger and data pre-processor for TO-PASS®

TO-PASS® Telecontrol Technology
Standards and Rated Conditions

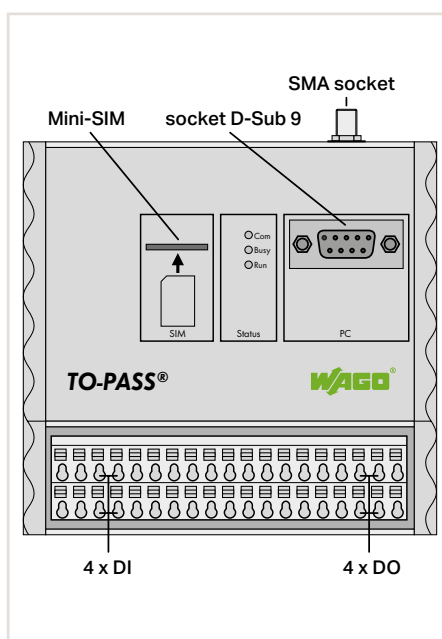
General Specifications	
Supply voltage	10–30 VDC
Ambient temperature (operation)	–20 ... +70 °C°C
Ambient temperature (storage)	–40 ... +85 °C
Relative humidity	95 %, without condensation
Operating altitude	0 ... 2000 m
Altitude at storage/transport	0 ... 15000 m
Pollution degree	2 per IEC 61131-2
Vibration resistance	4 g acc. IEC 60068-2-6
Shock resistance	15 g per IEC 60068-2-27
EMC immunity to interference	Per EN 61000-6-2
EMC emission of interference	Per EN 61000-6-3
Protection type	IP20
Mounting type	On 35 mm DIN-rail
Mounting position	Any
Connection technology: Antenna	SMA socket
Connection technology: Inputs/outputs	250 Series Terminal Blocks with PUSH WIRE® connection
Conductor size; strip length	0.5–1.5 mm² / 22–14 AWG; 9–10 mm / 0.35–0.39 inch

Approvals

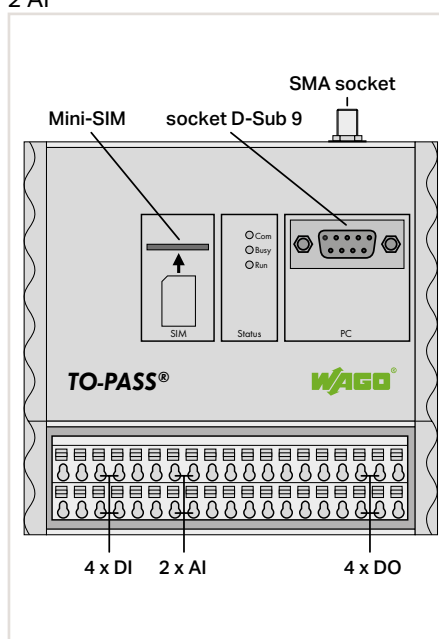
Overview of the approvals in the article comparison in Section 12, Technical Appendix, or online under www.wago.com



TO-PASS® Telecontrol Module for Fault Detection/Indication, Monitoring



2 AI

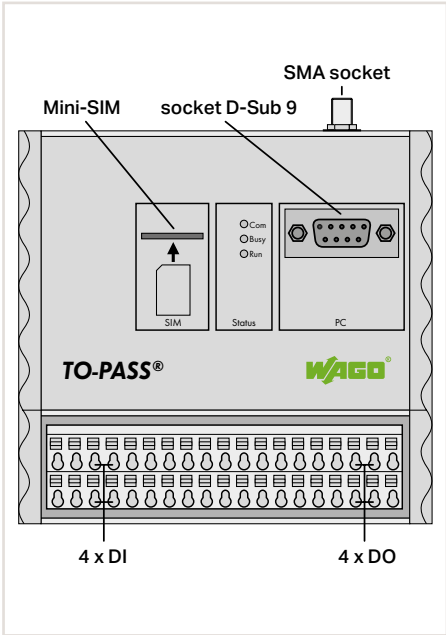
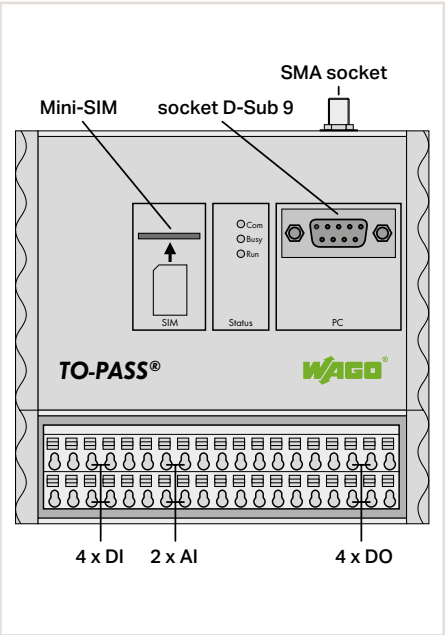
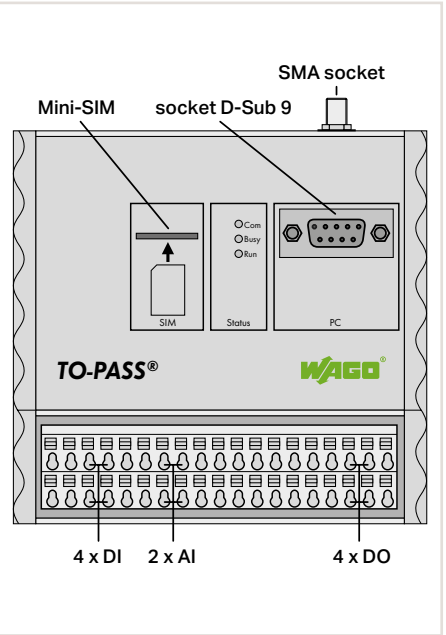


Item description	TO-PASS® Compact	TO-PASS® Compact
Version		2AI
Item no.	761-110	761-111
Technical Data		
Interfaces	Antenna connection (SMA socket), communication (D-Sub 9 socket)	Antenna connection (SMA socket), communication (D-Sub 9 socket)
Radio technology	Mobile communications	Mobile communications
SIM card type	Mini-SIM	Mini-SIM
Frequency band	GSM quad-band	GSM quad-band
Services	SMS (bidirectional), e-mail, fax, CSD data trans- mission	SMS (bidirectional), e-mail, fax, CSD data trans- mission
Fieldbus		
Baud rate		
Number of digital inputs	4 (Type 3)	4 (Type 3)
Voltage range for signal (0)	0 ... 5 VDC	0 ... 5 VDC
Voltage range for signal (1)	7 ... 30 VDC	7 ... 30 VDC
Number of digital outputs	4 (contacts)	4 (contacts)
Output current per channel	0.5 A (short-circuit-protected)	0.5 A (short-circuit-protected)
Number of analog inputs		2
Type of signal		0 ... 20 mA, 4 ... 20 mA
Supply voltage	10 ... 30 VDC	10 ... 30 VDC
Indicators	LED (Com, Busy, Run) green: Communication status, GSM modem, module	LED (Com, Busy, Run) green: Communication status, GSM modem, module
Dimensions W x H x D	109 x 78 x 105 mm	109 x 78 x 105 mm
Approvals	Country approvals: All EU countries (approvals for other countries upon request), UL 508	Country approvals: All EU countries (approvals for other countries upon request), UL 508
Data sheet and further information, see:	wago.com/761-110	wago.com/761-111

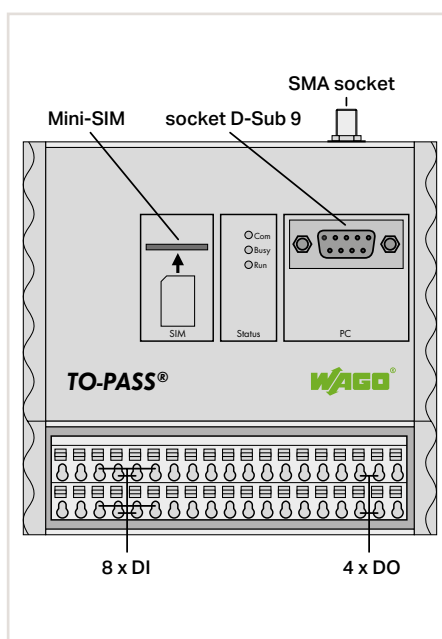
TO-PASS® Configuration Software and
TO-PASS® Web portal, see Section 1

TO-PASS® Outdoor, antenna, USB adapter
and power supply, see Pages 419 ... 421

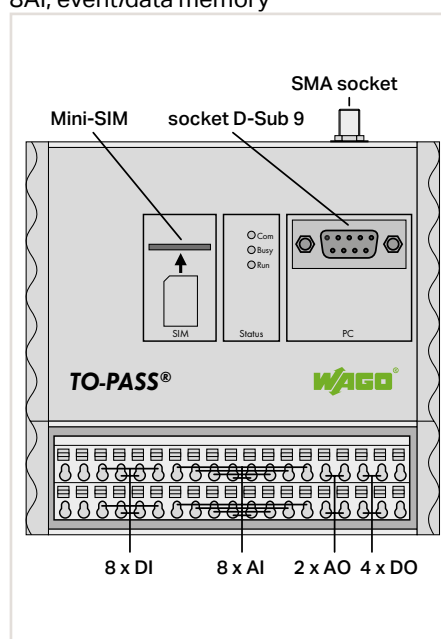
Approvals and corresponding ratings,
see Page 525 or www.wago.com

Web	2 AI, Web	2 AI, Web, MODBUS RS-485
		
TO-PASS® Compact	TO-PASS® Compact	TO-PASS® Compact
Web	2AI Web	2AI Web MODBUS RS485
761-112	761-113	761-114
Antenna connection (SMA socket), communication (D-Sub 9 socket)	Antenna connection (SMA socket), communication (D-Sub 9 socket)	Antenna connection (SMA socket), fieldbus (D-Sub 9 socket) communication (D-Sub 9 socket)
Mobile communications	Mobile communications	Mobile communications
Mini-SIM	Mini-SIM	Mini-SIM
GSM quad-band	GSM quad-band	GSM quad-band
SMS (bidirectional), e-mail, fax, CSD data trans- mission, GPRS connection to Internet	SMS (bidirectional), e-mail, fax, CSD data trans- mission, GPRS connection to Internet	SMS (bidirectional), e-mail, fax, CSD data trans- mission, GPRS connection to Internet MODBUS RTU, RS-485 (2-wire)
		9.6 kBd, 19.2 kBd
4 (Type 3)	4 (Type 3)	4 (Type 3)
0 ... 5 VDC	0 ... 5 VDC	0 ... 5 VDC
7 ... 30 VDC	7 ... 30 VDC	7 ... 30 VDC
4 (contacts)	4 (contacts)	4 (contacts)
0.5 A (short-circuit-protected)	0.5 A (short-circuit-protected)	0.5 A (short-circuit-protected)
	2	2
	0 ... 20 mA, 4 ... 20 mA	0 ... 20 mA, 4 ... 20 mA
10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC
LED (Com, Busy, Run) green: Communication status, GSM modem, module	LED (Com, Busy, Run) green: Communication status, GSM modem, module	LED (Com, Busy, Run) green: Communication status, GSM modem, module
109 x 78 x 105 mm	109 x 78 x 105 mm	109 x 78 x 105 mm
Country approvals: All EU countries (approvals for other countries upon request),  UL 508	Country approvals: All EU countries (approvals for other countries upon request),  UL 508	Country approvals: All EU countries (approvals for other countries upon request),  UL 508
wago.com/761-112	wago.com/761-113	wago.com/761-114

TO-PASS® Telecontrol Module for Fault Detection/Indication, Monitoring



8AI, event/data memory



Item description	TO-PASS® Compact	TO-PASS® Compact
Version		8 AI Elog/Dlog
Item no.	761-210	761-214
Technical Data		
Interfaces	Antenna connection (SMA socket), communication (D-Sub 9 socket)	Antenna connection (SMA socket), communication (D-Sub 9 socket)
Radio technology	Mobile communications	Mobile communications
SIM card type	Mini-SIM	Mini-SIM
Frequency band	GSM quad-band	GSM quad-band
Services	SMS (bidirectional), e-mail, fax, CSD data transmission	SMS (bidirectional), e-mail, fax, CSD data transmission
Number of digital inputs	8 (Type 3)	8 (Type 3)
Voltage range for signal (0)	0 ... 5 VDC	0 ... 5 VDC
Voltage range for signal (1)	7 ... 30 VDC	7 ... 30 VDC
Number of digital outputs	4 (contacts)	4 (contacts)
Output current per channel	0.5 A (short-circuit-protected)	0.5 A (short-circuit-protected)
Number of analog inputs		8
Number of analog outputs		2
Type of signal		0 ... 20 mA, 4 ... 20 mA
Supply voltage	10 ... 30 VDC	10 ... 30 VDC
Indicators	LED (Com, Busy, Run) green: Communication status, GSM modem, module	LED (Com, Busy, Run) green: Communication status, GSM modem, module
Dimensions W x H x D	109 x 78 x 105 mm	109 x 78 x 105 mm
Approvals	Country approvals: All EU countries (approvals for other countries upon request), UL 508	Country approvals: All EU countries (approvals for other countries upon request), UL 508
Data sheet and further information, see:	wago.com/761-210	wago.com/761-214

TO-PASS® Configuration Software and
TO-PASS® Web portal, see Section 1

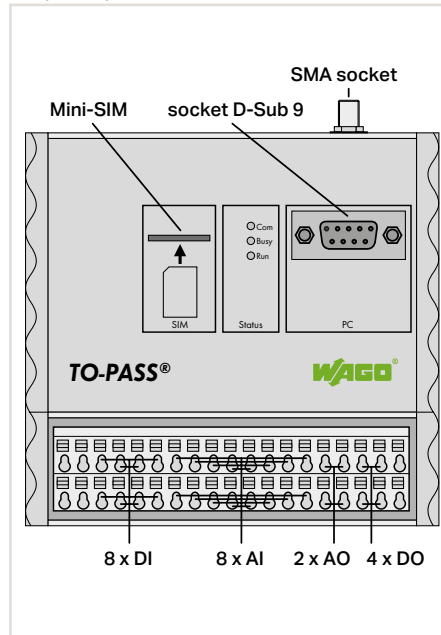
TO-PASS® Outdoor, antenna, USB adapter
and power supply, see Pages 419 ... 421

Approvals and corresponding ratings,
see Page 525 or www.wago.com

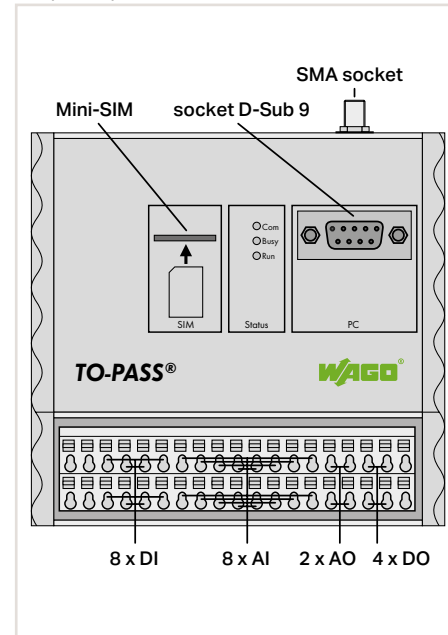
TO-PASS® Telecontrol Module for Fault Detection/Indication, Monitoring



8AI, Web, MODBUS RS-232

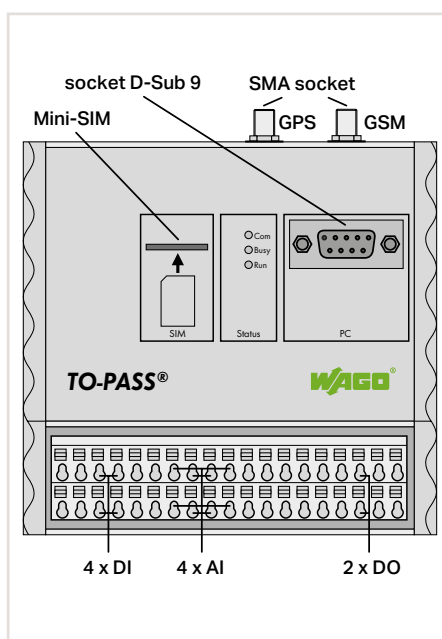


8AI, Web, MODBUS RS-485

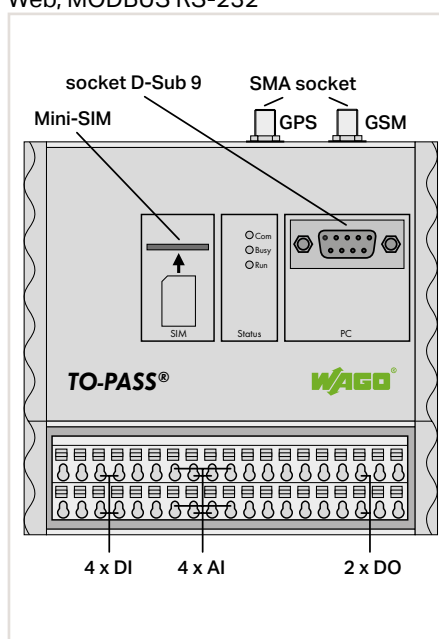


Item description	TO-PASS® Compact	TO-PASS® Compact
Version	8AI Web MODBUS RS232	8AI Web MODBUS RS485
Item no.	761-216	761-217
Technical Data		
Interfaces	Antenna connection (SMA socket), fieldbus (D-Sub 9 socket) communication (D-Sub 9 socket)	Antenna connection (SMA socket), Fieldbus (D-Sub 9 socket) communication (D-Sub 9 socket)
Radio technology	Mobile communications	Mobile communications
SIM card type	Mini-SIM	Mini-SIM
Frequency band	GSM quad-band	GSM quad-band
Services	SMS (bidirectional), e-mail, fax, CSD data transmission, GPRS connection to Internet	SMS (bidirectional), e-mail, fax, CSD data transmission, GPRS connection to Internet
Fieldbus	MODBUS RTU, RS-232 (2-wire)	MODBUS RTU, RS-485 (2-wire)
Baud rate	9.6 kBd, 19.2 kBd	9.6 kBd, 19.2 kBd
Number of digital inputs	8 (Type 3)	8 (Type 3)
Voltage range for signal (0)	0 ... 5 VDC	0 ... 5 VDC
Voltage range for signal (1)	7 ... 30 VDC	7 ... 30 VDC
Number of digital outputs	4 (contacts)	4 (contacts)
Output current per channel	0.5 A (short-circuit-protected)	0.5 A (short-circuit-protected)
Number of analog inputs	8	8
Number of analog outputs	2	2
Type of signal	0 ... 20 mA, 4 ... 20 mA	0 ... 20 mA, 4 ... 20 mA
Supply voltage	10 ... 30 VDC	10 ... 30 VDC
Indicators	LED (Com, Busy, Run) green: Communication status, GSM modem, module	LED (Com, Busy, Run) green: Communication status, GSM modem, module
Dimensions W x H x D	109 x 78 x 105 mm	109 x 78 x 105 mm
Approvals	Country approvals: All EU countries (approvals for other countries upon request), UL 508	Country approvals: All EU countries (approvals for other countries upon request), UL 508
Data sheet and further information, see:	wago.com/761-216	wago.com/761-217

TO-PASS® Telecontrol Module for Fault Detection/Indication, Position Monitoring



Web, MODBUS RS-232



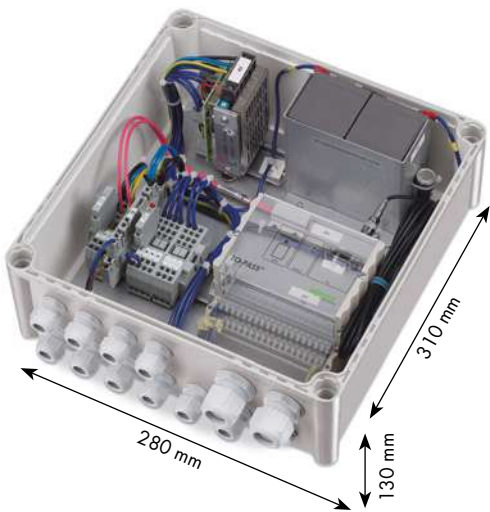
Item description	TO-PASS® Mobile	TO-PASS® Mobile
Version		Web MODBUS RS232
Item no.	761-314	761-316
Technical Data		
Interfaces	2 x antenna connections (SMA socket), Communication (D-Sub 9 socket)	2 x antenna connections (SMA socket), Communication (D-Sub 9 socket)
Radio technology	Mobile communications	Mobile communications
SIM card type	Mini-SIM	Mini-SIM
Frequency band	GSM quad-band	GSM quad-band
Services	SMS (bidirectional), e-mail, fax, CSD data transmission	SMS (bidirectional), e-mail, fax, CSD data transmission, GPRS connection to Internet
Fieldbus		MODBUS RTU, RS-232 (2-wire)
Baud rate		9.6 kBd, 19.2 kBd
Number of digital inputs	4 (Type 3)	4 (Type 3)
Voltage range for signal (0)	0 ... 5 VDC	0 ... 5 VDC
Voltage range for signal (1)	7 ... 30 VDC	7 ... 30 VDC
Number of digital outputs	2 (contacts)	2 (contacts)
Output current per channel	0.5 A (short-circuit-protected)	0.5 A (short-circuit-protected)
Number of analog inputs	4	4
Type of signal	0 ... 20 mA, 4 ... 20 mA	0 ... 20 mA, 4 ... 20 mA
Supply voltage	10 ... 30 VDC	10 ... 30 VDC
Indicators	LED (Com, Busy, Run) green: Communication status, GSM modem, module	LED (Com, Busy, Run) green: Communication status, GSM modem, module
Dimensions W x H x D	109 x 78 x 105 mm	109 x 78 x 105 mm
Approvals	Country approvals: All EU countries (approvals for other countries upon request)	Country approvals: All EU countries (approvals for other countries upon request)
Data sheet and further information, see:	wago.com/761-314	wago.com/761-316

TO-PASS® Configuration Software and TO-PASS® Web portal, see Section 1

TO-PASS® Outdoor, antenna, USB adapter and power supply, see Pages 419 ... 421

Approvals and corresponding ratings, see Page 525 or www.wago.com

TO-PASS® Outdoor Housing



Item description	TO-PASS® Outdoor
Item no.	761-9009
Technical Data	
Supply voltage	230 VAC, recommended pre-fuse: B 16 A, C 10 A
Power consumption	42 W
Sensor supply voltage	30 VDC, max. 150 mA
Self consumption	Approx. 1.5 W at 230 VAC (for charged batteries and a TO-PASS® module without sensors and heating): Heating: 8 W; heating switch: ON at 5 °C, OFF at 15 °C
Battery capacity	24 V / 1.2 Ah / annual maintenance required; battery runtimes: approx. 24 hours at a 5-minute transmission cycle not including the supply of decentralized peripheral devices
Mounting type	Protected wall-mount (no direct sunlight)
Mounting	4 x drilled holes, 7 mm
Housing material	Polycarbonate
Cable bushings	10 x M16, 2 x M25
Protection type	IP66
Ambient temperature (operation)	-4 ... +32 °C
Dimensions W x H x D	280 x 130 x 310 mm
Included:	IP66 housing with integrated GSM antenna; power supply unit 230 VAC to 30 VDC; 2 batteries; terminal block connections; cables; heater
Data sheet and further information, see:	wago.com/761-9009

TO-PASS® Accessories



Antenna, GSM UMTS Bluetooth® WLAN, self-adhesive	
Item no.	758-961
Technical Data	
Frequency band	850 / 900 / 1800 / 1900 / 2100 / 2400 MHz
Dimensions W x H	117 x 12 mm
Cable length	2.5 m
Cable type	RG174
Profit	2.15 dBi
VSWR	< 1.5
Connector	SMA straight plug



Antenna, GSM UMTS, theft-proof	
Item no.	758-962
Technical Data	
Frequency band	850 / 900 / 1800 / 1900 / 2100 MHz
Dimensions W x H	29 x 52 mm
Cable length	1 m
Cable type	RG174
Profit	2 dBi
VSWR	< 2
Connector	SMA straight plug



Antenna, GSM UMTS, rod	
Item no.	758-963
Technical Data	
Frequency band	850 / 900 / 1800 / 1900 / 2100 MHz
Dimensions, height	298 mm
Cable length	1 m
Cable type	RG58
Profit	2.2 dBi
VSWR	< 1.6
Connector	SMA straight plug



Antenna, GSM UMTS, magnetic base	
Item no.	758-965
Technical Data	
Frequency band	850 / 900 / 1800 / 1900 / 2100 MHz
Dimensions, height	88 mm
Cable length	2.5 m
Cable type	RG174
Profit	2.2 dBi
VSWR	< 2
Connector	SMA straight plug



Antenna, GPS GSM UMTS, theft-proof	
Item no.	758-966
Technical Data	
Frequency band	850 / 900 / 1800 / 1900 / 2100 MHz
Dimensions W x H	29 x 52 mm
Cable length	2.5 m
Cable type	RG174
Profit	2 dBi
VSWR	< 2
Connector	SMA straight plug

TO-PASS® Accessories



Adapters		
FME plug / SMA plug	Item no.	Pack. Unit
GSM UMTS <i>Bluetooth</i> ® WLAN	758-964	1

Adapters		
FME socket / SMA socket	Item no.	Pack. Unit
GSM UMTS <i>Bluetooth</i> ® WLAN	758-967	1

Adapters		
SMA plug / SMA plug	Item no.	Pack. Unit
GSM UMTS <i>Bluetooth</i> ® WLAN	758-968	1

Antenna connection cable		
SMA plug / SMA plug	Item no.	Pack. Unit
Cable length 1 m, cable type H155	758-970/000-100	1
Cable length 3 m, cable type H155	758-970/000-300	1
Cable length 5 m, cable type H155	758-970/000-500	1
Cable length 10 m, cable type H155	758-970/000-1000	1

Antenna splitter		
3 x SMA socket	Item no.	Pack. Unit
GSM UMTS <i>Bluetooth</i> ® WLAN	758-971	1

RF lightning protection		
SMA socket / SMA socket	Item no.	Pack. Unit
GSM UMTS <i>Bluetooth</i> ® WLAN	758-969	1

USB Adapter, USB-A, RS-232 (SUB-D 9/25 pol.)		
Length	Item no.	Pack. Unit
1 m	761-9005	1



Sensor/Actuator Boxes

SPEEDWAY I/O-System

- Uncompromising protection, even in the harshest environments outside the switch cabinet
- Degree of protection: IP67
- Fully encapsulated

Sensor/Actuator Boxes

- M8 and M12 sensor/actuator boxes
- Machine-mounted passive signal recording and output
- Fully encapsulated

◀ Section 6

Sensor/Actuator Boxes

Contents

				Page
	General Product Information			424
	Item Number Key			425
	Standards and Rated Conditions			425
	Approvals			425
	Interfaces and Types			427
		Description	Item No.	
	M12 Sensor/Actuator Box with Cable Connection	M12 S/A-Box 4-port 4-pole 5 m	757-244/000-005	428
		M12 S/A box 4-port 4-pole 10 m	757-244/000-010	
		M12 S/A box 6-port 4-pole 5 m	757-264/000-005	428
		M12 S/A box 6-port 4-pole 10 m	757-264/000-010	
		M12 S/A box 8-port 4-pole 5 m	757-284/000-005	429
		M12 S/A box 8-port 4-pole 10 m	757-284/000-010	
		M12 S/A box 8-port 4-pole 25 m	757-284/000-025	
		M12 S/A box 4-port 5-pole 5 m	757-245/000-005	430
		M12 S/A box 4-port 5-pole 10 m	757-245/000-010	
		M12 S/A box 6-port 5-pole 5 m	757-265/000-005	430
		M12 S/A box 6-port 5-pole 10 m	757-265/000-010	
		M12 S/A box 8-port 5-pole 5 m	757-285/000-005	431
		M12 S/A box 8-port 5-pole 10 m	757-285/000-010	
		M12 S/A box 8-port 5-pole 25 m	757-285/000-025	
	M12 Sensor/Actuator Box with M23 Connector	M12 S/A box 4-port 4-pole M23	757-144	432
		M12 S/A box 6-port 4-pole M23	757-164	432
		M12 S/A box 8-port 4-pole M23	757-184	433
		M12 S/A box 4-port 5-pole M23	757-145	434
		M12 S/A box 6-port 5-pole M23	757-165	434
		M12 S/A box 8-port 5-pole M23	757-185	435
		M12 S/A box 8-port 5-pole M23 NL	757-185/100-000	
	M8 Sensor/Actuator Box with Cable Connection	M8 S/A box 4-port 3-pole 2 m	757-443/000-002	436
		M8 S/A box 4-port 3-pole 5 m	757-443/000-005	
		M8 S/A box 4-port 3-pole 10 m	757-443/000-010	
		M8 S/A box 6-port 3-pole 5 m	757-463/000-005	436
		M8 S/A box 6-port 3-pole 10 m	757-463/000-010	
		M8 S/A box 8-port 3-pole 5 m	757-483/000-005	437
		M8 S/A box 8-port 3-pole 10 m	757-483/000-010	
		M8 S/A box 10-port 3-pole 5 m	757-403/000-005	437
		M8 S/A box 10-port 3-pole 10 m	757-403/000-010	
	M8 Sensor/Actuator Box with M16 Connector	M8 S/A box 4-port 3-pole M16	757-343	438
		M8 S/A box 6-port 3-pole M16	757-363	438
		M8 S/A box 8-port 3-pole M16	757-383	439
		M8 S/A box 10-port 3-pole M16	757-303	439
	Accessories			440
		Labeling cards, adapter, connecting cable		

Sensor/Actuator Boxes

General Product Information

For Signal Acquisition at the Machine Level

Passive M8/M12 sensor/actuator boxes are placed close to the process and acquire signals at the machine level. They can be used in very harsh environmental conditions and establish the connection from sensors and actuators to the controller across molded or detachable cables. Use of standardized pluggable connections supports sensor and actuator plug & play, while the use of trunk cables replaces the individual wiring of I/O signals to automation components in the switch cabinet. Cabling is well-arranged and minimized.

Signal Acquisition in Exceptionally Harsh Conditions

The sensor/actuator boxes are very robust and comply with degree of protection IP67 or IP68 with molded cabling (72 hours at 1 m water depth). Therefore, they are the ideal solution for applications where signals must be recorded under extreme environments (temperature, shock, vibration) without a switch cabinet. They are also excellent alternatives when the use of an active IP67 I/O system would not be cost-effective due to a low signal count or simple signal conditions (digital signal acquisition/output).

Plug-&-Play Connector Technology

The IP67 sensor/actuator boxes with a removable connecting cable (M16 or M23 pluggable connection) are well-suited to areas where frequent easy release and reconnection is required (transport, modification, service, etc.).

Fixed Trunk Cable

The IP68 sensor/actuator boxes with molded cables are preferred when challenging cable paths do not allow the use of preassembled M16/M23 cables.

Extreme Mechanical Performance

A system/machine is exposed to severe mechanical and thermal influences. It is important to process its signals despite strong vibration and shock. The sensor/actuator boxes are used at the machine level.

Full encapsulation safeguards system operation, mitigating the effects of extreme vibration and temperature loads when collecting signals and supplying power via the connecting cable of the controller or other automation components in the uncritically positioned area of the switch cabinet.

Flexible Assembly

The sensor/actuator boxes can be directly mounted on the machine. Extensive engineering ensures compliance with standardized specifications from CNOMO guidelines regarding the spacing of assembly drill holes that are often used in passive distributor or sensor/actuator boxes. An optional adapter is available that can be used to seamlessly mount two modules side by side. This has the advantage of maintaining a defined distance for proper routing of the sensor/actuator cables and of avoiding contamination points.

Advantages:

- Rugged, simple and compact extension for IP20 automation components
 - Meets increased requirements for environmental conditions
 - For plug & play connector technology when needed
 - For simpler cable installation in the form of trunk cables
- High-quality PUR connecting cables (drag chain compatible, halogen free)
- Fully encapsulated (resistance and leak-proof)
- Flange sockets (metal design)
- Ambient temperature (operation) -25 ... +80 °C
- Status LEDs

Sensor/Actuator Boxes

Item Number Key

Explanation of the components of an item number key

Series

Item No. : 757-abc/x00-0yy

a: Design

1: M12 sensor/actuator box with M23 connector

2: M12 sensor/actuator box with cable connection

3: M8 sensor/actuator box with M16 connection

4: M8 sensor/actuator box with cable connection

b: Number of M8/M12 connectors

4: 4 ea.

6: 6 ea.

8: 8 ea.

0: 10 ea.

c: Pole number

3: 3-pole

4: 4-pole

5: 5-pole

x00: Status LEDs

100: Without status LEDs

Oyy: Connection cable length

002: 2 m

005: 5 m

010: 10 m

025: 25 m

Standards and Rated Conditions

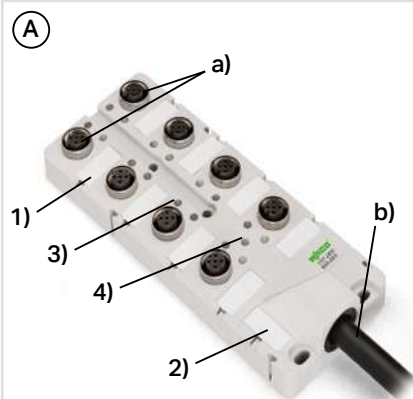
General Specifications	
Electrical Data	
Max. contact resistance	10 mΩ
Supply voltage	10–30 VDC
Current carrying capacity of the signal connections	2 A
Current carrying capacity of the supply connections	9 A (M12) or 6 A (M8)
Signal characteristic	PNP
Mechanical Data	
Degree of protection	
Sensor/actuator boxes with cable connection	IP68 (72 hours at 1 m water depth)
Sensor/actuator boxes with M16/M23 connector	IP67
Ambient temperature (operation)	–25 ... +80 °C
Mounting	Screw mount
Mounting position	Any
Vibration resistance	5 g acc. IEC 60068-2-6
Shock resistance	49 g per IEC 60068-2-27
Material Data	
Housing material	PA 66 (UL 94 V0); RAL 7035; silicon and halogen free
Encapsulation	Fully encapsulated with conformal coating (UL 94 V0)
Connecting cable	Suitable for drag chains

Approvals

Overview of the approvals in the article comparison in Section 12, Technical Appendix, or online under www.wago.com



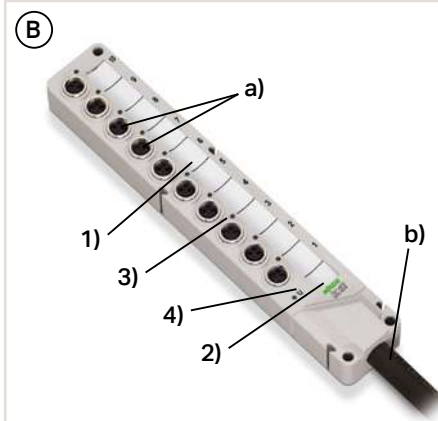
Sensor/Actuator Boxes Interfaces and Types



- (1) Sensor/actuator marking
(2) Module marking
(3) LED status indicator (by channel), yellow
(4) LED operating indicator module, green

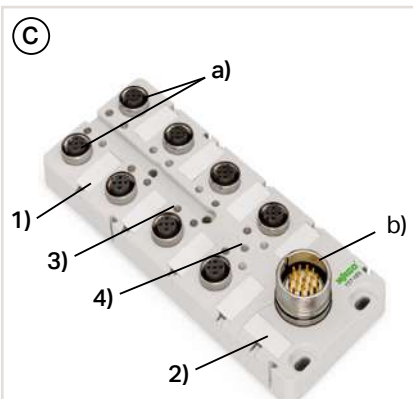
Housing Design (A)

- M12 sensor/actuator box with cable connection
- Sensor/actuator connections M12 (a)
- Connecting cable (b)



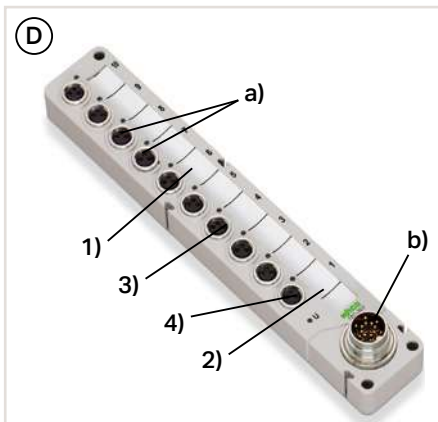
Housing Design (B)

- M8 sensor/actuator box with cable connection
- Sensor/actuator connections M8 (a)
- Connecting cable (b)



Housing Design (C)

- M12 sensor/actuator box with M23 connector
- Sensor/actuator connections M12 (a)
- Supply input M23 (b)



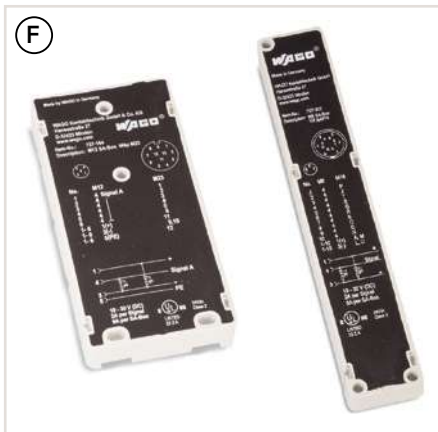
Housing Design (D)

- M8 sensor/actuator box with M16 connector
- Sensor/actuator connections M8 (a)
- Supply input M16 (b)



Adapter (E)

- Optional accessory
- For seamless assembly of two side-by-side sensor/actuator boxes
- Defined distance for proper cable connection
- Covers contamination points
- W x H x D (mm):
10-way: 20 x 16 x 175
8-way: 20 x 16 x 152
6-way: 20 x 16 x 123
4-way: 20 x 16 x 117



Degree of Protection (F)

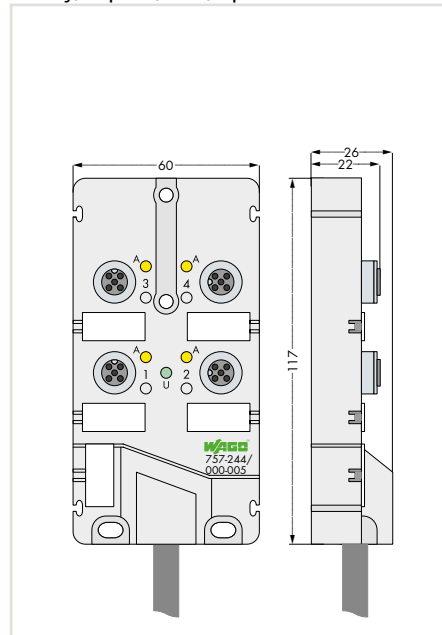
- All modules are fully encapsulated
- Degree of protection: IP67/68
- Printing on back of module details pin assignment

M12 Sensor/Actuator Box

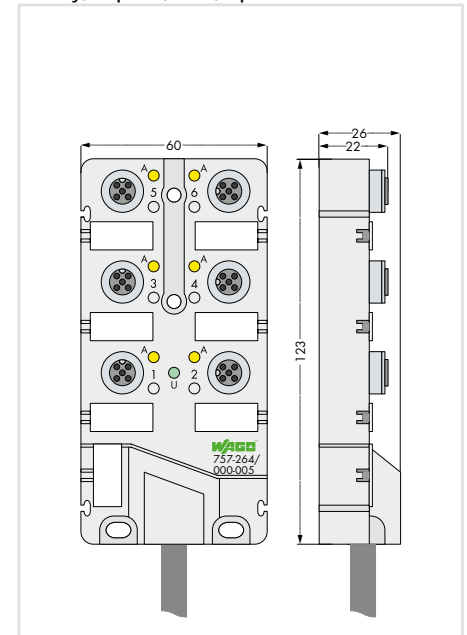


Figure: 757-284/000-005

4-way, 4-pole, 5 m, optional: 10 m



6-way, 4-pole, 5 m, optional: 10 m



Item description	M12 S/A-Box	
Version	4port 4pole 5m	4port 4pole 10m
Item No.	757-244/000-005	757-244/000-010

Technical Data

Connection technology: Inputs/outputs	4 x M12 connectors, 4-pole, incl. PE	
Number of poles	4 (1 signal per contact)	
Connection technology: Communication	Fixed connecting cable	
Connecting cable length	5 m	10 m
Dimensions W x H x D	60 x 26 x 117 mm	

Approvals

	E 175199, CE UL 508, Class 2 Equipment	
	These components are designed to be supplied through Class 2 power supplies in accordance with UL 1310 or Class 2 transformers in accordance with UL 1585	

Data sheet and further information, see:	wago.com/757-244	

Accessories	Item No.	Page
Marking card	757-011	440
Marking pen	210-110	440
Spacer module	757-040	440
M12 protective cap	756-8102	440

Item description	M12 S/A-Box	
Version	6port 4pole 5m	6port 4pole 10m
Item No.	757-264/000-005	757-264/000-010

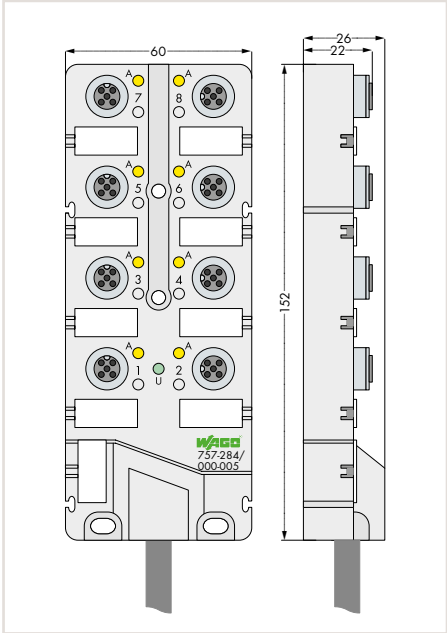
Connection technology: Inputs/outputs	6 x M12 connectors, 4-pole, incl. PE	
Number of poles	4 (1 signal per contact)	
Connection technology: Communication	Fixed connecting cable	
Connecting cable length	5 m	10 m
Dimensions W x H x D	60 x 26 x 123 mm	

	E 175199, CE UL 508, Class 2 Equipment	
	These components are designed to be supplied through Class 2 power supplies in accordance with UL 1310 or Class 2 transformers in accordance with UL 1585	

Data sheet and further information, see:	wago.com/757-264	

Accessories	Item No.	Page
Marking card	757-011	440
Marking pen	210-110	440
Spacer module	757-060	440
M12 protective cap	756-8102	440

8-way, 4-pole, 5 m, optional: 10 m, 25 m



M12 S/A-Box		
8port 4pole 5m	8port 4pole 10m	8port 4pole 25m
757-284/000-005	757-284/000-010	757-284/000-025

8 x M12 connectors, 4-pole, incl. PE		
4 (1 signal per contact)		
Fixed connecting cable		
5 m	10 m	25 m
60 x 26 x 152 mm		
E 175199, UL 508, Class 2 Equipment		
These components are designed to be supplied through Class 2 power supplies in accordance with UL 1310 or Class 2 transformers in accordance with UL 1585		
wago.com/757-284		

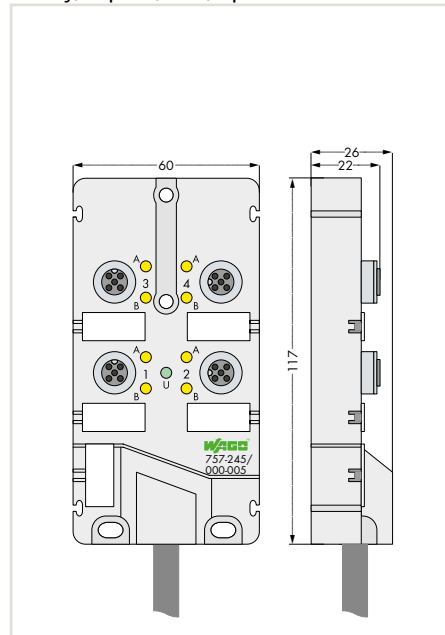
Item No.	Page
757-011	440
210-110	440
757-080	440
756-8102	440

M12 Sensor/Actuator Box

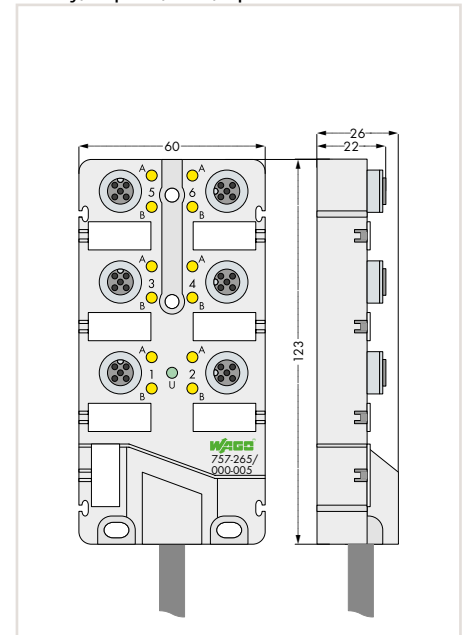


Figure: 757-285/000-005

4-way, 5-pole, 5 m, optional: 10 m

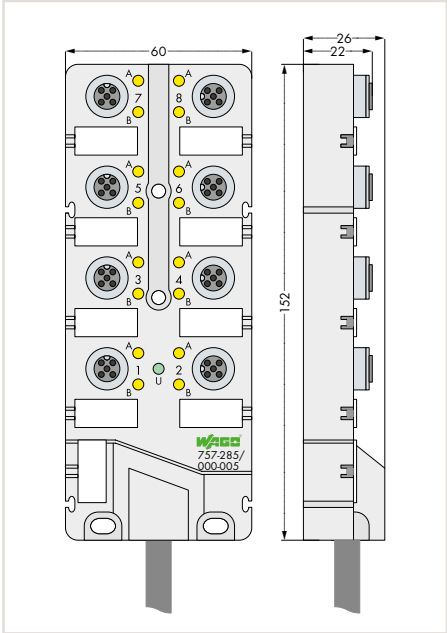


6-way, 5-pole, 5 m, optional: 10 m



Item description	M12 S/A-Box		M12 S/A-Box	
Version	4port 5pole 5m	4port 5pole 10m	6port 5pole 5m	6port 5pole 10m
Item No.	757-245/000-005	757-245/000-010	757-265/000-005	757-265/000-010
Technical Data				
Connection technology: Inputs/outputs	4 x M12 connectors, 5-pole, incl. PE		6 x M12 connectors, 5-pole, incl. PE	
Number of poles	5 (2 signals per contact)		5 (2 signals per contact)	
Connection technology: Communication	Fixed connecting cable		Fixed connecting cable	
Connecting cable length	5 m 10 m		5 m 10 m	
Dimensions W x H x D	60 x 26 x 117 mm		60 x 26 x 123 mm	
Approvals	E 175199, UL 508, Class 2 Equipment		E 175199, UL 508, Class 2 Equipment	
	These components are designed to be supplied through Class 2 power supplies in accordance with UL 1310 or Class 2 transformers in accordance with UL 1585		These components are designed to be supplied through Class 2 power supplies in accordance with UL 1310 or Class 2 transformers in accordance with UL 1585	
Data sheet and further information, see:	wago.com/757-245		wago.com/757-265	
Accessories	Item No.	Page	Item No.	Page
Marking card	757-011	440	757-011	440
Marking pen	210-110	440	210-110	440
Spacer module	757-040	440	757-060	440
M12 protective cap	756-8102	440	756-8102	440

8-way, 5-pole, 5 m, optional: 10 m, 25 m



M12 S/A-Box		
8port 5pole 5m	8port 5pole 10m	8port 5pole 25m
757-285/000-005	757-285/000-010	757-285/000-025

8 x M12 connectors, 5-pole, incl. PE		
5 (2 signals per contact)		
Fixed connecting cable		
5 m	10 m	25 m
60 x 26 x 152 mm		
E 175199, UL 508, Class 2 Equipment		
These components are designed to be supplied through Class 2 power supplies in accordance with UL 1310 or Class 2 transformers in accordance with UL 1585		
wago.com/757-285		

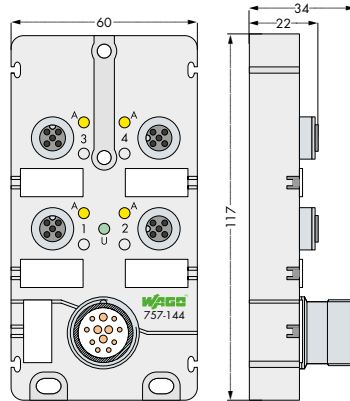
Item No.	Page
757-011	440
210-110	440
757-080	440
756-8102	440

M12 Sensor/Actuator Box

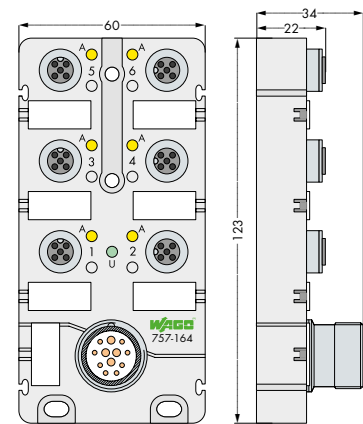


Figure: 757-184

4-way, 4-pole, M23 connector



6-way, 4-pole, M23 connector



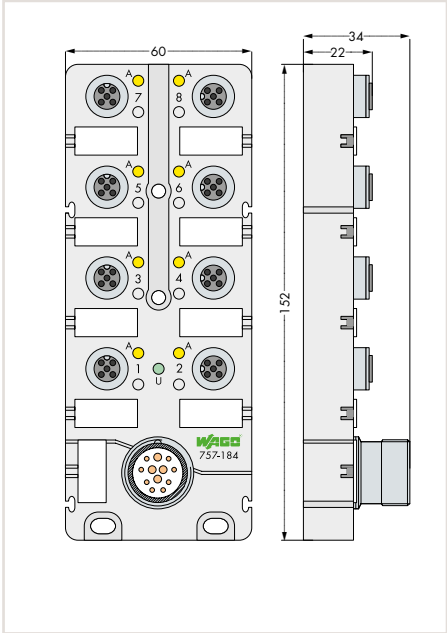
Item description	M12 S/A-Box		M12 S/A-Box	
Version	4port 4pole M23		6port 4pole M23	
Item No.	757-144		757-164	
Technical Data				
Connection technology: Inputs/outputs	4 x M12 connectors, 4-pole, incl. PE		6 x M12 connectors, 4-pole, incl. PE	
Number of poles	4 (1 signal per contact)		4 (1 signal per contact)	
Connection technology: Communication	M23 connectors, 12-pole		M23 connectors, 12-pole	
Dimensions W x H x D	60 x 34 x 117 mm		60 x 34 x 123 mm	
Approvals	E 175199,  UL 508, Class 2 Equipment These components are designed to be supplied through Class 2 power supplies in accordance with UL 1310 or Class 2 transformers in accordance with UL 1585		E 175199,  UL 508, Class 2 Equipment These components are designed to be supplied through Class 2 power supplies in accordance with UL 1310 or Class 2 transformers in accordance with UL 1585	
Data sheet and further information, see:	wago.com/757-144		wago.com/757-164	
Accessories	Item No.	Page	Item No.	Page
Marking card	757-011	440	757-011	440
Marking pen	210-110	440	210-110	440
Spacer module	757-040	440	757-060	440
M12 protective cap	756-8102	440	756-8102	440

 Connection cables, M23 socket
see Page 441

 IP67 Cables and Connectors
see Section 11

 Approvals and corresponding ratings,
see Page 525 or www.wago.com

8-way, 4-pole, M23 connector



M12 S/A-Box
8port 4pole M23
757-184

8 x M12 connectors, 4-pole, incl. PE
4 (1 signal per contact)
M23 connectors, 12-pole
60 x 34 x 152 mm
E 175199,  UL 508, Class 2 Equipment
These components are designed to be supplied through Class 2 power supplies in accordance with UL 1310 or Class 2 transformers in accordance with UL 1585
wago.com/757-184

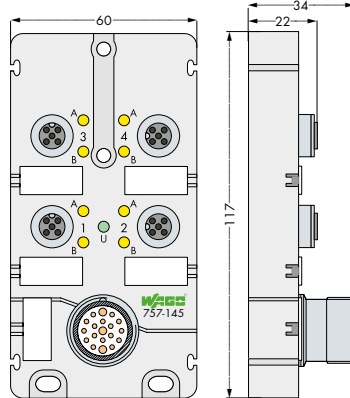
Item No.	Page
757-011	440
210-110	440
757-080	440
756-8102	440

M12 Sensor/Actuator Box

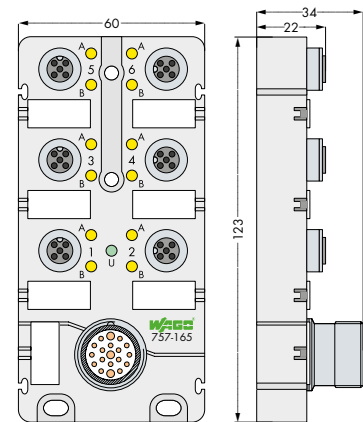


Figure: 757-185

4-way, 5-pole, M23 connector



6-way, 5-pole, M23 connector



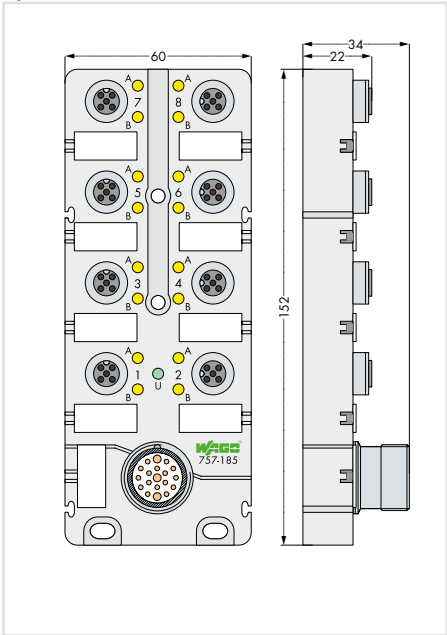
Item description	M12 S/A-Box		M12 S/A-Box	
Version	4port 5pole M23		6port 5pole M23	
Item No.	757-145		757-165	
Technical Data				
Connection technology: Inputs/outputs	4 x M12 connectors, 5-pole, incl. PE		6 x M12 connectors, 5-pole, incl. PE	
Number of poles	5 (2 signals per contact)		5 (2 signals per contact)	
Connection technology: Communication	M23 connectors, 19-pole		M23 connectors, 19-pole	
Dimensions W x H x D	60 x 34 x 117 mm		60 x 34 x 123 mm	
Approvals	E 175199,  UL 508, Class 2 Equipment These components are designed to be supplied through Class 2 power supplies in accordance with UL 1310 or Class 2 transformers in accordance with UL 1585		E 175199,  UL 508, Class 2 Equipment These components are designed to be supplied through Class 2 power supplies in accordance with UL 1310 or Class 2 transformers in accordance with UL 1585	
Data sheet and further information, see:	wago.com/757-145		wago.com/757-165	
Accessories	Item No.	Page	Item No.	Page
Marking card	757-011	440	757-011	440
Marking pen	210-110	440	210-110	440
Spacer module	757-040	440	757-060	440
M12 protective cap	756-8102	440	756-8102	440

Connection cables, M23 socket
see Page 441

IP67 Cables and Connectors
see Section 11

Approvals and corresponding ratings,
see Page 525 or www.wago.com

8-way, 5-pole, M23 connector,
optional: without LED



M12 S/A-Box	
8port 5pole M23	8port 5pole M23 NL
757-185	757-185/100-000

8 x M12 connectors, 5-pole, incl. PE	
5 (2 signals per contact)	
M23 connectors, 19-pole	
60 x 34 x 152 mm	
E 175199,  UL 508, Class 2 Equipment	
These components are designed to be supplied through Class 2 power supplies in accordance with UL 1310 or Class 2 transformers in accordance with UL 1585	
wago.com/757-185	wago.com/757-185/100-000

Item No.	Page
757-011	440
210-110	440
757-080	440
756-8102	440

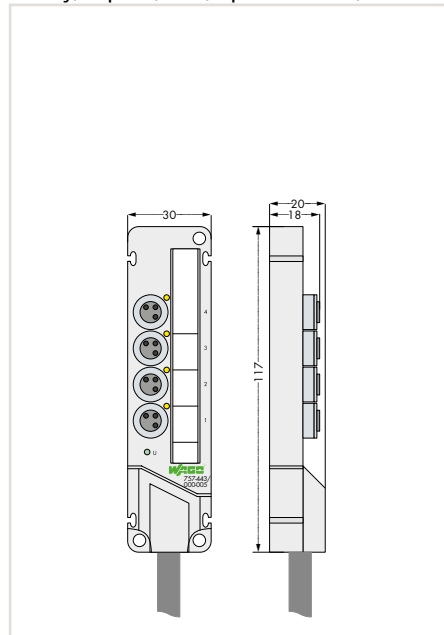
Module 757-185/100-000 has no status LEDs;
therefore, can also transmit analog signals!

M8 Sensor/Actuator Box

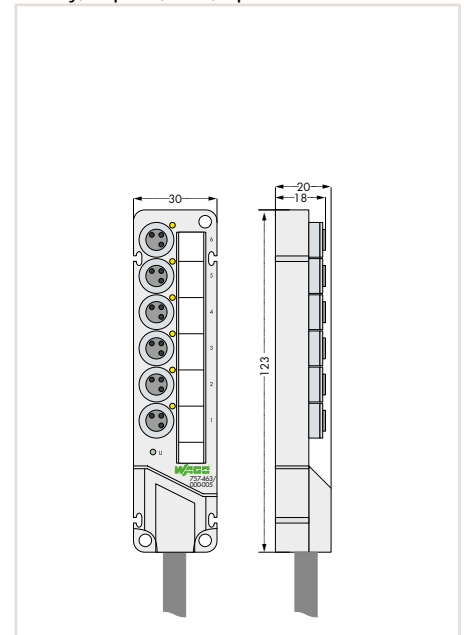


Figure: 757-403/000-005

4-way, 3-pole, 2 m, optional: 5 m, 10 m



6-way, 3-pole, 5 m, optional: 10 m



Item description	M8 S/A-Box		
Version	4port 3pole 2m	4port 3pole 5m	4port 3pole 10m
Item No.	757-443/000-002	757-443/000-005	757-443/000-010

Technical Data

Connection technology: Inputs/outputs	4 x M8 connectors, 3-pole		
Number of poles	3 (1 signal per contact)		
Connection technology: Communication	Fixed connecting cable		
Connecting cable length	2 m	5 m	10 m
Dimensions W x H x D	30 x 20 x 117 mm		

Approvals

E 175199, UL 508, Class 2 Equipment
These components are designed to be supplied through Class 2 power supplies in accordance with UL 1310 or Class 2 transformers in accordance with UL 1585

Data sheet and further information, see:	wago.com/757-443

Accessories	Item No.	Page
Marking strips	757-041	440
Marking pen	210-110	440
Spacer module	757-040	440
M8 protective cap	756-8101	440

Item description	M8 S/A-Box	
Version	6port 3pole 5m	6port 3pole 10m
Item No.	757-463/000-005	757-463/000-010

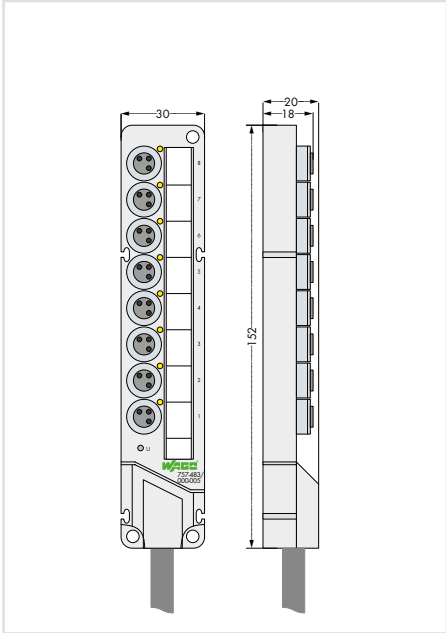
Connection technology: Inputs/outputs	6 x M8 connectors, 3-pole	
Number of poles	3 (1 signal per contact)	
Connection technology: Communication	Fixed connecting cable	
Connecting cable length	5 m	10 m
Dimensions W x H x D	30 x 20 x 123 mm	

E 175199, UL 508, Class 2 Equipment
These components are designed to be supplied through Class 2 power supplies in accordance with UL 1310 or Class 2 transformers in accordance with UL 1585

Data sheet and further information, see:	wago.com/757-463

Accessories	Item No.	Page
Marking strips	757-061	440
Marking pen	210-110	440
Spacer module	757-060	440
M8 protective cap	756-8101	440

8-way, 3-pole, 5 m, optional: 10 m

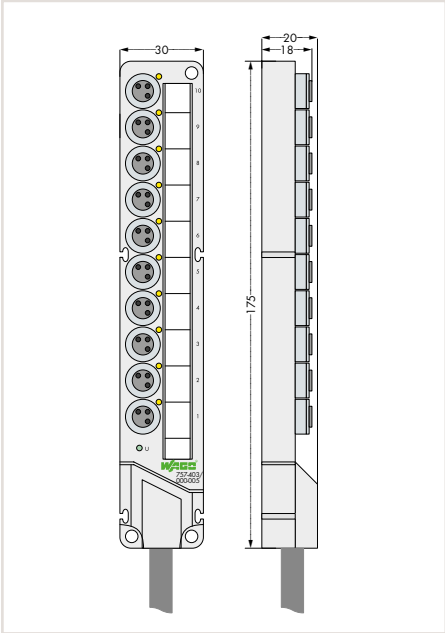


M8 S/A-Box	
8port 3pole 5m	8port 3pole 10m
757-483/000-005	757-483/000-010

8 x M8 connectors, 3-pole	
3 (1 signal per contact)	
Fixed connecting cable	
5 m	10 m
30 x 20 x 152 mm	
E 175199, UL 508, Class 2 Equipment	
These components are designed to be supplied through Class 2 power supplies in accordance with UL 1310 or Class 2 transformers in accordance with UL 1585	
wago.com/757-483	

Item No.	Page
757-081	440
210-110	440
757-080	440
756-8101	440

10-way, 3-pole, 5 m, optional: 10 m



M8 S/A-Box	
10port 3pole 5m	10port 3pole 10m
757-403/000-005	757-403/000-010

10 x M8 connectors, 3-pole	
3 (1 signal per contact)	
Fixed connecting cable	
5 m	10 m
30 x 20 x 175 mm	
E 175199, UL 508, Class 2 Equipment	
These components are designed to be supplied through Class 2 power supplies in accordance with UL 1310 or Class 2 transformers in accordance with UL 1585	
wago.com/757-403	

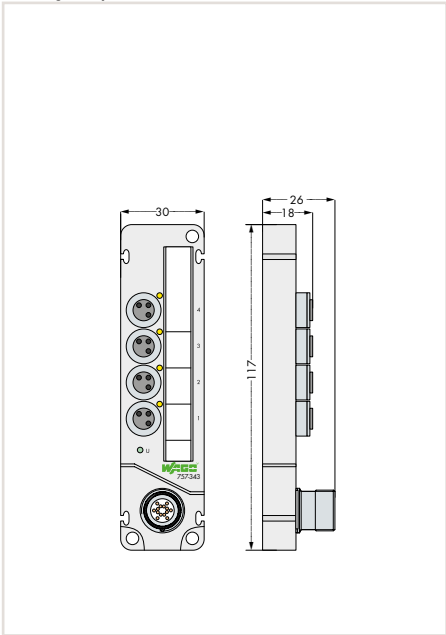
Item No.	Page
757-001	440
210-110	440
757-000	440
756-8101	440

M8 Sensor/Actuator Box

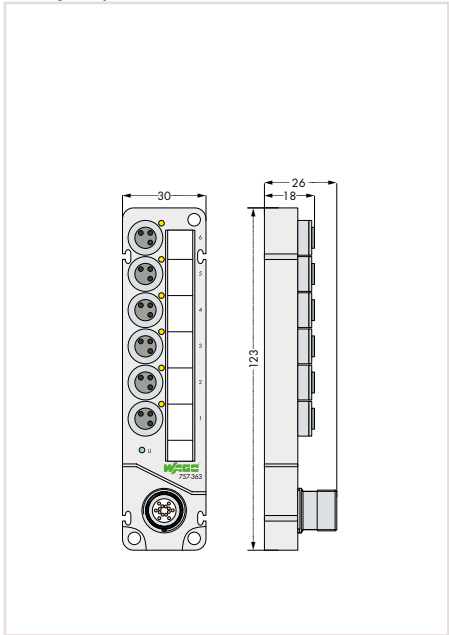


Figure: 757-303

4-way, 3-pole, M16 connector



6-way, 3-pole, M16 connector



Item description
Version
Item No.

M8 S/A-Box
4port 3pole M16
757-343

M8 S/A-Box
6port 3pole M16
757-363

Technical Data
Connection technology: Inputs/outputs
Number of poles
Connection technology: Communication
Dimensions W x H x D
Approvals
Data sheet and further information, see:

4 x M8 connectors, 3-pole
3 (1 signal per contact)
M16 connectors, 14-pole
30 x 26 x 117 mm
E 175199, UL 508, Class 2 Equipment These components are designed to be supplied through Class 2 power supplies in accordance with UL 1310 or Class 2 transformers in accordance with UL 1585
wago.com/757-343

6 x M8 connectors, 3-pole
3 (1 signal per contact)
M16 connectors, 14-pole
30 x 26 x 123 mm
E 175199, UL 508, Class 2 Equipment These components are designed to be supplied through Class 2 power supplies in accordance with UL 1310 or Class 2 transformers in accordance with UL 1585
wago.com/757-363

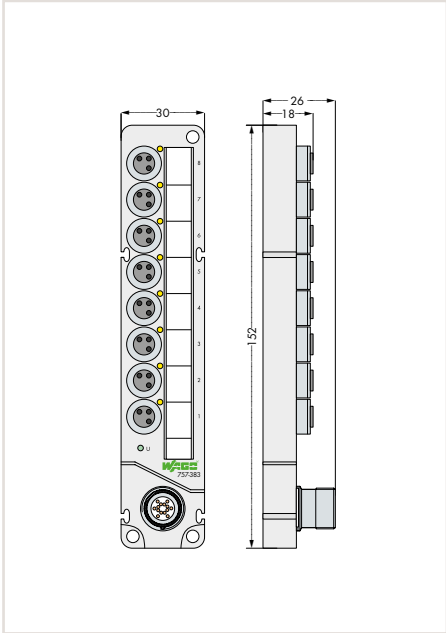
Accessories
Marking strips
Marking pen
Spacer module
M8 protective cap

Item No.	Page
757-041	440
210-110	440
757-040	440
756-8101	440

Item No.	Page
757-061	440
210-110	440
757-060	440
756-8101	440

- Connection cables, M16 socket
see Page 441
- IP67 Cables and Connectors
see Section 11
- Approvals and corresponding ratings,
see Page 525 or www.wago.com

8-way, 3-pole, M16 connector

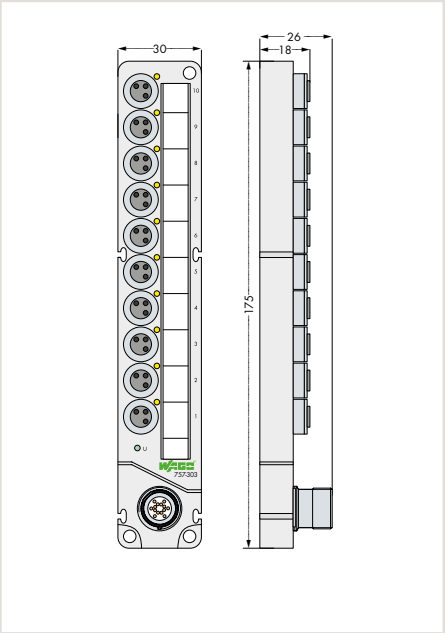


M12 S/A-Box
8port 4pole M23
757-383

8 x M8 connectors, 3-pole
3 (1 signal per contact)
M16 connectors, 14-pole
30 x 26 x 152 mm
E 175199, UL 508, Class 2 Equipment These components are designed to be supplied through Class 2 power supplies in accordance with UL 1310 or Class 2 transformers in accordance with UL 1585
wago.com/757-383

Item No.	Page
757-081	440
210-110	440
757-080	440
756-8101	440

10-way, 3-pole, M16 connector



M12 S/A-Box
10port 4pole M23
757-303

10 x M8 connectors, 3-pole
3 (1 signal per contact)
M16 connectors, 14-pole
30 x 26 x 175 mm
E 175199, UL 508, Class 2 Equipment These components are designed to be supplied through Class 2 power supplies in accordance with UL 1310 or Class 2 transformers in accordance with UL 1585
wago.com/757-303

Item No.	Page
757-001	440
210-110	440
757-000	440
756-8101	440

Sensor/Actuator Boxes, Accessories



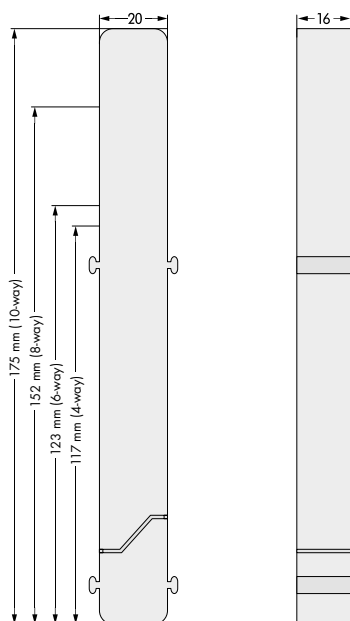
Marking card (40 markings)		
	Item No.	Pack. Unit
for M12 sensor/actuator box	757-011	1

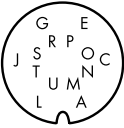
Marking strips for M8 sensor/actuator box		
	Item No.	Pack. Unit
4-way	757-041	100
6-way	757-061	100
8-way	757-081	100
10-way	757-001	100

Marking pen		
	Item No.	Pack. Unit
for permanent marking	210-110	1

Protective caps (for covering unused sensor/actuator ports)		
	Item No.	Pack. Unit
M8 protective cap	756-8101	10
M12 protective cap	756-8102	10

Spacer module for sensor/actuator box		
	Item No.	Pack. Unit
4-way	757-040	10
6-way	757-060	10
8-way	757-080	10
10-way	757-000	10



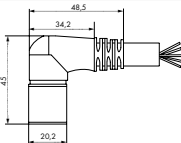
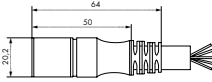


14-pole

Pin A, L: 0.75 mm²
Pin C - J, N - T: 0.34 mm²

A brown	N pink-brown
C white-pink	O violet
E black	P white
G pink	R red
J green	S gray
L blue	T yellow
M commoned with A	U commoned with L

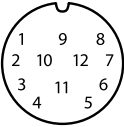




Operating voltage	150 V
Operating current	6 A (0.75 mm ²); 4 A (0.34 mm ²)
Rated surge voltage	1.2 kV
Suitable for drag chain applications	≥ 2 Mio. bending cycles
Ambient temperature (operation) moved	-30 ... +90 °C
Protection type	IP67
Cable diameter	9.1 mm ± 0.2

Interconnecting cable, 14-pole, M16 socket straight		
Cable length	Item No.	Pack. Unit
5 m	756-3205/140-050	1
10 m	756-3205/140-100	1
15 m	756-3205/140-150	1

Interconnecting cable, 14-pole, M16 socket right angle		
Cable length	Item No.	Pack. Unit
5 m	756-3206/140-050	1
10 m	756-3206/140-100	1
15 m	756-3206/140-150	1

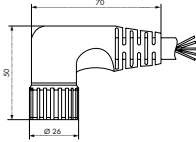
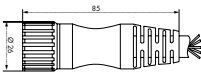


12-pole

Pin 9, 11, 12: 1.00 mm²; Pin 1 - 8: 0.34 mm²

1 white	7 black
2 green	8 violet
3 yellow	9 blue
4 gray	10 commoned with 9
5 pink	11 brown
6 red	12 green-yellow





Operating voltage	300 V
Operating current	8 A
Rated surge voltage	AC 2.5 kV
Suitable for drag chain applications	≥ 2 Mio. bending cycles
Ambient temperature (operation) moved	-5 ... +80 °C
Protection type	IP67
Cable diameter	8.6 mm ± 0.3

Interconnecting cable, 12-pole, M23 socket straight		
Cable length	Item No.	Pack. Unit
5 m	756-3201/120-050	1
10 m	756-3201/120-100	1
15 m	756-3201/120-150	1

Interconnecting cable, 12-pole, M23 socket right angle		
Cable length	Item No.	Pack. Unit
5 m	756-3202/120-050	1
10 m	756-3202/120-100	1
15 m	756-3202/120-150	1

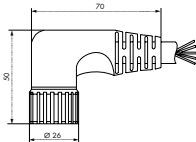
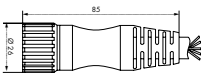


19-pole

Pin 6, 12, 19: 1.00 mm²;
Pin 1 - 5, 7 - 11, 13 - 19: 0.34 mm²

1 violet	8 white-green	15 white
2 red	9 white-yellow	16 yellow
3 gray	10 white-gray	17 pink
4 red-blue	11 black	18 gray-brown
5 green	12 green-yellow	19 brown
6 blue	13 yellow-brown	
7 gray-pink	14 brown-green	





Operating voltage	300 V
Operating current	10 A (Contacts 6, 12, 19); 8 A (other contacts)
Rated surge voltage	AC 2.5 kV
Suitable for drag chain applications	≥ 2 Mio. bending cycles
Ambient temperature (operation) moved	-5 ... +80 °C
Protection type	IP67
Cable diameter	9.7 mm ± 0.3

Interconnecting cable, 19-pole, M23 socket straight		
Cable length	Item No.	Pack. Unit
5 m	756-3203/190-050	1
10 m	756-3203/190-100	1
15 m	756-3203/190-150	1

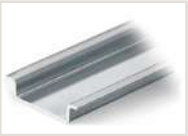
Interconnecting cable, 19-pole, M23 socket right angle		
Cable length	Item No.	Pack. Unit
5 m	756-3204/190-050	1
10 m	756-3204/190-100	1
15 m	756-3204/190-150	1



■ Accessories and Tools

Accessories and Tools

Contents

		Page
	Power Supplies, 787 Series	Power Supplies Overview 444
		Backup Capacitor Modules, DC/DC Converters 447
	System Wiring, 704 and 706 Series	Interface Modules for System Wiring 448
		WAGO Interface Cables 450
	IP67 Cables and Connectors, 756 Series	Sensor/Actuator Cable and Distribution Components 452
		Configurable Connectors 460
		Torque Wrench (M8 and M12) 462
	Configuration	Bluetooth® Adapter 464
		Communication Cable 465
	Fieldbus Connectors, 750 Series	ETHERNET, PROFIBUS, PROFINET, CANopen, INTERBUS, CC-Link 466
	IP65 System Housings, 850 Series	Stainless Steel, Sheet Steel, Aluminum, Polyester 478
	Accessories for DALI Multi-Master	DALI Multi-Sensors 484
		DALI Multi-Sensor Kit 486
		Power Supply for DALI Multi-Master 487
	Fieldbus Junction Boxes for DeviceNet, 810 Series	488
	Shield (Screen) Connecting System, 790, 791 Series	490
	Marking Systems	500
	Carrier Rails and Accessories, 210, 249, 209 Series	504
	Tools, Test and Measurement Tools, 206, 210 Series	506

EPSITRON® Power Supply System

additional technical data visit www.wago.com/epsitron

	Item Number	Output	Input Voltage Range	Functional Description	
EPSITRON® PRO Power – Professional and Efficient Power Supplies with Extra Power					
	787-819	12 VDC (11 ... 18 V) / 6 A	1 x 85 ... 264 VAC 120 ... 373 VDC	• TopBoost provides up to 60 A of additional output for 50 ms • PowerBoost offers up to 200 % of output power for four seconds • DC OK contact and stand-by input • Clear operating status indication via LED • Up to 94 % efficiency • Ambient operating temperature: –25 °C ... +70 °C (device start at –40 °C, type-tested) • Slim design and versatile mounting options • Pluggable CAGE CLAMP® connection technology • UL 508, UL 60950 approvals • LineMonitor provides configuration and monitoring of signal inputs and outputs^{a)}	
	787-821	12 VDC (11 ... 18 V) / 10 A			
	787-831	12 VDC (11 ... 18 V) / 15 A			
	787-818	24 VDC (22 ... 29.5 V) / 3 A			
	787-822	24 VDC (22 ... 29.5 V) / 5 A			
	787-832	24 VDC (22 ... 29.5 V) / 10 A			
	787-834	24 VDC (22 ... 29.5 V) / 20 A			
	787-833	48 VDC (33 ... 52 V) / 5 A	2/3 x 340 ... 550 VAC 480 ... 780 VDC		
	787-835	48 VDC (33 ... 52 V) / 10 A			
	787-840	24 VDC (22.8 ... 28.8 V) / 10 A			
	787-842	24 VDC (22.8 ... 28.8 V) / 20 A			
	787-844	24 VDC (22.8 ... 28.8 V) / 40 A			
	787-850 ^{a)}	24 VDC (22.8 ... 28.8 V) / 10 A			
	787-852 ^{a)}	24 VDC (22.8 ... 28.8 V) / 20 A			
	787-854 ^{a)}	24 VDC (22.8 ... 28.8 V) / 40 A			
787-845	48 VDC (39 ... 53 V) / 10 A				
787-847	48 VDC (39 ... 53 V) / 20 A				
EPSITRON® CLASSIC Power – Robust Power Supplies with Integrated TopBoost (Optional)					
	787-1601 ^{b)}	12 VDC (11.5 ... 14.5 V) / 2 A	1/2 x 85 ... 264 VAC 120 ... 372 VDC	• Slim design • Integrated TopBoost (787-16xx with ≥ 120 W) • DC OK signal/contact • Clear operating status indication via LED • Marking field for device identification • Up to 93 % efficiency • Ambient operating temperature: –25 °C ... +70 °C (device start at –40 °C type-tested) • Pluggable CAGE CLAMP® connection technology • UL 508, UL 60950, GL approvals • EN 60335-1 approval^{b)}	
	787-1611 ^{b)}	12 VDC (11.5 ... 14.5 V) / 4 A			
	787-1621 ^{b)}	12 VDC (11.5 ... 14.5 V) / 7 A			
	787-1631	12 VDC (11.5 ... 15 V) / 15 A			
	787-1602 ^{b)}	24 VDC (23 ... 28.5 V) / 1 A			
	787-1606 ^{b)}	24 VDC (23 ... 28.5 V) / 2 A			
	787-1616 ^{b)}	24 VDC (23 ... 28.5 V) / 4 A			
	787-1616/000-1000 ^{b)}	24 VDC (23 ... 28.5 V) / 3.8 A LPS			
	787-1622 ^{b)}	24 VDC (23 ... 28.5 V) / 5 A			
	787-1632	24 VDC (23 ... 28.5 V) / 10 A			
	787-1634	24 VDC (23 ... 28.5 V) / 20 A	1/2 x 180 ... 500 VAC 254 ... 780 VDC		
	787-1623 ^{b)}	48 VDC (40 ... 56 V) / 2 A			
	787-1633	48 VDC (40 ... 56 V) / 5 A			
	787-1635	48 VDC (40 ... 56 V) / 10 A	2/3 x 320 ... 575 VAC 450 ... 800 VDC		
	787-1628	24 VDC (23 ... 28.5 V) / 5 A			
	787-1638	24 VDC (23 ... 28.5 V) / 10 A			
	787-1640	24 VDC (23 ... 28.5 V) / 10 A			
	787-1642	24 VDC (23 ... 28.5 V) / 20 A			
	787-1644	24 VDC (23 ... 28.5 V) / 40 A			
EPSITRON® ECO Power – Economical Power Supplies for Standard Applications					
	787-712 ^{c)}	24 VDC (22 ... 28 V) / 2.5 A	1 x 85 ... 264 VAC 130 ... 373 VDC	• Economically priced and robustly packaged in a metal housing • Clear operating status LED indication and optional DC OK contact • Up to 90 % efficiency • Ambient operating temperature: –25 °C ... +70 °C • Overhead mounting possible • UL 508, UL 60950 approvals • ATEX/IEC Ex approval, Zone 2 or Class I Div. 2^{d)} • Tool-free connection technology^{d)}	
	787-722 ^{c)}	24 VDC (22 ... 28 V) / 5 A			
	787-732 ^{c)}	24 VDC (22 ... 28 V) / 10 A			
	787-734 ^{d)}	24 VDC (22 ... 28 V) / 20 A	1 x 90 ... 264 VAC 130 ... 373 VDC		
	787-736 ^{d)}	24 VDC (22 ... 28 V) / 40 A			
	787-738 ^{d)}	24 VDC (22 ... 28 V) / 6.25 A			
	787-740 ^{d)}	24 VDC (22 ... 28 V) / 10 A	2/3 x 325 ... 575 VAC 460 ... 800 VDC		
	787-742 ^{d)}	24 VDC (22 ... 28 V) / 20 A			
	787-1702	24 VDC (22 ... 26 V) / 1.25 A			
	787-1712	24 VDC (22 ... 26 V) / 2.5 A	1 x 90 ... 264 VAC 125 ... 375 VDC		• Economically supports basic applications • Flexible mounting via carrier rail adapter • Installation flexibility thanks to screw-mount clips • Up to 84 % efficiency • UL 508, UL 60950, EN 60335-1 approvals
	787-1722	24 VDC (22 ... 26 V) / 5 A			
	787-1732	24 VDC (22 ... 26 V) / 10 A			

EPSITRON® Power Supply System

additional technical data visit www.wago.com/epsitron

	Item Number	Output	Input Voltage Range	Functional Description
EPSITRON® COMPACT Power – Compact, High-Performance Power Supplies				
	787-1102 ^{a)}	24 VDC (22.8 ... 26.4 V) / 1.3 A	1 x 85 ... 264 VAC 120 ... 373 VDC	• Compact, low-profile design • Stepped profile for installation in standard distribution boards • Pluggable picoMAX® connection technology (tool-free) • Ambient operating temperature: -25 ... +70°C • Approvals: UL 60950, UL 508, GL^{a)}, EN60335-1^{b)} • Suitable for both parallel and series operation
	787-1112 ^{a)}	24 VDC (22.8 ... 26.4 V) / 2.5 A		
	787-1122 ^{a)}	24 VDC (22.8 ... 26.4 V) / 4 A		
	787-1202 ^{b)}	24 VDC (22 ... 26 V) / 1.3 A	1 x 85 ... 264 VAC 125 ... 375 VDC	
	787-1212 ^{b)}	24 VDC (22 ... 26 V) / 2.5 A		
	787-1216 ^{b)}	24 VDC (22 ... 26 V) / 4.2 A		
	787-1226 ^{b)}	24 VDC (22 ... 26 V) / 6 A	1 x 90 ... 132 VAC 180 ... 264 VDC	
	787-1001	12 VDC (10.8 ... 18 V) / 2 A	1 x 85 ... 264 VAC 120 ... 373 VDC	• Compact, low-profile design • Ideal for decentralized applications • Clear operating status indication via LED • Up to 88 % efficiency • Ambient operating temperature: -25 °C ... +60 °C (device start at -40 °C, type-tested) • Overhead mounting permitted • UL 508, UL 60950, GL approvals
	787-1011	12 VDC (10.5 ... 15.5 V) / 4 A		
	787-1021	12 VDC (10.5 ... 15.5 V) / 6.5 A		
	787-1017	18 VDC (15 ... 28 V) / 2.5 A		
	787-1002	24 VDC (22.8 ... 26.4 V) / 1.3 A		
	787-1012	24 VDC (22.8 ... 26.4 V) / 2.5 A		
	787-1022	24 VDC (22.8 ... 26.4 V) / 4 A		
	787-1020	5 VDC (4.5 ... 8.5 V) / 5.5 A		
EPSITRON®-DC/DC Converters – Dependable Power Supply for Specialty Voltages				
	787-2801 ^{a)}	5 VDC / 0.5 A	24 VDC (10 ... 30 V)	• Full commoning of the supply voltage with both 857 and 2857 Series • DC OK contact • UL 508, UL 60950, GL^{a)} approval
	787-2802 ^{a)}	10 VDC / 0.5 A	24 VDC (15 ... 30 V)	
	787-2803	24 VDC / 0.5 A	48 VDC (40 ... 55 V)	
	787-2805 ^{a)}	12 VDC / 0.5 A	24 VDC (15 ... 30 V)	
	787-2810 ^{a)}	5 / 10 / 12 VDC, adjustable / 0.5 A	24 VDC (10 ... 30 V)	• Suitable for railway applications per EN 50155 • UL 508, UL 60950 approvals
	787-1014	24 VDC / 2 A	110 VDC (77 ... 140 V)	
	787-1014/072-000	24 VDC / 2 A	72 VDC (40 ... 90 V)	
EPSITRON® – Uninterruptible Power Supplies (UPS) — Reliably Compensate for Long Power Outages				
	787-870	24 VDC (20 ... 25,5 V) / 10 A	24 VDC	• Slim UPS charger and controller with convenient visualization and configuration • Optional power supply with integrated UPS charger and controller (787-1675) • Battery control technology for predictive maintenance that extends battery life • Pluggable CAGE CLAMP® connection technology • UL 508, UL 60950 approvals
	787-875	24 VDC (20 ... 25,5 V) / 20 A		
	787-1675	23 ... 28.5 VDC (mains operation)/5 A; 18.5 ... 27.5 VDC (battery operation)/5 A	1/2 x 85 ... 264 VAC 110 ... 370 VDC	
	787-876	24 VDC / max. 7.5 A / 1.2 Ah	24 VDC	
	787-871	24 VDC / max. 20 A / 3.2 Ah		
	787-872	24 VDC / max. 40 A / 7 Ah		
	787-873	24 VDC / max. 40 A / 12 Ah		
	787-1671	24 VDC / max. 5 A / 0.8 Ah		
EPSITRON® – Capacitive Buffer Modules — Short-Term Power Reserves for Mains Failures and Load Changes				
	787-880	24 VDC (20.4 ... 24 V) / 10 A	24 VDC	• Maintenance-free, high-energy gold caps • Integrated diodes for decoupling buffered loads from unbuffered loads • Parallel-connections possible • Indication via LED and contact • Configurable switch-on threshold • Ambient operating temperature: -10 °C ... +50 °C • Pluggable CAGE CLAMP® connection technology • UL 508 approval
	787-881	24 VDC (20.4 ... 24 V) / 20 A		
EPSITRON® – Redundancy Modules — Reliably Increase a Power Supply's Stability				
	787-885 ^{b)}	24 VDC / 2 x 20 A, max. 40 A	2 x 24 VDC	• Integrated power diodes with overload capability • Redundancy module with low-loss MOSFET decouples two power supplies ^{a)} • Solutions for 12/24/48 VDC supply, up to 76 A • Parallel-connections possible, reverse voltage protection • Clear operating status LED indication and optional signal contact ^{b)} • Ambient operating temperature: -25 °C ... +70 °C • UL 508, UL 60950 approvals
	787-1685 ^{a), b)}	24 VDC / 2 x 40 A, max. 40 A, signal contact		
	787-886 ^{b)}	48 VDC / 2 x 20 A, max. 40 A	2 x 48 VDC	
	787-783	9 ... 54 VDC / 2 x 12.5 A, max. 25 A	2 x 9 ... 54 VDC	
	787-785	9 ... 54 VDC / 2 x 40 A, max. 76 A		

EPSITRON® Power Supply System

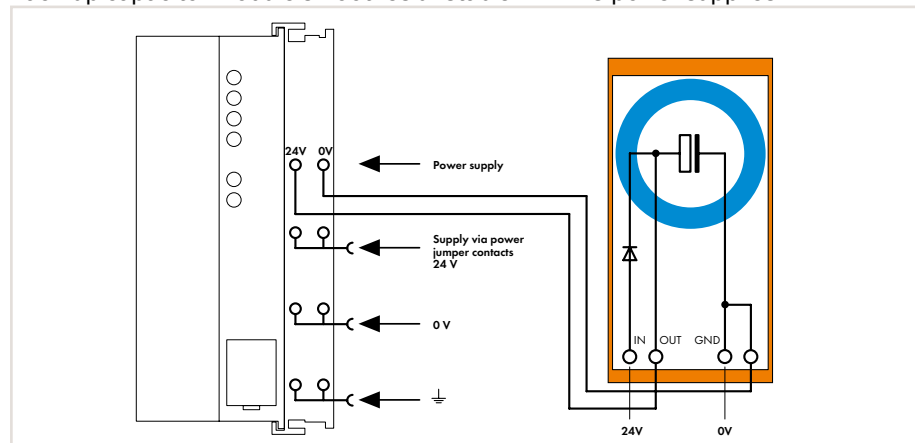
additional technical data visit www.wago.com/epsitron

	Item Number	Output	Input Voltage Range	Functional Description
EPSITRON® – Electronic Circuit Breakers — Compact and Precise ECBs for DC Circuits				
	787-1662	2 x 24 VDC / 2 ... 10 A		• Two, four or eight channels with a 6-stage adjustable nominal current • Slim design, communication capability • High switch-on capacity reduces false tripping • Ambient operating temperature: -25 °C ... +70 °C • Pluggable CAGE CLAMP® connection technology • Active current limitation ^{e)} • UL 2367, GL approvals • With potential-free signal contact ^{g)} • Specialty configuration ^{h)}
	787-1662/106-000	2 x 24 VDC / 1 ... 6 A		
	787-1662/000-004 ^{h)}	2 x 24 VDC / 2 ... 10 A		
	787-1662/000-054 ^{g, h)}	2 x 24 VDC / 2 ... 10 A		
	787-1662/004-1000 ^{d)}	2 x 24 VDC / 3.8 A		
	787-1662/006-1000 ^{d)}	2 x 24 VDC / 0.5 ... 6 A		
	787-1662/212-1000 ^{d)}	2 x 24 VDC / 2 ... 12 A		
	787-1664	4 x 24 VDC / 2 ... 10 A		
	787-1664/106-000	4 x 24 VDC / 1 ... 6 A		
	787-1664/000-004 ^{h)}	4 x 24 VDC / 2 ... 10 A		
	787-1664/000-054 ^{g, h)}	4 x 24 VDC / 2 ... 10 A		
	787-1664/004-1000 ^{d)}	4 x 24 VDC / 3.8 A		
	787-1664/006-1000 ^{d)}	4 x 24 VDC / 0.5 ... 6 A		
	787-1664/212-1000 ^{d)}	4 x 24 VDC / 2 ... 12 A		
	787-1664/006-1054 ^{e, g, h)}	4 x 24 VDC / 0.5 ... 6 A		
	787-1668	8 x 24 VDC / 2 ... 10 A		
	787-1668/106-000	8 x 24 VDC / 1 ... 6 A		
	787-1668/000-004 ^{h)}	8 x 24 VDC / 2 ... 10 A		
	787-1668/000-054 ^{g, h)}	8 x 24 VDC / 2 ... 10 A		
	787-1668/106-054 ^{g)}	8 x 24 VDC / 1 ... 6 A		
	787-1668/006-1000 ^{d)}	8 x 24 VDC / 0.5 ... 6 A		
	787-1668/006-1054 ^{e, g, h)}	8 x 24 VDC / 0.5 ... 6 A		
	787-1662/000-100	2 x 12 VDC / 2 ... 10 A	12 VDC	
	787-1664/000-100	4 x 12 VDC / 2 ... 10 A		
	787-1662/000-200	2 x 48 VDC / 2 ... 10 A	48 VDC	
	787-1662/000-250 ^{g)}	2 x 48 VDC / 2 ... 10 A		
	787-1664/000-200	4 x 48 VDC / 2 ... 10 A		
	787-1664/000-250 ^{g)}	4 x 48 VDC / 2 ... 10 A		
	787-1668/000-200	8 x 48 VDC / 2 ... 10 A		
	787-1668/000-250 ^{g)}	8 x 48 VDC / 2 ... 10 A		

Back-up capacitor module, DC/DC Converter



Back-up capacitor module smoothes unstable 24 V DC power supplies



Item description

Item No.

Technical Data

Nominal voltage	
Nominal current	
Nominal capacity	
Weight	
Dimensions W x H x L	
Wire connection	
Cross sections	
Strip lengths	
Data sheet and further information, see:	

Stützelko-Modul, zur Glättung instabiler 24 VDC
288-824

24 VDC (+25 %)
1 A
10000 µF
104.4 g
38 x 81 x 85 mm, Height from upper-edge of DIN 35 rail
CAGE CLAMP® (236 Series)
0.08 ... 2.5 mm² / 28 ... 14 AWG
5 ... 6 mm / 0.22 in
wago.com/288-824

This module is equipped with a capacitor which smoothes unstable 24VDC power supplies in case the voltage tolerances mentioned in our data sheets cannot be ensured.

Reasons for voltage transients could be:

- Voltage disconnections (switching transients) on primary side
- Overloads on secondary side
- Switching of inductive or capacitive loads

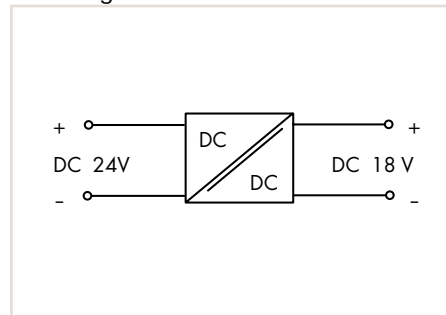
The back-up capacitor module is connected between the 24V power supply and the electronic device which has to be protected.

Notice:

If using a non-filtered single-phase power supply, the capacitor causes a voltage increase.



DC/DC Converter,
Mounting carrier for DIN 35 rail



Item description

Item No.

Technical Data

Input voltage	
Input voltage range	
Output voltage	
Nominal output current	
Efficiency	
Test voltage input/output	
Short circuit protection	
Ambient temperature (operation)	
Weight	
Dimensions W x H x L	
Wire connection	
Cross sections	
Strip lengths	
Data sheet and further information, see:	

DC/DC Converter, Mounting carrier for DIN 35 rail
288-895

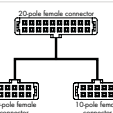
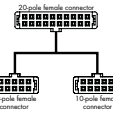
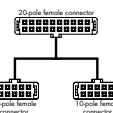
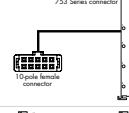
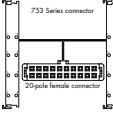
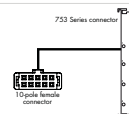
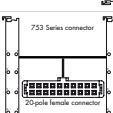
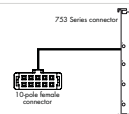
24 VDC
18 V ... 36 VDC
18 VDC (± 1 %)
400 mA
82 %
1500 VDC
permanent
-25 ... +70 °C
76 g
50 x 25 x 85 mm, Height from upper-edge of DIN 35 rail
CAGE CLAMP® (256 Series)
0,08 ... 2,5 mm² / 28 ... 12 AWG (THHN, THWN)
5 ... 6 mm / 0.22 in
wago.com/288-895

Interface Modules for System Wiring



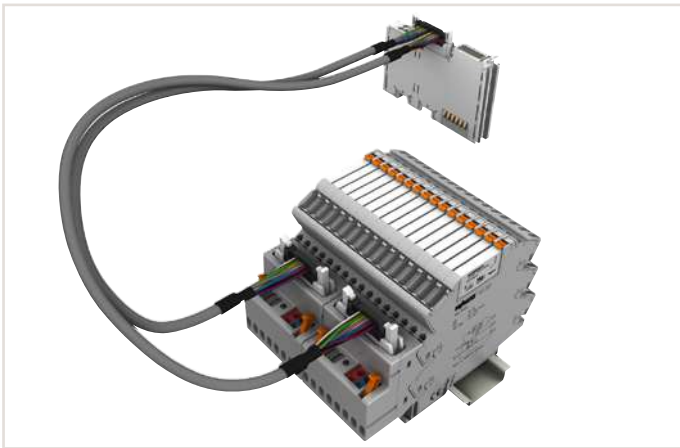
Digital input and output modules with ribbon cable connector provide easy and fast connection of WAGO interface modules to the WAGO-I/O-SYSTEM.

WAGO pre-assembled ribbon cables eliminate discrete wiring, while reducing costs for system wiring applications. Furthermore, modules can be pre-wired, also allowing the connection level to be relocated.

WAGO-I/O-SYSTEM 750				WAGO Ribbon Cable		WAGO Interface Modules	
	I/O Modules	Item No.		Ribbon Cable	Item No.	Interface Modules	Item No.
DI		750-1400	16 DI 24V DC 3.0 ms ribbon cable,		706-3057/300-xxx (see Page 450)		Input module, 20-pole T16ES: 289-614, 704-2004, 704-2024, 704-2044, 704-2054*
					706-7753/302-xxx (see Page 450)		Input module, 10-pole T8ES: 289-611, 704-2003*
DO		750-1500	16 DO 24V DC 0.5 A ribbon cable,		706-3057/300-xxx (see Page 450)		Input module, 20-pole T16S: 704-5004, 704-5014, 704-5024, 704-5034, 704-5044, 704-5054, 704-5064, 704-5074* or T16ES
					706-7753/302-xxx (see Page 450)		Relay module, 8-channel T8S: 704-5003, 704-5013* oder T8ES
DI/DO		750-1502	8DI 8DO 24V DC 0.5 A ribbon cable,		706-7753/302-xxx (see Page 450)		Input module, 10-pole T8ES: 289-611, 704-2003*
							Relay module, 8-channel T8S: 704-5003, 704-5013* or T8ES
WAGO-I/O-SYSTEM 753				WAGO Ribbon Cable		WAGO Interface Modules	
	I/O Modules	Item No.		Ribbon Cable	Item No.	Interface Modules	Item No.
DI		753-430	8 DI		706-7753/300-100 (see Page 451)		Input module, 10-pole T8ES: 289-611, 704-2003*
		753-431	8 DI				
		753-436	8 DI		706-7753/301-200 (see Page 451)		Input module, 20-pole T16ES: 289-614, 704-2004, 704-2024, 704-2044, 704-2054*
		753-437	8 DI				
		753-430 (x2)	2 x 8 DI		706-7753/300-100 (see Page 451)		Relay module, 8-channel T8S: 704-5003, 704-5013* or T8ES
		753-431 (x2)	2 x 8 DI				
		753-436 (x2)	2 x 8 DI		706-7753/301-200 (see Page 451)		Relay module, 16-channel T16S: 704-5004, 704-5014, 704-5024, 704-5034, 704-5044, 704-5054, 704-5064, 704-5074* or T16ES
		753-437 (x2)	2 x 8 DI				
DO		753-530	8 DO		706-7753/300-100 (see Page 451)		Relay module, 8-channel T8S: 704-5003, 704-5013* or T8ES
		753-530 (x2)	2 x 8 DO				

*additional technical data visit www.wago.com/Item.No.

Interface Adapter for System Wiring



WAGO Interface Adapter, 857 Series

WAGO's Interface Adapter provides a fast wiring solution for relay and optocoupler modules within the JUMPFLEX® 857 Series. On the module side, pre-assembled WAGO Ribbon Cables (706 Series) connect to the WAGO-I/O-SYSTEM (PLC).

This eliminates cumbersome discrete wiring between 750 Series I/O modules and 857 Series relays/optocouplers.

As a result, both installation time and costs are reduced.

Depending on the application, the WAGO interface adapters can be used with D-sub or ribbon cable connectors.

WAGO's interface adapters are equipped with status indicator.

They also feature integrated test ports for each channel.

The interface adapters are simply plugged into the 857 Series relay/optocoupler modules via jumper slot.

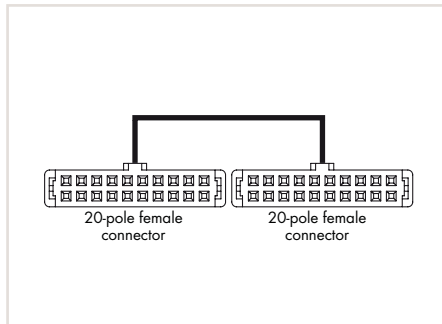
Furthermore, WAGO's interface adapter features locking devices for secure connection.

WAGO-I/O-SYSTEM 750				WAGO Ribbon Cable		WAGO Interface Modules	
	I/O Modules	Item No.		Ribbon Cable	Item No.	Interface Modules	Item No.
DI		750-1400	16 DI 24V DC 3.0 ms ribbon cable		706-7753/304-xxx*		Item No.: 857-982*; Output, positive switching 8-channel adapter with 14-pin ribbon cable connector acc. to DIN 41651
		750-1402	16 DI 24V DC 3.0 ms ribbon cable, low-side switch				Item No.: 857-986*; Input, positive switching 8-channel adapter with SUB-D male connector
DO		750-1500	16 DO 24V DC 0.5 A ribbon cable		706-7753/304-xxx*		Item No.: 857-981*; Input, positive switching 8-channel adapter with 14-pin ribbon cable connector acc. to DIN 41651
							Item No.: 857-982*; Output, positive switching 8-channel adapter with 14-pin ribbon cable connector acc. to DIN 41651
DI/DO		750-1502	8DI 8DO 24V DC 0.5 A ribbon cable		706-7753/304-xxx*		Item No.: 857-981*; Input, positive switching 8-channel adapter with 14-pin ribbon cable connector acc. to DIN 41651
							Item No.: 857-986*; Input, positive switching 8-channel adapter with SUB-D male connector

*additional technical data visit www.wago.com/Item No.

WAGO Interface Cables

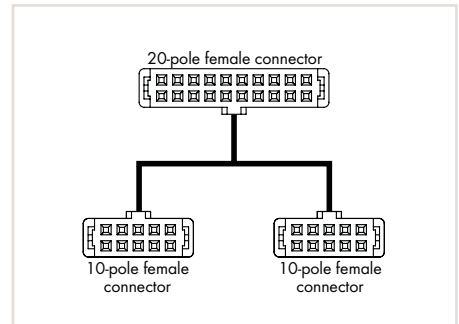
for 289, 704 Series, in Connection with WAGO-I/O-SYSTEM 750 706 Series



WAGO Interface Cable,
20/20

Length	Item No.	Pack. Unit
1 m	706-3057/300-100	1
2 m	706-3057/300-200	1
3 m	706-3057/300-300	1

WAGO Interface Cables provide fast and easy connection of WAGO I/O modules equipped with a HE 10 connector (750-1400, -1402, -1500, -1501, -1502) to appropriate interface or relay modules (16-channel) featuring a 20-pole HE 10 connector.



WAGO Interface Cable,
20/2x10

Length	Item No.	Pack. Unit
1 m	706-7753/302-100	1
2 m	706-7753/302-200	1

WAGO Interface Cables provide fast and easy connection of WAGO I/O modules equipped with a HE 10 connector (750-1400, -1402, -1500, -1501, -1502) to appropriate interface or relay modules featuring a 10-pole HE 10 connector. For example, this cable connects 2 relay modules (8-channel) to a WAGO I/O module.

Technical Data

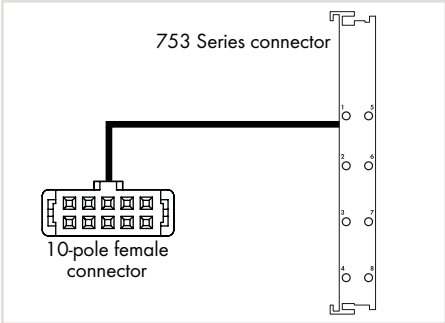
Ports	2 x 20-pole connector acc. to DIN 41651
Wire cross-section	0.14 mm ² LiYY
Color code	acc. to DIN VDE 47100
Current per channel	1 A (max.)
Operating temperature	-25 ... +70 °C
Protection type	IP20

Ports	1 x 20-pole / 2 x 10-pole connector acc. to DIN 41651
Wire cross-section	0.14 mm ² LiYY
Color code	acc. to DIN VDE 47100
Current per channel	1 A (max.)
Operating temperature	-25 ... +70 °C
Protection type	IP20

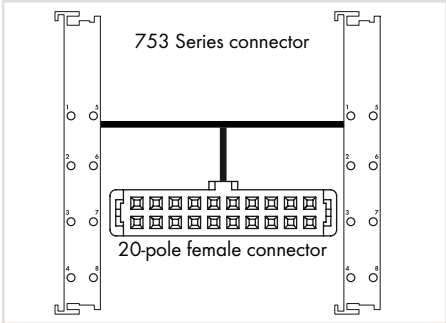
WAGO Interface Cables

for 289, 704 Series, in Connection with WAGO-I/O-SYSTEM 753

706 Series



WAGO Interface Cable, 753 Series pluggable connector/10-pole		
Length	Item No.	Pack Unit
1 m	706-7753/300-100	1



WAGO Interface Cable, 2 x 753 Series pluggable connector/20-pole		
Length	Item No.	Pack Unit
2 m	706-7753/301-200	1

WAGO Interface Cables provide fast and easy connection of WAGO I/O modules equipped with pluggable connectors (e.g., 753-430, -431, -530) to appropriate interface or relay modules featuring a 10-pole female connector.

WAGO Interface Cables provide fast and easy connection of WAGO I/O modules equipped with pluggable connectors (e.g., 753-430, -431, -530) to appropriate interface or relay modules featuring a 20-pole female connector. For example, this cable connects two WAGO I/O modules to one relay output module (16-channel).

Technical Data	
Ports	753 Series pluggable connector/10-pole acc. to DIN 41651
Wire cross-section	0.14 mm² LiYY
Color coding	acc. to DIN VDE 47100
Current per channel	max. 1 A
Ambient temperature (operation)	-25 ... +70 °C*
Degree of protection	IP20

753 Series pluggable connector/10-pole acc. to DIN 41651
0.14 mm² LiYY
acc. to DIN VDE 47100
max. 1 A
-25 ... +70 °C*
IP20

2 x 753 Series pluggable connector/20-pole acc. to DIN 41651
0.14 mm² LiYY
acc. to DIN VDE 47100
max. 1 A
-25 ... +70 °C*
IP20

*Observe maximum operating temperature of the WAGO I/O modules used.

IP67 Cables and Connectors, 756 Series



Series 756 offers a wide range of accessories for the connection of inductive or capacitive proximity switches, light barriers, flow control devices, push buttons etc. to the WAGO-I/O-SYSTEM 757 (IP67 sensor/actuator boxes) and WAGO-Speedway 767 (modular IO system IP67). The cables are not only a protection against dust and water, the design of their coupling nuts also provides protection against mechanical loosening when exposed to vibrations. In addition to that, fixed cables offer bend protection.

Cables with one or two preassembled wire ends are used. Cables with one preassembled wire end are often used when the length of the cable cannot be predetermined exactly or when the cable assembly with connectors proves to be difficult. Cables with one free wire end can therefore be adapted to individual prerequisites. Cables with two preassembled wire ends drastically reduce assembly and installation time.

Sensor/actuator cables, with one end of cable fitted

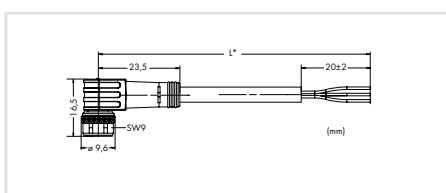
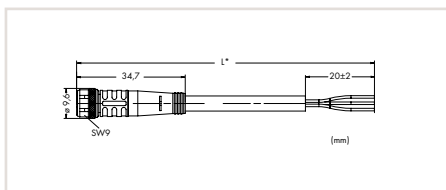
M8 socket



3-pole

Pin 1 - 4: 0.34 mm²

1 brown (+)
3 blue (-)
4 black (S)



M12 socket



3-pole



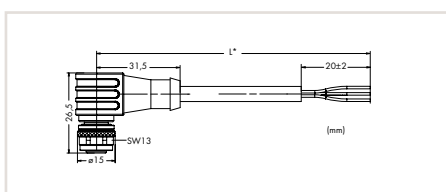
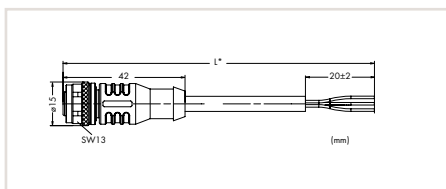
4-pole



5-pole

Pin 1 - 5: 0.34 mm²

1 brown (+)
2 white (Ö)
3 blue (-)
4 black (S)
5 gray



Operating voltage	60 V AC/DC
Operating current	max. 4 A
Rated surge voltage	1.5 kV
Suitable for drag chain applications	≥ 2 Mio. bending cycles
Ambient temperature (operation) moved	-25 ... +90 °C
Protection type	IP67
Cable diameter	4.1 mm ±0.2

Sensor/actuator cables, M8 socket, straight

	Item No.	Pack. Unit
3-pol., M8 socket, straight, 1.5 m	756-5101/030-015	10
3-pol., M8 socket, straight, 5 m	756-5101/030-050	10
3-pol., M8 socket, straight, 10 m	756-5101/030-100	10

Sensor/actuator cables, M8 socket, right angle

	Item No.	Pack. Unit
3-pol., M8 socket, right angle, 1.5 m	756-5102/030-015	10
3-pol., M8 socket, right angle, 5 m	756-5102/030-050	10
3-pol., M8 socket, right angle, 10 m	756-5102/030-100	10

Operating voltage	250 V AC/DC
Operating current	max. 4 A
Rated surge voltage	2.5 kV (3-, 4-pole); 1.5 kV (5-pole)
Suitable for drag chain applications	≥ 2 Mio. bending cycles
Ambient temperature (operation) moved	-25 ... +90 °C
Protection type	IP67
Cable diameter	4.3 mm ±0.2 (3-pole); 4.7 mm ±0.2 (4-pole); 5.0 mm ±0.2 (5-pole); 6.5 mm ±0.2 (5-pole, shielded)

Sensor/actuator cables, M12 socket, straight

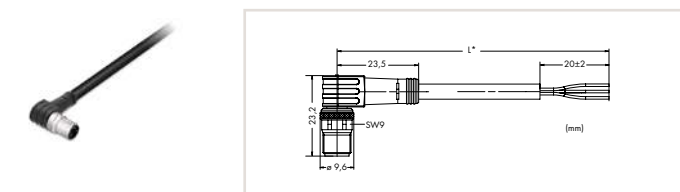
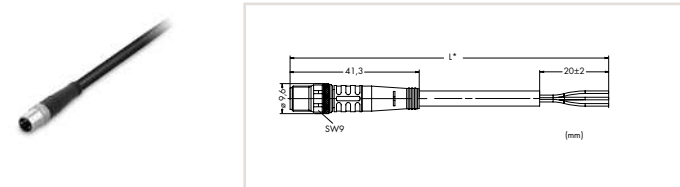
	Item No.	Pack. Unit
3-pol., M12 socket, straight, 1.5 m	756-5301/030-015	10
3-pol., M12 socket, straight, 5 m	756-5301/030-050	10
3-pol., M12 socket, straight, 10 m	756-5301/030-100	10
4-pol., M12 socket, straight, 1.5 m	756-5301/040-015	10
4-pol., M12 socket, straight, 5 m	756-5301/040-050	10
4-pol., M12 socket, straight, 10 m	756-5301/040-100	10
5-pol., M12 socket, straight, 1.5 m	756-5301/050-015	10
5-pol., M12 socket, straight, 5 m	756-5301/050-050	10
5-pol., M12 socket, straight, 10 m	756-5301/050-100	10
shielded, 5-pol., M12 socket, straight, 1.5 m	756-5301/060-015	10
shielded, 5-pol., M12 socket, straight, 5 m	756-5301/060-050	10
shielded, 5-pol., M12 socket, straight, 10 m	756-5301/060-100	10

Sensor/actuator cables, M12 socket, right angle

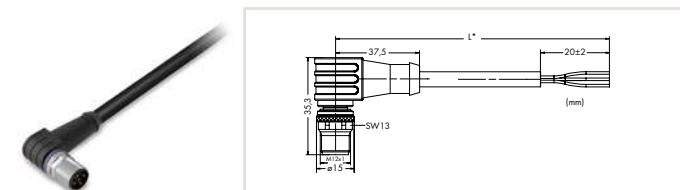
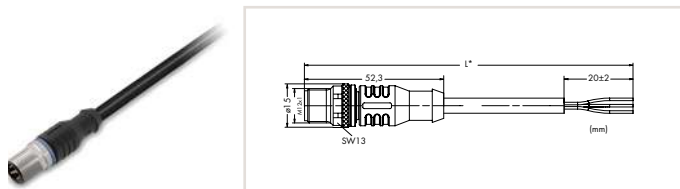
	Item No.	Pack. Unit
3-pol., M12 socket, right angle, 1.5 m	756-5302/030-015	10
3-pol., M12 socket, right angle, 5 m	756-5302/030-050	10
3-pol., M12 socket, right angle, 10 m	756-5302/030-100	10
4-pol., M12 socket, right angle, 1.5 m	756-5302/040-015	10
4-pol., M12 socket, right angle, 5 m	756-5302/040-050	10
4-pol., M12 socket, right angle, 10 m	756-5302/040-100	10
5-pol., M12 socket, right angle, 1.5 m	756-5302/050-015	10
5-pol., M12 socket, right angle, 5 m	756-5302/050-050	10
5-pol., M12 socket, right angle, 10 m	756-5302/050-100	10
shielded, 5-pol., M12 socket, right angle, 1.5 m	756-5302/060-015	10
shielded, 5-pol., M12 socket, right angle, 5 m	756-5302/060-050	10
shielded, 5-pol., M12 socket, right angle, 10 m	756-5302/060-100	10

Sensor/actuator cables, with one end of cable fitted

M8 plug	Pin 1 - 4: 0.34 mm ²
	1 brown (+) 3 blue (-) 4 black (S)
3-pole	



M12 plug	Pin 1 - 5: 0.34 mm ²
	1 brown (+) 2 white (Ö) 3 blue (-) 4 black (S) 5 gray
3-pole	
4-pole	
5-pole	



Operating voltage	60 V AC/DC
Operating current	max. 4 A
Rated surge voltage	1.5 kV
Suitable for drag chain applications	≥ 2 Mio. bending cycles
Ambient temperature (operation) moved	-25 ... +90 °C
Protection type	IP67
Cable diameter	4.1 mm ±0.2

Sensor/actuator cables, M8 plug, straight		
	Item No.	Pack. Unit
3-pol., M8 plug, straight, 1.5 m	756-5111/030-015	10
3-pol., M8 plug, straight, 5 m	756-5111/030-050	10
3-pol., M8 plug, straight, 10 m	756-5111/030-100	10

Sensor/actuator cables, M8 plug, right angle		
	Item No.	Pack. Unit
3-pol., M8 plug, right angle, 1.5 m	756-5112/030-015	10
3-pol., M8 plug, right angle, 5 m	756-5112/030-050	10
3-pol., M8 plug, right angle, 10 m	756-5112/030-100	10

Operating voltage	250 V AC/DC
Operating current	max. 4 A
Rated surge voltage	2.5 kV (3-, 4-pole); 1.5 kV (5-pole)
Suitable for drag chain applications	≥ 2 Mio. bending cycles
Ambient temperature (operation) moved	-25 ... +90 °C
Protection type	IP67
Cable diameter	4.3 mm ±0.2 (3-pole); 4.7 mm ±0.2 (4-pole); 5.0 mm ±0.2 (5-pole); 6.5 mm ±0.2 (5-pole, shielded)

Sensor/actuator cables, M12 plug, straight		
	Item No.	Pack. Unit
3-pol., M12 plug, straight, 1.5 m	756-5311/030-015	10
3-pol., M12 plug, straight, 5 m	756-5311/030-050	10
3-pol., M12 plug, straight, 10 m	756-5311/030-100	10
4-pol., M12 plug, straight, 1.5 m	756-5311/040-015	10
4-pol., M12 plug, straight, 5 m	756-5311/040-050	10
4-pol., M12 plug, straight, 10 m	756-5311/040-100	10
5-pol., M12 plug, straight, 1.5 m	756-5311/050-015	10
5-pol., M12 plug, straight, 5 m	756-5311/050-050	10
5-pol., M12 plug, straight, 10 m	756-5311/050-100	10
shielded, 5-pol., M12 plug, straight, 1.5 m	756-5311/060-015	10
shielded, 5-pol., M12 plug, straight, 5 m	756-5311/060-050	10
shielded, 5-pol., M12 plug, straight, 10 m	756-5311/060-100	10

Sensor/actuator cables, M12 plug, right angle		
	Item No.	Pack. Unit
3-pol., M12 plug, right angle, 1.5 m	756-5312/030-015	10
3-pol., M12 plug, right angle, 5 m	756-5312/030-050	10
3-pol., M12 plug, right angle, 10 m	756-5312/030-100	10
4-pol., M12 plug, right angle, 1.5 m	756-5312/040-015	10
4-pol., M12 plug, right angle, 5 m	756-5312/040-050	10
4-pol., M12 plug, right angle, 10 m	756-5312/040-100	10
5-pol., M12 plug, right angle, 1.5 m	756-5312/050-015	10
5-pol., M12 plug, right angle, 5 m	756-5312/050-050	10
5-pol., M12 plug, right angle, 10 m	756-5312/050-100	10
shielded, 5-pol., M12 plug, right angle, 1.5 m	756-5312/060-015	10
shielded, 5-pol., M12 plug, right angle, 5 m	756-5312/060-050	10
shielded, 5-pol., M12 plug, right angle, 10 m	756-5312/060-100	10

Sensor/actuator cables, with one end of cable fitted

M12 plug



8-pole, shielded

Pin 1 - 8: 0.25 mm²

1 white

2 brown

3 green

4 yellow

5 gray

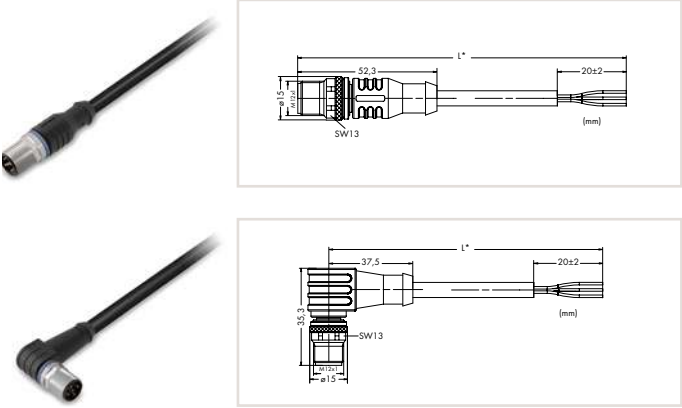
6 pink

7 blue

8 red

Shield (screen)

Operating voltage	250 V AC/DC
Operating current	max. 4 A
Rated surge voltage	1.5 kV
Suitable for drag chain applications	≥ 2 Mio. bending cycles
Ambient temperature (operation) moved	-25 ... +90 °C
Protection type	IP67
Cable diameter	6.3 mm ±0.2



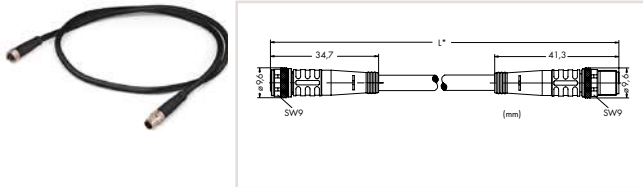
Sensor/actuator cables, M12 plug, straight		
	Item No.	Pack. Unit
shielded, 8-pol., M12 plug, straight, 1.5 m	756-5311/090-015	10
shielded, 8-pol., M12 plug, straight, 5 m	756-5311/090-050	10
shielded, 8-pol., M12 plug, straight, 10 m	756-5311/090-100	10

Sensor/actuator cables, M12 plug, right angle		
	Item No.	Pack. Unit
shielded, 8-pol., M12 plug, right angle, 1.5 m	756-5312/090-015	10
shielded, 8-pol., M12 plug, right angle, 5 m	756-5312/090-050	10
shielded, 8-pol., M12 plug, right angle, 10 m	756-5312/090-100	10

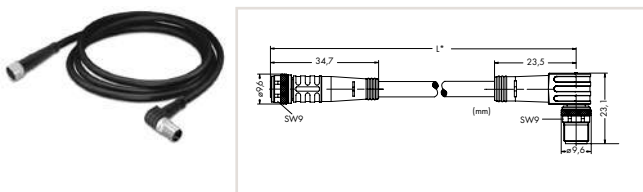
Sensor/actuator cables, both ends of the cable are fitted with plug/socket

M8 socket	M8 plug	Pin 1 - 4: 0.34 mm ²
		1 brown (+) 3 blue (-) 4 black (S)
3-pole	3-pole	

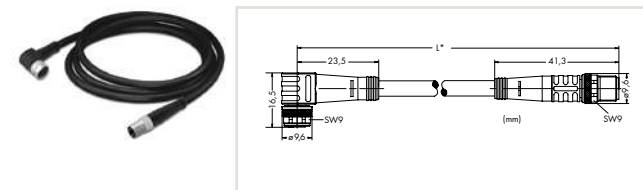
Operating voltage	60 V AC/DC
Operating current	max. 4 A
Rated surge voltage	1.5 kV
Suitable for drag chain applications	≥ 2 Mio. bending cycles
Ambient temperature (operation) moved	-25 ... +90 °C
Protection type	IP67
Cable diameter	4.1 mm ±0.2



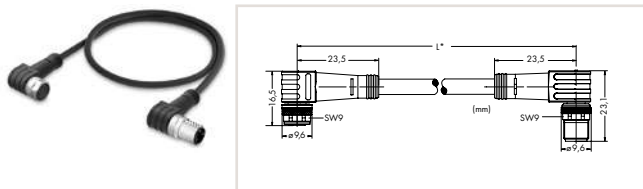
Sensor/actuator cables, M8 socket, straight – M8 plug, straight		
	Item No.	Pack. Unit
3-pol., M8 socket, straight, M8 plug, straight, 1 m	756-5201/030-010	10
3-pol., M8 socket, straight, M8 plug, straight, 2 m	756-5201/030-020	10



Sensor/actuator cables, M8 socket, straight – M8 plug, right angle		
	Item No.	Pack. Unit
3-pol., M8 socket, straight, M8 plug, right angle, 1 m	756-5202/030-010	10
3-pol., M8 socket, straight, M8 plug, right angle, 2 m	756-5202/030-020	10



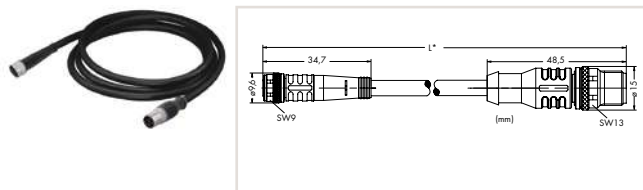
Sensor/actuator cables, M8 socket, right angle – M8 plug, straight		
	Item No.	Pack. Unit
3-pol., M8 socket, right angle, M8 plug, straight, 1 m	756-5203/030-010	10
3-pol., M8 socket, right angle, M8 plug, straight, 2 m	756-5203/030-020	10



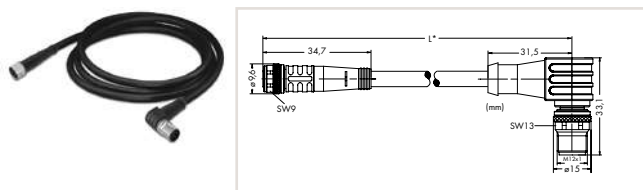
Sensor/actuator cables, M8 socket, right angle – M8 plug, right angle		
	Item No.	Pack. Unit
3-pol., M8 socket, right angle, M8 plug, right angle, 1 m	756-5204/030-010	10
3-pol., M8 socket, right angle, M8 plug, right angle, 2 m	756-5204/030-020	10

M8 socket	M12 plug	Pin 1 - 4: 0.34 mm ²
		1 brown (+) 2 white (Ö) 3 blue (-) 4 black (S)
3-pole	3-pole	
		
4-pole	4-pole	

Operating voltage	60 V AC/DC
Operating current	max. 4 A
Rated surge voltage	1.5 kV
Suitable for drag chain applications	≥ 2 Mio. bending cycles
Ambient temperature (operation) moved	-25 ... +90 °C
Protection type	IP67
Cable diameter	4.1 mm ±0.2

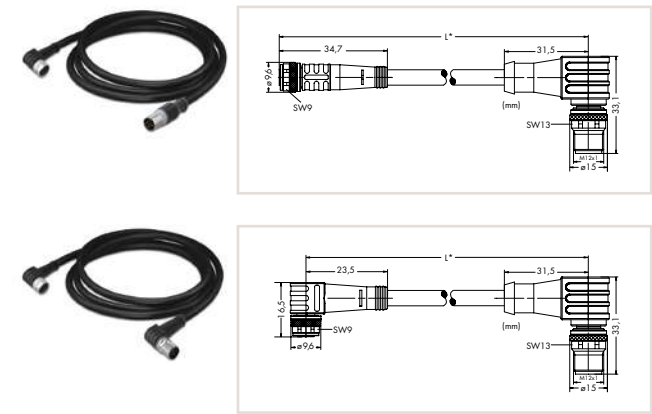


Sensor/actuator cables, M8 socket, straight – M12 plug, straight		
	Item No.	Pack. Unit
3-pol., M8 socket, straight, M12 plug, straight, 1 m	756-5507/030-010	10
3-pol., M8 socket, straight, M12 plug, straight, 2 m	756-5507/030-020	10
4-pol., M8 socket, straight, M12 plug, straight, 1 m	756-5507/040-010	10
4-pol., M8 socket, straight, M12 plug, straight, 2 m	756-5507/040-020	10



Sensor/actuator cables, M8 socket, straight – M12 plug, right angle		
	Item No.	Pack. Unit
3-pol., M8 socket, straight, M12 plug, right angle, 1 m	756-5508/030-010	10
3-pol., M8 socket, straight, M12 plug, right angle, 2 m	756-5508/030-020	10
4-pol., M8 socket, straight, M12 plug, right angle, 1 m	756-5508/040-010	10
4-pol., M8 socket, straight, M12 plug, right angle, 2 m	756-5508/040-020	10

Sensor/actuator cables, both ends of the cable are fitted with plug/socket



M12 socket

3-pole

M8 plug

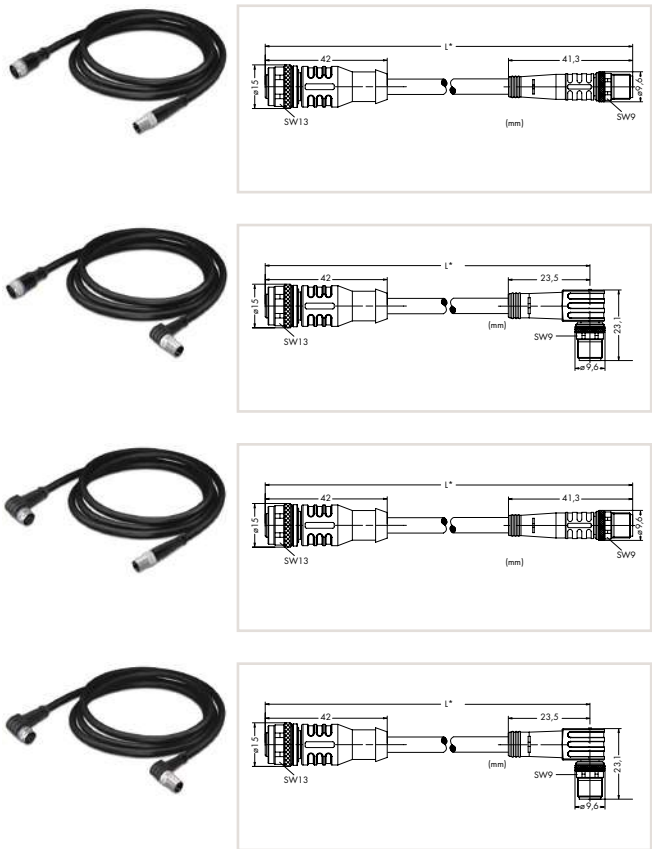
3-pole

Pin 1 - 4: 0.34 mm²
1 brown (+)
3 blue (-)
4 black (S)

Sensor/actuator cables, M8 socket, right angle – M12 plug, straight		
	Item No.	Pack. Unit
3-pol., M8 socket, right angle, M12 plug, straight, 1 m	756-5509/030-010	10
3-pol., M8 socket, right angle, M12 plug, straight, 2 m	756-5509/030-020	10
4-pol., M8 socket, right angle, M12 plug, straight, 1 m	756-5509/040-010	10
4-pol., M8 socket, right angle, M12 plug, straight, 2 m	756-5509/040-020	10

Sensor/actuator cables, M8 socket, right angle – M12 plug, right angle		
	Item No.	Pack. Unit
3-pol., M8 socket, right angle, M12 plug, right angle, 1 m	756-5510/030-010	10
3-pol., M8 socket, right angle, M12 plug, right angle, 2 m	756-5510/030-020	10
4-pol., M8 socket, right angle, M12 plug, right angle, 1 m	756-5510/040-010	10
4-pol., M8 socket, right angle, M12 plug, right angle, 2 m	756-5510/040-020	10

Operating voltage	60 V AC/DC
Operating current	max. 4 A
Rated surge voltage	1.5 kV
Suitable for drag chain applications	≥ 2 Mio. bending cycles
Ambient temperature (operation) moved	-25 ... +90 °C
Protection type	IP67
Cable diameter	4.1 mm ±0.2



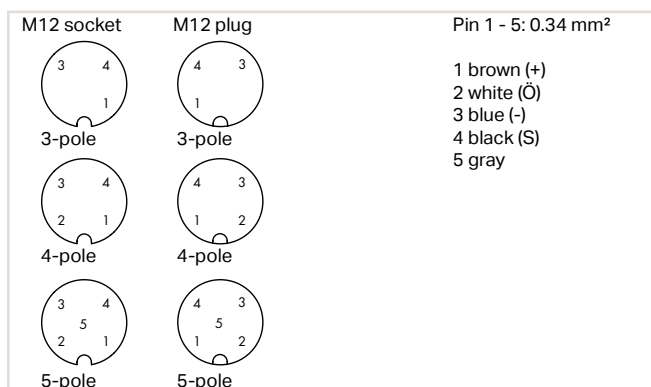
Sensor/actuator cables, M12 socket, straight – M8 plug, straight		
	Item No.	Pack. Unit
3-pol., M12 socket, straight, M8 plug, straight, 1 m	756-5501/030-010	10
3-pol., M12 socket, straight, M8 plug, straight, 2 m	756-5501/030-020	10

Sensor/actuator cables, M12 socket, straight – M8 plug, right angle		
	Item No.	Pack. Unit
3-pol., M12 socket, straight, M8 plug, right angle, 1 m	756-5502/030-010	10
3-pol., M12 socket, straight, M8 plug, right angle, 2 m	756-5502/030-020	10

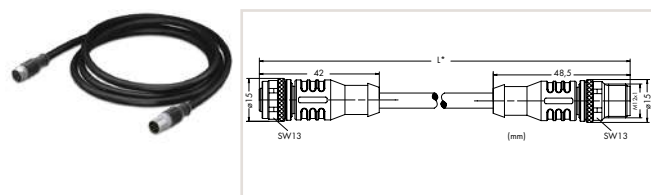
Sensor/actuator cables, M12 socket, right angle – M8 plug, straight		
	Item No.	Pack. Unit
3-pol., M12 socket, right angle, M8 plug, straight, 1 m	756-5503/030-010	10
3-pol., M12 socket, right angle, M8 plug, straight, 2 m	756-5503/030-020	10

Sensor/actuator cables, M12 socket, right angle – M8 plug, right angle		
	Item No.	Pack. Unit
3-pol., M12 socket, right angle, M8 plug, right angle, 1 m	756-5504/030-010	10
3-pol., M12 socket, right angle, M8 plug, right angle, 2 m	756-5504/030-020	10

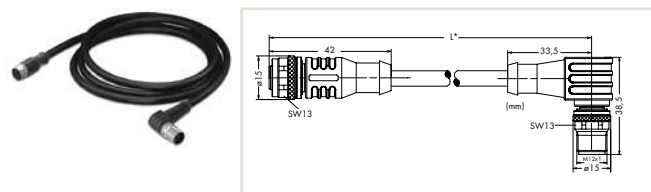
Sensor/actuator cables, both ends of the cable are fitted with plug/socket



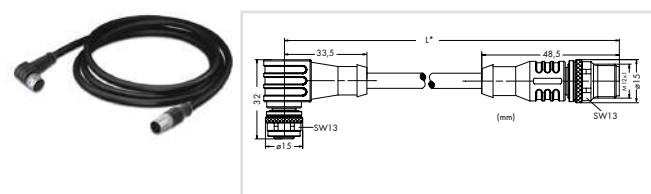
Operating voltage	250 V AC/DC
Operating current	max. 4 A
Rated surge voltage	2.5 kV (3-, 4-pole); 1.5 kV (5-pole)
Suitable for drag chain applications	≥ 2 Mio. bending cycles
Ambient temperature (operation) moved	-25 ... +90 °C
Protection type	IP67
Cable diameter	4.3 mm ±0.2 (3-pole); 4.7 mm ±0.2 (4-pole); 5.0 mm ±0.2 (5-pole); 6.5 mm ±0.2 (5-pole, shielded)



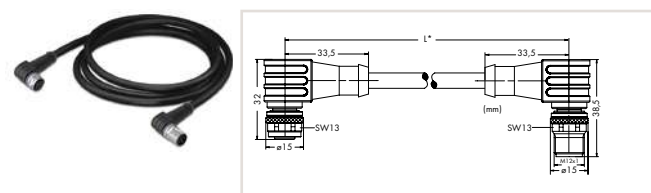
Sensor/actuator cables, M12 socket, straight – M12 plug, straight		
	Item No.	Pack. Unit
3-pol., M12 socket, straight, M12 plug, straight, 1 m	756-5401/030-010	10
3-pol., M12 socket, straight, M12 plug, straight, 2 m	756-5401/030-020	10
4-pol., M12 socket, straight, M12 plug, straight, 1 m	756-5401/040-010	10
4-pol., M12 socket, straight, M12 plug, straight, 2 m	756-5401/040-020	10
5-pol., M12 socket, straight, M12 plug, straight, 1 m	756-5401/050-010	10
5-pol., M12 socket, straight, M12 plug, straight, 2 m	756-5401/050-020	10
shield., 5-pol., M12 socket, straight, M12 plug, strai., 1 m	756-5401/060-010	10
shield., 5-pol., M12 socket, straight, M12 plug, strai., 2 m	756-5401/060-020	10



Sensor/actuator cables, M12 socket, straight – M12 plug, right angle		
	Item No.	Pack. Unit
3-pol., M12 socket, straight, M12 plug, right angle, 1 m	756-5402/030-010	10
3-pol., M12 socket, straight, M12 plug, right angle, 2 m	756-5402/030-020	10
4-pol., M12 socket, straight, M12 plug, right angle, 1 m	756-5402/040-010	10
4-pol., M12 socket, straight, M12 plug, right angle, 2 m	756-5402/040-020	10
5-pol., M12 socket, straight, M12 plug, right angle, 1 m	756-5402/050-010	10
5-pol., M12 socket, straight, M12 plug, right angle, 2 m	756-5402/050-020	10
shielded, 5-pol., M12 socket, straight, M12 plug, right angle, 1 m	756-5402/060-010	10
shielded, 5-pol., M12 socket, straight, M12 plug, right angle, 2 m	756-5402/060-020	10



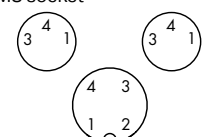
Sensor/actuator cables, M12 socket, right angle – M12 plug, straight		
	Item No.	Pack. Unit
3-pol., M12 socket, right angle, M12 plug, straight, 1 m	756-5403/030-010	10
3-pol., M12 socket, right angle, M12 plug, straight, 2 m	756-5403/030-020	10
4-pol., M12 socket, right angle, M12 plug, straight, 1 m	756-5403/040-010	10
4-pol., M12 socket, right angle, M12 plug, straight, 2 m	756-5403/040-020	10
5-pol., M12 socket, right angle, M12 plug, straight, 1 m	756-5403/050-010	10
5-pol., M12 socket, right angle, M12 plug, straight, 2 m	756-5403/050-020	10
shielded, 5-pol., M12 socket, right angle, M12 plug, straight, 1 m	756-5403/060-010	10
shielded, 5-pol., M12 socket, right angle, M12 plug, straight, 2 m	756-5403/060-020	10



Sensor/actuator cables, M12 socket, right angle – M12 plug, right angle		
	Item No.	Pack. Unit
3-pol., M12 socket, right angle, M12 plug, right angle, 1 m	756-5404/030-010	10
3-pol., M12 socket, right angle, M12 plug, right angle, 2 m	756-5404/030-020	10
4-pol., M12 socket, right angle, M12 plug, right angle, 1 m	756-5404/040-010	10
4-pol., M12 socket, right angle, M12 plug, right angle, 2 m	756-5404/040-020	10
5-pol., M12 socket, right angle, M12 plug, right angle, 1 m	756-5404/050-010	10
5-pol., M12 socket, right angle, M12 plug, right angle, 2 m	756-5404/050-020	10
shielded, 5-pol., M12 socket, right angle, M12 plug, right angle, 1 m	756-5404/060-010	10
shielded, 5-pol., M12 socket, right angle, M12 plug, right angle, 2 m	756-5404/060-020	10

Sensor/actuator cables, both ends of the cable are fitted with plug/socket

2 x M8 socket



Pin 1 - 4: 0.34 mm²

M12 plug



Socket 1

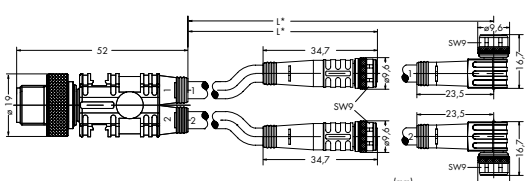
1
3
4

4
3
1
2

Socket 2

1
3
4

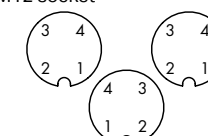
Plug



Operating voltage	60 V AC/DC
Operating current	max. 4 A
Rated surge voltage	1.5 kV
Suitable for drag chain applications	≥ 2 Mio. bending cycles
Ambient temperature (operation) moved	-25 ... +90 °C
Protection type	IP67
Cable diameter	4.1 mm ±0.2

Sensor/actuator cables, 2 x M8 socket – M12 plug		
	Item No.	Pack. Unit
4-pol., 2xM12 plug, straight, M8 socket, straight, 1 m	756-5513/040-010	10
4-pol., 2xM12 plug, straight, M8 socket, straight, 2 m	756-5513/040-020	10
4-pol., 2xM12 plug, straight, M8 socket, right angle, 1 m	756-5514/040-010	10
4-pol., 2xM12 plug, straight, M8 socket, right angle, 2 m	756-5514/040-020	10

2 x M12 socket



Pin 1 - 4: 0.34 mm²

M12 plug



Socket 1

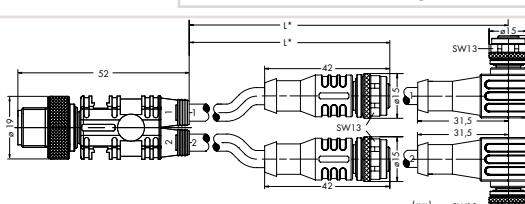
1
2
3
4

4
3
2
1

Socket 2

1
2
3
4

Plug

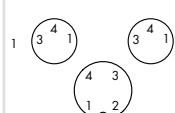


Operating voltage	250 V AC/DC
Operating current	max. 4 A
Rated surge voltage	2.5 kV
Suitable for drag chain applications	≥ 2 Mio. bending cycles
Ambient temperature (operation) moved	-25 ... +90 °C
Protection type	IP67
Cable diameter	4.7 mm ±0.2

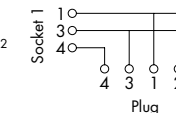
Sensor/actuator cables, 2 x M8 socket – M12 plug		
	Item No.	Pack. Unit
4-pol., 2xM12 plug, straight, M12 socket, straight, 1 m	756-5516/040-010	10
4-pol., 2xM12 plug, straight, M12 socket, straight, 2 m	756-5516/040-020	10
4-pol., 2xM12 plug, straight, M12 socket, right angle, 1 m	756-5517/040-010	10
4-pol., 2xM12 plug, straight, M12 socket, right angle, 2 m	756-5517/040-020	10



1



2



Socket 1

1
3
4

4
3
1
2

Socket 2

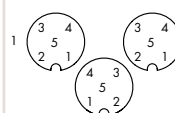
1
3
4

Plug

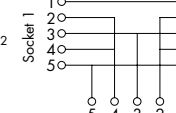
M8/M12 twin distribution connector		
	Item No.	Pack. Unit
M12/M8 twin distribution connector	756-9301/040-000	1



1



2



Socket 1

1
2
3
4
5

5
4
3
2
1

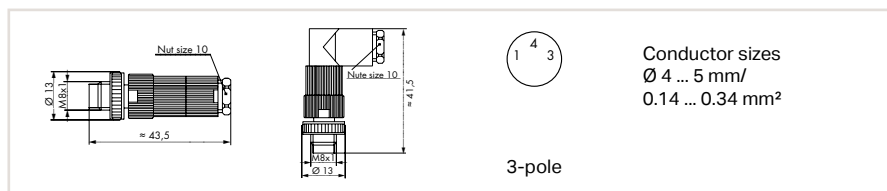
Socket 2

1
2
3
4
5

Plug

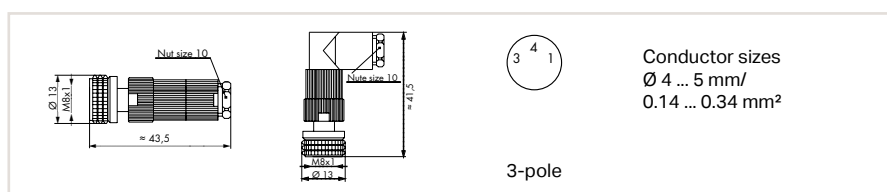
M12/M12 twin distribution connector		
	Item No.	Pack. Unit
M12/M12 twin distribution connector	756-9301/050-000	1

Configurable connectors



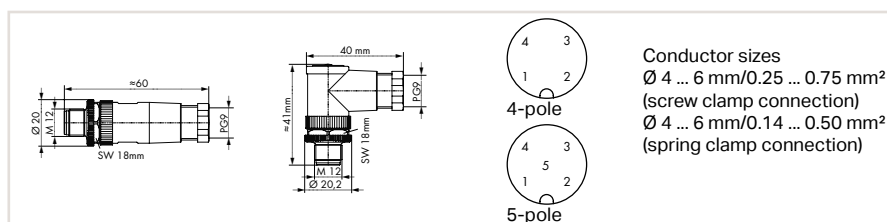
M8 plug, straight and right angle

	Item No.	Pack. Unit
Fitted pluggable connector, 3-pol., M8 plug, straight, Pin penetration	756-9102/030-000	5
Fitted pluggable connector, 3-pol., M8 plug, right angle, Pin penetration	756-9105/030-000	5



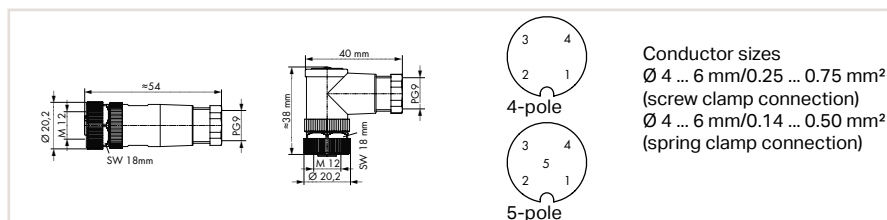
M8 socket, straight and right angle

	Item No.	Pack. Unit
Fitted pluggable connector, 3-pol., M8 socket, straight, Pin penetration	756-9112/030-000	5
Fitted pluggable connector, 3-pol., M8 socket, right angle, Pin penetration	756-9115/030-000	5



M12 plug, straight and right angle

	Item No.	Pack. Unit
Fitted pluggable connector, 4-pol., M12 plug, straight, Screw	756-9201/040-000	5
Fitted pluggable connector, 4-pol., M12 plug, right angle, Screw	756-9204/040-000	5
Fitted pluggable connector, 4-pol., M12 plug, straight, Spring	756-9202/040-000	5
Fitted pluggable connector, 4-pol., M12 plug, right angle, Spring	756-9205/040-000	5
Fitted pluggable connector, 5-pol., M12 plug, straight, Screw	756-9201/050-000	5
Fitted pluggable connector, 5-pol., M12 plug, right angle, Screw	756-9204/050-000	5
Fitted pluggable connector, 5-pol., M12 plug, straight, Spring	756-9202/050-000	5
Fitted pluggable connector, 5-pol., M12 plug, right angle, Spring	756-9205/050-000	5

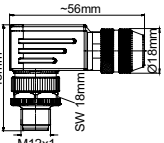
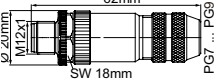


M12 socket, straight and right angle

	Item No.	Pack. Unit
Fitted pluggable connector, 4-pol., M12 socket, straight, Screw	756-9211/040-000	5
Fitted pluggable connector, 4-pol., M12 socket, right angle, Screw	756-9214/040-000	5
Fitted pluggable connector, 4-pol., M12 socket, straight, Spring	756-9212/040-000	5
Fitted pluggable connector, 4-pol., M12 socket, right angle, Spring	756-9215/040-000	5
Fitted pluggable connector, 5-pol., M12 socket, straight, Spring	756-9212/050-000	5
Fitted pluggable connector, 5-pol., M12 socket, right angle, Spring	756-9215/050-000	5

Configurable shielded connectors





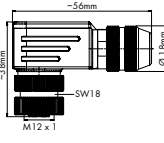
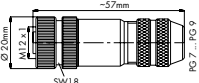


5-pole

Conductor size
Ø 6 ... 8 mm/
0.14 ... 0.50 mm²

M12 plug, straight and right angle		
	Item No.	Pack. Unit
Fitted pluggable connector, 5-pol. shielded, M12 plug, straight, Spring	756-9207/060-000	1
Fitted pluggable connector, 5-pol. shielded, M12 plug, right angle, Spring	756-9211/060-000	1





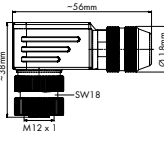
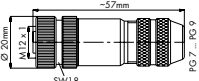


5-pole

Conductor size
Ø 6 ... 8 mm/
0.14 ... 0.50 mm²

M12 socket, straight and right angle		
	Item No.	Pack. Unit
Fitted pluggable connector, 5-pol. shielded, M12 socket, straight, Spring	756-9208/060-000	1
Fitted pluggable connector, 5-pol. shielded, M12 socket, right angle, Spring	756-9210/060-000	1







8-pole

Conductor size
Ø 6 ... 8 mm/
0.14 ... 0.50 mm²

M12 socket, straight and right angle		
	Item No.	Pack. Unit
Fitted pluggable connector, 8-pol. shielded, M12 socket, straight, Screw	756-9211/090-000	1
Fitted pluggable connector, 8-pol. shielded, M12 socket, right angle, Screw	756-9214/090-000	1

Torque Wrench M8 and M12, Assembly kit



Assembly kit for 756 Series IP67 cable assemblies and pluggable connectors with hex nut, consists of:

- Tool kit
- Torque screwdriver with adjustable torque (window scale)
- Adjustment tool for changing the torque
- Socket wrench SW9 (for M8 cable assemblies)
- Socket wrench SW13 (for M12 cable assemblies)

A torque specification of 0.6 Nm for M8 connectors and 1.0 Nm for M12 connectors is required for 756 Series cables and connectors.

Torque Wrench M8 and M12		
	Item No.	Pack. Unit
	206-701	1

Torque range	0.4 ... 1 Nm ±6 %
Material	
Handle	Polypropylene (PP) for hard zone, thermoplastic elastomers (TPE) for soft zone
Allen key	Polyamide (PA), fiber-glassreinforced; chromium-vanadiummolybdenum steel (CrMoV) (1.2381)
Adjustment tools	Cellulose acetate; chromiumvanadium-molybdenum steel (CrMoV) (1.2381)
Color	black
Standards/specifications	EN ISO 6789; BS EN 26789; ASME B107.14.M

Bluetooth® Adapter



Item description

Item No.

Technical Data

Range
Data transfer rate
Frequency range
Type of communication
Profiles supported
Version
Radio
Antenna
Connections
Configuration
Function
LED
Security encryption
Ambient temperature (operation)
Dimensions W x H x D
Approvals
Data sheet and further information, see:

Bluetooth® Adapter

750-921

20 m free field (Class 2)*
9600 ... 115000 bit/s
ISM band, 2402 ... 2483 MHz
Peer-to-peer connection
Serial Port Profile (SPP)
Bluetooth® 2.1
Class 2
Integrated
4-pole service connector
AT commands, e.g., via hyperterminal
Master or slave
Operating mode
128-bit encryption
-20 ... +60 °C
15 x 50 x 19 mm
Bluetooth® approval, CE
wago.com/750-921

The *Bluetooth®* Adapter wirelessly connects a notebook computer with *Bluetooth®* functionality to the service interface of the fieldbus coupler/ controller. It also provides an active connection to a programmable fieldbus controller.

As a cable substitute, the *Bluetooth®* Adapter allows communication between two controllers, as well as between fieldbus couplers/controllers via WAGO software tools.

The adapter is supplied via the service interface and, therefore, via the power supply of the fieldbus coupler/controller.

* The maximum range in the field decreases with use in buildings and changes depending on the building materials used and the spatial geometry. Therefore range specifications within buildings can only represent typical values which can normally be reached. More detailed information is available in the manual.

WAGO Communication Cable

RS232 communication cable, RS-232 (SUB-D 9 pol.),
Service Interface I/O-System 750



Item description	Communication cable
Item No.	750-920
Technical Data	
Ports	4-pole Service Interface
Length	2,5 m
Ambient temperature (operation)	0 ... +55 °C
Degree of protection	IP20
Data sheet and further information, see:	wago.com/750-920

The WAGO Communication Cable provides a simple option for communication with WAGO software tools (WAGO-I/O-CHECK, WAGO-I/O-PRO, ...).

Notice: The communication cable shall not be connected or removed when energized.

USB communication cable, USB-A,
Service Interface I/O-System 750



Item description	Communication cable USB-C STA-M-AX	
Version	USB 2.5m	USB 5m
Item No.	750-923	750-923/000-001
Technical Data		
USB specification	2.0 compatible/ full-speed-device	
Operating system	Microsoft® Windows® 2000; Microsoft® Windows® XP Professional; Microsoft® Windows® Vista®; Microsoft® Windows® 7	
Interface USB	Type A/m	
Length	2.5 m	5 m
Ambient temperature (operation)	-25 ... +70 °C	
Approvals	CE	
Data sheet and further information, see:	wago.com/750-923	

The WAGO USB Communication Cable connects a PC (notebook) to either the service interface of the 857 Series Signal Conditioners and Relay Modules (JUMPFLEX), or to WAGO-I/O-SYSTEM buscouplers/controllers.

Notice:
Using the WAGO 759-923 USB Communication Cable in combination with select programmable fieldbus controllers requires the specific firmware versions

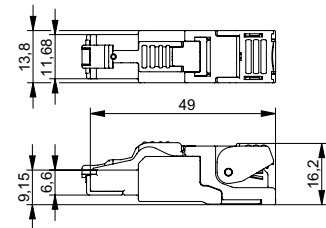
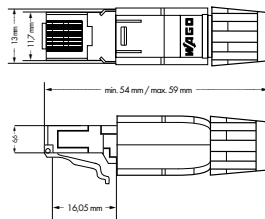
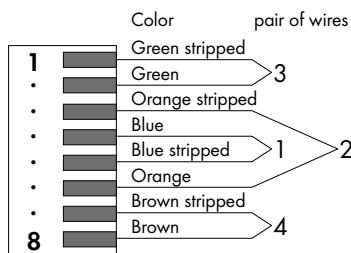
ETHERNET Connector, Code T568A

ETHERNET Connector, RJ-45, Cat 5, straight, Code T568A, AWG22

ETHERNET Connector, RJ-45, Cat 6A, straight, Code T568A, AWG22, optional: AWG 24



Pin assignment TIA-568A



Item description

Version

Item No.

Connector ETHERNET RJ45

Cat.5 180° T568A AWG22

750-975

Connector ETHERNET RJ45

Cat.6A 180° T568A AWG22

750-977/000-011

Cat.6A 180° T568A AWG24

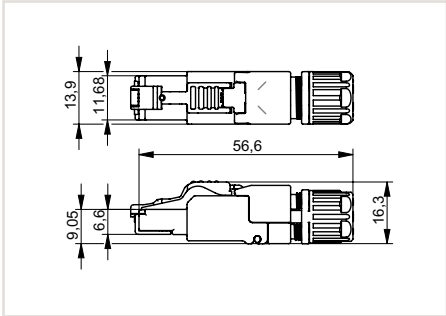
750-977/000-021

Technical Data

Category	Cat. 5e
Data transmission rate max.	1 GBit/s
Code	TIA-568A
Cable outlet	180°
No. of Poles	8
Housing material	Plastic
Mating cycles	> 1000
Wire connection	IDC (Insulation Displacement Contact)
Cross sections	solid: 0.13 ... 0.24 mm ² / AWG 26/1 ... 23/1; stranded: 0.14 ... 0.36 mm ² / AWG 26/7 ... 22/7
Cable jacket Ø	4.5 ... 8 mm
Cable strain relief	Screw-clamp connection
Shield contacting	>180°
Ambient temperature (operation)	-20 ... +70 °C
Ambient temperature (storage)	-40 ... +70 °C
Relative humidity	95 %, non-condensing
Degree of protection	IP20
Standards/specifications	- Basic standard: IEC 60603-7 RJ-45 Category 5; - CD ISO/IEC 11801: 2002; - EN 50173: 2002; - EIA/TIA 568A: 2002; UL 1863
Approvals	Marine
Data sheet and further information, see:	wago.com/750-975

Cat. 6A	
10 GBit/s	
TiA-568A	
180°	
8	
Zinc die-cast	
> 750	
IDC (Insulation Displacement Contact)	
solid: 0.21 ... 0.32 mm² / AWG 24/1 ... 22/1; stranded: 0.11 ... 0.36 mm² / AWG 27/7 ... 22/7	solid: 0.13 ... 0.21 mm² / AWG 26/1 ... 24/1; stranded: 0.11 ... 0.23 mm² / AWG 27/7 ... 24/7
5.5 ... 9 mm	
360°	
-40 ... +85 °C	
-40 ... +85 °C	
95 %, non-condensing	
IP20	
IEC60603-7-51, ISO/IEC 11801, IEEE 802.3an; EIA/TIA 568-C.2; DIN EN 50173-1; UL 1863; UL 2043	
wago.com/ 750-977/000-011	wago.com/ 750-977/000-021

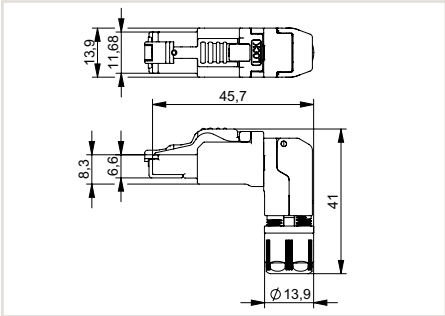
ETHERNET Connector, RJ-45, Cat 6A, straight, Code T568A, AWG22, with strain relief, optional: AWG 24



Connector ETHERNET RJ45	
Cat.6A 180° T568A AWG22 Strain relief	Cat.6A 180° T568A AWG24 Strain relief
750-978/000-011	750-978/000-021

Cat. 6A	
10 GBit/s	
TiA-568A	
180°	
8	
Zinc die-cast	
> 750	
IDC (Insulation Displacement Contact)	
solid: 0.21 ... 0.32 mm² / AWG 24/1 ... 22/1;	solid: 0.13 ... 0.21 mm² / AWG 26/1 ... 24/1;
stranded: 0.11 ... 0.36 mm² / AWG 27/7 ... 22/7	stranded: 0.11 ... 0.23 mm² / AWG 27/7 ... 24/7
5.5 ... 10 mm	
Screw-clamp connection	
360°	
-40 ... +85 °C	
-40 ... +85 °C	
95 %, non-condensing	
IP20	
IEC60603-7-51, ISO/IEC 11801, IEEE 802.3an; EIA/TIA 568-C.2; DIN EN 50173-1; UL 1863; UL 2043	
wago.com/ 750-978/000-011	wago.com/ 750-978/000-021

ETHERNET Connector, RJ-45, Cat 6A, right angle, Code T568A, AWG22, with strain relief, optional: AWG 24



Connector ETHERNET RJ45	
Cat.6A 90° T568A AWG22 Strain relief	Cat.6A 90° T568A AWG24 Strain relief
750-979/000-011	750-979/000-021

Cat. 6A	
10 GBit/s	
TiA-568A	
90°, position selectable	
8	
Zinc die-cast	
> 750	
IDC (Insulation Displacement Contact)	
solid: 0.21 ... 0.32 mm² / AWG 24/1 ... 22/1;	solid: 0.13 ... 0.21 mm² / AWG 26/1 ... 24/1;
stranded: 0.11 ... 0.36 mm² / AWG 27/7 ... 22/7	stranded: 0.11 ... 0.23 mm² / AWG 27/7 ... 24/7
5.5 ... 10 mm	
Screw-clamp connection	
360°	
-40 ... +85 °C	
-40 ... +85 °C	
95 %, non-condensing	
IP20	
IEC60603-7-51, ISO/IEC 11801, IEEE 802.3an; EIA/TIA 568-C.2; DIN EN 50173-1; UL 1863; UL 2043	
wago.com/ 750-979/000-011	wago.com/ 750-979/000-021

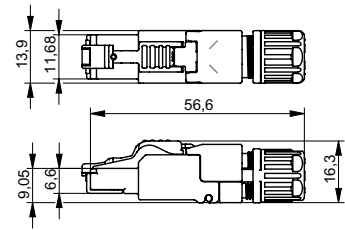
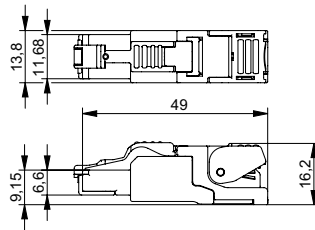
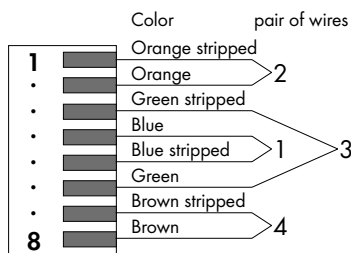
ETHERNET Connector, Code T568B

ETHERNET Connector, RJ-45, Cat 6A, straight, Code T568B, AWG22, opt.: AWG 24

ETHERNET Connector, RJ-45, Cat 6A, straight, Code T568B, AWG22, with strain relief, optional: AWG 24



Pin assignment TIA-568B



Item description

Version

Item No.

Connector ETHERNET RJ45

Cat.6A 180° T568B
AWG22

750-977/000-012

Cat.6A 180° T568B
AWG24

750-977/000-022

Connector ETHERNET RJ45

Cat.6A 180° T568B
AWG22 Strain relief

750-978/000-012

Cat.6A 180° T568B
AWG24 Strain relief

750-978/000-022

Technical Data

Category	Cat. 6A
Data transmission rate max.	10 GBit/s
Code	TIA-568B
Cable outlet	180°
No. of Poles	8
Housing material	Zinc die-cast
Mating cycles	> 750
Wire connection	IDC (Insulation Displacement Contact)
Cross sections	solid: 0.21 ... 0.32 mm² / AWG 24/1 ... 22/1; stranded: 0.11 ... 0.36 mm² / AWG 27/7 ... 22/7
Cable jacket Ø	5.5 ... 9 mm
Cable strain relief	
Shield contacting	360°
Ambient temperature (operation)	-40 ... +85 °C
Ambient temperature (storage)	-40 ... +85 °C
Relative humidity	95 %, non-condensing
Degree of protection	IP20
Standards/specifications	IEC60603-7-51, ISO/IEC 11801, IEEE 802.3an; EIA/TIA 568-C.2; DIN EN 50173-1; UL 1863; UL 2043

Approvals

Data sheet and further information, see:

wago.com/
750-977/000-012

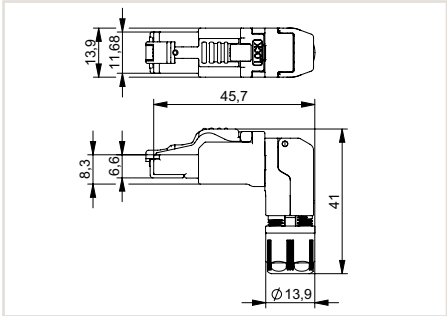
wago.com/
750-977/000-022

Cat. 6A
10 GBit/s
TIA-568B
180°
8
Zinc die-cast
> 750
IDC (Insulation Displacement Contact)
solid: 0.21 ... 0.32 mm² / AWG 24/1 ... 22/1; stranded: 0.11 ... 0.36 mm² / AWG 27/7 ... 22/7
solid: 0.13 ... 0.21 mm² / AWG 26/1 ... 24/1; stranded: 0.11 ... 0.23 mm² / AWG 27/7 ... 24/7
5.5 ... 10 mm
Screw-clamp connection
360°
-40 ... +85 °C
-40 ... +85 °C
95 %, non-condensing
IP20
IEC60603-7-51, ISO/IEC 11801, IEEE 802.3an; EIA/TIA 568-C.2; DIN EN 50173-1; UL 1863; UL 2043

wago.com/
750-978/000-012

wago.com/
750-978/000-022

ETHERNET Connector, RJ-45, Cat 6A, right angle, Code T568B, AWG22, with strain relief, optional: AWG 24



Connector ETHERNET RJ45	
Cat.6A 90° T568B AWG22 Strain relief	Cat.6A 90° T568B AWG24 Strain relief
750-979/000-012	750-979/000-022

Cat. 6A	
10 GBit/s	
TIA-568B	
90°, position selectable	
8	
Zinc die-cast	
> 750	
IDC (Insulation Displacement Contact)	
solid: 0.21 ... 0.32 mm² / AWG 24/1 ... 22/1;	solid: 0.13 ... 0.21 mm² / AWG 26/1 ... 24/1;
stranded: 0.11 ... 0.36 mm² / AWG 27/7 ... 22/7	stranded: 0.11 ... 0.23 mm² / AWG 27/7 ... 24/7
5.5 ... 10 mm	
Screw-clamp connection	
360°	
-40 ... +85 °C	
-40 ... +85 °C	
95 %, non-condensing	
IP20	
IEC60603-7-51, ISO/IEC 11801, IEEE 802.3an; EIA/TIA 568-C.2; DIN EN 50173-1; UL 1863; UL 2043	
wago.com/ 750-979/000-012	wago.com/ 750-979/000-022

PROFINET Connector

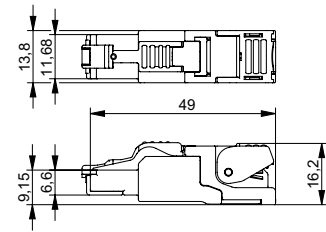
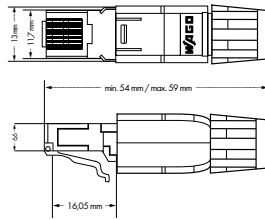
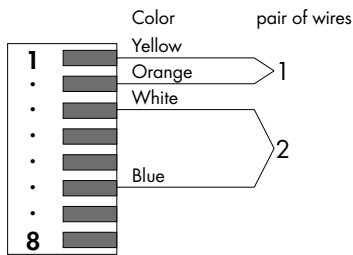
PROFINET Connector, RJ-45, Cat 5, straight, AWG22



PROFINET Connector, RJ-45, Cat 6A, straight, AWG22



Pin assignment PROFINET



Item description

Version

Item No.

Connector PROFINET RJ45

Cat.5 180° AWG22

750-976

Connector PROFINET RJ45

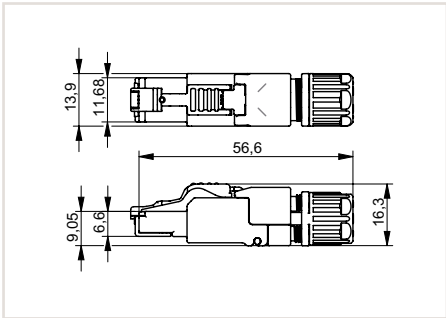
Cat.6A 180° AWG22

750-977/000-013

Technical Data

Category	Cat. 5e	Cat. 6A
Data transmission rate max.	100 MBit/s	100 MBit/s
Code	PROFINET	PROFINET
Cable outlet	180°	180°
No. of Poles	8	8
Housing material	Plastic	Zinc die-cast
Mating cycles	> 1000	> 750
Wire connection	IDC (Insulation Displacement Contact)	IDC (Insulation Displacement Contact)
Cross sections	solid: 0.13 ... 0.24 mm ² / AWG 26/1 ... 23/1; stranded: 0.14 ... 0.36 mm ² / AWG 26/7 ... 22/7	solid: 0.21 ... 0.32 mm ² / AWG 24/1 ... 22/1; stranded: 0.11 ... 0.36 mm ² / AWG 27/7 ... 22/7
Cable jacket Ø	4.5 ... 8 mm	5.5 ... 9 mm
Cable strain relief	Screw-clamp connection	
Shield contacting	>180°	360°
Ambient temperature (operation)	-20 ... +70 °C	-40 ... +85 °C
Ambient temperature (storage)	-40 ... +70 °C	-40 ... +85 °C
Relative humidity	95 %, non-condensing	95 %, non-condensing
Degree of protection	IP20	IP20
Standards/specifications	- Basic standard: IEC 60603-7 RJ-45 Category 5; - CD ISO/IEC 11801: 2002; - EN 50173: 2002; - EIA/TIA 568A: 2002; UL 1863	IEC60603-7-51, ISO/IEC 11801, IEEE 802.3an; EIA/TIA 568-C.2; DIN EN 50173-1; UL 1863; UL 2043
Approvals	Marine	
Data sheet and further information, see:	wago.com/750-976	wago.com/750-977/000-013

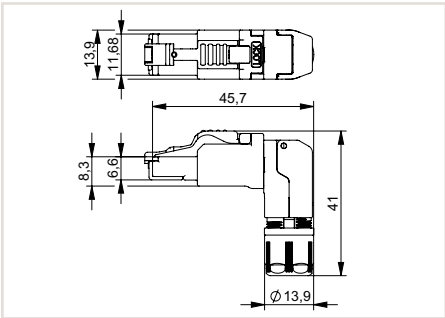
PROFINET Connector, RJ-45, Cat 6A, straight, AWG22, with strain relief



Connector PROFINET RJ45
Cat.6A 180° AWG22 Strain relief
750-978/000-013

Cat. 6A
100 MBit/s
PROFINET
180°
8
Zinc die-cast
> 750
IDC (Insulation Displacement Contact)
solid: 0.21 ... 0.32 mm ² / AWG 24/1 ... 22/1; stranded: 0.11 ... 0.36 mm ² / AWG 27/7 ... 22/7
5.5 ... 10 mm
Screw-clamp connection
360°
-40 ... +85 °C
-40 ... +85 °C
95 %, non-condensing
IP20
IEC60603-7-51, ISO/IEC 11801, IEEE 802.3an; EIA/TIA 568-C.2; DIN EN 50173-1; UL 1863; UL 2043
wago.com/750-978/000-013

PROFINET Connector, RJ-45, Cat 6A, right angle, AWG22, with strain relief

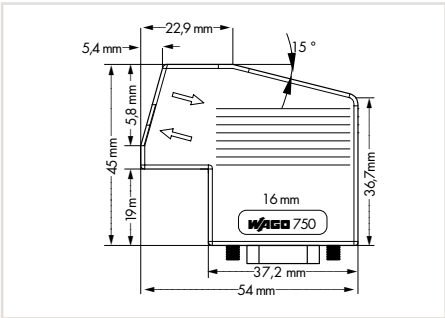
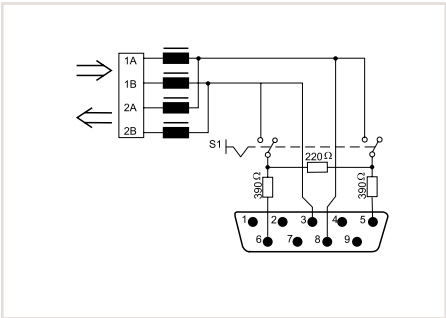


Connector PROFINET RJ45
Cat.6A 90° AWG22 Strain relief
750-979/000-013

Cat. 6A
100 MBit/s
PROFINET
90°, position selectable
8
Zinc die-cast
> 750
IDC (Insulation Displacement Contact)
solid: 0.21 ... 0.32 mm ² / AWG 24/1 ... 22/1; stranded: 0.11 ... 0.36 mm ² / AWG 27/7 ... 22/7
5.5 ... 10 mm
Screw-clamp connection
360°
-40 ... +85 °C
-40 ... +85 °C
95 %, non-condensing
IP20
IEC60603-7-51, ISO/IEC 11801, IEEE 802.3an; EIA/TIA 568-C.2; DIN EN 50173-1; UL 1863; UL 2043
wago.com/750-979/000-013

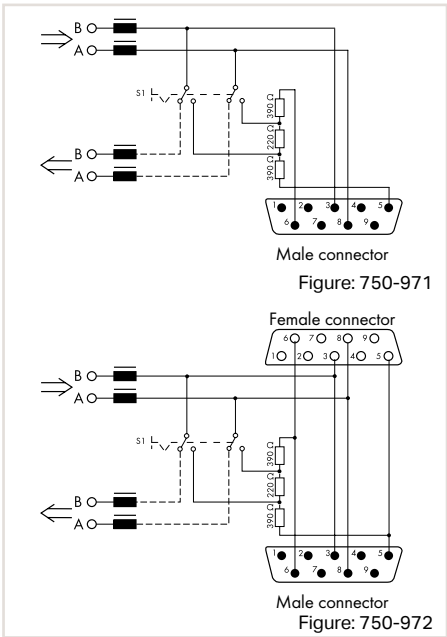
PROFIBUS Fieldbus Connector

PROFIBUS Fieldbus Connector,
with D-Sub plug, 9-pol.



Item description	
Item No.	
Technical Data	
Double cable input	min. Ø 4.5 mm / max. Ø 9.5 mm
Data transmission rate max.	12 Mbit/s
Terminating resistor	externally operable switch
Housing color	light gray
Degree of protection	IP20
Ambient temperature (operation)	0 ... +60 °C
Ambient temperature (storage)	-25 ... +85 °C
Relative humidity	95 % non-condensing
Wire connection	CAGE CLAMP® terminal strips with locking slide (218 Series)
Cross sections	0.08 mm² ... 0.5 mm² / AWG 28 ... 20 sep. connection 0.75 mm² / AWG 18 possible
Approvals	
Data sheet and further information, see:	
Accessories	
Operating tool, type 1, blade 2.5 x 0.4 mm	Item No. 210-719 Page 504
Operating tool, type 2, blade 3.5 x 0.5 mm	Item No. 210-720 Page 504

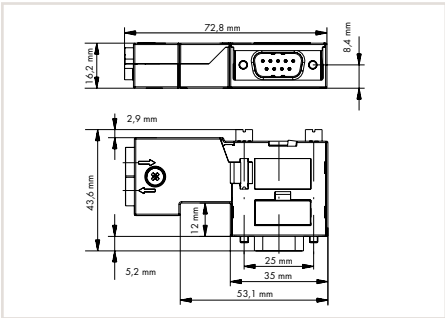
PROFIBUS Fieldbus Connector



Item description
Item No.

Technical Data	
Double cable input	
Data transmission rate max.	
Terminating resistor	
Housing color	
Degree of protection	
Ambient temperature (operation)	
Ambient temperature (storage)	
Relative humidity	
Wire connection	
Cross sections	
Data sheet and further information, see:	
Accessories	
Operating tool, type 1, blade 2.5 x 0.4 mm	

PROFIBUS Fieldbus Connector, with D-Sub plug, 9-pol.

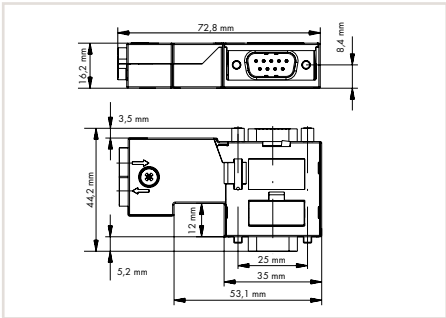


Connector PROFIBUS DSub-M 9P
750-971

Ø 8.5 mm
12 Mbit/s
externally operable switch
light gray
IP20
0 ... +60 °C
-25 ... +85 °C
95 % non-condensing
CAGE CLAMP® terminal strips with locking slide (218 Series)
0.08 mm² ... 0.5 mm² / AWG 28 ... 20 sep. connection 0.75 mm² / AWG 18 possible
wago.com/750-971

Item No.	Page
210-719	504

PROFIBUS Fieldbus Connector, with D-Sub plug, 9-pol., PG interface



Connector PROFIBUS DSub-M 9P PG-Int
750-972

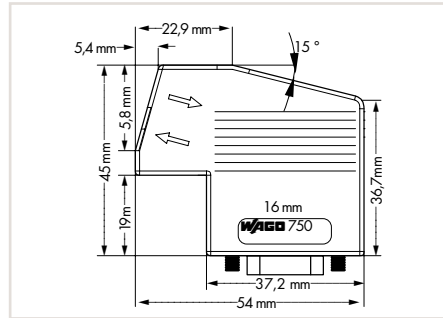
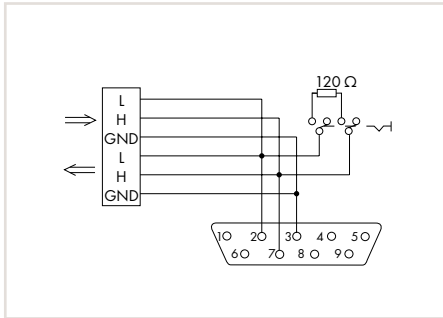
Ø 8.5 mm
12 Mbit/s
externally operable switch
light gray
IP20
0 ... +60 °C
-25 ... +85 °C
95 % non-condensing
CAGE CLAMP® terminal strips with locking slide (218 Series)
0.08 mm² ... 0.5 mm² / AWG 28 ... 20 sep. connection 0.75 mm² / AWG 18 possible
wago.com/750-972

Item No.	Page
210-719	504

The fieldbus connector has a connection option for a programming device without the connection to the PROFIBUS device being interrupted.

CANopen Fieldbus Connector

CANopen Fieldbus Connector,
with D-Sub socket, 9-pol.



Item description

Item No.

Connector CANopen DSub-F 9P

750-963

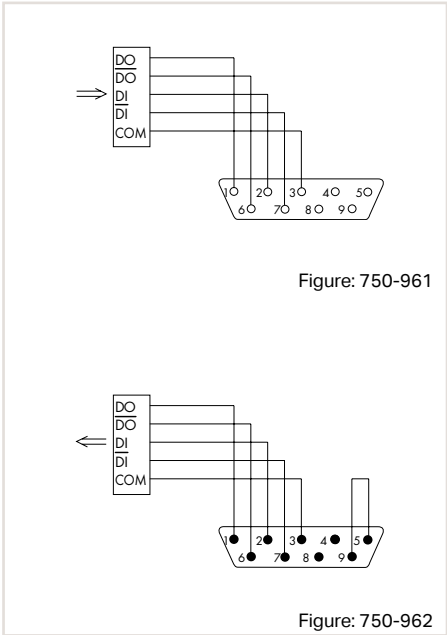
Technical Data

Double cable input	min. Ø 4,5 mm / max. Ø 9,5 mm
Data transmission rate max.	1 Mbd
Terminating resistor	externally operable switch
Housing color	light gray
Degree of protection	IP20
Ambient temperature (operation)	0 ... +60 °C
Ambient temperature (storage)	-25 ... +85 °C
Relative humidity	95 % non-condensing
Wire connection	CAGE CLAMP® terminal strips with locking slide (218 Series)
Cross sections	0.08 mm² ... 0.5 mm² / AWG 28 ... 20 sep. connection 0.75 mm² / AWG 18 possible
Approvals	Marine, UL 508, ATEX/IECEX
Data sheet and further information, see:	wago.com/750-963

Accessories

Item No.	Page
Operating tool, type 1, blade 2.5 x 0.4 mm	504
Operating tool, type 2, blade 3.5 x 0.5 mm	504

INTERBUS Fieldbus Connector



INTERBUS Fieldbus Connector,
with D-Sub socket, 9-pol.



INTERBUS Fieldbus Connector,
with D-Sub plug, 9-pol.



Item description
Item No.

Technical Data	
Double cable input	
Data transmission rate max.	
Housing color	
Degree of protection	
Ambient temperature (operation)	
Ambient temperature (storage)	
Relative humidity	
Wire connection	
Cross sections	
Approvals	
Data sheet and further information, see:	
Accessories	
Operating tool, type 1, blade 2.5 x 0.4 mm	
Operating tool, type 2, blade 3.5 x 0.5 mm	

Connector INTERBUS DSub-F 9P
750-961

min. Ø 4.5 mm / max. Ø 9.5 mm
2 Mbd
light gray
IP20
0 ... +60 °C
-25 ... +85 °C
95 % non-condensing
CAGE CLAMP® terminal strips with locking slide (218 Series)
0.08 mm² ... 0.5 mm² / AWG 28 ... 20 sep. connection 0.75 mm² / AWG 18 possible
UL 508, ANSI/ISA, ATEX/IECEX
wago.com/750-961

Item No.	Page
210-719	504
210-720	504

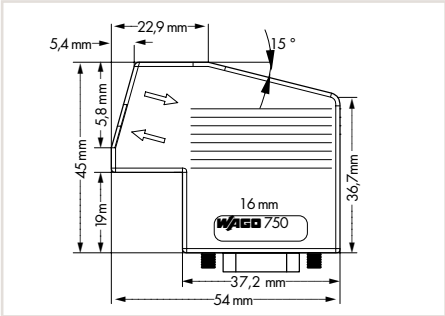
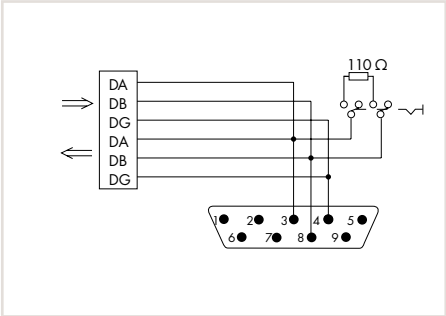
Connector INTERBUS DSub-M 9P
750-962

min. Ø 4.5 mm / max. Ø 9.5 mm
2 Mbd
light gray
IP20
0 ... +60 °C
-25 ... +85 °C
95 % non-condensing
CAGE CLAMP® terminal strips with locking slide (218 Series)
0.08 mm² ... 0.5 mm² / AWG 28 ... 20 sep. connection 0.75 mm² / AWG 18 possible
UL 508, ANSI/ISA, ATEX/IECEX
wago.com/750-962

Item No.	Page
210-719	504
210-720	504

CC-Link Fieldbus Connector

CC-Link Fieldbus Connector,
with D-Sub plug, 9-pol.



Item description	
Item No.	
Connector CC-Link DSub-M 9P	
750-965	
Technical Data	
Double cable input	min. Ø 4.5 mm / max. Ø 9.5 mm
Terminating resistor	externally operable switch
Housing color	light gray
Degree of protection	IP20
Ambient temperature (operation)	0 ... +60 °C
Ambient temperature (storage)	-25 ... +85 °C
Relative humidity	95 % non-condensing
Wire connection	CAGE CLAMP® terminal strips with locking slide (218 Series)
Cross sections	0.08 mm² ... 0.5 mm² / AWG 28 ... 20 sep. connection 0.75 mm² / AWG 18 possible
Approvals	UL 508
Data sheet and further information, see:	wago.com/750-965
Accessories	
Operating tool, type 1, blade 2.5 x 0.4 mm	Item No. 210-719 Page 504
Operating tool, type 2, blade 3.5 x 0.5 mm	Item No. 210-720 Page 504

IP65 System housing



- ① Stainless steel
- ② Sheet steel
- ③ Die-cast aluminum
- ④ Polyester
- ⑤ Sheet steel with cable entry plates

The growing importance of industrial fieldbus systems in the field of process engineering, for example the chemical industry or food industry, demands enclosures that protect both the system equipment and the products.

WAGO offers enclosures that allow the use of the WAGO-I/O-SYSTEM 750 in installations where severe conditions exist.

The IP65 enclosures come equipped with the WAGO-I/O-SYSTEM 750, meeting these requirements.

They have the appropriate number of cable grips with metric or cable entry plates.

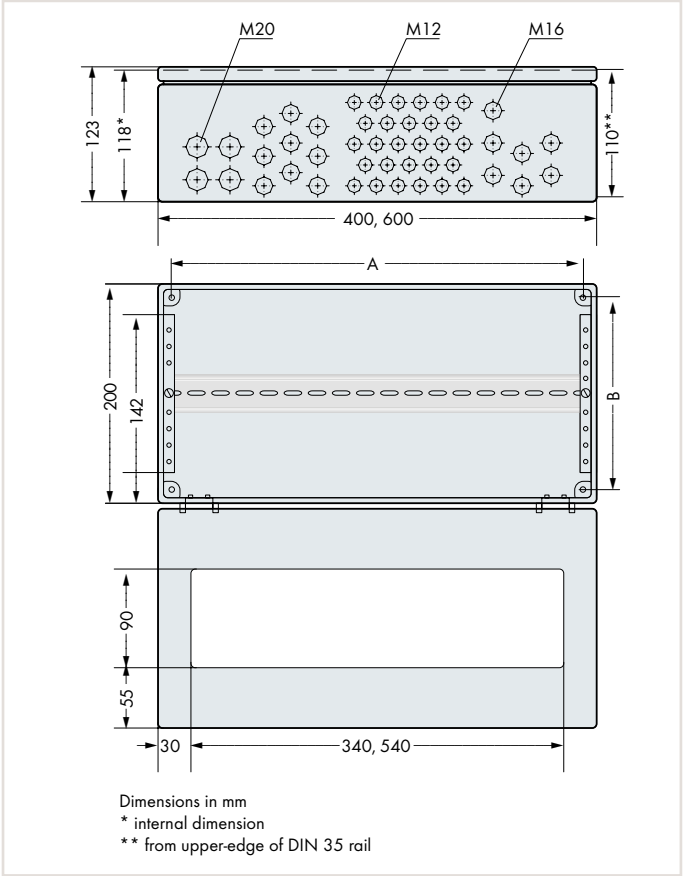
Each enclosure is available in four different sizes.

Delivery time and other types of enclosures are available upon request!

Stainless-steel system housing



Stainless-steel system housing



Item description
Version
Item no.

SST Enclosure		
14301 400mm CG5	14301 400mm CG1	14301 600mm CG6
850-804	850-804/000-001	850-805

Technical Data
Number of M12 screw connections
Number of M16 screw connections
Number of M20 screw connections
Mounting dimension A x B
Dimensions W x H x D
No. of I/O modules
Data sheet and further information, see:

28	32*	67
16	13*	19
4	2*	4
376 x 176 mm		576 x 176 mm
400 x 123 x 200 mm		600 x 123 x 200 mm
≤ 24**		≤ 40**
wago.com/850-804		wago.com/850-805

Accessories
Pole mounting

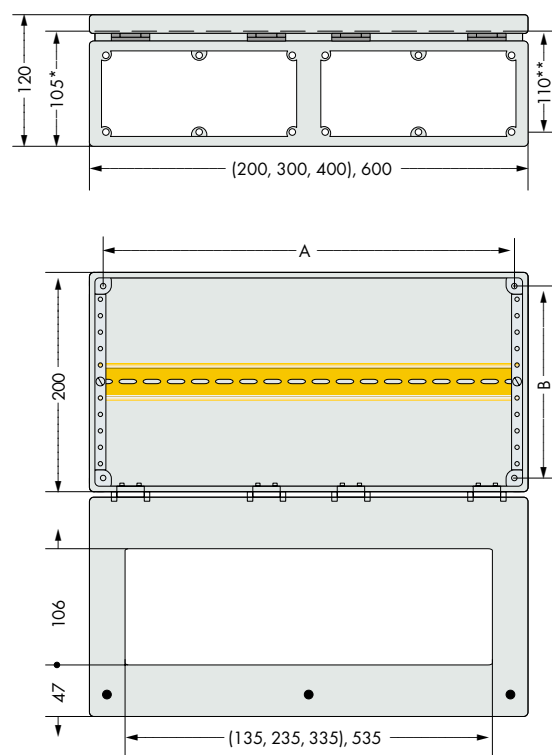
Item no.
850-903

- * Arrangement of the cable grips differs from standard enclosures
- **The „number of I/O modules“ also takes fieldbus couplers and bus end modules into account. This applies to 12mm-wide I/O modules. I/O modules with a width of 24mm count as two I/O modules.
- Included:
- Stainless steel enclosure 1.4301 streak finish
 - With hinged cover 90°, (850-804/000-001: 180°), with cellular rubber gasket made of natural rubber, 2 to 3 quick disconnects
 - Hinges made of chromed GdZn (Gadulinium Zinc) with M5 countersunk screws
 - Macrolon inspection glass
 - Metric cable grips (brass, nickel-plated), incl. filler plugs;
 - M12 cable grip, cable diameter 3–6mm;
 - M16 cable grip, cable diameter 5–9mm;
 - M20 cable grip, cable diameter 9–13mm
 - 1 DIN 35/7.5 rail

Sheet-steel system housing



Sheet-steel system housing



Dimensions in mm
 * internal dimension
 ** from upper-edge of DIN 35 rail

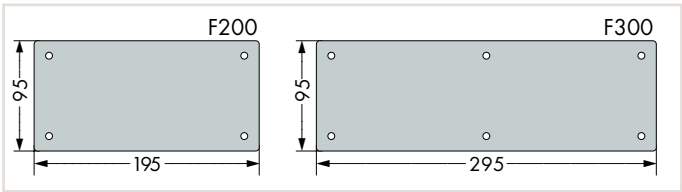
Item description		STE Enclosure			
Version		RAL7035 200mm	RAL7035 300mm	RAL7035 400mm	RAL7035 600mm
Item no.		850-814/002-000	850-815/002-000	850-816/002-000	850-817/002-000
Technical Data					
Mounting dimension A x B		160 x 160	260 x 160	360 x 160	560 x 160
Dimensions W x H x D		200 x 120 x 200 mm	300 x 120 x 200 mm	400 x 120 x 200 mm	600 x 120 x 200 mm
No. of I/O modules		≤ 8*	≤ 16*	≤ 24*	≤ 40*
Data sheet and further information, see:		wago.com/ 850-814/002-000	wago.com/ 850-815/002-000	wago.com/ 850-816/002-000	wago.com/ 850-817/002-000
Accessories Flange plates					
Size 195 x 95 mm: F200; F200-1; F200-2; F204		No. of Flange plates			
Size 295 x 95 mm: F300; F300-1; F300-2; F304		1	-	2	-
		-	1	-	2
Accessories					
Wall mounting system		Item no.			
		850-904			

*The „number of I/O modules“ also takes fieldbus couplers and bus end modules into account. This applies to 12mm-wide I/O modules. I/O modules with a width of 24mm count as two I/O modules.

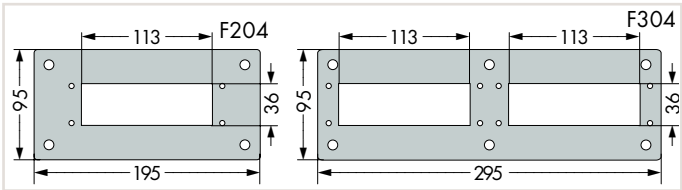
Included:

- Powder-coated, sheet steel enclosure
- Box with narrow beveled edge, sturdy gutter profile
- With hinged cover 180° (PA), with foam PU seal, 2 to 3 quick disconnects
- Quick-release fasteners in plastic bushes
- Mounting holes (incl. sealing plugs)
- Large Macrolon inspection glass
- Removable, yellow-chromized interior profiles
- Galvanized carrier rail (contact with enclosure) DIN 35/7.5, adjustable in 12.5mm/0.49in. spacing
- Grounding lug for cover and flanges with quick-release ribbon cable connectors
- Light gray, RAL 7035

Flange Plates and Cable Entry Plates



Flange plate, RAL7035, without cut-out		
	Width x Height	Item no.
F200 Flange Plate RAL7035 WCO	195 x 95 mm	850-818/002-000
F300 Flange Plate RAL7035 WCO	295 x 95 mm	850-819/002-000



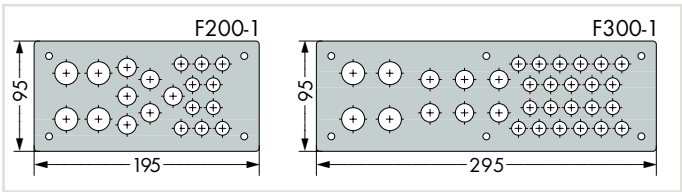
Flange plate, RAL7035, with cut-out		
	Width x Height	Item no.
F204 Flange Plate RAL7035 1CO	195 x 95 mm	850-818/002-005
F304 Flange Plate RAL7035 2CO	295 x 95 mm	850-819/002-005



Figure: F204 with KDF 22 (tool-less cable entry technique in IP65)

Cable entry plate		Item no.
KDP 22 Cable Entry Plate; 16 x Gr. 1, 4 x Gr. 2, 2 x Gr. 3		850-820/000-001
KDP 29 Cable Entry Plate; 29 x Gr. 1		850-820/000-002

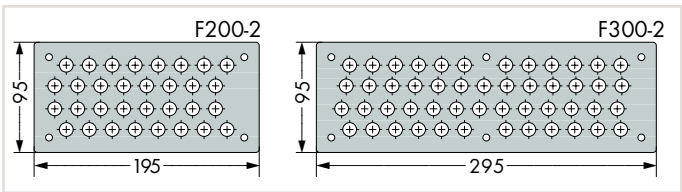
Cable entry plate, polyamide
Size 1: Cable Ø 3.0 ... 6.5 mm
Size 2: Cable Ø 5.0 ... 9.2 mm
Size 3: Cable Ø 8.0 ... 12.5 mm



Flange plate, RAL7035, M20-, M16-, M12 drilled holes		
	Width x Height	Item no.
F200-1 Flange Plate RAL7035 HO1; 4 x M20, 6 x M16, 10 x M12	195 x 95 mm	850-818/002-001
F300-1 Flange Plate RAL7035 HO5; 4 x M20, 6 x M16, 22 x M12	295 x 95 mm	850-819/002-001



Flange plate, RAL7035, M20-, M16-, M12 cable grip		
	Width x Height	Item no.
F200-1 Flange Plate RAL7035 CG8; 4 x M20, 6 x M16, 10 x M12	195 x 95 mm	850-818/002-002
F300-1 Flange Plate RAL7035 CG9; 4 x M20, 6 x M16, 22 x M12	295 x 95 mm	850-819/002-002



Flange plate, RAL7035, M12 drilled holes		
	Width x Height	Item no.
F200-2 Flange Plate RAL7035 HO4; 32 x M12	195 x 95 mm	850-818/002-003
F300-2 Flange Plate RAL7035 HO6; 50 x M12	295 x 95 mm	850-819/002-003



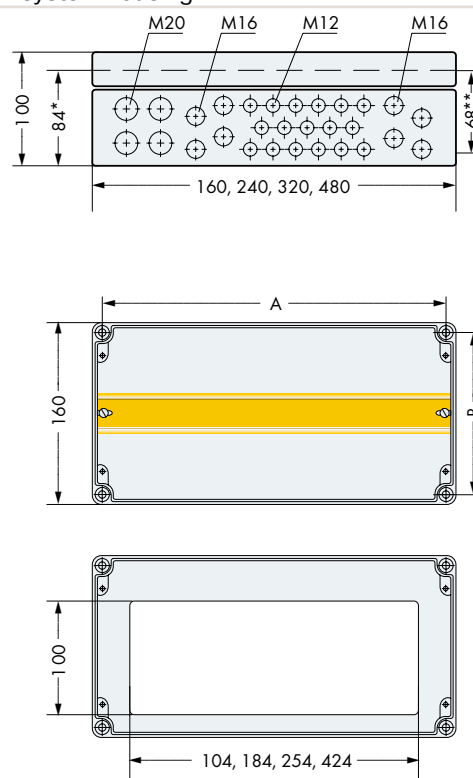
Illustration similar

Flange plate, RAL7035, M12 cable grip		
	Width x Height	Item no.
F200-2 Flange Plate RAL7035 HO2; 32 x M12	195 x 95 mm	850-818/002-004
F300-2 Flange Plate RAL7035 CG12; 50 x M12	295 x 95 mm	850-819/002-004

Aluminum system housing



Aluminum system housing



Dimensions in mm
 * internal dimension
 ** from upper-edge of DIN 35 rail

Item description		ALU Enclosure			
Version: Enclosure type in RAL 7032		RAL7032 160mm CG11	RAL7032 240mm CG7	RAL7032 320mm CG10	RAL7032 480mm CG4
Item no.		850-825	850-826	850-827	850-828
Version: Enclosure type in RAL 7035			RAL7035 240mm CG7	RAL7035 320mm CG10	RAL7035 480mm CG4
Item no.			850-826/002-000	850-827/002-000	850-828/002-000

Technical Data					
Number of M12 screw connections		9	14	17	35
Number of M16 screw connections		-	4	8	10
Number of M20 screw connections		4			
Mounting dimension A x B		142 x 142 mm	222 x 142 mm	302 x 142 mm	462 x 142 mm
Dimensions W x H x D		160 x 100 x 160 mm	240 x 100 x 160 mm	320 x 100 x 160 mm	480 x 100 x 160 mm
No. of I/O modules		≤ 4*	≤ 11*	≤ 18*	≤ 31*
Data sheet and further information, see:		wago.com/850-825	wago.com/850-826	wago.com/850-827	wago.com/850-828

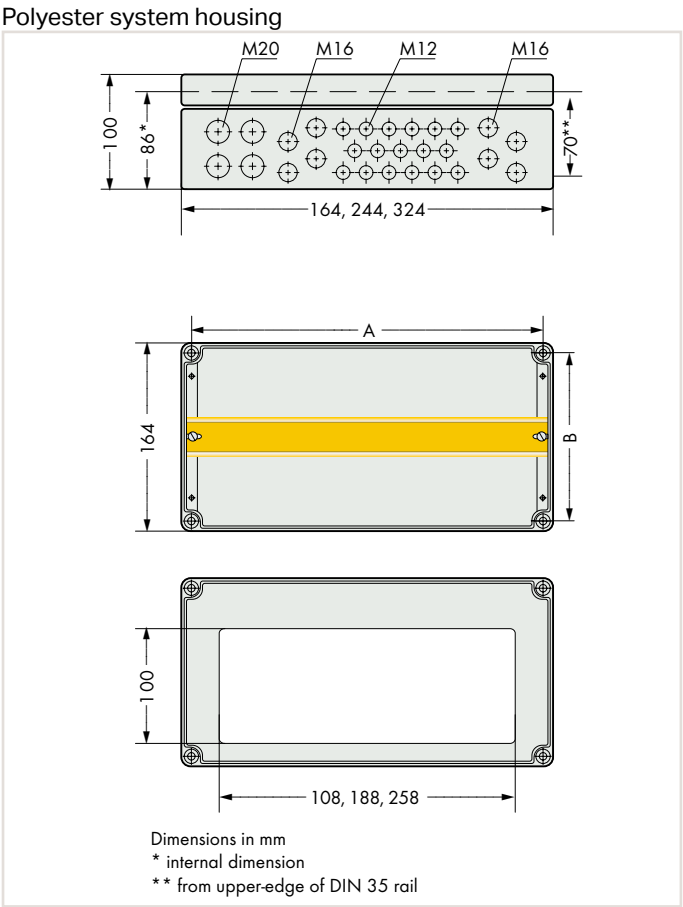
Accessories		Item no.			
Pole mounting		850-903			

*The „number of I/O modules“ also takes fieldbus couplers and bus end modules into account. This applies to 12mm-wide I/O modules. I/O modules with a width of 24mm count as two I/O modules.

Included:

- Aluminum enclosure, G AL Si 12 alloy / DIN 1725
- Stainless steel cover screws, captive
- Inspection glass, incl. attachment panel for customer marking (marking not included in scope of supply)
- Mounting holes (4 mounting channels located outside the sealed enclosure)
- Metric cable grips (brass, nickel-plated), incl. filler plugs;
 - M12 cable grip, cable diameter 3–6mm;
 - M16 cable grip, cable diameter 5–9mm;
 - M20 cable grip, cable diameter 9–13mm
- 1 DIN 35/7.5 rail
- Tongue and groove system, seal with groove in enclosure cover
- Oil and petroleum-resistant neoprene round chord seal
- Grounding link in enclosure
- Pebble gray, RAL 7032 or light gray RAL 7035

Polyester system housing



Item description	POL Enclosure		
Version	RAL7032 164mm CG11	RAL7032 244mm CG7	RAL7032 324mm CG10
Item no.	850-834	850-835	850-836

Technical Data			
Number of M12 screw connections	9	14	17
Number of M16 screw connections	-	4	8
Number of M20 screw connections	4		
Mounting dimension A x B	142 x 142 mm	222 x 142 mm	302 x 142 mm
Dimensions W x H x D	164 x 100 x 164 mm	244 x 100 x 164 mm	324 x 100 x 164 mm
No. of I/O modules	≤ 4*	≤ 11*	≤ 18*
Data sheet and further information, see:	wago.com/850-834	wago.com/850-835	wago.com/850-836

Accessories	Item no.
Pole mounting	850-903

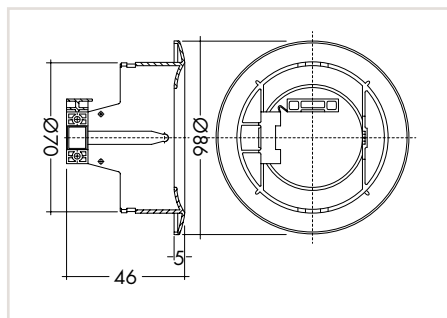
*The „number of I/O modules“ also takes fieldbus couplers and bus end modules into account. This applies to 12mm-wide I/O modules. I/O modules with a width of 24mm count as two I/O modules.

Included:

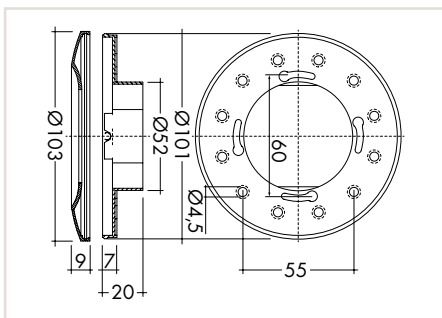
- Polyester enclosure, glass fiber-reinforced, halogen-free, as V0 version (self-extinguishing)
- Polyamide cover screws, captive
- Inspection glass, incl. attachment panel for customer marking (marking not included in scope of supply)
- Mounting holes (4 mounting channels located outside the sealed enclosure)
- Metric cable grips (polyamide PA 6), incl. filler plugs;
M12 cable grip, 3–6 mm cable diameter ;
M16 cable grip, 5–9 mm cable diameter;
M20 cable grip, 9–13 mm cable diameter
- 1 x DIN 35/7.5 rail
- Oil and petroleum-resistant neoprene round chord seal
- Pebble gray, RAL 7032

DALI Multi-Sensors

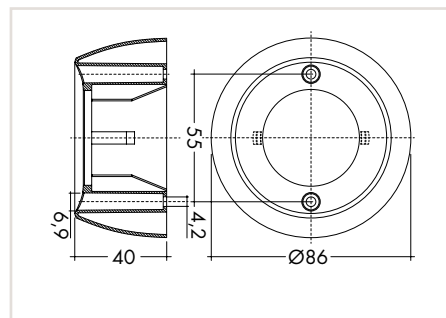
Ceiling Installation



Box Installation



Surface Mounting



The WAGO DALI MSensor 02 is used with WAGO DALI Modules (753-647 DALI Multi-Master Module or 750-641 DALI/DSI Module).

It has been designed for the following principal applications:

- Individual offices
- Open-plan offices
- Training/presentation rooms
- Corridors, passageways and garages

The Multi-Sensor features both motion and light detection. As an option, the sensor can be operated via remote control (from Tridonic). The sensor enables both motion detection and daylight-dependent lighting control; both of which can also be deactivated.

Addressing is performed via rotary switch or WAGO DALI Configurator.

Parameters can be adjusted individually via WAGO DALI Configurator.

Power supply is provided via DALI line.

The number of sensors, which can be operated on a DALI line, depends on the total power consumption of the specific devices and address range for the actuators and sensors. Due to the capacity of the DALI bus, a maximum of 16 DALI sensor couplers must be operated on the DALI Multi-Master Module (753-647).

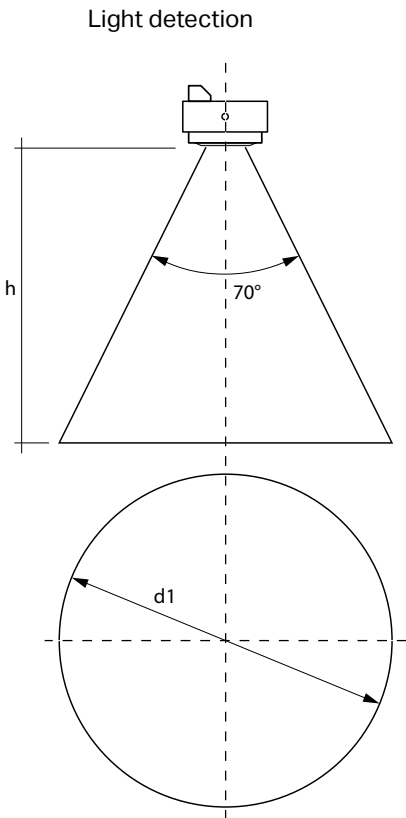
Installation notes:

- The DALI MSensor 02 is supplied directly via DALI line.
- DALI is not SELV (Safety Extra Low Voltage). The installation instructions for mains voltage therefore apply.
- The detection range of the sensor must be within the lighting area of the controlled luminaires.
- The detection ranges of the sensors must not overlap as this may influence the lighting control.
- When installed at a height other than the recommended installation height (2.5 m), the presence and light sensor might show different characteristics. When mounted at a higher level, its sensitivity is reduced. If mounted at a lower level, its range is diminished.
- Heaters, fans, printers and copiers located in the detection range may cause incorrect presence detection.

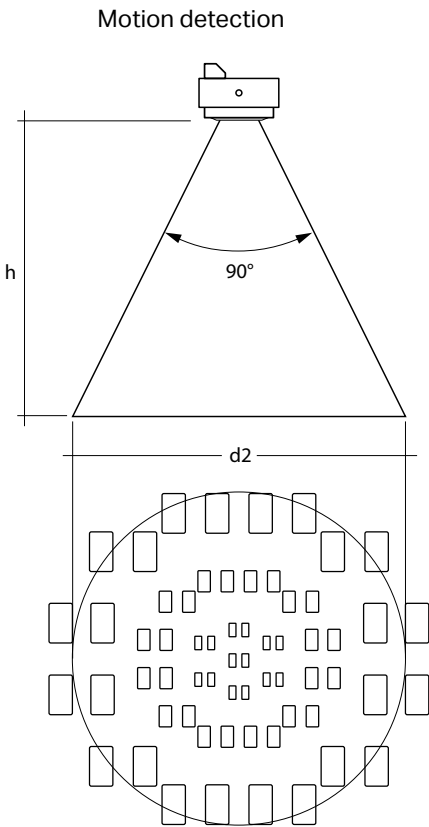
Item description	DALI-MSensor		
Version	02 5DPI 41rc (Ceiling Installation)	02 5DPI 41w (Box Installation)	02 5DPI 41rs (Surface Mounting)
Item No.	2851-8301	2851-8302	2851-8303
Technical Data			
Ø of detection range, mounted at a height of 2.5 m	5 m		
Extension of the detection range	2 m (if mounted at a height of 2.5 m and swivelled through 15°)		-
Swivel design	yes		no
Swivel range	± 15°		-
Detection angle	360°		
Light measurement at the sensor head	10 ... 650 lx (The measured value at the sensor head corresponds to approx. 15 to 2,000 lux on the surface measured.)		
Remote control range	5 m		
Data sheet and further information, see:	wago.com/2851-8301	wago.com/2851-8302	wago.com/2851-8303

Technical Data	
Power supply	via DALI line
Current consumption	6 mA from DALI line
Operating temperature	0 °C ... +50 °C
Storage temperature	-25 °C ... +55 °C
Degree of protection	IP20
Wire type and cross-section	Solid or fine-stranded wires ranging from 0.5 mm² to 1.5 mm² (AWG 20–16)

Technical Data	
General settings:	
Motion detection	enabled, on/off
Lighting control	enabled
Setpoint, lighting control	150 lx
Power-on setting	no action
Bright-out timeout	10 min.
Bright-out threshold	150 %
Control speed	4
Switch-on value	auto (calculated)
Rotary switch	0, broadcast
Motion detector settings:	
Fade-in time	< 0.7 s
Presence value	regulated
Run-on time	20 min.
Fade time	5.6 s
Absence value	3 %
Switch-off delay	10 min.
Fade-off time	5.6 s
Manual-off	10 min.



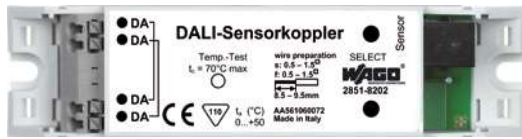
h *	d1	d2
1,7m	2,4m	3,4m
2,0m	2,8m	4,0m
2,3m	3,2m	4,6m
2,5m	3,5m	5,0m
2,7m	3,8m	5,4m
3,0m	4,2m	6,0m
3,5m	4,9m	7,0m
4,0m	5,6m	8,0m



* The recommended maximum room height for office applications is 3 m and for corridor applications 4 m, for example.
Calculation of the diameter:
 $d = 2 \times \tan(0.5 \times \alpha) \times h$

WAGO DALI Multi-Sensor Kit

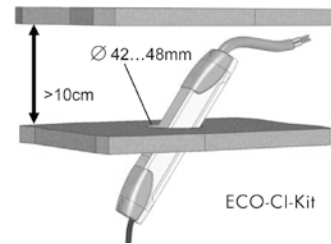
DALI Sensor Coupler



MULTI 3 CI Sensor



ECO CI Kit



The WAGO DALI Multi-Sensor Kit is paired with the WAGO 753-647 DALI Multi-Master Module and includes the following three components:

- DALI Sensor Coupler (also available individually)
- ECO CI Kit
- MULTI 3 CI Sensor

The DALI Sensor Coupler connects the MULTI 3 CI Sensor to a DALI bus system. For this, the MULTI 3 CI Sensor is connected to the DALI Sensor Coupler via RJ-10 socket. DALI terminals connect the DALI Sensor Coupler to both the DALI network and WAGO DALI Module.

The ECO CI Kit contains two covers, which can be used as touch guards and strain relief for cables within the ceiling installation of the DALI Sensor Coupler. The MULTI 3 CI Sensor has a motion and light sensor, enabling both motion detection and daylight-dependent lighting control. Power supply to the DALI Sensor Coupler is provided via DALI line. The DALI Sensor Coupler transmits measured values from the connected sensor channels as telegrams to the WAGO DALI Module via DALI line. Parameters can be adjusted individually via WAGO DALI Configurator.

The number of sensors, which can be operated on a DALI line, depends on the total power consumption of the specific devices and the address range for the actuators and sensors. Due to the capacity of the DALI bus, a maximum of 16 DALI sensor couplers must be operated on the DALI Multi-Master Module (753-647).

Assembly

Sensor connection

The MULTI 3 CI Sensor is connected to a 4-pole RJ-10 socket (4P4C), which is marked as "Sensor" on the housing cover.

For easy connection, the sensor plug is equipped with a quick-connect latch. Only one MULTI 3 CI Sensor must be connected to sensor coupler.

Ceiling installation

For installation outside of a lighting fixture (e.g., suspended ceiling), the ECO CI Kit must also be attached to both sides of the unit to ensure strain relief and touch protection. The DALI Sensor Coupler can also be installed in lighting fixtures. The installation spaces available in lighting fixtures can be used, as the dimensions correspond to those of an electronic ballast.

Note:

The DALI Sensor Coupler is also available individually, allowing the unit to be combined with other multi-sensor models from Osram.

	Delivery type	Item No.
WAGO DALI Multi-Sensor Kit	Set incl. DALI Sensor Coupler, MULTI 3 CI Sensor, ECO CI Kit	2851-8201
DALI Sensor Coupler		2851-8202

DALI Sensor Coupler

Power supply	via DALI line
Current consumption	5 mA (from the DALI line)
Input signal voltage/current:	according to MULTI 3 CI Sensor
Connections	Inputs: for MULTI 3 CI Sensor's modular plug 4P4C (RJ-10), sensor cable length, max. 5 m; DALI connection: Push-wire connectors, 8.5 – 9.5 mm strip length
Cross sections	0.5 ... 1.5 mm ² (e + f)
Dimensions (mm) W x H x D	118 x 21 x 30 mm
Weight	35 g
Ambient temperature (operation)	0 ... +50 °C
Ambient temperature (storage)	-25 ... +70 °C
Relative humidity	5 ... 93 %, non-condensing
Degree of protection	IP20
Approvals	CE

ECO CI Kit:

Installation opening diameter: 42 ... 48 mm

Minimum suspended ceiling distance: 25 mm

MULTI 3 CI Sensor:

Maximum total length of signal line (incl. all connections to the control units): 100 m

Dimensions (Diameter x H): 50 x 25 mm

Light sensor detection area: 20 ... 600 lx (measured on the sensor), opening angle approx. 90°

Recommended installation height: 2 ... 4 m

Motion detection area: Conical, opening angle approx. 80°, depending on installation height 4 – 8 m

Power Supply for 753-647 DALI Multi-Master Module

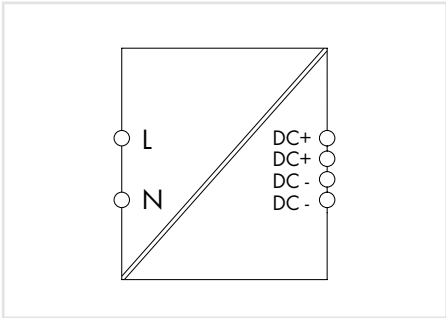
EPSITRON® COMPACT Power

787 Series



- Supplies up to five 753-647 DALI Multi-Master Modules*
- Prepared for class II equipment
- Natural convection cooling when horizontally mounted
- Stage profile, ideal for distribution boards or distribution boxes

*Note: The 787-1007 Power Supply must be operated in a DALI network with interconnected 753-647 DALI Multi-Master Module. Otherwise the connected DALI devices will be destroyed.



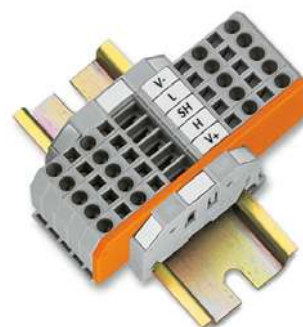
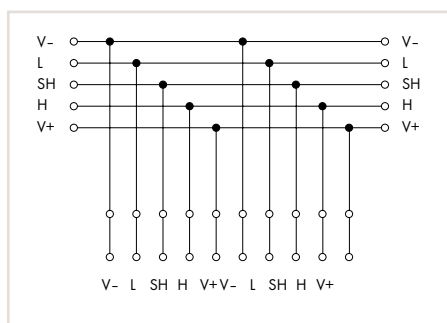
EPSITRON® – Primary Switch Mode Power Supply, COMPACT Power, 1-phase, Output 18 VDC / 1.1 A

	Item No.	Pack. Unit
	787-1007	1

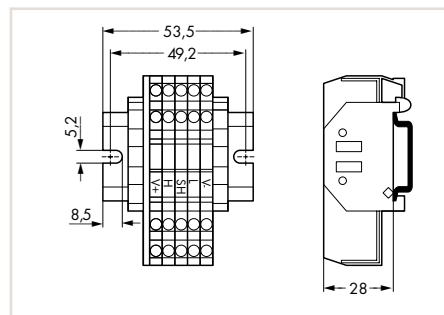
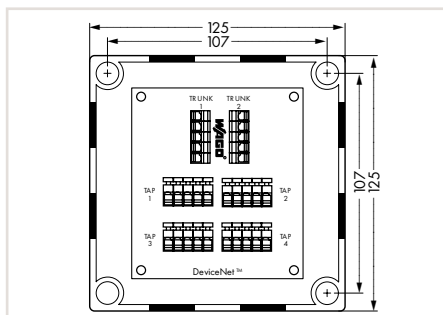
Technical Data	
Input:	
Nominal input voltage Vi nom	100 ... 240 VAC
Input voltage range	85 ... 264 VAC; 120 ... 373 VDC
Frequency	44 ... 66 Hz; 0 Hz
Input current Ii	0.6 A at 110 VAC / 0.4 A at 230 VAC
Inrush current	< 30 A, NTC
Mains failure hold-up time	> 10 ms at 110 VAC / > 80 ms at 230 VAC
Output:	
Nominal output voltage Vo nom	18 VDC
Output current Io	1.1 A at 18 VDC max. 0.8 A (18 VDC) in any mounting position
Factory preset	18 VDC
Adjustment accuracy	2 %
Residual ripple	< 150 mV (peak-peak)
Current limitation	1.1 x Io typ.
Overload behavior	Constant current
Operational indication	LED green (U _a)
Efficiency	80 % typ.
Power loss PV	3 W (no load) / 6 W (rated load)
Fuse protection:	
Internal fuse	2 AT
External fuse	Wire breaking 10 A, 16 A, Character- istic B, C; An external DC fuse is re- quired for the DC input voltage

Technical Data	
Environmental requirements:	
Ambient operating temperature	-25 ... +60 °C
Storage temperature	-25 ... +80 °C
Rel. humidity	5 ... 96 % (no condensation)
Degree of pollution	2 (acc. to EN 50178)
Climatic category	3K3 (acc. to EN 60721)
Safety and protection:	
Enclosure	Plastic, light gray, Flammability class V0 acc. to UL94
Test voltage pri. - sec.	4.2 kV DC
Protection class	II
Degree of protection	IP20 (acc. to EN 60529)
No-load proof	yes
Feedback voltage	max. 20 VDC
Short circuit protection	yes
MTBF	500000 h
Connection and type of mounting:	
Wire connection	Input/Output: WAGO 740 Series
Cross sections	Input/Output: 0.08 mm² ... 2.5 mm² / AWG 28 ... 12
Stripped lengths	Input/Output: 6 ... 7 mm / 0.24 ... 0.28 in
Type of mounting	DIN-rail mount (EN 60715)
Dimensions and weight:	
Dimensions (mm) W x H x L	54 x 89 x 59, Length: 55 mm, from upper-edge of DIN 35 rail
Weight	170 g
Standards and approvals:	
Standards/Specifications	EN 60950-1, EN 61204-3, UL 508, GL

Multi-Port Device Taps



DeviceNet requires a terminating resistor to be installed at each end of the trunk. The resistor (metal film resistor) requirements are: 121 Ohm $\pm$ 1 %, 1/4 W. Termination resistor should not be installed at the end of a drop; only at the two ends of the main trunk, as required.



Item description

Multi-port device tap
2 trunk cables (input, output)
4 drop cables
IP 65/NEMA 4 enclosure

Multi-port device tap
2 trunk cables (input, output)
2 drop cables „open-style“

Item No.

810-900/000-001

810-901/000-001

Technical Data

CAGE CLAMP® connections for trunk cable
CAGE CLAMP® connections for drop cable

2 x 256-405 (PCB terminal strips)
4 x 255-405 (PCB terminal strips)

Enclosure

with knockouts for cable grips

Terminal blocks

5 x 280-633

End stops

2 x 249-116

Mounting rail

DIN 35, slotted as shown

Cross sections

0.08 ... 2.5 mm² / 28 ... 12 AWG

0.08 ... 2.5 mm² / 28 ... 12 AWG

Cable diameter trunk cable*

Ø 10 ... 14 mm

Cable diameter drop cable*

Ø 6 ... 12 mm

Degree of protection (enclosure)

IP65/NEMA 4

Data sheet and further information, see:

wago.com/810-900/000-001

wago.com/810-901/000-001

Accessories

Grips for - trunk cable
Ø 10 ... 14 mm

Item No. 810-900/001-000 Pack. Unit 1

Grips for - drop cable
Ø 6 ... 12 mm

810-900/002-000 1

Termination resistor

810-900/003-000 200

Test adapter for mini banana plug

810-900/004-000 1

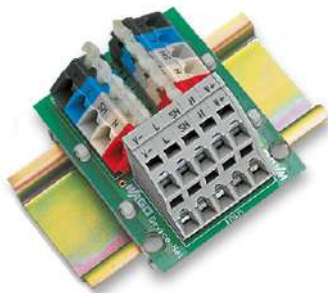
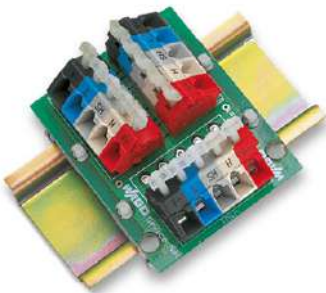
Item No. Pack. Unit

810-900/003-000 200

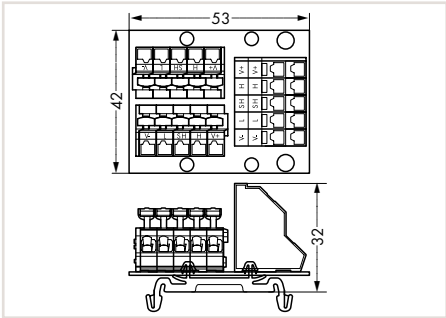
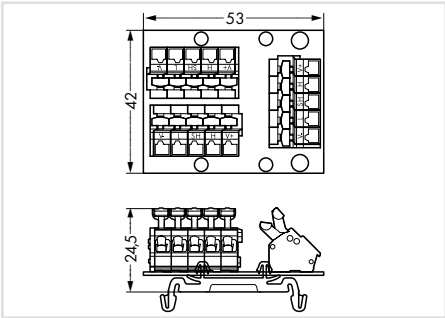
810-901/001-000 1

*when using cable grips

Multi-Port Device Taps



DeviceNet requires a terminating resistor to be installed at each end of the trunk. The resistor (metal film resistor) requirements are: 121 Ohm ± 1 %, ¼ W. Termination resistor should not be installed at the end of a drop; only at the two ends of the main trunk, as required.



Item description
Item No.

Multi-port device tap 2 trunk cables (input, output) 1 drop cables „open-style”
810-902/000-001

Multi-port device tap 2 trunk cables (input, output) 2 drop cables „open-style”
810-902/000-002

Technical Data
CAGE CLAMP® connections for trunk cable
CAGE CLAMP® connections for drop cable
Cross sections
Data sheet and further information, see:

2 x 5 x 256 Series (PCB terminal strips)
1 x 5 x 256 Series (PCB terminal strips)
0.08 ... 2.5 mm² / 28 ... 12 AWG
wago.com/810-902/000-001

2 x 5 x 256 Series (PCB terminal strips)
1 x 5 x 736 Series (PCB terminal strips)
0.08 ... 2.5 mm² / 28 ... 12 AWG
wago.com/810-902/000-002

Accessories
Termination resistor
Test adapter for mini banana plug

Item No.	Pack. Unit
810-900/003-000	200
810-901/001-000	1

Item No.	Pack. Unit
810-900/003-000	200
810-901/001-000	1

790 Series, Shield Connection System

– Description and Handling –



Carrier with grounding foot* (790-113)
45 mm long, busbar 90° to the rail

* for all sizes of shield clamping saddles



Carrier with grounding foot* (790-114)
45 mm long, busbar parallel to the rail

* for all sizes of shield clamping saddles



Carrier with grounding foot* (790-115),
125 mm long, busbar parallel to the rail

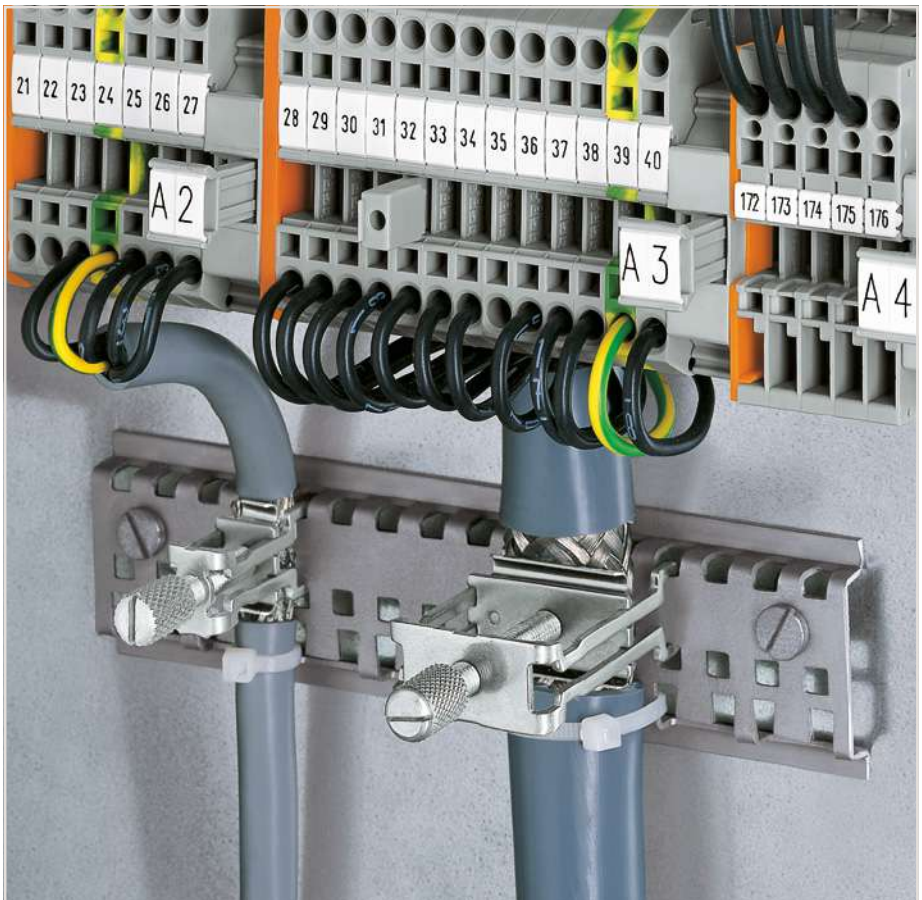
* for all sizes of shield clamping saddles



Fitting spacer sleeve to a specialty slotted carrier rail



Fitting an additional clamping saddle



Tightening/removing a shield clamping saddle



After connection, tighten the knurled screw to complete the installation.
Recommended tightening torque: 0.5 Nm



To remove the clamping saddle, unscrew until ratcheted mechanism is released, then slightly tip saddle and remove the clamping saddle.

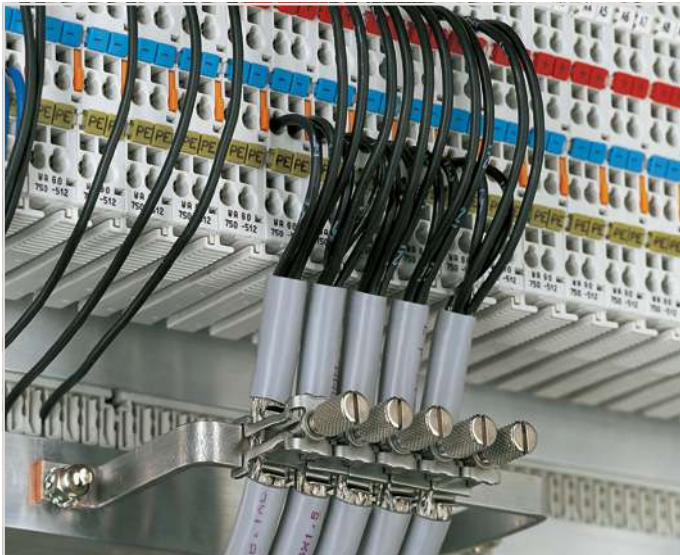
790 Series, Shield Connection System
Installation



Carrier with grounding foot, busbar parallel to the rail



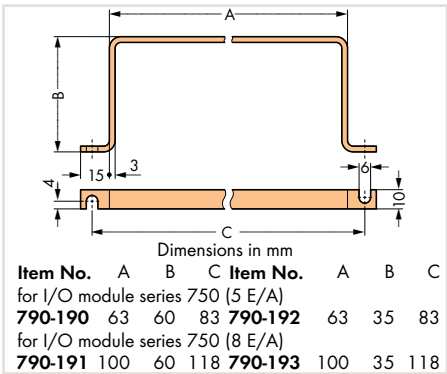
Insulated mounting carriers for a common shield reference potential, independent of housing potential



U-shaped copper busbar 10 mm x 3 mm

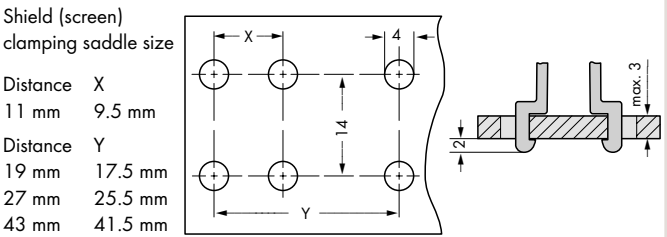


Snap into any metal plate up to max. thickness 3 mm.



Dimensions in mm

Hole dimensions for panel mounting



Additionally, the spring material is part of the clamping saddle, providing a good electrical connection (the system also acts as a partial strain relief). The spring element integrated in the shield clamping saddle compensates deformation and settling that results from a connected shield.

Shield Clamping Saddles 790 Series



Shield clamping saddle, 11 mm, diameter of compatible conductor up to 8 mm
Note: Cannot be used for connecting ground conductors

Item No.	Pack. Unit
790-108	50 (10)



Shield clamping saddle, 19 mm, diameter of compatible conductor, 7 ... 16 mm
Note: Cannot be used for connecting ground conductors

Item No.	Pack. Unit
790-116	50 (10)



Shield clamping saddle, 27 mm, diameter of compatible conductor, 6 ... 24 mm
Note: Cannot be used for connecting ground conductors

Item No.	Pack. Unit
790-124	50 (10)



Shield clamping saddle, 43 mm, diameter of compatible conductor, 22 ... 40 mm
Note: Cannot be used for connecting ground conductors

Item No.	Pack. Unit
790-140	50 (10)



Assembly

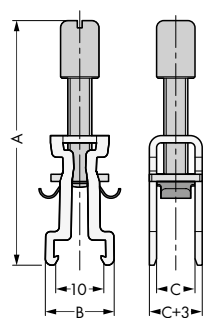
The shield clamping saddle is shipped ready for direct connection to the busbar 10 mm x 3 mm or to a drilled mounting plate. After connection, tighten the knurled screw to complete the installation.
Max. tightening torque 0.5 Nm



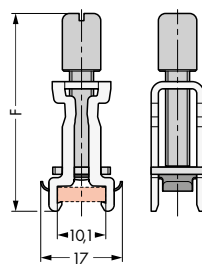
Removal

To remove the clamping saddle, unscrew until ratcheted mechanism is released, then slightly tip saddle and remove the clamping saddle.

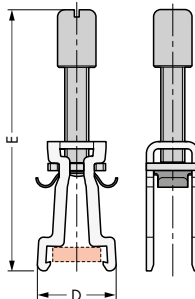
Installation position
(delivery state)



Closed position



Removal position

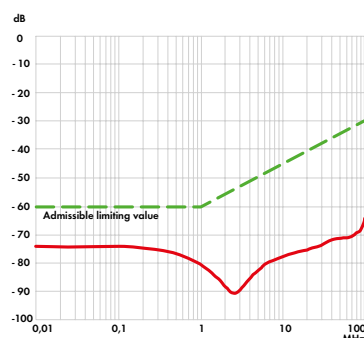


Dimensions in mm

Item No.	A	B	C	D	E	F
790-108	51	15	8	16	55	42
790-116	53	15	16	16	57	45
790-124	78	15	24	16	83	58
790-140	97	15	40	16	100	73

Dimensions in mm

Negative Shield Attenuation



WAGO's shield connecting system is highly effective because the clamping unit can be brought very close to the unshielded part of the cable.

Shield Clamping Saddle with Latching Spring

790 Series



Shield clamping saddle, 12.4 mm, diameter of compatible conductor, 3 ... 8 mm Note: Cannot be used for connecting ground conductors and strain relief		
Item No.	Pack.	Unit
790-208	50	



Shield clamping saddle, 21.8 mm, diameter of compatible conductor, 6 ... 16 mm Note: Cannot be used for connecting ground conductors and strain relief		
Item No.	Pack.	Unit
790-216	25	



Shield clamping saddle, 27 mm, diameter of compatible conductor, 6 ... 20 mm Note: Cannot be used for connecting ground conductors and strain relief		
Item No.	Pack.	Unit
790-220	25	



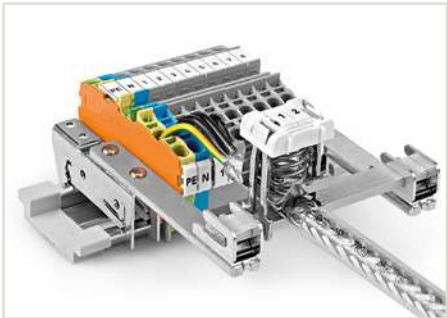
Mounting on specialty slotted carrier rail (790-145)
When releasing the saddle, do not place your finger under the clamping spring!



Removing the shield clamping saddle.



Shield clamping saddle contacts shield conductor and specialty slotted carrier rail (790-145).



Application example



Marking – here with marking strip



Marking – here with WMB markers

Delivery position

Mounting position

Item No.	Dimensions in mm				
	A	B	C	D	E*
790-208	30	29.9	8	12.4	25.8
790-216	34.6	28.3	16	21.8	30.2
790-220	45.6	28.3	24	30	41.2

*Height with WMB marker

Dimensions in mm

Shield Clamps and Shield Termination

791 and 709 Series



Shield clamp, diameter of compatible conductor 10 ... 17 mm, height max. 63 mm, 23 mm wide
Note: Cannot be used for connecting ground conductors

	Item No.	Pack. Unit
	791-117	50

Shield clamp, diameter of compatible conductor 1.5 ... 6.5 mm, height max. 40 mm, 10 mm wide
Note: Cannot be used for connecting ground conductors

	Item No.	Pack. Unit
	791-107	50

Shield clamp, diameter of compatible conductor 5 ... 11 mm, height max. 47 mm, 17 mm wide
Note: Cannot be used for connecting ground conductors

	Item No.	Pack. Unit
	791-111	50

Shield clamp, diameter of compatible conductor 16 ... 24 mm, height max. 78 mm, 30 mm wide
Note: Cannot be used for connecting ground conductors

	Item No.	Pack. Unit
	791-124	50

Shield termination, including cable ties for conductor diameter 5 ... 10 mm

	Item No.	Pack. Unit
	709-350	100 (25)

Shield termination, including cable ties for conductor diameter 5 ... 10 mm

	Item No.	Pack. Unit
	709-352	100 (25)



Insert the shield termination in the female connector using the operating tool



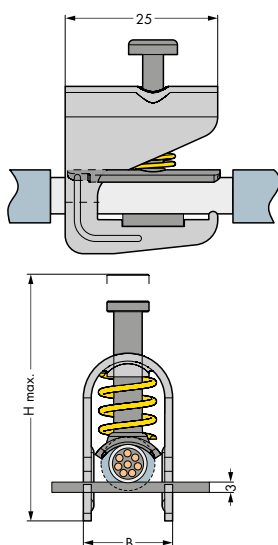
Fit the shield termination on the conductor.



Fasten the shield conductor and the shield termination to the strain relief plate using cable ties.



Shield termination, here with the example of an X-COM® female connector



Dimensions in mm

Accessories for Shield Connection Systems



Carrier with grounding foot, parallel to the rail, 15 mm long, Cu 10 mm x 3 mm, suitable for 790-108 shield clamping saddle

Item No.	Pack. Unit
790-110	25



Carrier with grounding foot, parallel to the rail, 25 mm long, Cu 10 x 3 mm, suitable for 790-108 and 790-116 shield clamping saddles, as well as for 791-111 and 791-117 shield clamps

Item No.	Pack. Unit
790-112	25



Carrier with grounding foot, 90 ° to carrier rail, 45 mm long, Cu 10 mm x 3 mm, suitable for 790 Series shield clamping saddle

Item No.	Pack. Unit
790-113	25



Carrier with grounding foot, parallel to the rail, 45 mm long, Cu 10 x 3 mm, suitable for 790 Series shield clamping saddles and 791 Series shield clamps

Item No.	Pack. Unit
790-114	25



Carrier with 2 grounding feet, parallel to the rail, 125 mm long, Cu 10 mm x 3 mm

Item No.	Pack. Unit
790-115	25



Busbar, tin-plated, 1000 mm long, Cu 10 mm x 3 mm, I_N 140 A

Item No.	Pack. Unit
210-133	1



Busbar, tin-plated, 30 mm long, Cu 10 mm x 3 mm

Item No.	Pack. Unit
790-133	20



Busbar, tin-plated, 50 mm long, Cu 10 mm x 3 mm

Item No.	Pack. Unit
790-134	20



Carrier rail, with special perforations, 1000 mm long, tin-plated

Item No.	Pack. Unit
790-145	1



Spacer sleeve, for specialty slotted carrier rail, use M5 size screw

Item No.	Pack. Unit
790-144	200 (100)

Accessories for Shield Connection Systems



Insulated mounting foot, for busbar with screw M4 x 8 mm		
Color	Item No.	Pack. Unit
gray	790-100	50 (25)



Insulated mounting foot, for busbar with sheet metal screw (3.5 x 9) mm		
Color	Item No.	Pack. Unit
gray	790-101	50 (25)



U-shaped busbar, Cu 10 mm x 3 mm, suitable for 750 Series I/O modules		
	Item No.	Pack. Unit
for 5 I/O	790-190	25 (5)



U-shaped busbar, Cu 10 mm x 3 mm, suitable for 750 Series I/O modules		
	Item No.	Pack. Unit
for 8 I/O	790-191	25



U-shaped busbar, Cu 10 mm x 3 mm, suitable for 750 Series I/O modules		
	Item No.	Pack. Unit
for 5 I/O	790-192	25

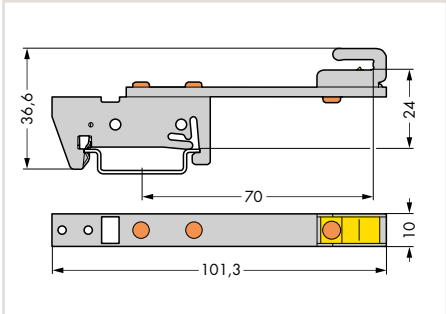


U-shaped busbar, Cu 10 mm x 3 mm, suitable for 750 Series I/O modules		
	Item No.	Pack. Unit
for 8 I/O	790-193	25

Busbar Carriers
790 Series



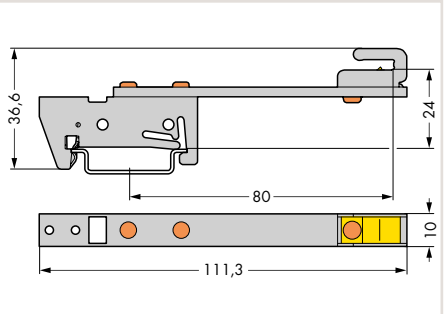
Dimensions in mm



Busbar carrier, for busbars Cu 10 mm x 3 mm, single side, straight, distance between center of DIN-rail and busbar carrier: 70 mm		
Item No.	Pack.	Unit
790-300	10	



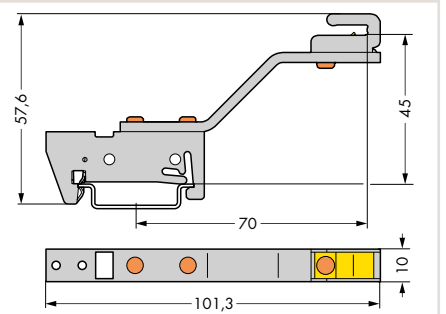
Dimensions in mm



Busbar carrier, for busbars Cu 10 mm x 3 mm, single side, straight, distance between center of DIN-rail and busbar carrier: 80 mm		
Item No.	Pack.	Unit
790-302	10	



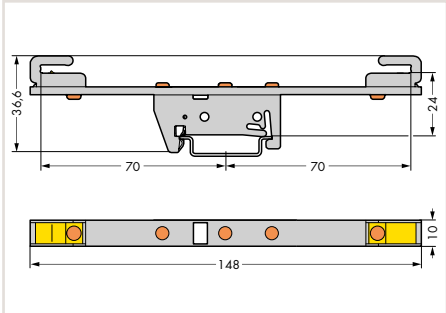
Dimensions in mm



Busbar carrier, for busbars Cu 10 mm x 3 mm, single side, angled, distance between center of DIN-rail and busbar carrier: 70 mm		
Item No.	Pack.	Unit
790-301	10	



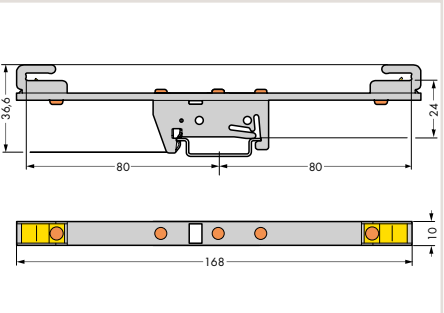
Dimensions in mm



Busbar carrier, for busbars Cu 10 mm x 3 mm, both sides, straight, distance between center of DIN-rail and busbar carrier: 70 mm		
Item No.	Pack.	Unit
790-310	10	



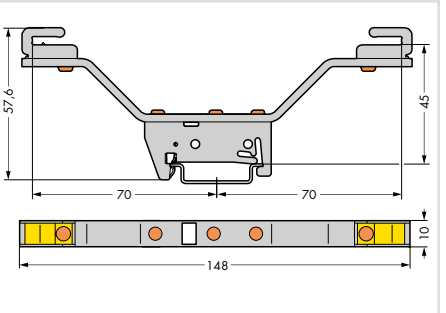
Dimensions in mm



Busbar carrier, for busbars Cu 10 mm x 3 mm, both sides, straight, distance between center of DIN-rail and busbar carrier: 80 mm		
Item No.	Pack.	Unit
790-312	10	



Dimensions in mm

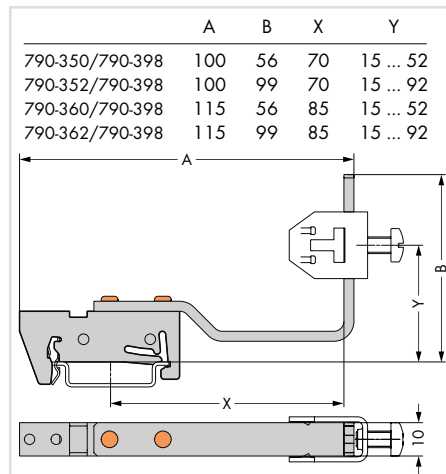


Busbar carrier, for busbars Cu 10 mm x 3 mm, both sides, angled, distance between center of DIN-rail and busbar carrier: 70 mm		
Item No.	Pack.	Unit
790-311	10	

Busbar carrier, flexible with T-connector and T-connector 790 Series



Dimensions in mm



Busbar carrier with T-connector, flexible, for busbars Cu 10 mm x 3 mm, distance between center of DIN-rail and busbar carrier: 70 mm, height: 56 mm

Item No.	Pack. Unit
790-350/790-398	12

Busbar carrier with T-connector, flexible, for busbars Cu 10 mm x 3 mm, distance between center of DIN-rail and busbar carrier: 70 mm, height: 99 mm

Item No.	Pack. Unit
790-352/790-398	12

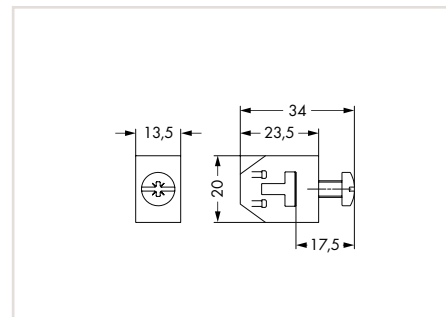
Busbar carrier with T-connector, flexible, for busbars Cu 10 mm x 3 mm, distance between center of DIN-rail and busbar carrier: 85 mm, height: 56 mm

Item No.	Pack. Unit
790-360/790-398	12

Busbar carrier with T-connector, flexible, for busbars Cu 10 mm x 3 mm, distance between center of DIN-rail and busbar carrier: 85 mm, height: 99 mm

Item No.	Pack. Unit
790-362/790-398	25

Dimensions in mm



T-connector, for connecting two busbars Cu 10 mm x 3 mm

Item No.	Pack. Unit
790-398	10



Horizontal mounting position of the busbar



Vertical mounting position of the busbar



The height of the busbar can be adjusted.

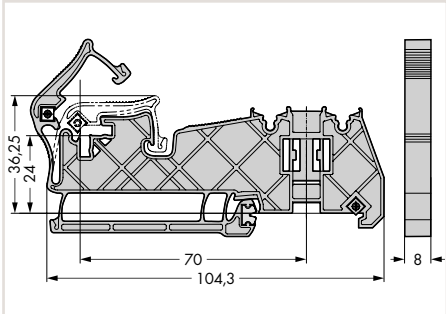


Fix the busbar by tightening the screws at the required position.

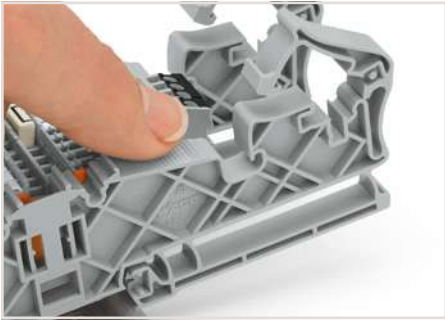
Busbar Carriers
790 Series



Dimensions in mm



Busbar carrier, for busbars Cu 10 mm x 3 mm, no contact to DIN-rail, insulated		
Color	Item No.	Pack. Unit
gray	790-400	20



Snapping the busbar carrier onto DIN 35 rail.



Vertical mounting position of the busbar



Placing the busbar in the carrier holder.



Horizontal mounting position of the busbar

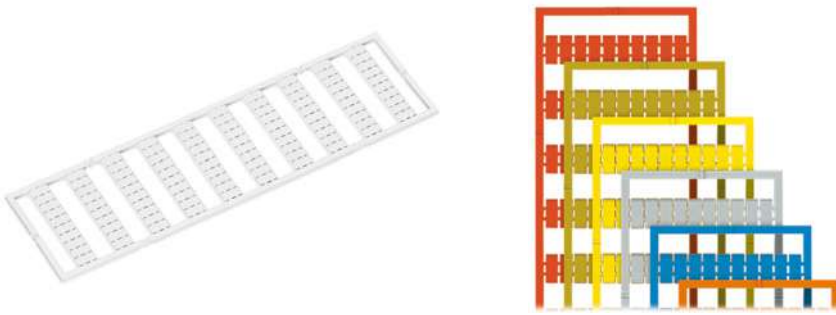


Insert the fixing bracket.



Release the fixing bracket by pushing the operating tool down ① and then forward ②.

WMB Multi marking systems for terminal widths 3.5 mm, 4 ... 4.2 mm and from 5 mm



- Marker width 5 mm: For continuous marking of 270, 280, 780, 869, 870, 880 and individual marking of 281 ... 285, 781 ... 785, 2002, 2003, 2022, 2004, 2006, 2010 and 2016 Series terminal blocks
- Marker width 5 ... 5.2 mm: For continuous marking of 270, 280, 780, 869, 870, 880, 2002, 2003 and 2022 Series terminal blocks and individual marking of terminal blocks larger than 5 / 5.2 mm
- Marker width 4 ... 4.2 mm: For continuous marking of 279 and 2001 Series terminal blocks
- Marker width 3.5 mm: For continuous marking of 2000 and 2020 Series terminal blocks

WMB Multi marking system, 10 strips with 10 markers per card, plain

Marking	5 mm Item No.	5 ... 5.2 mm Item No.	4 ... 4.2 mm Item No.	3.5 mm Item No.	Pack. Unit
white	793-501	793-5501	793-4501	793-3501	5
yellow	793-501/000-002	793-5501/000-002	793-4501/000-002		5
red	793-501/000-005	793-5501/000-005	793-4501/000-005		5
blue	793-501/000-006	793-5501/000-006	793-4501/000-006		5
gray	793-501/000-007	793-5501/000-007	793-4501/000-007		5
orange	793-501/000-012	793-5501/000-012	793-4501/000-012		5
brown		793-5501/000-014	793-4501/000-014		5
light green	793-501/000-017	793-5501/000-017	793-4501/000-017		5
green	793-501/000-023	793-5501/000-023	793-4501/000-023		5
violet	793-501/000-024	793-5501/000-024	793-4501/000-024		5



WMB Inline, plain, 2,000 WMB markers (4 mm) on roll, stretchable 4 ... 4.2 mm

Color	Item No.	Pack. Unit
white	2009-114	1



WMB Inline, plain, 1,500 WMB markers (5 mm) on roll, stretchable 5 ... 5.2 mm

Color	Item No.	Pack. Unit
white	2009-115	1

Mini-WSB Quick Marking System



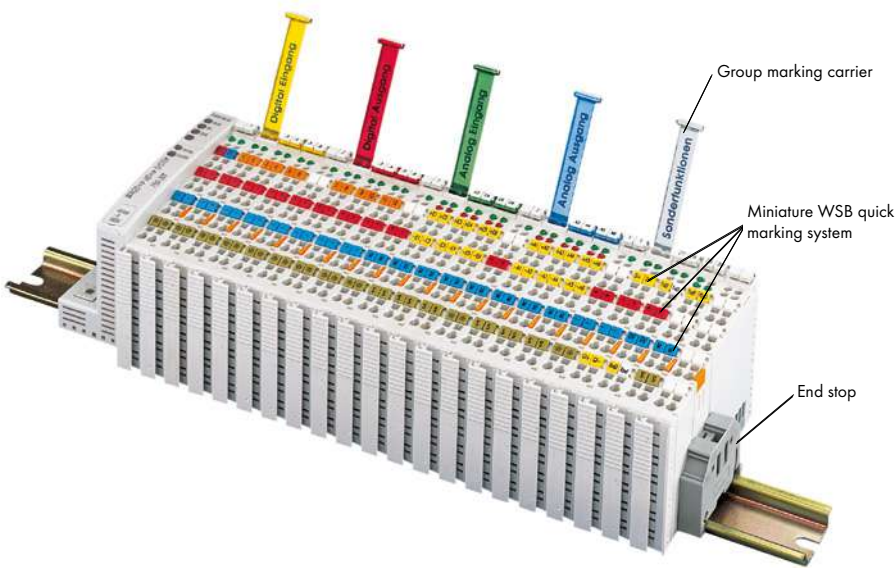
Mini-WSB Quick marking system, white, 10 strips with 10 markers per card, marker width 5 mm		
Marking	Item No.	Pack. Unit
plain	248-501	5



Mini-WSB Quick marking system, 10 strips with 10 markers per card, marker width 5 mm, plain		
Color	Item No.	Pack. Unit
yellow	248-501/000-002	5
red	248-501/000-005	5
blue	248-501/000-006	5
gray	248-501/000-007	5
orange	248-501/000-012	5
light green	248-501/000-017	5
green	248-501/000-023	5
violet	248-501/000-024	5



Mini-WSB Inline, plain, 1,700 Mini-WSB markers, on roll, marker width 5 mm		
Color	Item No.	Pack. Unit
white	2009-145	1



Marking strips, 46.6 x 7 mm		
	Item No.	Pack. unit
Markers for group marker carrier, DIN A4 sheet (160 markers)	750-100	1

Miniature WSB Quick Marking System, printed



Mini-WSB Quick Marking System, 10 strips with 10 markers per card, 5 mm wide markers			
Marking		Item No.	Pack. unit
0 V	100 x blue	247-506/000-006	5
0 V	100 x white	247-506	5
-	100 x blue	247-507/000-006	5
-	100 x white	247-507	5
24 V	100 x red	247-508/000-005	5
24 V	100 x white	247-508	5
+	100 x red	247-509/000-005	5
+	100 x white	247-509	5
⊕	100 x light green	247-552/000-017	5
⊕	100 x white	247-552	5
PE	100 x light green	248-578/000-017	5
PE	100 x white	248-578	5
A0 A1 ... A8 A9	10 x white	247-510	5
E0 E1 ... E8 E9	10 x white	247-511	5
X0 X1 ... X8 X9	10 x white	247-512	5
0 to 09	10 x white	247-513	5
10 to 19	10 x white	247-514	5
20 to 29	10 x white	247-515	5
30 to 39	10 x white	247-516	5
40 to 49	10 x white	247-517	5
50 to 59	10 x white	247-518	5
60 to 69	10 x white	247-519	5
70 to 79	10 x white	247-520	5
80 to 89	10 x white	247-521	5
90 to 99	10 x white	247-522	5
00 to 49	2 x white	247-523	5
50 to 99	2 x white	247-524	5
100 to 149	2 x white	247-525	5
150 to 199	2 x white	247-526	5
200 to 249	2 x white	247-527	5
250 to 299	2 x white	247-528	5
300 to 349	2 x white	247-529	5
350 to 399	2 x white	247-530	5
400 to 449	2 x white	247-531	5
450 to 499	2 x white	247-532	5
500 to 549	2 x white	247-533	5
550 to 599	2 x white	247-534	5
600 to 649	2 x white	247-535	5
650 to 699	2 x white	247-536	5
700 to 749	2 x white	247-537	5
750 to 799	2 x white	247-538	5
800 to 849	2 x white	247-539	5
850 to 899	2 x white	247-540	5
900 to 949	2 x white	247-541	5
950 to 999	2 x white	247-542	5
.0 to .7 / free	10 x / 20 x white	247-543	5
.0 to .7 /-	10 x / 20 x white	247-544	5
.0 to .7 /-	10 x / 20 x blue	247-544/000-006	5
.0 to .7 /+	10 x / 20 x white	247-545	5
.0 to .7 /+	10 x / 20 x red	247-545/000-005	5
.0 to .7 /N	10 x / 20 x white	247-546	5
.0 to .7 /N	10 x / 20 x blue	247-546/000-006	5
.0 to .7 /L	10 x / 20 x white	247-547	5

Marker carrier and marker adapter



Figure: 750-103

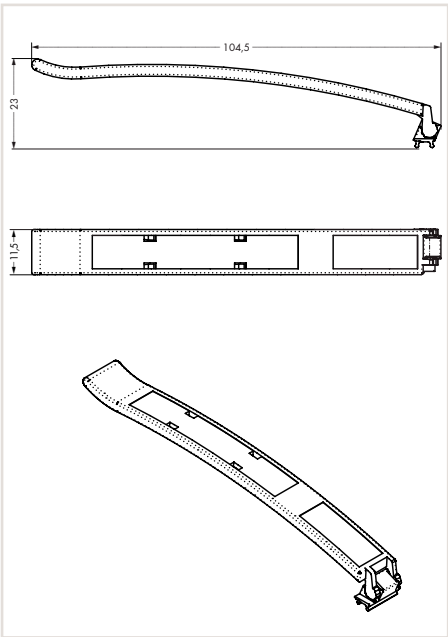


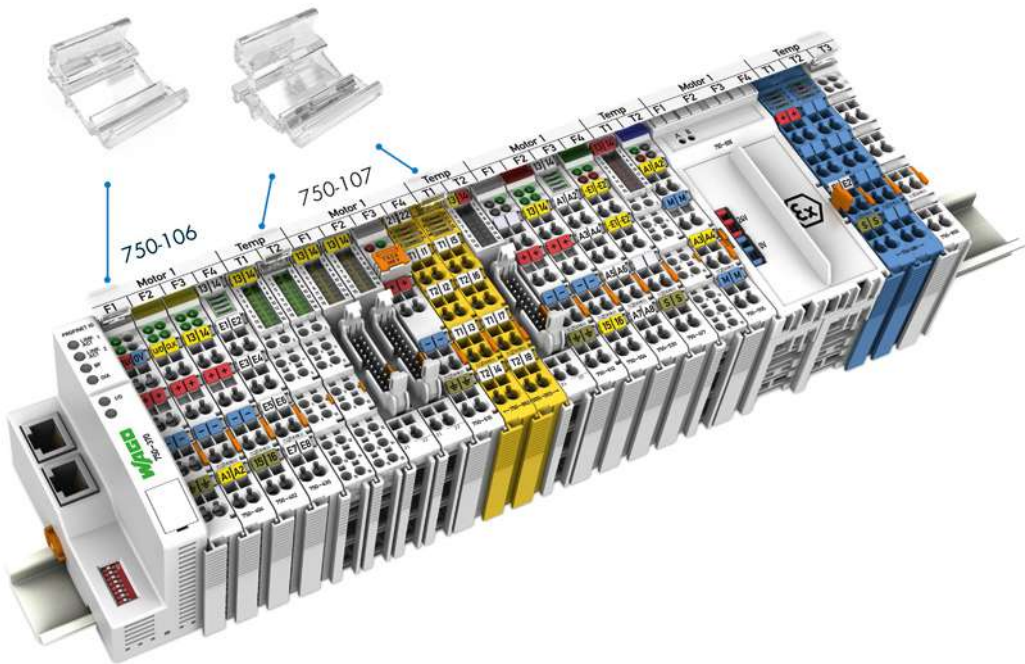
Figure: 750-106

Figure: 750-107

Item description
Version
Item No.
Technical Data
Dimensions W x H
Components
Weight
Data sheet and further information, see:
Accessories
Marking strips, plain, 7.5 mm wide, 50 m reel
Marking strips, 52.0 x 8.5 mm
Marking strip, plains, 11 mm wide, 50 m reel
WMB Inline, plain, 1,500 WMB markers (5 mm) per reel, stretchable 5– 5.2 mm

Marker carriers
Item No.
750-103
11.5 x 104.5 mm
Polycarbonate
2.84 g
wago.com/750-103
Item No.
709-178
750-105

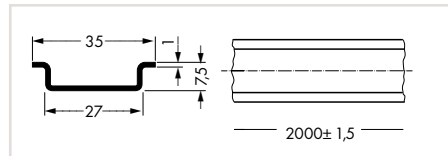
Marker carrier	
Max. 4 LEDs	Max. 8/16 LEDs
750-106	750-107
Polycarbonate	
0.4 g	
wago.com/750-106	wago.com/750-107
Item No.	
2009-110	
2009-115	



Carrier Rails, Rail End Cap, Angled Support Brackets



Dimensions in mm

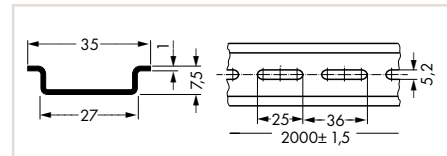


Steel carrier rail, I_N 76 A (reference length of 1 m/3'3"), 35 x 7.5 mm, 1 mm, 2 m/6'6" long, according to EN 60715, unslotted

	Item No.	Pack. Unit
galvanized	210-113	10
continuously galvanized	210-505	1



Dimensions in mm

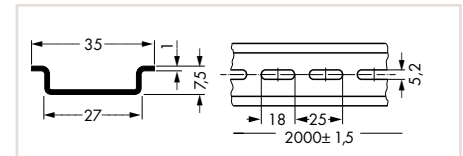


Steel carrier rail, I_N 76 A (reference length of 1 m/3'3"), 35 x 7.5 mm, 1 mm, 2 m/6'6" long, hole width 25 mm; hole spacing 36 mm, according to EN 60715, slotted

	Item No.	Pack. Unit
galvanized	210-112	10 (1)
continuously galvanized	210-504	1



Dimensions in mm

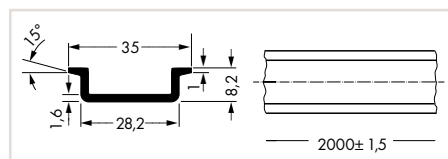


Steel carrier rail, I_N 76 A (reference length of 1 m/3'3"), 35 x 7.5 mm, 1 mm, 2 m/6'6" long, hole width 18 mm; hole spacing 25 mm, according to EN 60715, slotted

	Item No.	Pack. Unit
slotted	210-115	1



Dimensions in mm

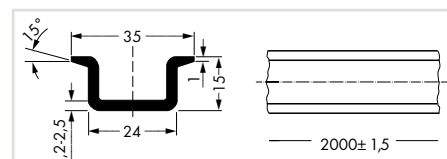


Aluminum carrier rail, I_N 76 A (reference length of 1 m/3'3"), 35 x 8.2 mm, 1.6 mm, 2 m/6'6" long, similar EN 60715

	Item No.	Pack. Unit
unslotted	210-196	10



Dimensions in mm

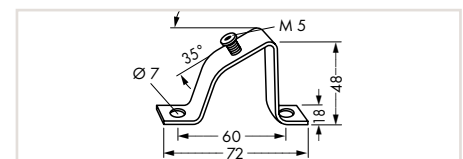


Copper carrier rail, I_N 309 A (reference length of 1 m/3'3"), 35 x 15 mm, 2.3 mm, 2 m/6'6" long, according to EN 60175

	Item No.	Pack. Unit
unslotted	210-198	10



Dimensions in mm

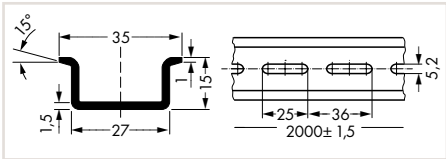


Angled support bracket, without screw

	Item No.	Pack. Unit
	210-148	10
	210-149	100 (20)



Dimensions in mm

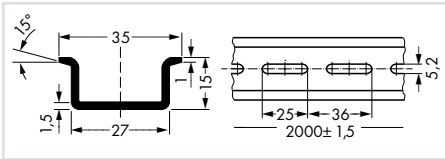


Steel carrier rail, I_N 125 A (reference length of 1m/3'3"), 35 x 15 mm, 1.5 mm, 2 m/6'6" long, similar to EN 60715

	Item No.	Pack. Unit
slotted	210-197	10
unslotted	210-114	10



Dimensions in mm

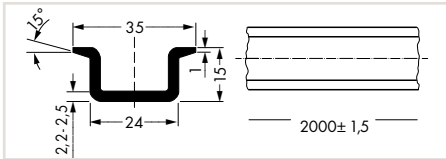


Steel carrier rail, I_N 125 A (reference length of 1m/3'3"), 35 x 15 mm, 1.5 mm, 2 m/6'6" long, continuously galvanized, similar to EN 60715

	Item No.	Pack. Unit
slotted	210-508	1
unslotted	210-506	1

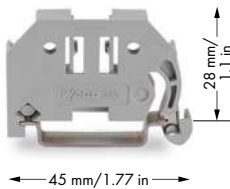


Dimensions in mm



Steel carrier rail, I_N 125 A (reference length of 1m/3'3"), 35 x 15 mm, 2.3 mm, 2 m/6'6" long, according to EN 60715

	Item No.	Pack. Unit
slotted	210-118	10



Screwless end stop, for DIN 35 rail, 6 mm wide		
Color	Item No.	Pack. Unit
gray	249-116	100 (25)

Screwless end stop, for DIN 35 rail, 10 mm wide		
Color	Item No.	Pack. Unit
gray	249-117	50 (25)



Screwless end stop, for DIN 35 rail, 14 mm wide		
Color	Item No.	Pack. Unit
gray	249-197	10



Rail end cap, for DIN 35 rail (7.5 mm high)		
Color	Item No.	Pack. Unit
gray	209-109	50 (25)



Mounting carrier, for isolated mounting on DIN 35 rails		
Color	Item No.	Pack. Unit
gray	209-106	25

Operating tools



Operating tool with a partially insulated shaft, type 1, (2.5 x 0.4) mm blade, for 279, 726, 727, 2000, 2001 and 2020 Series

Item No.	Pack. Unit
210-719	1

Operating tool set with a partially insulated shaft, type 1, (2.5 x 0.4) mm blade, type 2, (3.5 x 0.5) mm blade, type 3, (5.5 x 0.8) mm blade

Item No.	Pack. Unit
210-722	1

Operating tool set with a partially insulated shaft, (2.5 x 0.4) mm blade, short for 279, 726, 727, 2000, 2001, 2020 Series

Item No.	Pack. Unit
210-647	1

Operating tool with a partially insulated shaft, type 2, (3.5 x 0.5) mm blade, for 260, 261, 262, 264, 270, 280, 281, 290, 775, 776, 777, 769, 780, 781, 869, 870, 880, 2002, 2003, 2004, 2005, 2022 Series

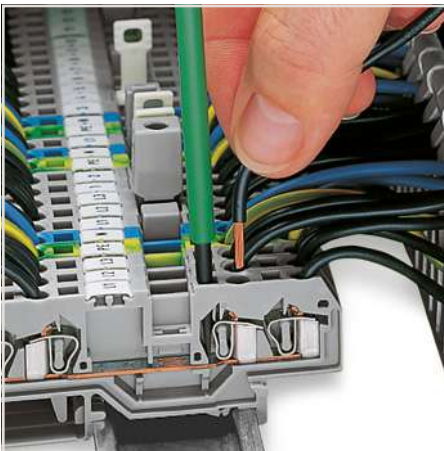
Item No.	Pack. Unit
210-720	1

Operating tool with a partially insulated shaft, (2.5 x 0.4) mm blade, short, angled, for 279, 2000, 2001 and 2020 Series

Item No.	Pack. Unit
210-648	1

Operating tool with a partially insulated shaft, type 3, (5.5 x 0.8) mm blade, for 282, 283, 284, 285, 782, 783, 784, 785, 2006, 2010, 2016 Series

Item No.	Pack. Unit
210-721	1



The blade dimensions of the above-listed operating tools with a partially insulated shaft are ideal for easy operation of front-entry terminal blocks.



Set of operating tools

Cable strippers



Cable stripper, for round cables with an outer Ø 2.5 mm ... 11 mm		
	Item No.	Pack. Unit
	206-171	1

Cable stripper, for round cables with an outer Ø 4.5 mm ... 45 mm		
	Item No.	Pack. Unit
	206-174	1

Replacement blade, for Ø 2.5 ... Ø 11 mm, for cable stripper (206-171)		
	Item No.	Pack. Unit
	206-170	1

Replacement blade, for Ø 4.5 ... Ø 45 mm, for cable stripper (206-174)		
	Item No.	Pack. Unit
	206-173	1



Set the cable diameter.



Strip the cable.

Stripping Tools



„Quickstrip“ 10, 0.02 mm² ... 10 mm² "f-st" (6 mm² "s"), Cutter for conductors up to 10 mm² "f-st" 1.5 mm² "s")

Item No.	Pack. Unit
206-124	1



„Quickstrip“ 16, 4 mm² ... 16 mm², Cutter for conductors up to 10 mm² "f-st" (1.5 mm² "s")

Item No.	Pack. Unit
206-125	1



„Standard“ blade cassette, 0.02 ... 10 mm², for wire stripper (206-124)

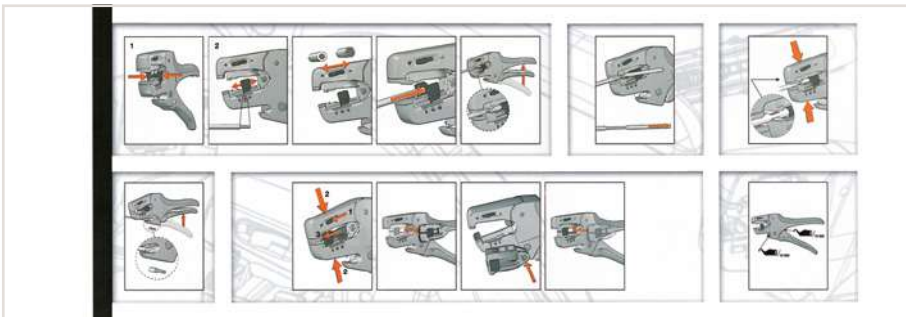
Item No.	Pack. Unit
206-126	1

„V“ blade cassette, 0.1 ... 4 mm² for PTFE, for wire stripper (206-124)

Item No.	Pack. Unit
206-127	1

„Standard“ blade cassette, 4 ... 16 mm², for wire stripper (206-125)

Item No.	Pack. Unit
206-128	1



Handling description included.

Stripping tools:

- Automatically adjusts to conductor size
- No damage to conductor strands
- Gripping pressure of jaws automatically adjusts conductor insulation diameter
- Clamping jaws and stripping blades open automatically once the stripping process is completed, ensuring no damage to the conductor strands
- Exact strip length may be set by sliding red setting stop
- Stripping blades can be replaced
- Self-sharpening, fully protected cutter, also replaceable.*
- The complete body is made of glass fiber-reinforced polyamide.

* applies to Microstrip



Cutting



Stripping

Crimping Tools



Variocrimp 4 crimping tool, for insulated and uninsulated ferrules, 0.25 mm² ... 4 mm²/AWG 24 ... 12		
Item No.	Pack. Unit	
206-204	1	



Variocrimp 16 crimping tool, for insulated and uninsulated ferrules, 6 ... 16 mm²/AWG 10 ... 6		
Item No.	Pack. Unit	
206-216	1	



Cable cutter, cutting Cu and Al conductors up to 35 mm²		
Item No.	Pack. Unit	
206-118	1	



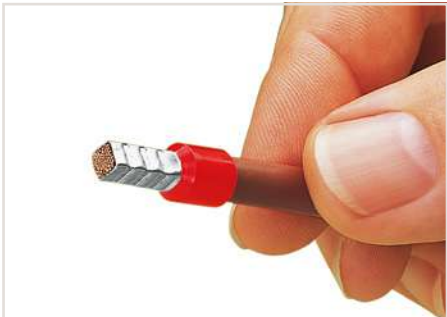
Insert ferruled conductor into crimping station.



Squeeze handles until ratchet mechanism is released.



Cutting a cable.



A perfect gastight crimp, both electrically and mechanically reliable.



Only for "Variocrimp 16":
Adjust conductor cross section with crimping tool in open position.

- Application notes:
- The built-in crimping pressure control of "Variocrimp 4" automatically adjusts the crimping force to the conductor cross-section. Select the wire gauge on "Variocrimp 16" before crimping.
 - Only one crimping station is needed to handle the specified conductor sizes
 - Uniform, compact crimping on all four sides for high conductor retention
 - No need to center the conductor into the ferrule.
 - Conductor and ferrule insertion possible from both sides (for left- and right-handers)
 - Built-in ratchet mechanism ensures gas-tight crimp connection
 - Crimping tools open automatically after crimping operation is complete
 - Comfortable handles for operator

Test and Measurement Devices



Profi LED+, 2-pole voltage tester with LED display, removable test probes, 4 mm Ø

Item No.	Pack. Unit
206-707	1



Profi LED+, 2-pole voltage tester with LED display, removable test probes, 4 mm Ø

Item No.	Pack. Unit
206-706	1



Spare test probes, 4 mm Ø (2 pieces)

Item No.	Pack. Unit
206-808	25



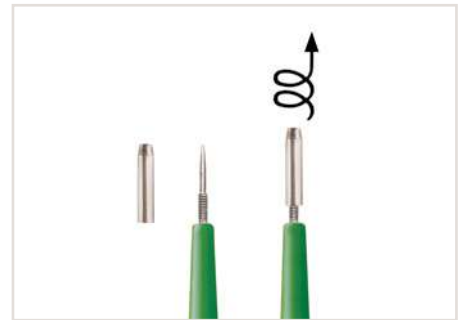
Additional product features for Profi LED+:

- Automatic measurement range selection
- Single-pole phase testing AC >100 V
- Two-pole sequence testing (R and L)
- Continuity testing
- FI/RCD testing (30 mA) via buttons
- One-hand operation for SCHUKO and CEE sockets
- LED torch lamp function
- Automatic backlight
- Auto power-off function
- CAT IV 1000 V
- TÜV/GS tested and approved
- IEC/EN 61243-3 (DIN VDE 0682-401)



Additional product features for Profi LED+:

- Automatic measurement range selection
- Single-pole phase testing AC >100 V
- Two-pole sequence testing (R and L)
- Continuity testing
- FI/RCD testing (30 mA) via buttons
- One-hand operation for SCHUKO and CEE sockets
- LED torch lamp function
- CAT IV 1000 V
- TÜV/GS tested and approved
- IEC/EN 61243-3 (DIN VDE 0682-401)



Profi-LED+:

- Improved socket contact via 4 mm Ø test probes
- Removable test probes for small test ports (suitable for all WAGO terminal blocks)

Test and Measurement Devices
206 Series



Multi-Tester, Digital multimeter with contactless voltage tester		
Item No.	Pack. Unit	
206-810	1	



Clamp-Multi-Tester		
Item No.	Pack. Unit	
206-816	1	



Testboy, with integrated flashlight, contactless voltage tester		
Item No.	Pack. Unit	
206-804	1	



- Additional product features for Multi Tester:
- Contact-less voltage test AC >100 V (optical and acoustical)
 - Resistance measurement up to 20 MΩ
 - Acoustical continuity test
 - Diode test
 - Data hold function
 - Auto power-off function
 - LED torch lamp function
 - CAT IV 600 V
 - TÜV/GS tested and approved
 - IEC/EN 61010-1 (DIN VDE 0411)



- Voltage testing in switchgear cabinet
- Additional Clamp-Multi-Tester features:
- DC and AC current up to 600 A
 - True RMS and min./max. value measurement
 - DC and AC voltage up to 600 V
 - Manual or automatic measurement range selection
 - Resistance up to 60 MΩ
 - Capacitance measurement
 - Acoustical continuity test
 - Diode test, Data hold function
 - Large LCD with backlight
 - LED measuring point lighting
 - CAT III 600 V overvoltage protection
 - IEC/EN 61010-1 (DIN VDE 0411)
 - Includes batteries, measurement leads and carrying bag



- A device that will reliably detect AC voltage in cables, sockets, fuses, switches, outlets, etc.
- Testboy can detect the following:
- Live conductors
 - Cable breaks
 - blown fuses (in cartridge or holder)
 - Defective switches
 - Defective lamps



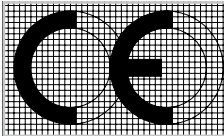
Current measurement in the switchgear cabinet



Technical Section

Technical Section

Contents

	Page
   cULus BV (Bureau Veritas) DNV (Det Norske GL (Germanischer	Approvals Overview 514
	Technical Support 526
	CE Marking and EC Directives 528
	General Technical Information for Electrical Equipment in Hazardous Environments 529
Electromagnetic Industrial- and Test Specification EN 61000-4-2 ESD	Electromagnetic Compatibility and Mechanical Strength (Industrial- and Residential Areas) 530
Electromagnetic Shipping Test Specification IEC 61000-4-2 ESD	Electromagnetic Compatibility and Mechanical Strength (Ship Building Area) 531
IEC 61131-1 EN 61131-1 Programmable controllers - Part 1: General information	Specifications and Test Results 532
	Electrical Engineering Laboratory: Product Safety for Our Customers 536
	WAGO Seminars 538

Approvals Overview

Operation and Monitoring – e!DISPLAY 7300T, Web Panels

[illegible]

☒ Approval is available ☐ Approval is pending

Controllers – PFC100/200, PFC200 XTR, 750 Series Controllers, 750 XTR Controllers
Variants upon Request (Item No. with Suffix /...-...)

12

☒ Approval is available ☐ Approval is pending

Approvals Overview

Fieldbus Couplers – I/O-System 750; Fieldbus Connector Variants upon Request (Item No. with Suffix /...-...)

[illegible]

¹⁾ Notice: WAGO's 750-626 Filter Module is mandatory for marine approval (observe power supply instructions)!

☒ Approval is available ☐ Approval is pending

12

²⁾ This module shall only be used in connection with the 24 VDC Ex i supply module (observe power supply instructions)!

Approvals Overview

Digital Output – I/O-System 750/753

Variants upon Request (Item No. with Suffix /...-...)

	cULus	E175199 Sec. 1, UL 508												
	ABS (American Bureau of Shipping)	03-HG374860/4-PDA; 10-HN17750340X												
	BV (Bureau Veritas)	13453/C0 BV, 30389/A1 BV												
	DNV (Det Norske Veritas) GL (Germanischer Lloyd)	A-14093, A-14050; 11 631-10 HH; 19 741-11 HH; 26 898-05 HH; TAA00000Y7												
	GL (Germanischer Lloyd)	59 627-08 HH; 61 626-13 HH; 95 043-14 HH; Cat. A, B, C, D (EMC 1)												
	KR (Korean Register of Shipping)	HMB05880-AC001, -AC002, -AC003, -AC004												
	LR (Lloyd's Register)	02/20026 (E4); Env. 1, 2, 3, 4												
	NK (Nippon Kaiji Kyokai)	TA12716M												
	Polski Rejestr Statkow	TE/1989/880590/13												
	RINA (Registro Italiano Navale)	ELE134212XG												
	cULus	E198726 Sec. 1, ANSI/ISA 12.12.01												
	INMETRO	TÜV 12.1297 X; TÜV 14.1911 X												
	TÜV	07ATEX554086 X; IECEX TUN 09.0001 X 12ATEX106032 X; IECEX TUN 12.0039 X 14ATEX148929 X; IECEX TUN 14.0035 X												
Item No.	Item Description	Ex	RINA	PRS	NK	LR	KR	GL	DNV GL	BV	ABS	UL	See Page	
Digital Output														
750-501	2DO 24 VDC 0.5A	■	■	■	■	■	■	■	■	■	■	■	153	
750-502	2DO 24 VDC 2A	■	■	■	■	■	■	■	■	■	■	■	154	
750-504	4DO 24 VDC 0.5A	■	■	■	■	■	■	■	■	■	■	■	156	
750-506	2DO 24 VDC 0.5A Diagn	■	■	■	■	■	■	■	■	■	■	■	155	
750-508	2DO 24 VDC 2A Diagn	■	■	■	■	■	■	■	■	■	■	■	155	
750-509	2DO 230 VAC 0.3A SSR	■	■	■	■	■	■	■	■	■	■	■	164	
750-512	2RO 250 VAC 2A Relay2NO	■	■	■	■	■	■	■	■	■	■	■	167	
750-513	2RO 250 VAC 2A Pot-free Relay2NO	■	■	■	■	■	■	■	■	■	■	■	167	
750-514	2RO 125 VAC 0.5A Pot-free Relay2CO	■	■	■	■	■	■	■	■	■	■	■	166	
750-516	4DO 24 VDC 0.5A LSS	■	■	■	■	■	■	■	■	■	■	■	158	
750-517	2RO 250 VAC 1A Pot-free Relay2CO	■	■	■	■	■	■	■	■	■	■	■	166	
750-519	4DO 5 VDC 20mA	■	■	■	■	■	■	■	■	■	■	■	152	
750-522	2DO 230 VAC SSR	■	■	■	■	■	■	■	■	■	■	■	165	
750-523	1RO 250 VAC 16A Pot-free Relay1NO	■	■	■	■	■	■	■	■	■	■	■	169	
750-530	8DO 24 VDC 0.5A	■	■	■	■	■	■	■	■	■	■	■	159	
750-531	4DO 24 VDC 0.5A 2-wire	■	■	■	■	■	■	■	■	■	■	■	157	
750-532	4DO 24 VDC 0.5A Diagn	■	■	■	■	■	■	■	■	■	■	■	158	
750-534	8DO 12 VDC 1A	■	■	■	■	■	■	■	■	■	■	■	152	
750-535 ²⁾	2DO 24 VDC Ex i	■	■	■	■	■	■	■	■	■	■	■	262	
750-536	8DO 24 VDC 0.5A LSS	■	■	■	■	■	■	■	■	■	■	■	159	
750-537	8DO 24 VDC 0.5A Diagn	■	■	■	■	■	■	■	■	■	■	■	159	
750-538 ²⁾	2RO Relay 2CO Ex i	■	■	■	■	■	■	■	■	■	■	■	263	
750-539 ²⁾	4DO 24 VDC Valve Ex i	■	■	■	■	■	■	■	■	■	■	■	262	
750-1500	16DO 24 VDC 0.5A Ribbon Cable	■	■	■	■	■	■	■	■	■	■	■	162	
750-1501	16DO 24 VDC 0.5A LSS Ribbon Cable	■	■	■	■	■	■	■	■	■	■	■	163	
750-1502	8DIO 24 VDC 0.5A Ribbon Cable	■	■	■	■	■	■	■	■	■	■	■	161	
750-1504	16DO 24 VDC 0.5A	■	■	■	■	■	■	■	■	■	■	■	162	
750-1505	16DO 24 VDC 0.5A LSS	■	■	■	■	■	■	■	■	■	■	■	163	
750-1506	8DIO 24 VDC 0.5A	■	■	■	■	■	■	■	■	■	■	■	161	
750-1515	8DO 24 VDC 0.5A 2-wire	■	■	■	■	■	■	■	■	■	■	■	160	
750-1516	8DO 24 VDC 0.5A LSS 2-wire	■	■	■	■	■	■	■	■	■	■	■	160	
753-540	4DO 120/230 VAC	■	■	■	■	■	■	■	■	■	■	■	164	

*Approval also applies for WAGO's 753 Series I/O Module variant with pluggable connector.

²⁾ This module shall only be used in connection with the 24 VDC Ex i supply module (observe power supply instructions)!

■ Approval is available □ Approval is pending

Approvals Overview
Analog Input – I/O-System 750/753
 Variants upon Request (Item No. with Suffix /...-...)

	cULus	E175199 Sec. 1, UL 508
	ABS (American Bureau of Shipping)	03-HG374860/4-PDA; 10-HN17750340X
	BV (Bureau Veritas)	13453/C0 BV, 30389/A1 BV
	DNV (Det Norske Veritas) GL (Germanischer Lloyd)	A-14093, A-14050; 11 631-10 HH; 19 741-11 HH; 26 898-05 HH; TAA00000Y7
	GL (Germanischer Lloyd)	59 627-08 HH; 61 626-13 HH; 95 043-14 HH; Cat. A, B, C, D (EMC 1)
	KR (Korean Register of Shipping)	HMB05880-AC001, -AC002, -AC003, -AC004
	LR (Lloyd's Register)	02/20026 (E4); Env. 1, 2, 3, 4
	NK (Nippon Kaiji Kyokai)	TA12716M
	Polski Rejestr Statkow	TE/1989/880590/13
	RINA (Registro Italiano Navale)	ELE134212XG
	cULus	E198726 Sec. 1, ANSI/ISA 12.12.01
	INMETRO	TÜV 12.1297 X; TÜV 14.1911 X
	TÜV	07ATEX554086 X; IECEx TUN 09.0001 X 12ATEX106032 X; IECEx TUN 12.0039 X 14ATEX148929 X; IECEx TUN 14.0035 X

Item No.	Item Description	Ex	RINA	PRS	NK	LR	KR	GL	DNV GL	BV	ABS	UL	See Page
Analog Input													
750-450	4AI RTD Adjust	■	□						■			□	193
750-451	8AI RTD Adjust	■	□						■			□	193
750-452	2AI 0-20mA Diff	■	■	■	■	■	■		■	■	■	■	172
750-453	4AI 0-20mA SE	■	■	■	■	■	■		■	■	■	■	174
750-454	2AI 4-20mA Diff	■	■	■	■	■	■		■	■	■	■	175
750-455	4AI 4-20mA SE	■	■	■	■	■	■		■	■	■	■	180
750-456	2AI ±10 VDC	■	■	■	■	■	■		■	■	■	■	183
750-457	4AI ±10 VDC SE	■	■	■	■	■	■		■	■	■	■	184
750-458	8AI TC Adjust	■	□						■			□	195
750-459	4AI 0-10 VDC SE	■	■	■	■	■	■		■	■	■	■	187
750-461	2AI Pt100/RTD	■	■	■	■	■	■		■	■	■	■	190
750-463	4AI RTD -30°C...+150°C	■	■	■	■	■	■		■	■	■	■	193
750-464	2/4AI RTD Adjust	■	■	■	■	■	■		■	■	■	■	192
750-465	2AI 0-20mA SE	■	■	■	■	■	■		■	■	■	■	172
750-466	2AI 4-20mA SE	■	■	■	■	■	■		■	■	■	■	176
750-467	2AI 0-10 VDC SE	■	■	■	■	■	■		■	■	■	■	185
750-468	4AI 0-10 VDC SE	■	■	■	■	■	■		■	■	■	■	186
750-469	2AI TC K Diagn	■	■	■	■	■	■		■	■	■	■	194
750-470	2AI 0-20mA SE	■	■	■	■	■	■		■	■	■	■	173
750-472	2AI 0-20mA SE 16Bit	■	■	■	■	■	■		■	■	■	■	173
750-473	2AI 4-20mA SE	■	■	■	■	■	■		■	■	■	■	177
750-474	2AI 4-20mA SE 16Bit	■	■	■	■	■	■		■	■	■	■	178
750-475	2AI 0-1A AC/DC Diff	■	■	■	■	■	■		■	■	■	■	182
750-476	2AI ±10 VDC SE	■	■	■	■	■	■		■	■	■	■	184
750-477	2AI 0-10 V AC/DC	■	■	■	■	■	■		■	■	■	■	189
750-478	2AI 0-10 VDC SE 16Bit	■	■	■	■	■	■		■	■	■	■	185
750-479	2AI ±10 VDC Diff	■	■	■	■	■	■		■	■	■	■	183
750-480	2AI 0-20mA Diff	■	■	■	■	■	■		■	■	■	■	174
750-481/003-000 ²⁾	2AI RTD Ex i	■	■	■	■	■	■		■	■	■	■	266
750-482	2AI 4-20mA HART	■	■	■	■	■	■		■	■	■	■	179
750-483	2AI 0-30 VDC	■	■	■	■	■	■		■	■	■	■	189
750-484 ²⁾	2AI 4-20mA HART Ex i	■	■	■	■	■	■		■	■	■	■	265
750-485 ²⁾	2AI 4-20mA Ex i	■	■	■	■	■	■		■	■	■	■	264
750-486 ²⁾	4AI 0/4-20mA NE43 Ex i	■	■	■	■	■	■		■	■	■	■	264
750-487/003-000 ²⁾	1AI TC Exi	■	■	■	■	■	■			■		■	266
750-491	1AI DMS	■	□									□	196
750-492	2AI 4-20mA Diff	■	■	■								■	179
750-493	3-PHASE POM 480VAC 1A	■										■	197
750-494	3-PHASE POM 480VAC 1A	■								■		■	198
750-495	3-PHASE POM 690VAC 1A									■		■	199
750-496	8AI 0/4-20mA		□									□	181
750-497	8AI ±10 V/0-10 VDC		□									□	188

*Approval also applies for WAGO's 753 Series I/O Module variant with pluggable connector.

²⁾ This module shall only be used in connection with the 24 VDC Ex i supply module (observe power supply instructions)!

☒ Approval is available ☐ Approval is pending

Variants upon Request (Item No. with Suffix /...-...)

[illegible]

☒ Approval is available ☐ Approval is pending

Approvals Overview

Function, Technology, Communication Modules – I/O-System 750/753

59
Variants upon Request (Item No. with Suffix /...-...)

	cULus	E175199 Sec. 1, UL 508
	ABS (American Bureau of Shipping)	03-HG374860/4-PDA; 10-HN17750340X
	BV (Bureau Veritas)	13453/C0 BV, 30389/A1 BV
	DNV (Det Norske Veritas) GL (Germanischer Lloyd)	A-14093, A-14050; 11 631-10 HH; 19 741-11 HH; 26 898-05 HH; TAA00000Y7
	GL (Germanischer Lloyd)	59 627-08 HH; 61 626-13 HH; 95 043-14 HH; Cat. A, B, C, D (EMC 1)
	KR (Korean Register of Shipping)	HMB05880-AC001, -AC002, -AC003, -AC004
	LR (Lloyd's Register)	02/20026 (E4); Env. 1, 2, 3, 4
	NK (Nippon Kaiji Kyokai)	TA12716M
	Polski Rejestr Statkow	TE/1989/880590/13
	RINA (Registro Italiano Navale)	ELE134212XG
	cULus	E198726 Sec. 1, ANSI/ISA 12.12.01
	INMETRO	TÜV 12.1297 X; TÜV 14.1911 X
	TÜV	07ATEX554086 X; IECEx TUN 09.0001 X 12ATEX106032 X; IECEx TUN 12.0039 X 14ATEX148929 X; IECEx TUN 14.0035 X

Item No.	Item Description	Ex	RINA	PRS	NK	LR	KR	GL	DNV GL	BV	ABS	UL	See Page
Function, Technology, Communication Modules													
750-404	Up/Down Counter	■*	■*	■*	■*	■*	■*		■*	■*	■*	■*	212
750-511	2PWM 24 VDC 0.1A 250Hz	■	■	■	■	■	■		■	■	■	■	214
750-630	SSI Interface	■	■	■	■	■	■		■	■	■	■	215
750-631/000-004	Inc. Encoder RS-422 16Bit	■	■	■	■	■	■		■	■	■	■	218
750-632	Proportional Valve Module	■	■	■	■	■	■		■	■	■	■	228
750-633 ²⁾	Up/Down Counter Ex i	■	■	■	■	■	■		■	■	■	■	268
750-635	Digital Impulse Interface	■*	■	■*					■			■*	220
750-637	Inc. Encoder RS-422 32Bit	■	■	■	■	■	■	■	■	■	■	■	218
750-638	2Up/Down Counter	■*	■	■*					■			■*	213
750-640	RTC Module	■	■	■	■	■	■		■	■	■	■	221
750-642	Radio Receiver EnOcean	■	■	■	■	■	■		■	■	■	■	239
750-643	MP-Bus Master	■	■	■	■	■	■		■	■	■	■	243
750-644	Bluetooth® RF-Transceiver	■	■	■	■	■	■		■	■	■	■	238
750-645	2VIB VRMS/SPM Multi	■	■	■	■	■	■		■	■	■	■	222
750-650	RS232 C Interface	■*	■*	■*	■*	■*	■*		■*	■*	■*	■*	232
750-651	TTY Interface 9600Bd N 8/1	■	■	■	■	■	■		■	■	■	■	237
750-652	RS232/485 Interface	■*	■*	■*	■*	■*	■*		■*	■*	■*	■*	236
750-653	RS485 Interface 9600Bd	■*	■*	■*	■*	■*	■*		■*	■*	■*	■*	234
750-654	Data Exchange Interface	■	■	■	■	■	■		■	■	■	■	247
750-655	AS-Interface Master	■*	■*	■*	■*	■*	■*		■*	■*	■*	■*	244
750-657	IO-Link Master	■	■	■	■	■	■		■	■	■	■	245
750-658	CAN Gateway	■	■	■	■	■	■		■	■	■	■	246
750-660/000-001	8FDI 24 VDC PROFI-safe	■	■	■	■	■	■		■	■	■	■	250
750-661/000-003	4FDI 24 VDC PROFI-safe V2 iPar	■*	■*	■*	■*	■*	■*		■	■	■	■*	251
750-662/000-003	8FDI 24 VDC PROFI-safe V2 iPar	■*	■*	■*	■*	■*	■*		■	■	■	■*	251
750-663/000-003	4F-Ex i DI 24 VDC PROFI-safe V2 iPar	■	■	■	■	■	■		■	■	■	■	255
750-665/000-001	4FDI/4FDO 24 VDC 0.5A PROFI-safe	■	■	■	■	■	■		■	■	■	■	250
750-666/000-003	4FDI/2FDO 24 VDC 10A PROFI-safe V2 iPar	■*	■*	■*	■*	■*	■*		■	■	■	■*	253
750-667/000-003	4FDI/4FDO 24 VDC 2A PROFI-safe V2 iPar	■*	■*	■*	■*	■*	■*		■	■	■	■*	254
750-670	Stepper Controller RS422/24 VDC 20mA	■										■	223
750-671	Stepper Controller 24 VDC 1.5A	■	■										224
753-646	KNX/EIB/TP1 Interface		■	■	■	■	■	■	■	■	■	■	240
753-647	DALI Multi-Master								■			■	241
753-648	LON FTT Interface		■									■	242

*Approval also applies for WAGO's 753 Series I/O Module variant with pluggable connector.

²⁾ This module shall only be used in connection with the 24 VDC Ex i supply module (observe power supply instructions)!

☒ Approval is available ☐ Approval is pending

Approvals Overview

Supply and Segment Modules – I/O-System 750/753

Variants upon Request (Item No. with Suffix /...-...)

[illegible]

*Approval also applies for WAGO's 753 Series I/O Module variant with pluggable connector.

¹⁾ Notice: WAGO's 750-626 Filter Module is mandatory for marine approval (observe power supply instructions)!

³⁾ Notice: WAGO's 750-624 Filter Module is mandatory for marine approval (observe power supply instructions)!

⁴⁾ Notice: WAGO's 750-626 Filter Module is mandatory for marine approval at 24 VDC power supply (observe power supply instructions)!

☒ Approval is available ☐ Approval is pending

I/O-Systems – 750 XTR Series

[illegible]

Variants upon Request (Item No. with Suffix /...-...)

[illegible]

Approvals Overview; Infrastructure –
Industrial Switches, *TO-PASS*® Telecontrol Technology, Sensor/Actuator Boxes
 Variants upon Request (Item No. with Suffix /...-...)

[illegible]

Product Support From

Consulting Services

- Selection of the fieldbus
- Use of components
- Combination of components
- Cooperation with other suppliers



Contact

WAGO Kontakttechnik GmbH & Co. KG
Postfach 2880 · 32385 Minden
Hansastraße 27 · 32423 Minden

Telephone:

Headquarters 0571/887 - 0

Sales 0571/887 - 44222

Order service 0571/887 - 44333

Technical Support 0571/887 - 44555

Fax 0571/887 - 844169

Email info@wago.com

Internet www.wago.com



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- Trained staff
- PLC & PC control
- Multiple fieldbuses
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 - Automotive industry
 - Machine building
 - Chemical industry
 - Food processing
 - Building automation
 - Process engineering
 - Process control
 - and many more



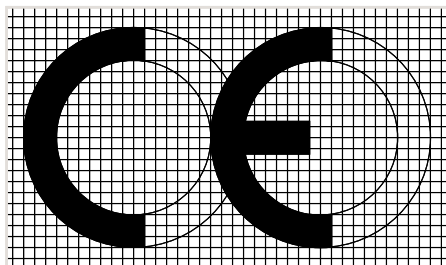
We will help you

- Product documentation
- Manuals
- Application notes
- By telephone
- On-site

CE Marking and EC Directives

CE conformity marking:

The CE conformity marking consists of the characters "CE", with the following script:



Communauté Européenne
(European Community)

The CE marking shall be affixed to the electrical equipment, or if that is not possible, to the smallest packing unit. With the CE marking, manufacturers attest conformity of their products to the relevant directives.

In addition to the CE marking, the manufacturer provides an EC "Declaration of Conformity" for the product. This EC "Declaration of Conformity" must be retained and submitted to a national surveillance authority upon request.

The **EC directives** are legally binding specifications of the European Union. Their goal is the harmonization of legal and administrative regulations in the various EU member states, in order to prevent trade obstructions.

In order to "market" a product, it must comply with the relevant directives. The product may be subject to several directives, e.g. the EMC and the low voltage directives.

Low Voltage Directive

The safety of electrical equipment is guaranteed by the Low Voltage Directive. This directive covers 'complete' electrical equipment designed for use with a voltage rating of between 50 and 1000V for alternating current and between 75 and 1500V for direct current. Products falling within the scope of the Low Voltage Directive that are designed in such a way that they can be used in other electrical devices and whose safety, for the most part, is dependent on how these components were built into the end product and what features the end product has are defined as basic components in accordance with the Low Voltage Directive. The Low Voltage Directive doesn't apply to basic components.

EMC Directive

The EMC Directive implies that a product must meet the limits of the radiated electromagnetic disturbance and also requires that a product must be immune to electromagnetic interference. Electromagnetic passive components or components with no direct function, like resistors, diodes, capacitors, switching relays or cables (in the form of passive printed circuit boards) are not considered as apparatus within the meaning of the EMC Directive.

Machinery Directive

The Machinery Directive does not apply to WAGO products.

Explosive Atmospheres Directive (ATEX)

Directive for devices and protective systems intended for use in hazardous locations.

Radio Equipment Directive

A device or relevant component thereof, capable of communication by emitting and/or receiving radio waves utilizing the spectrum allocated to terrestrial/space radio communication, falls within the scope of the Radio Equipment Directive. As such, these devices and components are tested and labeled accordingly. This label implicitly includes both Low Voltage and EMC Directives, since the Radio Equipment Directive also encompasses the safety targets for both of these directives.

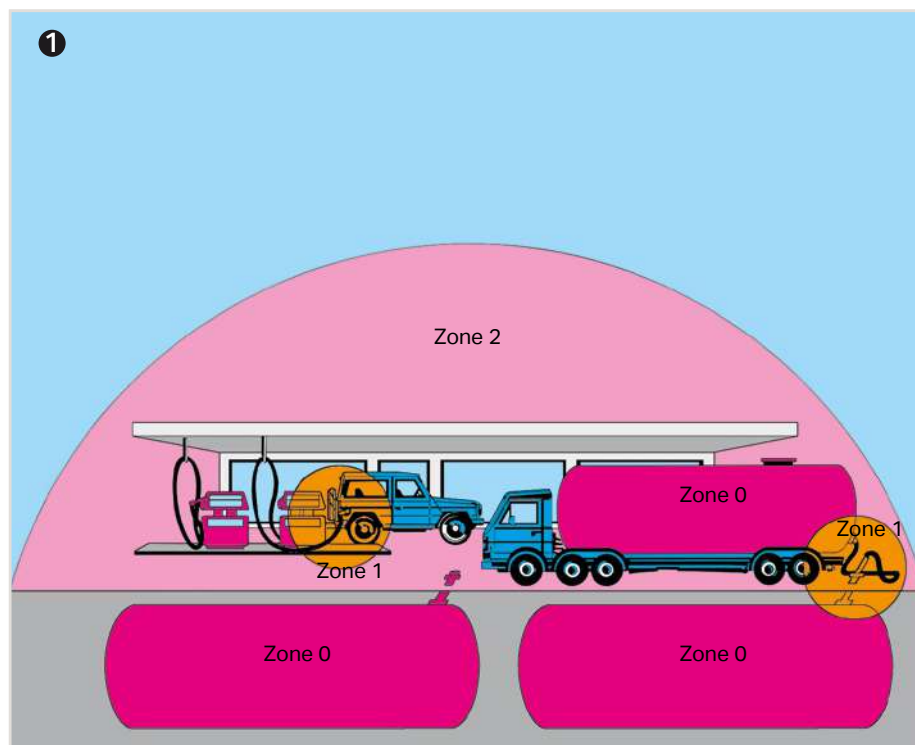
General Technical Information for Electrical Equipment in Hazardous Environments

Hazardous Environments

Hazardous environments are areas in which the atmosphere may become explosive. Explosive atmosphere is defined as a mixture of ignitable substances

in the form of gases, vapors or mixtures with air under atmospheric conditions in critically mixed ratios such that excessive high temperature, arcs or sparks may cause an explosion.

DIN EN 1127-1 and all other related standards that are commonly known divide up hazardous areas according to the likelihood of the occurrence of an explosive atmosphere into the following zones:



❶ Hazardous environments as a result of combustible gases, vapors or mist.

Zone 0

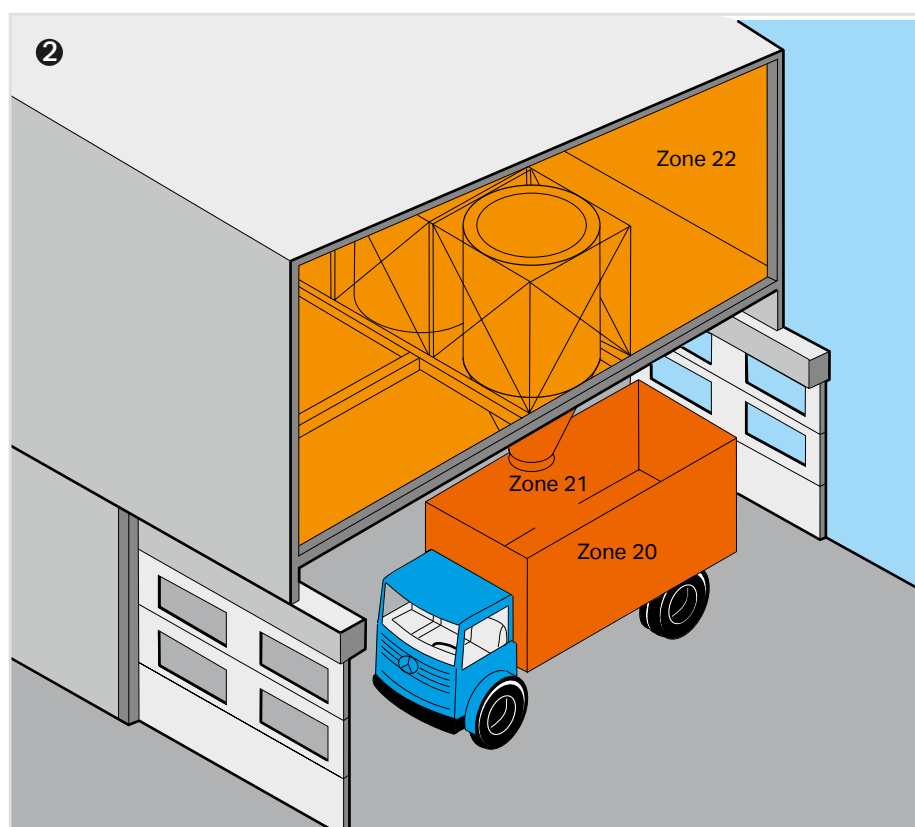
Area in which an explosive gas/air mixture is continuously present or present for long periods.

Zone 1

Area in which an explosive atmosphere can occur during normal operation

Zone 2

Area in which an explosive atmosphere is unlikely to occur under normal operation and if it does it will be for a short period.



❷ Hazardous areas caused by combustible dust

Zone 20

Area in which an explosive dusty atmosphere is present "permanently", for "long periods" or "frequently" and in which deposits of combustible dust of unknown or excessive thickness may be formed. Dust deposits alone are not grounds for classification as Zone 20.

Zone 21

Area in which an explosive dusty atmosphere is present "occasionally" under normal operating conditions and in which deposits or layers of combustible dust can generally be present.

Zone 22

Area in which an explosive dusty atmosphere is not likely to occur during normal operation and, if it occurs, will only exist for a "short period", or in which accumulations or layers of combustible dust are present.

Please refer to the manuals for more information on explosion protection.

Electromagnetic Compatibility and Mechanical Strength (Industrial- and Residential Areas)

Immunity to interference for industrial areas acc. to EN 61000-6-2

Test Specification		Test Values	Evaluation Criteria *)
EN 61000-4-2	ESD	4 kV/8 kV (contact/air)	B
EN 61000-4-3	Electromagnetic fields	10 V/m: 80 MHz ... 1 GHz	A
		3V/m: 1.4 ... 2.0 GHz	A
		1V/m: 2.0 ... 2.7 GHz	A
EN 61000-4-4	Burst	1 kV/2 kV (data/supply)	B
EN 61000-4-5	Surge	Data: - / 1 kV (line: line – line : ground)	B
		DC supply: 0.5 kV / 0.5 kV (line : line – line : ground)	B
		AC supply: 1 kV / 2 kV (line : line – line : ground)	B
EN 61000-4-6	RF disturbances	10 V/m, 80 % AM (0.15 ... 80 MHz)	A
EN 61000-4-8	Magnetic field	30 A/m, 50/60Hz	A
*) Criteria A: The device must work in accordance with the regulations during and after the test. Criteria B: The device must work in accordance with the regulations after the test.			

Emission of interference for residential areas acc. to EN 61000-6-3

Test Specification		Limit Values Quasi Peak	Frequency Range	Distance
EN 55016-2-1	AC supply, conducted	66 ... 56 dB(μV)	150 ... 500 kHz	
		56 dB(μV)	500 kHz ... 5 MHz	
		60 dB(μV)	5 ... 30 MHz	
EN 55016-2-1	DC supply/data line	79 dB(μV)	150 ... 500 kHz	
	conducted	73 dB(μV)	500 kHz ... 30 MHz	
EN 55016-2-3	radiated	30 dB(μV/m)	30 ... 230 MHz	10 m
		37 dB(μV/m)	230 MHz ... 1 GHz	10 m
EN 55022	Telecommunications/	84 ... 74 dB(μV)	150 ... 500 kHz	
	Mains connection, conducted	74 dB(μV)	500 kHz ... 30 MHz	

Emission of interference for industrial areas acc. to EN 61000-6-4

Test Specification		Limit Values Quasi Peak	Frequency Range	Distance
EN 55016-2-1	AC supply, conducted	79 dB(μV)	150 ... 500 kHz	
		73 dB(μV)	500 kHz ... 30 MHz	
EN 55016-2-3	radiated	40 dB(μV/m)	30 ... 230 MHz	10 m
		47 dB(μV/m)	230 MHz ... 1 GHz	10 m
EN 55022	Telecommunications/	97 ... 87 dB(μV)	150 ... 500 kHz	
	Mains connection, conducted	87 dB(μV)	500 kHz ... 30 MHz	

Mechanical strength acc. to EN 61131-2

Test Specification		Frequency Range	Limit Values
IEC 60068-2-6	Vibration	5 Hz ≤ f < 9 Hz	1.75 mm amplitude (permanently)
			3.5 mm amplitude (short term)
		9 Hz ≤ f < 150 Hz	0.5 g (permanent)
			1 g (short term)
		Note on vibration test: a) Frequency change: max. 1 octave/minute b) Vibration direction: 3 axes	
IEC 60068-2-27	shock		15 g
		Note on shock test: a) Type of shock: half sine b) Shock duration: 11 ms	
		c) Shock direction: 3x in positive and 3x in negative direction for each of the three mutually perpendicular axes of the test specimen	

Electromagnetic Compatibility and Mechanical Strength (shipping)

Immunity to interference in the shipping industry acc. to Germanischer Lloyd

Test Specification		Test Values	Evaluation Criteria *)
IEC 61000-4-2	ESD	6 kV / 8 kV (contact – air)	B
IEC 61000-4-3	Electromagnetic fields	10 V/m 80 MHz ... 2 GHz	A
IEC 61000-4-4	Burst	1 kV / 2 kV (data – supply)	A
IEC 61000-4-5	Surge	0.5 kV / 1 kV (line: line – line : ground)	A
IEC 61000-4-6	RF disturbances	10 V, 80 % AM (0.15 ... 80 MHz)	A
Type Test	AF disturbances (harmonics)	3 V, 2 W	A
Type Test	high voltage	755 V DC	-
		1500 V AC	-
*) Criteria A: The device must work in accordance with the regulations during and after the test. Criteria B: The device must work in accordance with the regulations after the test.			

Immunity to interference in the shipping industry acc. to Germanischer Lloyd

Test Specification		Limit Values Quasi Peak	Frequency Range	Distance
Type Test	EMC 1, conducted (allows for ship bridge control applications)	96 ... 50 dB(μV)	10 ... 150 kHz	
		60 ... 50 dB(μV)	150 ... 350 kHz	
		50 dB(μV)	350 kHz ... 30 MHz	
Type Test	EMC 1, radiated (allows for ship bridge control applications)	80 ... 52 dB(μV/m)	150 ... 300 kHz	3 m
		52 ... 34 dB(μV/m)	300 kHz ... 30 MHz	3 m
		54 dB(μV/m)	30 MHz ... 2 GHz	3 m
		except for: 24 dB(μV/m)	156 ... 165 MHz	3 m
Type Test	EMC 2, conducted (allows for machine room applications)	120 ... 69 dB(μV)	10 ... 150 kHz	
		79 dB(μV)	150 ... 500 kHz	
		73 dB(μV)	500 kHz ... 30 MHz	
Type Test	EMC 2, radiated (allows for machine room applications)	80 ... 50 dB(μV/m)	150 kHz ... 30 MHz	3 m
		60 ... 54 dB(μV/m)	30 ... 100 MHz	3 m
		54 dB(μV/m)	100 MHz ... 2 GHz	3 m
		except for: 24 dB(μV/m)	156 ... 165 MHz	3 m

Mechanical strength acc. to Germanischer Lloyd

Test Specification		Frequency Range	Limit Values
IEC 60068-2-6	Vibration (category A, C)	2 Hz ≤ f < 13.2 Hz	±1.0 mm amplitude (permanent)
		13.2 Hz ≤ f < 100 Hz	0.7 g (permanent)
		Note on vibration test: a) Frequency change: max. 1 octave/minute b) Vibration direction: 3 axes	
IEC 60068-2-6	Vibration (category A-D)	2 Hz ≤ f < 25 Hz	±1.6 mm amplitude (permanent)
		25 Hz ≤ f < 100 Hz	4 g (permanent)
		Note on vibration test: a) Frequency change: max. 1 octave/minute b) Vibration direction: 3 axes	

Specifications and Test Results

In particular the following standards apply to the design and the application of the terminal blocks and connectors contained in this catalog:

DIN VDE 0100

Construction of high current installations with nominal voltages up to 1000V

EN 50110-1

VDE 0105-1

Operation of electrical installations

IEC 61140

EN 61140

VDE 0140-1

Protection against electric shock - Common aspects for installation and equipment

IEC 60664-1

EN 60664-1

VDE 0110-1

Insulation coordination for equipment within low-voltage systems - Part 1: Principles, requirements and tests

IEC 60204-1

EN 60204-1

VDE 0113-1

Safety of machinery - Electrical equipment of machines - Part 1: General requirements

EN 50178

VDE 0160

Electronic equipment for use in power installations

IEC 62305-1

EN 62305-1

VDE 0185-305-1

Protection against lightning - Part 1: General principles

IEC 60060-1

HD 588.1 S1

VDE 0432-1

High voltage test techniques; Part 1: general specifications and test requirements

IEC 60085

EN 60085

VDE 0301-1

Electrical insulation - Thermal evaluation and designation

IEC 60529

EN 60529

VDE 0470-1

Degrees of protection provided by enclosures (IP code)

IEC 60603-1

EN 60603-1

Connectors for frequencies below 3 MHz for use with printed boards - Part 1: Generic specification: General requirements and guide for the preparation of detail specifications, with assessed quality

IEC 61984

EN 61984

VDE 0627

Connectors - Safety requirements and tests

IEC 60999-1

EN 60999-1

VDE 0609-1

Connecting devices - Electrical copper conductors; Safety requirements for screw-type and screwless-type clamping units - Part 1: General requirements and particular requirements for clamping units for conductors 0.2 mm² up to 35 mm²

IEC 60617-2

EN 60617-2

Graphical symbols for diagrams - Part 2: Symbol elements, qualifying symbols and other symbols having general application

IEC 61558-1

EN 61558-1

VDE 0570-1

Safety of power transformers, power supplies, reactors and similar products Part 1: General requirements and tests

IEC 60669-2-1

EN 60669-2-1

VDE 0632-2-1

Switches for household and similar fixed electrical installations - Part 2-1: Particular requirements - Electronic switches

IEC 60947-7-1

EN 60947-7-1

VDE 0611-1

Low-voltage switchgear and controlgear - Part 7-1: Ancillary equipment - Terminal blocks for copper conductors

IEC 60998-2-2

EN 60998-2-2

VDE 0613-2-2

Connecting devices for low-voltage circuits for household and similar purposes - Part 2-2: Particular requirements for connecting devices as separate entities with screwless type clamping units

IEC 60947-1

EN 60947-1

VDE 0660-100

Low-voltage switchgear and controlgear Part 1: General rules

IEC 60947-5-6

EN 60947-5-6

VDE 0660-212

Low-voltage switchgear and controlgear Part 5-6: Control circuit devices and switching elements, DC interface for proximity sensors and switching amplifiers (NAMUR)

IEC 60439-1

EN 60439-1

VDE 0660-500

Low-voltage switchgear and controlgear assemblies - Part 1: Type-tested and partially type-tested assemblies

IEC 60555-1

EN 60555 Part 1

VDE 0838-1

Disturbances in supply systems caused by household appliances and similar electrical equipment; Part 1: definitions

IEC 60715

EN 60715

Dimensions of low-voltage switchgear and controlgear - Standardized mounting on rails for mechanical support of electrical devices in switchgear and controlgear installations

IEC 60950-1

EN 60950-1

VDE 0805-1

Information technology equipment - Safety Part 1: General requirements

IEC 60127-6

EN 60127-6

VDE 0820-6

Miniature fuses - Part 6: Fuse-holders for miniature fuse-links

EN 50155 VDE 0115-200 Railway applications – Electronic equipment used on rolling stock	Interfaces - Fieldbuses	IEC 60079-14 EN 60079-14 VDE 0165-1 Explosive atmospheres - Part 14: Electrical installations design, selection and erection
EN 50090-2-2 VDE 0829-2-2 Home and Building Electronic Systems (HBES) – Part 2-2: System overview – General technical requirements; German version	DIN 66259-1 Electrical characteristics for unbalanced double-current interchange circuits	IEC 60079-15 EN 60079-15 VDE 0170-16 Electrical apparatus for explosive gas atmospheres - Part 15: Construction, test and marking of type of protection "n" electrical apparatus
IEC 60099-1 EN 60099-1 VDE 0675-1 Surge arresters - Part 1: Non-linear resistor type gapped surge arresters for a.c. systems	EN 50325-1 Industrial communications subsystem based ISO 11898 (CAN) for controller-device interfaces - Part 1: General requirements	IEC 61241-0 EN 61241-0 VDE 0170-15-0 Electrical apparatus for use in the presence of combustible dust - Part 0: General requirements
IEC 61643-1 EN 61643-11 VDE 0675-6-11 Low-voltage surge protective devices – Part 11: Surge protective devices connected to low-voltage power systems – Requirements and tests	IEC 61784-1 EN 61784-1 Industrial communication networks – Profiles Part 1: Fieldbus profiles	IEC 61241-1 EN 61241-1 VDE 0170-15-1 Electrical apparatus for use in the presence of combustible dust - Part 1: Protection by enclosures "tD"
IEC 61643-21 EN 61643-21 VDE 0845-3-1 Low voltage surge protective devices - Part 21: Surge protective devices connected to telecommunications and signalling networks; Performance requirements and testing methods	IEC 61158-2 EN 61158-2 Industrial communication networks - Fieldbus specifications - Part 2: Physical layer specification and service definition	IEC 61241-11 EN 61241-11 VDE 0170-15-11 Electrical apparatus for use in the presence of combustible dust - Part 11: Protection by intrinsic safety "iD"
IEC 61508-1 EN 61508-1 VDE 0803-1 Functional safety of electrical/electronic/programmable electronic safety-related systems - Part 1: General requirements	IEC 61158-6-x EN 61158-6-x DIN EN 61158-6-x Industrial communication networks - Fieldbus specifications - Part 6-x	
IEC 62061 EN 62061 VDE 0113-50 Safety of machinery - Functional safety of safety-related electrical, electronic and programmable electronic control systems	Explosion Protection	
	IEC 60079-0 EN 60079-0 VDE 0170-1 Electrical apparatus for explosive gas atmospheres - Part 0: General requirements	
	IEC 60079-7 EN 60079-7 VDE 0170-6 Explosive atmospheres - Part 7: Equipment protection by increased safety "e"	
	IEC 60079-11 EN 60079-11 VDE 0170-7 Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "I"	

Specifications and Test Results (continued)

Environmental Testing

IEC 60068-2-6
EN 60068-2-6
VDE 0468-2-6
Environmental testing - Part 2-6: Tests -
Test Fc: Vibration (sinusoidal)

IEC 60068-2-27
EN 60068-2-27
Basic environmental testing procedures -
Part 2: Tests; test Ea and guidance:
Shock

IEC 60068-2-42
EN 60068-2-42
Environmental testing - Part 2-42: Tests -
Test Kc: Sulphur dioxide test for contacts
and connections

IEC 60068-2-43
EN 60068-2-43
Environmental testing - Part 2-43: Tests -
Test Kd: Hydrogen sulphide test for
contacts
and connections

EMC Requirements

IEC 61000-6-1
EN 61000-6-1
VDE 0839-6-1
Electromagnetic compatibility (EMC) -
Part 6-1: Generic standards - Immunity
for residential, commercial and light-
industrial environments

IEC 61000-6-2
EN 61000-6-2
VDE 0839-6-2
Electromagnetic compatibility (EMC) -
Part 6-2: Generic standards - Immunity
for industrial environments

IEC 61000-6-3
EN 61000-6-3
VDE 0839-6-3
Electromagnetic compatibility (EMC) -
Part 6-3: Generic standards - Emission
standard for residential, commercial and
light-industrial environments

IEC 61000-6-4
EN 61000-6-4
VDE 0839-6-4
Electromagnetic compatibility (EMC) -
Part 6-4: Generic standards - Emission
standard for industrial environments

IEC 61000-3-2
EN 61000-3-2
VDE 0838-2
Electromagnetic compatibility (EMC) -
Part 3-2: Limits
- Limits for harmonic current emissions
(equipment input current ≤ 16 A per
phase)

IEC/CISPR 11
EN 55011
VDE 0875-11
Industrial scientific and medical (ISM)
radiofrequency
equipment - Electromagnetic distur-
bance characteristics -
Limits and methods of measurement

IEC/CISPR 22
EN 55022
VDE 0878-22
Information technology equipment -
Radio
disturbance characteristics
- Limits and methods of measurement

IEC/CISPR 24
EN 55024
VDE 0878-24
Information technology equipment
- Immunity characteristics
- Limits and methods of measurement

IEC 61326-3-1
EN 61326-3-1
VDE 0843-20-3-1
Electrical equipment for measurement,
control and laboratory use - EMC re-
quirements - Part 3-1: Immunity require-
ments for safety-related systems and for
equipment intended to perform safety-
related functions (functional safety) -
General industrial applications

PLC & PC control

IEC 61131-1
EN 61131-1
Programmable controllers - Part 1: General information

IEC 61131-2
EN 61131-2
VDE 0411-500
Programmable controllers - Part 2: Equipment requirements and tests

IEC 61131-3
EN 61131-3
Programmable controllers - Part 3: Programming languages

Relay

IEC 61810-1
EN 61810-1
VDE 0435-201
Electromechanical elementary relays - Part 1: General requirements

IEC 61810-2
EN 61810-2
VDE 0435-120
Electromechanical elementary relays - Part 2: Reliability

IEC 61810-5
EN 50205
VDE 0435-2022
Electromechanical non-specified time all-or-nothing relays - Part 5: Insulation coordination

IEC 60255-5
EN 60255-5
VDE 0435-130
Electrical relays - Part 5: Insulation coordination for measuring relays and protection equipment - Requirements and tests

UL Directives

UL 1059; ANSI 1059
Terminal blocks

UL 486E
Equipment wiring terminals for use with aluminum and/or copper conductors

UL 508
Industrial control equipment

ANSI/ISA12.12.01
Non-incendive electrical equipment for use in Class I and Class II, Division 2 and Class III, Divisions 1 and 2 hazardous (classified) locations

Ship Classifications

ABS (American Bureau of Shipping)
Steel Vessels
Part 4: Vessel Systems and Machinery

BV (Bureau Veritas)
Rules for the classification of steel ships and offshore units

DNV (Det Norsk Veritas)
Det Norsk Veritas' Rules for Classification of Ships, High Speed & Light Craft and Det Norsk Veritas' Offshore Standards: 2007

GL (Germanischer Lloyd)
Rules for Classification and Construction VI Additional Rules and Guidelines 7 Guidelines for the Performance of Type Test
2 Test Requirements for Electrical/Electronic Devices and Systems

LR (Lloyds Register)
Type Approval System
Test Specification Number 1

RINA (Registro Italiano Navale)
Rules for the classification of ships
Part C – Machinery, systems and fire protection Ch.3, Sect.6, Table 1

BSH (Federal Maritime and Hydrographic Agency)
Certificate on measurement of safe distance
to the standard magnetic and steering magnetic compass in accordance with ISO
R 695 and DIN EN 60945 Section 11.2

KR (Korean Register of Shipping)
List of approved Manufacturers And Type Approval Equipment; Pt.6, Ch.1, Sec.3 of the Rules for Classification, Steel Ships

NKK (Nippon Kaiji Kyokai)
Guidance for the approval and type approval of materials and equipment for marine use

PRS (Polski Rejestr Statkow)
Publication No.11/P
Environmental Tests on Marine Equipment

Electrical Engineering Laboratory: Product Safety for Our Customers

The WAGO laboratory in Minden is an "accredited test lab for electrical and mechanical tests on terminal blocks and connectors, as well as for environment simulations."

Accreditation, as ISO/IEC 17011:2004 defines, is a third party-attestation related to a conformity assessment body conveying formal demonstration of its competence to carry out specific conformity assessment tasks.

Accreditation, according to DIN EN ISO/IEC 17025, is granted by the Deutsche Akkreditierungsstelle GmbH DAkkS (German Accreditation Office GmbH DAkkS). This national accreditation office, which was established by the German Federal Ministry for Economics and Technology (BMWi), certifies that our test laboratory is officially recognized as possessing the necessary expertise to conduct defined tests and types of tests independently and objectively.

Through obtaining the accreditation, the following objectives were achieved:

- Customer requirements
- Workflow optimization
- Clearly defined processes
- Clear organization and structure
- Greater transparency
- Consistent, high-quality laboratory testing
- Maximum traceability
- Traceable measurement results
- Sustainable quality awareness

Visitor center



High-voltage test



Vibration- and shock-resistance testing



Conductor retention force
testing



Deutsche Akkreditierungsstelle GmbH

Beliehene gemäß § 8 Absatz 1 AkkStelleG i.V.m. § 1 Absatz 1 AkkStelleGBV
Unterzeichnerin der Multilateralen Abkommen
von EA, ILAC und IAF zur gegenseitigen Anerkennung

Akkreditierung



Die Deutsche Akkreditierungsstelle GmbH bestätigt hiermit, dass das Prüflaboratorium

WAGO Kontakttechnik GmbH & Co. KG
Hansastraße 27, 32423 Minden

die Kompetenz nach DIN EN ISO/IEC 17025:2005 besitzt, Prüfungen in folgenden Bereichen durchzuführen:

**Elektrische und mechanische Prüfungen an Klemmen und Steckverbinder
sowie Umweltsimulation**

Die Akkreditierungsurkunde gilt nur in Verbindung mit dem Bescheid vom 18.12.2014 mit der Akkreditierungsnummer D-PL-19704-01 und ist gültig bis 17.12.2019. Sie besteht aus diesem Deckblatt, der Rückseite des Deckblatts und der folgenden Anlage mit insgesamt 5 Seiten.

Registrierungsnummer der Urkunde: **D-PL-19704-01-00**

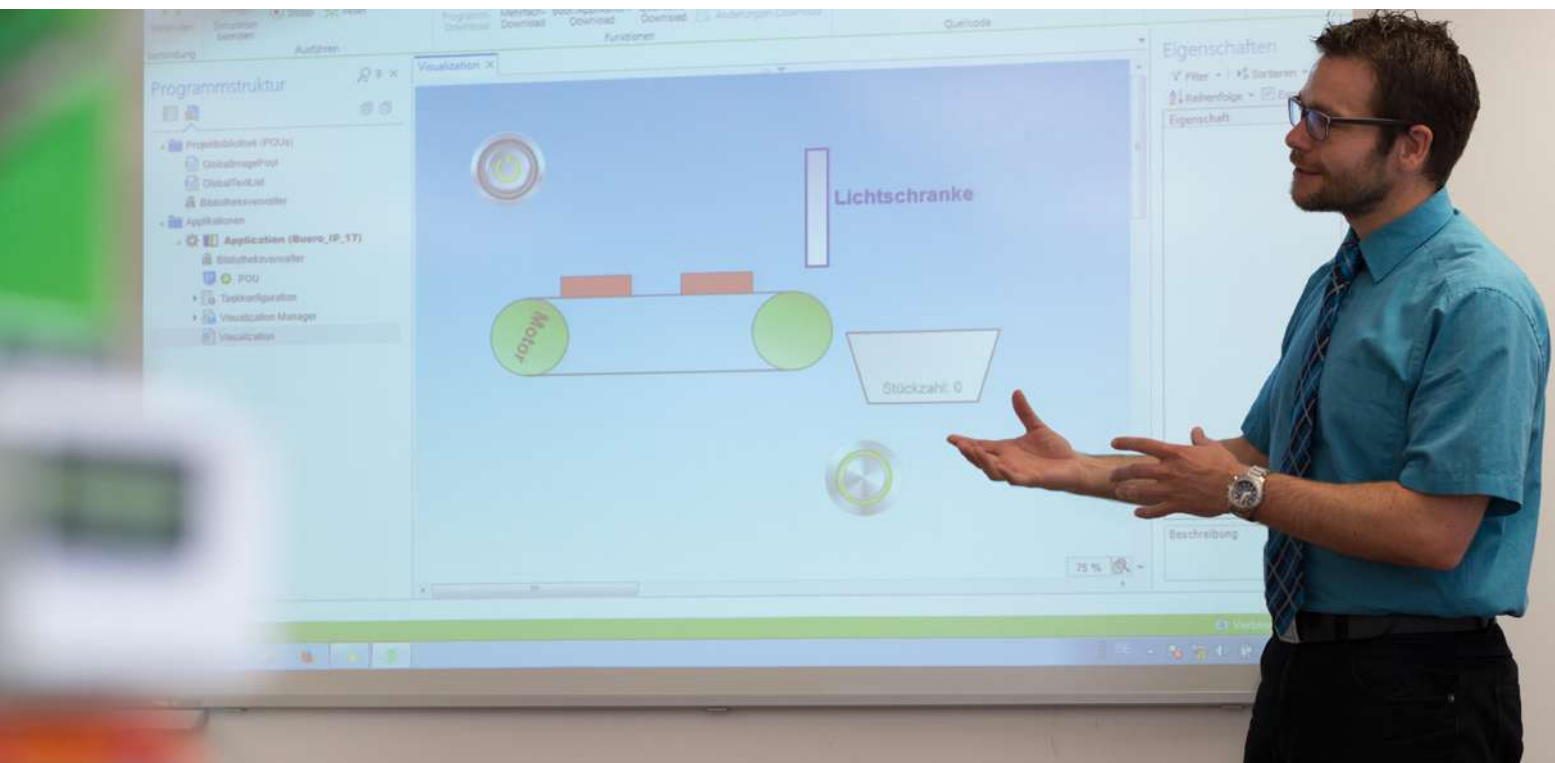
Frankfurt am Main, 18.12.2014

Siehe Hinweise auf der Rückseite


Im Auftrag Dipl.-Ing. (FH) Ralf Egner
Abteilungsleiter

WAGO Seminars

Learn Today. Benefit Tomorrow



Setting the Bar with Your Goals

Product-related and customer-specific training seminars



Small Groups

No question goes unanswered and no one is overlooked in WAGO training courses made up of small groups.



Teamwork

Learning is effective in a group. Ideas can be discussed and exchanged while experiences can be shared – all for the benefit of the participants.



Practical Topics

Experience has shown that – practice makes perfect. The focus of every WAGO training seminar is on practical, hands-on learning.

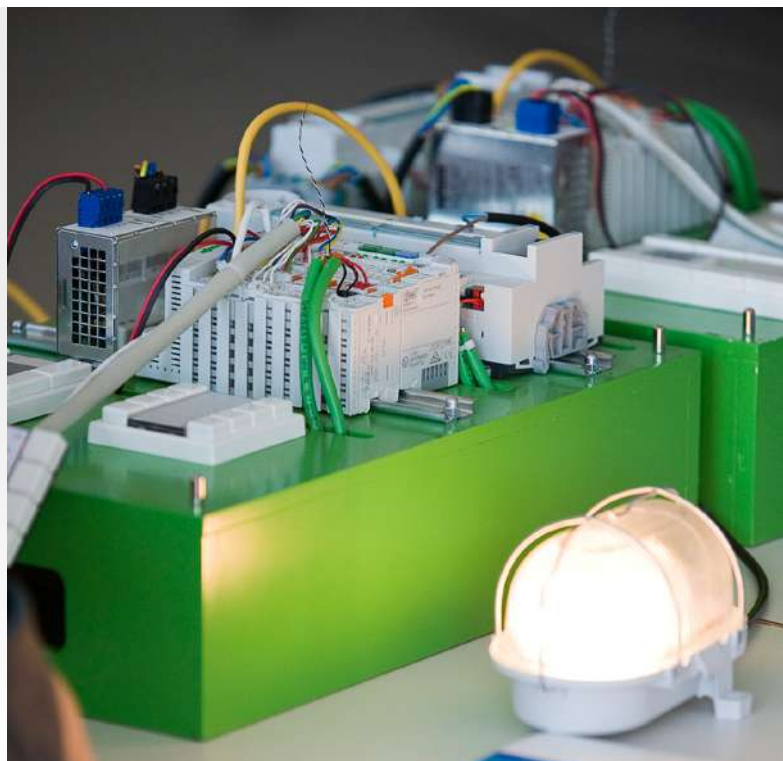
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Your instructor is a specialist and knows all the ins and outs of the topic. No time is therefore wasted. Each WAGO training seminar ensures that every minute spent is an effective investment of your expertise.

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training@wago.com

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WAGO Company.**



Product-Related Seminars

We regularly offer product-related training courses on the following:

- Building and industrial automation
- Programming of automation components
- Fieldbus systems

Current seminars at:

www.wago.com

Customer-Specific Training Seminars

In addition to these "open" seminars, we also offer customer-specific courses as company seminars to address your company's particular needs.

Upon request, we can also conduct these courses at your location.

**Special
company seminars**

12



Indexes and Addresses

Indexes and Addresses
Contents

	Page
Product Index	542
Item Number Index	544
WAGO Worldwide	550

Product Index

Term	Section	Term	Section	Term	Section
A		ETHERNET connector	11	Operating tools	11
Actuator cables	11	ETHERNET fieldbus components	2, 3, 4.1, 5, 6	P	
Aluminum system housing	11	ETHERNET, PROFINET cable	6	Parameterizing software	1
Analog input modules	4.4, 4.9, 5, 6	Extended input voltage and		PCB data	3, 4.1, 6
Analog output modules	4.5, 4.9, 5, 6	F		Peak-time counter	4.6
Antenna (SMA plug)	9	Fail-safe digital input	4.8	PERSPECTO®	2
Approvals	12	Fail-safe digital input and relay output	4.8	PFC100	3
AS-Interface master	4.7	Fail-safe digital input/output	4.8	PFC200	3
B		Fault detection, monitoring	9	Placeholder module	4.10
Backup capacitor module	11	Field side power supply filter module	4.10, 5	Pluggable compensation connector	6
BACnet configurator	1	Fieldbus components	2 ... 6	Pluggable connector	4
BACnet MS/TP	3.3	Fieldbus connectors	11	Plug-ins	1
BACnet/IP	3.3	Fieldbus controller	3	Polyester system housing	11
Binary placeholder module	4.10	Fieldbus couplers	4.1, 5, 6	Position monitoring	9
Bluetooth® adapter	8	Field-side connection module	4.10, 5, 6	Power cable	6
Bluetooth® ETHERNET gateway	8	Filter module for field-side power supply	4.10, 5	Power supplies	11
Bluetooth® RF transceiver	4.7, 8	Flange plates	11	Power supply filter	4.10, 5
Building automation	1, 4.7, 11	Frequency counter	4.6	Power supply units	11
Bus end module	4.10, 5	Function and technology modules	4.6, 4.9, 6	PROFIBUS cable	6
Bus extension	4.10	Function blocks for building automation	1	PROFIBUS fieldbus components	3, 4.1, 6, 11
Busbar carriers	11	Functional safety	4.8	PROFINET connector	11
C		Fuse holder	4.10	PROFINET I/O	4.1, 6
Cable assemblies	6, 11	G		PROFIsafe, safety modules	4.8
Cable cutter	11	Germany and overseas	13	Programmable fieldbus controllers	3
Cable entry plates	11	Group marker carriers	11	Programming and	
Cable strippers	11	H		Proportional valve module	4.6
Cables and connectors	6, 11	HART® Protokoll	4.4, 4.9	Proximity switch	4.2
Cables, pre-assembled	6, 11	HTL incremental encoder/counter	6	proximity switch	4.2, 4.9
CAGE CLAMP® connection	0	I		Pt100 analog input module	4.4, 4.9, 5, 6
CAN gateway	4.7	I/O modules for severe conditions	6	Pulse extension	4.2
CANopen/DeviceNet cable	6	I/O systems	4, 5, 6	Pulse width outputs	4.6
CANopen® Fieldbus components	2 ... 6, 11	IEC 60870 / IEC 61850 configurator	1	Push-in CAGE CLAMP® connection	0
Capacitive buffer modules	11	IEC/EN regulations	12	R	
Carrier rail adapter	11	IEC/EN specifications	12	Radio adapter	11
Carrier rails	11	Incremental encoder interface	4.6	Radio technology Bluetooth®	4.7, 8
CC-Link	4.1	Industrial managed switches	7	Radio transmitter	8
CC-Link fieldbus connector	11	Industrial switches	7	Rail end cap for DIN35 rail	11
CE marking	12	INTERBUS fieldbus components	3.3, 4.1, 11	Real-time clock module	4.6
Commissioning software	1	Interface adapters	11	Redundancy module	11
Communication modules	4.7, 5, 6	Interface cables	11	Relay output	4.3
Companies and representatives		Interface modules for system wiring	11	Resistance measurement	4.4, 4.9, 5, 6
Condition monitoring	4.6	Interference-free for use in safety functions	4.3, 6	Resistance sensors	4.4, 4.9, 5, 6
Configurable shielded connectors	6	Internal data bus extension	4.10	Resistive temperature device (RTD)	
Configuration files	1	Intrinsically Safe Ex i modules	4.9	input module	4.4, 4.9, 5, 6
Configuration software	1	Intrinsically safe modules	4.9	Resistor bridges (strain gauge)	4.4
Connection cables	6, 10, 11	Intruder detection	4.2	Ribbon cable	4.2, 4.3, 11
Connector, pluggable	4	IO-Link master	4.7	RJ-45 connectors	11
Control panel	2	Item Number Index	13	Rogowski coils	4.4, 5
Controller	3	K		RS-232 C serial interface	4.7, 5
Crimping tools	11	KNX/EIB/TP1 interface	4.7	RS-232 communication cable	1
D		KNX/IP	3.3	RS-232 serial interface	4.7
DALI configurator	1	L		RS-232/422/485 serial interface	6
DALI power supply	11	Libraries	1	RS-232/485 serial interface	4.7
DALI/DSI master	4.7	Lighting control DALI/DSI	4.7	RS-485 serial interface	4.7
DALI-Multi-sensor	11	Linux® controller	3	RTC module	4.6
DC Drive controller	4.6	LON® configurator	4.7	Runtime software	1
DC/DC converters, rail mounted	11	LON-FTT interface		S	
DeviceNet fieldbus components	3, 4.1, 6, 11	M		Screwdriver see operating tool	11
Differential input	4.4, 4.9, 5	Magnetic antenna	9	Segment modules	4.10
Differential measurement input	4.4, 4.9, 5	Marker carriers	11	Sensor/actuator boxes	10
Digital impulse interface	4.6	Marking cards	11	Sensor/actuator cable	11
Digital input modules	4.2, 4.8, 4.9, 5, 6	Marking systems for varying terminal		sercos	4.1, 6
Digital input/output	4.2, 4.3, 6	block widths	11	sercos cable	6
Digital output modules	4.3, 4.8, 4.9, 5, 6	Memory card	2	Serial data exchange interface	4.7
Distance module	4.10, 5	Mini-WSB quick marking system	11	Serial interface	4.7, 5, 6
Distribution cables (sensor/actuator)	11	Mobile software	1	Serial TTY interface	4.7
Down counter	4.6	MODBUS fieldbus components	3, 4.1, 5, 6	Servo stepper controller	4.6
E		Modular I/O system		SFP modules	7
e!COCKPIT	1	Mounting sets	2	Sheet-steel system housing	11
EC directives	12	MOVLINK® RS-232/485 serial interface	6	Shield clamping saddles	11
EDS files	3, 4.1, 5, 6	Multi-port device taps for DeviceNet	11	Shield clamps	11
Electronic circuit breakers	11	N		Shield connecting system	11
Enclosures for the WAGO-I/O-SYSTEM	11	NAMUR	4.2, 4.9	Shield termination	11
End stops	11	O		Single-ended	4.4, 4.9, 5
Engineering software	1	Operating temperature range	5	Software solutions	1
EnOcean button	8			Solid-state	4.3
EnOcean radio receiver module	4.7, 8			SPEEDWAY	6
EnOcean radio technology	8			Spring-equipped shield clamping saddles	11
EtherCAT	4.1			SSI absolute encoder	4.6, 6
				Stainless-steel system housing	11
				Stepper controllers	4.6

Term	Section	Term	Section	Term	Section
Stepper module	4.6				
Stripping tools	11				
Subsidiaries and representatives	13				
Supply and segment modules	4.10, 5				
Supply modules	4.10, 5, 6				
Switched-mode power supplies	11				
System bus cable	6				
System bus cable for drag chain	6				
System housing	11				
System power supply	4.10, 5				
System wiring	11				
T					
3-phase power measurement	4.4, 5				
Technical information	12				
Technical support	12				
Telecontrol gateway	1				
Telecontrol technology	3, 4.1, 5, 9				
Telecontroller	3				
Test and measurement devices	11				
Thermistor (connection of)	4.2				
Thermocouple	4.4, 4.9, 5, 6				
Thermocouple	4.4, 4.9, 5, 6				
Tools	11				
TO-PASS®	9				
TO-PASS® web portal	1				
Torque wrench	6				
Touch monitor	2				
Training courses and seminars	12				
TTL incremental encoder	6				
TTY interface	4.7				
U					
Uninterruptible power supplies (UPS)	11				
Up/down counters	4.6				
USB communication cable	11				
USB communication cable RS-232	1, 11				
V					
Vibration velocity / bearing condition monitoring	4.6				
W					
WAGO in Germany	13				
WAGO interface cables	11				
WAGO ribbon cables	11				
WAGO SPEEDWAY	6				
WAGO WebVisu app	1				
WAGO worldwide	13				
WAGO-I/O-CHECK	1				
WAGO-I/O-PRO	1				
WAGO-I/O-SYSTEM 750	4				
Web panels	2				
Wire strippers	11				
WLAN	8				
WLAN ETHERNET gateway	8				
WMB Inline markers	11				
WMB multi marking system	11				
WSB quick marking system	11				
X					
XTR	3, 5				

Item Number Index

Item No.	Page	Item No.	Page	Item No.	Page	Item No.	Page
206 Series		247-530	502	706-7753/301-200	451	750-422	140
		247-531	502	706-7753/302-100	450	750-423	141
206-118	509	247-532	502	706-7753/302-200	450	750-424	139
206-124	508	247-533	502	706-7753/304-xxx	449	750-425	138
206-125	508	247-534	502	706-7753/306-xxx	449	750-427	145
206-126	508	247-535	502			750-427/040-000	303
206-127	508	247-536	502	709 Series		750-428	142
206-128	508	247-537	502			750-429/040-001	302
206-170	507	247-538	502	709-178	503	750-430	126
206-171	507	247-539	502			750-430/025-000	126
206-173	507	247-540	502	709-350	494	750-431	131
206-174	507	247-541	502	709-352	494	750-432	125
206-204	509	247-542	502			750-433	130
206-216	509	247-543	502	750 Series		750-435	259
206-701	375	247-544	502			750-436	133
206-706	510	247-544/000-006	502	750-100	501	750-437	136
206-707	510	247-545	502	750-103	503	750-438	259
206-804	511	247-545/000-005	502	750-105	503	750-439	260
206-808	510	247-546	502	750-106	503	750-450	193
206-810	511	247-546/000-006	502	750-107	503	750-451	193
206-816	511	247-547	502			750-452	172
209-106	505	247-552	502	750-303	107	750-452/000-200	172
209-109	505	247-552/000-017	502	750-304	116	750-453	174
				750-306	111	750-453/040-000	306
210 Series		248 Series		750-307	112	750-454	175
210-110	357	248-501	501	750-310	118	750-454/000-003	175
210-112	504	248-501/000-002	501	750-315/300-000	115	750-454/000-200	175
210-113	504	248-501/000-005	501	750-316/300-000	115	750-454/025-000	175
210-114	505	248-501/000-006	501	750-331	108	750-455	180
210-115	504	248-501/000-007	501	750-333	107	750-455/020-000	180
210-118	505	248-501/000-012	501	750-333/025-000	107	750-455/025-000	180
210-133	495	248-501/000-017	501	750-333/040-000	298	750-455/040-000	306
210-148	504	248-501/000-023	501	750-334	116	750-456	183
210-149	504	248-501/000-024	501	750-337	112	750-456/000-200	183
210-196	504	248-578	502	750-337/025-00	112	750-457	184
210-197	505	248-578/000-017	502	750-338	113	750-457/025-000	184
210-198	504			750-338/040-000	300	750-457/040-000	307
		249 Series		750-342	109	750-458	195
210-504	504			750-343	108	750-459	187
210-505	504	249-116	505	750-344	117	750-461	190
210-506	505	249-117	505	750-345	117	750-461/000-002	191
210-508	505	249-197	505	750-346	111	750-461/000-003	191
				750-347	113	750-461/000-004	191
210-647	506			750-348	113	750-461/000-005	191
210-648	506			750-351	114	750-461/000-007	191
		288 Series		750-352	109	750-461/000-009	191
210-719	506	288-824	447	750-352/000-001	109	750-461/000-200	190
210-720	506	288-895	447	750-352/040-000	299	750-461/003-000	190
210-721	506			750-354	110	750-461/020-000	191
210-722	506			750-354/000-001	110	750-461/025-000	190
		289 Series		750-375	106	750-463	192
247 Series		289-611	448	750-375/025-000	106	750-464	192
247-506	502	289-614	448	750-377	106	750-464/020-000	193
247-506/000-006	502			750-377/025-000	106	750-464/040-000	307
247-507	502	704 Series				750-465	172
247-507/000-006	502	704-2003	448	750-400	123	750-465/025-000	172
247-508	502	704-2004	448	750-400/025-000	123	750-466	176
247-508/000-005	502	704-2024	448	750-401	129	750-466/000-003	176
247-509	502	704-2044	448	750-402	124	750-466/000-200	177
247-509/000-005	502	704-2054	448	750-402/025-000	124	750-466/025-000	176
247-510	502			750-403	129	750-467	185
247-511	502			750-404	212	750-467/000-200	185
247-512	502	704-5003	448	750-404/000-001	212	750-468	186
247-512	502	704-5004	448	750-404/000-002	212	750-468/000-200	186
247-513	502	704-5013	448	750-404/000-003	213	750-468/025-000	186
247-514	502	704-5014	448	750-404/000-004	212	750-468/040-000	307
247-515	502	704-5024	448	750-404/000-005	213	750-469	194
247-516	502	704-5034	448	750-405	146	750-469/000-001	195
247-517	502	704-5044	448	750-406	146	750-469/000-002	195
247-518	502	704-5054	448	750-407	145	750-469/000-003	195
247-519	502	704-5064	448	750-407/040-000	303	750-469/000-006	195
247-520	502	704-5074	448	750-408	132	750-469/000-008	195
247-521	502			750-408/025-000	132	750-469/000-012	195
247-522	502			750-409	135	750-469/000-200	194
247-523	502	706 Series		750-410	137	750-469/003-000	194
247-524	502	706-3057/300-100	450	750-411	137	750-469/040-000	308
247-525	502	706-3057/300-200	450	750-412	143	750-470	173
247-526	502	706-3057/300-300	450	750-412/000-001	143	750-470/005-000	173
247-527	502			750-414	122	750-472	173
247-528	502			750-415	141	750-472/000-200	173
247-529	502	706-7753/300-100	451	750-418	123	750-472/005-000	173
				750-421	124	750-473	177

Item No.	Page	Item No.	Page	Item No.	Page	Item No.	Page
750-473/005-000	177	750-550/000-200	206	750-637	218	750-920	465
750-474	178	750-552	202	750-637/000-001	219	750-921	464
750-474/000-200	178	750-552/000-200	202	750-637/000-002	219	750-923	465
750-474/005-000	178	750-552/025-000	202	750-637/000-003	219	750-923/000-001	465
750-475	182	750-553	203	750-637/000-004	219	750-925	222
750-475/020-000	182	750-554	204	750-638	213	750-960	472
750-476	184	750-554/000-200	204	750-638/025-000	213	750-961	475
750-476/000-200	184	750-554/025-000	204	750-640	221	750-962	475
750-477	189	750-555	205	750-642	239	750-963	474
750-478	185	750-556	208	750-643	243	750-965	476
750-478/005-000	185	750-556/000-200	208	750-644	238	750-971	473
750-479	183	750-557	208	750-645	222	750-972	473
750-479/000-001	183	750-557/040-000	311	750-650	232	750-975	466
750-480	174	750-559	207	750-650/000-001	232	750-976	470
750-481/003-000	266	750-559/025-000	207	750-650/000-002	232	750-977/000-011	466
750-482	179	750-559/040-000	311	750-650/000-006	232	750-977/000-012	468
750-482/025-000	179	750-560	206	750-650/000-010	233	750-977/000-013	470
750-482/000-300	179	750-562	209	750-650/000-011	233	750-977/000-021	466
750-483	189	750-563	205	750-650/000-012	233	750-977/000-022	468
750-484	265	750-563/040-000	310	750-650/000-015	233	750-978/000-011	467
750-485	264	750-585	267	750-650/003-000	233	750-978/000-012	468
750-486	264	750-586	267	750-651	237	750-978/000-013	471
750-487/003-000	266	750-597	209	750-651/000-002	237	750-978/000-021	467
750-491	196			750-652	236	750-978/000-022	468
750-491/000-001	196	750-600	288	750-652/025-000	236	750-979/000-011	467
750-492	179	750-600/025-000	288	750-652/040-000	312	750-979/000-012	469
750-492/040-001	308	750-600/040-000	317	750-653	234	750-979/000-013	471
750-493	197	750-601	273	750-653/000-001	234	750-979/000-021	467
750-493/000-001	197	750-602	272	750-653/000-002	234	750-979/000-022	469
750-493/025-000	197	750-602/025-000	272	750-653/000-006	235		
750-494	198	750-602/040-000	313	750-653/000-007	235	750-1400	127
750-494/000-001	198	750-603	280	750-653/003-000	235	750-1402	134
750-494/025-000	198	750-604	280	750-653/025-000	235	750-1405	127
750-494/025-001	198	750-606	258	750-653/025-018	234	750-1405/040-000	302
750-495	199	750-609	277	750-654	247	750-1406	131
750-495/000-001	199	750-610	273	750-655	244	750-1407	134
750-495/000-002	199	750-611	277	750-657	245	750-1415	126
750-495/040-000	309	750-612	275	750-658	246	750-1415/040-000	301
750-495/040-001	309	750-612/040-000	313	750-660/000-001	250	750-1416	131
750-495/040-002	309	750-613	274	750-661/000-003	251	750-1416/040-000	301
750-496	181	750-613/040-000	314	750-662/000-003	251	750-1417	133
750-497	188	750-614	279	750-663/000-003	255	750-1418	136
		750-615	277	750-665/000-001	250	750-1420	125
750-501	153	750-616	287	750-666/000-003	252	750-1421	130
750-501/000-800	153	750-616/030-000	287	750-667/000-003	253	750-1422	132
750-502	154	750-616/040-000	317	750-669/000-003	254	750-1423	135
750-502/000-800	154	750-617	276	750-670	223	750-1425	148
750-504	156	750-621	287	750-671	224		
750-504/000-800	156	750-622	285	750-672	225	750-1500	162
750-504/025-000	156	750-623	272	750-673	226	750-1501	163
750-504/025-800	156	750-624	282			750-1502	161
750-506	155	750-624/000-001	282	750-804	85	750-1504	162
750-506/000-800	155	750-624/020-000	282	750-806	81	750-1505	163
750-508	155	750-624/020-001	282	750-815/300-000	82	750-1506	161
750-508/000-800	155	750-624/040-001	315	750-815/325-000	82	750-1515	160
750-508/040-000	304	750-625/000-001	258	750-816/300-000	82	750-1515/040-000	304
750-509	164	750-626	283	750-829	79	750-1516	160
750-511	214	750-626/020-000	283	750-831	78		
750-511/000-001	214	750-626/025-000	283	750-831/000-002	78	750-1605	281
750-511/000-002	214	750-626/025-001	283	750-833	83	750-1605/040-000	316
750-512	167	750-626/040-000	315	750-833/025-000	83	750-1606	281
750-513	167	750-627	284	750-837	84	750-1606/040-000	316
750-513/000-001	167	750-628	284	750-837/020-000	84	750-1607	281
750-514	166	750-630	215	750-837/021-000	84		
750-515	168	750-630/000-001	216	750-838	84	750-8100	54
750-516	158	750-630/000-002	217	750-838/020-000	84	750-8101	55
750-517	166	750-630/000-004	215	750-838/021-000	84	750-8101/025-000	55
750-517/040-000	305	750-630/000-005	215	750-838/040-000	93	750-8102	55
750-519	152	750-630/000-006	216	750-842	80	750-8102/025-000	55
750-522	165	750-630/000-008	216	750-843	80		
750-523	169	750-630/000-009	217	750-852	76	750-8202	56
750-530	159	750-630/000-011	216	750-880	74	750-8202/025-000	56
750-530/025-000	159	750-630/000-012	216	750-880/025-000	74	750-8202/025-001	56
750-531	157	750-630/000-013	216	750-880/025-001	74	750-8202/025-002	56
750-531/000-800	157	750-630/003-000	215	750-880/025-002	74	750-8202/040-000	66
750-532	158	750-631/000-004	218	750-880/040-000	92	750-8202/040-001	66
750-534	152	750-632	228	750-880/040-001	92	750-8203	57
750-535	262	750-633	268	750-881	75	750-8203/025-000	57
750-536	159	750-635	220	750-882	75	750-8204	57
750-537	159	750-636	227	750-885	75	750-8204/025-000	57
750-538	262	750-636/000-700	227	750-885/025-000	75	750-8206	57
750-539	263	750-636/000-800	227	750-889	77	750-8206/025-000	57
750-550	206	750-636/025-000	227			750-8206/025-001	57

Item No.	Page	Item No.	Page	Item No.	Page	Item No.	Page
756-3106/040-100	363	756-5311/090-050	455	756-8101	357	757-144	432
756-3106/040-200	363	756-5311/090-100	455	756-8102	357	757-145	434
		756-5312/030-015	454	756-8103	357	757-164	432
756-3201/120-050	441	756-5312/030-050	454	756-8104	357	757-165	434
756-3201/120-100	441	756-5312/030-100	454	756-8201	374	757-184	433
756-3201/120-150	441	756-5312/040-015	454	756-8301	357	757-185	435
756-3202/120-050	441	756-5312/040-050	454	756-8302	357	757-185/100-000	435
756-3202/120-100	441	756-5312/040-100	454				
756-3202/120-150	441	756-5312/050-015	454	756-9102/030-000	460	757-244/000-005	428
756-3203/190-050	441	756-5312/050-050	454	756-9105/030-000	460	757-244/000-010	428
756-3203/190-100	441	756-5312/050-100	454	756-9112/030-000	460	757-245/000-005	430
756-3203/190-150	441	756-5312/060-015	454	756-9115/030-000	460	757-245/000-010	430
756-3204/190-050	441	756-5312/060-050	454			757-264/000-005	428
756-3204/190-100	441	756-5312/060-100	454	756-9201/040-000	460	757-264/000-010	428
756-3204/190-150	441	756-5312/090-015	455	756-9201/050-000	460	757-265/000-005	430
756-3205/140-050	441	756-5312/090-050	455	756-9202/040-000	460	757-265/000-010	430
756-3205/140-100	441	756-5312/090-100	455	756-9202/050-000	460	757-284/000-005	429
756-3205/140-150	441			756-9203/040-000	371	757-284/000-010	429
756-3206/140-050	441	756-5401/030-010	458	756-9203/050-000	371	757-284/000-025	429
756-3206/140-100	441	756-5401/030-020	458	756-9204/040-000	460	757-285/000-005	431
756-3206/140-150	441	756-5401/040-010	458	756-9204/050-000	460	757-285/000-010	431
		756-5401/040-020	458	756-9205/040-000	460	757-285/000-025	431
756-4101/042-030	372	756-5401/050-010	458	756-9205/050-000	460		
		756-5401/050-020	458	756-9206/040-000	371	757-303	439
756-5101/030-015	453	756-5401/060-010	458	756-9206/050-000	371	757-343	438
756-5101/030-050	453	756-5401/060-020	458	756-9207/050-000	374	757-363	438
756-5101/030-100	453	756-5402/030-010	458	756-9207/060-000	370	757-383	439
756-5102/030-015	453	756-5402/030-020	458	756-9208/060-000	370		
756-5102/030-050	453	756-5402/040-010	458	756-9209/060-000	372	757-403/000-005	437
756-5102/030-100	453	756-5402/040-020	458	756-9210/060-000	370	757-403/000-010	437
756-5111/030-015	454	756-5402/050-010	458	756-9211/040-000	460	757-443/000-002	436
756-5111/030-050	454	756-5402/050-020	458	756-9211/060-000	370	757-443/000-005	436
756-5111/030-100	454	756-5402/060-010	458	756-9211/090-000	370	757-443/000-010	436
756-5112/030-015	454	756-5402/060-020	458	756-9212/040-000	460	757-463/000-005	436
756-5112/030-050	454	756-5403/030-010	458	756-9212/050-000	460	757-463/000-010	436
756-5112/030-100	454	756-5403/030-020	458	756-9213/040-000	371	757-483/000-005	437
		756-5403/040-010	458	756-9213/050-000	371	757-483/000-010	437
756-5201/030-010	456	756-5403/040-020	458	756-9214/040-000	460		
756-5201/030-020	456	756-5403/050-010	458	756-9214/090-000	370	757-801	398
756-5202/030-010	456	756-5403/050-020	458	756-9215/040-000	460		
756-5202/030-020	456	756-5403/060-010	458	756-9215/050-000	460	757-901/000-050	357
756-5203/030-010	456	756-5403/060-020	458	756-9216/040-000	371		
756-5203/030-020	456	756-5404/030-010	458	756-9216/050-000	371	758 Series	
756-5204/030-010	456	756-5404/030-020	458	756-9217/050-000	373		
756-5204/030-020	456	756-5404/040-010	458	756-9218/050-000	374	758-879/000-000	44
		756-5404/040-020	458			758-879/000-001	44
756-5301/030-015	453	756-5404/050-010	458	756-9301/040-000	459	758-879/000-100	45
756-5301/030-050	453	756-5404/050-020	458	756-9301/050-000	459	758-879/000-101	45
756-5301/030-100	453	756-5404/060-010	458	756-9303/050-000	372	758-879/000-300	45
756-5301/040-015	453	756-5404/060-020	458			758-879/000-301	45
756-5301/040-050	453			756-9401/060-000	370	758-879/000-302	45
756-5301/040-100	453	756-5501/030-010	457	756-9402/060-000	370	758-879/000-303	45
756-5301/050-015	453	756-5501/030-020	457	756-9403/060-000	370	758-879/000-304	45
756-5301/050-050	453	756-5502/030-010	457	756-9404/060-000	370	758-879/000-3102	44
756-5301/050-100	453	756-5502/030-020	457	756-9405/060-000	372		
756-5301/060-015	453	756-5503/030-010	457	756-9406/050-000	373	758-910	405
756-5301/060-050	453	756-5503/030-020	457	756-9409/060-000	372	758-912	405
756-5301/060-100	453	756-5504/030-010	457	756-9411/060-000	370	758-915	397
756-5302/030-015	453	756-5504/030-020	457	756-9412/060-000	370	758-916	401
756-5302/030-050	453	756-5507/030-010	456	756-9413/060-000	370	758-917	401
756-5302/030-100	453	756-5507/030-020	456	756-9414/060-000	370	758-940/001-000	404
756-5302/040-015	453	756-5507/040-010	456			758-940/002-000	404
756-5302/040-050	453	756-5507/040-020	456	756-9501/040-000	370	758-940/002-000	404
756-5302/040-100	453	756-5508/030-010	456	756-9501/060-000	370	758-940/003-000	404
756-5302/050-015	453	756-5508/030-020	456	756-9503/040-000	373	758-940/004-000	404
756-5302/050-050	453	756-5508/040-010	456	756-9504/040-000	373	758-961	420
756-5302/050-100	453	756-5508/040-020	456	756-9601/060-000	374	758-962	420
756-5302/060-015	453	756-5509/030-010	457	756-9602/060-000	374	758-963	420
756-5302/060-050	453	756-5509/030-020	457	756-9603/060-000	374	758-964	421
756-5302/060-100	453	756-5509/040-010	457	756-9604/060-000	374	758-965	420
756-5311/030-015	454	756-5509/040-020	457			758-966	420
756-5311/030-050	454	756-5510/030-010	457	757 Series		758-967	421
756-5311/030-100	454	756-5510/030-020	457			758-968	421
756-5311/040-015	454	756-5510/040-010	457	757-000	440	758-969	421
756-5311/040-050	454	756-5510/040-020	457	757-001	440	758-970/000-100	421
756-5311/040-100	454	756-5513/040-010	459	757-011	440	758-970/000-1000	421
756-5311/050-015	454	756-5513/040-020	459	757-011	440	758-970/000-300	421
756-5311/050-050	454	756-5514/040-010	459	757-040	440	758-970/000-500	421
756-5311/050-100	454	756-5514/040-020	459	757-041	440	758-971	421
756-5311/060-015	454	756-5516/040-010	459	757-060	440		
756-5311/060-050	454	756-5516/040-020	459	757-061	440		
756-5311/060-100	454	756-5517/040-010	459	757-080	440		
756-5311/090-015	455	756-5517/040-020	459	757-081	440		

Item Number Index

Item No.	Page	Item No.	Page	Item No.	Page	Item No.	Page
759 Series		767-1501	333	787-885	445	787-2802	445
759-200	29	767-3801	334	787-886	445	787-2803	445
759-200/000-002	29	767-3802	335	787-1001	445	787-2805	445
		767-3803	334	787-1002	445	787-2810	445
759-302	13	767-3804	335	787-1007	487	790 Series	
759-302/000-923	13	767-3805	336	787-1011	445	790-100	496
759-333	12	767-3806	337	787-1012	445	790-101	496
759-333/000-923	12			787-1014	445	790-108	492
759-911	12	767-4801	338	787-1014/072-000	445	790-113	495
759-920	13	767-4801/000-800	338	787-1017	445	790-114	495
759-930	14	767-4802	340	787-1020	445	790-115	495
		767-4802/000-800	340	787-1021	445	790-116	492
761 Series		767-4803	338	787-1022	445	790-124	492
		767-4803/000-800	338			790-133	495
761-110	414	767-4804	340	787-1102	445	790-134	495
761-111	414	767-4804/000-800	340	787-1112	445	790-140	492
761-112	415	767-4805	339	787-1122	445	790-144	495
761-113	415	767-4806	341			790-145	495
761-114	415	767-4807	342	787-1202	445	790-190	496
		767-4807/000-800	342	787-1212	445	790-191	496
761-210	416	767-4808	343	787-1216	445	790-192	496
761-214	417			787-1226	445	790-193	496
761-216	417	767-5201	351				
761-217	417	767-5202	352	787-1601	444	790-208	493
		767-5203	353	787-1602	444	790-216	493
		767-5204	354	787-1606	444	790-220	493
761-314	418			787-1611	444		
761-316	418	767-5401	347	787-1616	444		
				787-1616/000-1000	444	790-300	497
761-700	28	767-5801	344	787-1621	444	790-301	497
761-700/000-005	28	767-5801/000-800	344	787-1622	444	790-302	497
761-700/000-020	28	767-5802	345	787-1623	444	790-310	497
761-701	28	767-5802/000-800	345	787-1628	444	790-311	497
761-702	28	767-5803	346	787-1631	444	790-312	497
761-702/000-005	28	767-5803/000-800	346	787-1632	444	790-350/790-398	498
761-702/000-020	28			787-1633	444	790-352/790-398	498
761-703	28	767-6401	348	787-1634	444	790-360/790-398	498
761-703/000-005	28	767-6402	349	787-1635	444	790-362/790-398	498
761-703/000-020	28	767-6403	349	787-1638	444	790-398	498
761-704	28			787-1640	444		
		767-7401	350	787-1642	444	790-400	499
761-9005	30			787-1644	444		
761-9005	421	767-9101	355	787-1662	446	791 Series	
761-9009	419			787-1662/000-004	446	791-107	494
		787 Series		787-1662/000-054	446	791-111	494
762 Series		787-712	444	787-1662/000-100	446	791-117	494
762-3000	40	787-722	444	787-1662/000-200	446	791-124	494
762-3001	40	787-732	444	787-1662/000-250	446		
762-3002	41	787-734	444	787-1662/004-1000	446		
762-3003	41	787-736	444	787-1662/006-1000	446	793 Series	
762-3035/000-001	42	787-738	444	787-1662/106-000	446	793-501	500
762-3057/000-001	42	787-740	444	787-1662/212-1000	446	793-501/000-002	500
		787-742	444	787-1664	446	793-501/000-005	500
762-3104/000-001	43	787-742	444	787-1664/000-004	446	793-501/000-006	500
762-3121/000-001	43	787-783	445	787-1664/000-054	446	793-501/000-007	500
762-3150/000-001	43	787-785	445	787-1664/000-100	446	793-501/000-012	500
762-3150/000-003	43			787-1664/000-200	446	793-501/000-017	500
		787-818	444	787-1664/000-250	446	793-501/000-023	500
762-9001	45	787-819	444	787-1664/004-1000	446	793-501/000-024	500
		787-821	444	787-1664/006-1000	446		
767 Series		787-822	444	787-1664/006-1054	446		
		787-831	444	787-1664/106-000	446		
767-101	357	787-832	444	787-1664/212-1000	446	793-3501	500
767-102	357	787-833	444	787-1668	446		
767-103	357	787-834	444	787-1668/000-004	446	793-4501	500
767-104	357	787-835	444	787-1668/000-054	446	793-4501/000-002	500
767-111	356	787-840	444	787-1668/000-200	446	793-4501/000-005	500
		787-842	444	787-1668/000-250	446	793-4501/000-006	500
		787-844	444	787-1668/006-1000	446	793-4501/000-007	500
767-121	347	787-845	444	787-1668/006-1054	446	793-4501/000-012	500
767-122	356	787-847	444	787-1668/106-000	446	793-4501/000-014	500
767-123	356	787-850	444	787-1668/106-054	446	793-4501/000-017	500
767-124	356	787-852	444	787-1671	445	793-4501/000-023	500
767-125	356	787-854	444	787-1675	445	793-4501/000-024	500
767-126	356	787-870	445	787-1685	445		
		787-871	445			793-5501	500
767-1101	329	787-872	445	787-1702	444	793-5501/000-002	500
767-1201	328	787-873	445	787-1712	444	793-5501/000-005	500
767-1301	330	787-875	445	787-1722	444	793-5501/000-006	500
767-1311	331	787-876	445	787-1732	444	793-5501/000-007	500
767-1401	332	787-880	445			793-5501/000-012	500
		787-881	445	787-2801	445	793-5501/000-014	500

Item No.	Page	Item No.	Page	Item No.	Page	Item No.	Page
793-5501/000-017	500	857 Series					
793-5501/000-023	500						
793-5501/000-024	500						
810 Series		857-981	449				
810-900/000-001	488	857-982	449				
810-900/001-000	488	857-986	449				
810-900/002-000	488	2009 Series					
810-900/003-000	488	2009-110	503				
810-900/004-000	488	2009-114	500				
810-901/000-001	488	2009-115	500				
810-901/001-000	488	2009-145	501				
810-902/000-001	489	2759 Series					
810-902/000-002	489	2759-101/1110-2002	10				
850 Series		2759-101/1110-2005	10				
850-804	479	2759-101/1110-2010	10				
850-804/000-001	479	2759-101/1110-2015	10				
850-805	479	2759-101/1110-2020	10				
850-814/002-000	480	2759-101/1110-3000	10				
850-815/002-000	480	2759-101/1110-4000	10				
850-816/002-000	480	2851 Series					
850-817/002-000	480	2851-8201	486				
850-818/002-000	481	2851-8202	486				
850-818/002-001	481	2851-8301	484				
850-818/002-002	481	2851-8302	484				
850-818/002-003	481	2851-8303	484				
850-818/002-004	481						
850-818/002-005	481						
850-819/002-000	481						
850-819/002-001	481						
850-819/002-002	481						
850-819/002-003	481						
850-819/002-004	481						
850-819/002-005	481						
850-820/000-001	481						
850-820/000-002	481						
850-825	482						
850-826	482						
850-826/002-000	482						
850-827	482						
850-827/002-000	482						
850-828	482						
850-828/002-000	482						
850-834	483						
850-835	483						
850-836	483						
850-903	479						
850-904	480						
852 Series							
852-101	382						
852-102	382						
852-103	383						
852-1102	384						
852-111	386						
852-1111	387						
852-1112	387						
852-112	386						
852-201/040-002	388						
852-201/107-002	388						
852-201/107-030	388						
852-303	385						
852-1200	388						
852-1210	388						
852-1280	388						
852-1305	385						
852-9101	389						

WAGO Worldwide Companies and Representatives

Algeria
please contact WAGO France

Argentina
Bruno Schillig S.A.
Arenales 4030, B1604CFD
Florida, PBA
Phone +54 11 4730 1100
Fax +54 11 4761 7244
wago@schillig.com.ar

Austria
WAGO Kontakttechnik Ges.m.b.H.
Europaring F15 602
Campus 21
2345 Brunn am Gebirge
Phone +43 1 6150780
Fax +43 1 6150775
wago-at@wago.com

Azerbaijan
AZ Technics LTD
Zulfi V. Alizade
Y.Safarov str.33, AZ1025,
Baku
Republic of Azerbaijan
Phone +994 50 210 24 49
Fax +994 12 496 83 34
info@AZtechnics.az

Australia
WAGO Pty. Ltd.
2-4 Overseas Drive
Noble Park Victoria 3174
Phone +61 03 8791 6300
Fax +61 03 9701 0177
sales.anz@wago.com

Bangladesh
please contact WAGO India

Belarus
OOO FEK
pr-t Pushkina 29-B
220015 Minsk
Phone +375 17 2102189
Fax +375 17 2102189
wago@fek.by

UP ATAVA
ul. Denisovskaya, 47, office 1
220006 Minsk
Phone +375 17 2054015
Fax +375 17 2851759

Belgium
WAGO BeLux nv
Excelsiorlaan 11
1930 Zaventem
Phone +32 2 717 9090
Fax +32 2 717 9099
info-be@wago.com

Bolivia
ISOTEK S.R.L.
Zona Casco Viejo
Calle Isso #578, B/San Roque
Santa Cruz
Phone +591 721 000 27

Bosnia and Herzegovina
please contact WAGO Bulgaria

Brazil
WAGO Eletroeletrônicos Ltda
Rua Américo Simões 1470
São Roque da Chave
Itupeva SP Brasil 13295-000
Phone +55 11 4591 0199
Fax +55 11 4591 0190
info.br@wago.com

Bulgaria
WAGO Kontakttechnik GmbH & Co. KG/
Representative Office Sofia
Business Center Serdika
2E Akad. Ivan Geshov Blvd.
Building 1, Floor 4, Office 417
1330 Sofia
Phone +359 2 489 46 09/10
Fax +359 2 928 28 50
info-BG@wago.com

Canada
please contact WAGO USA

Chile
Desimat Chile
Av Puerto Vespuccio 9670
Pudahuel Santiago
Phone +56 2 747 0152
Fax +56 2 747 0153
ventaschile@desimat.cl

China
WAGO Electronic (Tianjin) Co., Ltd.
No.5, Quan Hui Road
Wuqing Development Area
Tianjin 301700
Phone +86 22 5967 7688
Fax +86 22 5961 7668
info-cn@wago.com

Colombia
T.H.L. Ltda.
Cra. 49 B # 91-33
Bogotá
Phone +57 1 621 85 50
Fax +57 1 621 60 28
ventas-thl@thl-ltda.com

Croatia
M.B.A. d.o.o.
Frana Supila 5
51211 Matulji
Phone +385 51 275-736
Fax +385 51 275-066
mba@ri.htnet.hr

MICROSTAR d.o.o.
Siget 18 b
10020 Zagreb
Phone +385 1 3647 849
Fax +385 1 3636 662
wago@microstar.hr

Czech Republic
WAGO Elektro spol. sr. o.
Rozvodova 1116/36
143 00 Praha 4 - Modřany
Phone +420 261 090 143
Fax +420 261 090 144
info.cz@wago.com
wago-cz@wago.com

Denmark
WAGO Denmark A/S
Lejrevej 17
3500 Værløse
Phone +45 44 357 777
info.dk@wago.com

Egypt
IBN Engineering Instrumentation & Control
71 a El Shaheed Ahmed Hamdi St.
King Faisal, Giza
Phone +20 2 721 4350
Fax +20 2 722 1709
sales@ibnengineering.com

Ecuador
ECUAINSETEC CIA LTDA
Yugoslavia N34-110 y Azuay
Quito
Phone +593 2 24 50 475
Fax +593 2 22 51 242
g.castro@ecuainsetec.com.ec

Estonia
Eltarko OÜ
Laki 14 - 502
10621 Tallinn
Phone +372 651 7731
Fax +372 651 7786
andres@eltarko.ee

Finland
WAGO Finland Oy
Vellamonkatu 30 B
00550 Helsinki
Phone +358 9 7744 060
Fax +358 9 7744 0660
tilaus@wago.fi

France
WAGO Contact SAS
Paris Nord 2
83 Rue des Chardonnerets
B.P. 55065 - Tremblay en France
95947 - ROISSY CDG CEDEX
Phone +33 1 4817 2590
Fax +33 1 4863 2520
info-fr@wago.com

Germany
WAGO Kontakttechnik GmbH & Co. KG
Postfach 28 80, 32385 Minden
Hansastraße 27
32423 Minden
Phone +49 571 887-0
Fax +49 571 887-844169
info@wago.com

Germany
WAGO Kontakttechnik GmbH & Co. KG
Waldstraße 1
99706 Sondershausen
Phone +49 3632 659-0
Fax +49 3632 659-100
info@wago.com

Great Britain
WAGO Limited
Triton Park, Swift Valley Industrial Estate
RUGBY
Warwickshire, CV21 1SG
Phone +44 1788 568 008
Fax +44 1788 568 050
uksales@wago.com

Greece
PANAGIOTIS SP. DIMOULAS
DIMOULAS AUTOMATIONS
Kritis Str. 26
10439 Athens
Phone +30 210 883 3337
Fax +30 210 883 4436
wago.info@dimoulas.com.gr

Honduras
CILASAS S.A. de C.V.
Barrio Los Andes
7 Calle entre 14 y 15 Ave. N.O.
P.O. Box. 1061
San Pedro Sula
Phone +504 2557 1146/7
Fax +504 2557 1149

Hong Kong
National Concord Eng., Ltd.
Unit A-B, 5/F.
Southeast Industrial Building
611-619 Castle Peak Road
Tsuen Wan, N.T.
Phone +852 2429 2611
Fax +852 2429 2164
sales@nce.com.hk

Hungary
WAGO Hungária KFT
Ipari Park, Gyár u. 2
2040 Budapest
Phone +36 23 502-170
Fax +36 23 502-166
info.hu@wago.com

Iceland
S. Gudjonsson ehf.
Audbrekku 9-11
202 Kopavogur
Phone +354 520-4500
Fax +354 520-4501
export@wago.com

India
WAGO Private Limited
C-27, Sector-58, Phase-III
Noida-201 301
Gautam Budh Nagar (U.P)
Phone +91 120 438 8700
Fax +91 120 438 8799
info.india@wago.com

Indonesia
please contact WAGO Singapore

Iraq
please contact WAGO Middle East

Ireland
Drives & Controls
Unit F4, Riverview Business Park
Nangor Road
Dublin 12
Phone +353 1 4604474
Fax +353 1 4604507
info@drivesandcontrols.ie

Israel
Contel Israel Electronic Solutions Ltd.
Bet Hapaamon
20 Hataas Street
P.O. Box 66
44425 Kefar-Saba
Phone +972 9 76 77 240
Fax +972 9 76 77 243
sales@comPhoneco.il

Italy
WAGO ELETTRONICA SRL a Socio
Unico
Via Parini 1
40033 Casalecchio di Reno (BO)
Phone +39 051 6132112
Fax +39 051 6272174
info-ita@wago.com

Japan
WAGO Co. of JAPAN Ltd.
Kinshicho Prime Tower
5-7, Kameido, Koto-Ku
Tokyo 136-0071
Phone +81 3 5627 2059
Fax +81 3 5627 2055
info-jp@wago.com

Jordan
please contact WAGO Middle East

Kazakhstan
TOO INTANT
232/2, Ryskulov avenue
050061 Almaty
Phone +7 727 356 52 91/92/93
Fax +7 727 327 14 92/93
ee@intant.net
ees_sm1@intant.net

TOO Technik-Trade
ul. i. A. Protosanova, 81
070004 Ust-Kamenogorsk
Phone +7 7232 254 064
Fax +7 7232 253 251
info@technik.kz

Korea
WAGO Korea Co., Ltd.
Room 205 AnyangMegaValley,
268, Hagui-ro, Dongan-gu, Anyang-si,
Gyeonggi-do, 14056, South Korea
Phone +82 31 421 9500
info.korea@wago.com

Kosovo
please contact WAGO Bulgaria

Latvia
INSTABALT LATVIA SIA
Vestienas iela 6
Rīga, LV-1035
Phone +371 6790 1188
Fax +371 6790 1180
info@instabalt.lv

Lebanon
Gemayel Trading & Contracting
Antonins Project
P.O. BOX 70-1096
Antelias
Lebanon
Phone +961 4 521 029
Fax +961 4 521 029
info@uae.com

Lithuania
INSTABALT LIT UAB
Savanorių 187
Vilnius, 2053
Phone +370 52 322 295
Fax +370 52 322 247
info@instabalt.lt

Luxembourg
please contact WAGO Belgium

Macedonia
please contact WAGO Bulgaria

Kompjunet Inzenering
Vladimir Komarov 1A-3/9
1000 Skopje
Republic of Macedonia
Phone +389 2 521 12 00
Phone +389 2 246 11 08

Malaysia
WAGO Representative Office Malaysia
No 806, Block A4, Leisure Commerce Square,
No 9, Jalan PJS 8/9, 46150 Petaling Jaya,
Selangor Darul Ehsan, Malaysia
Phone +60 3 7877 1776
Fax +60 3 7877 2776
kian.guan.tan@wago.com

HPH Materials (M) Sdn Bhd
No. 4, Jalan Nilam 1/6
Suban Hi-Tech Industrial Park
40000 Shah Alam
Selangor, D.E. Malaysia
Phone +60 3 5638 2213
Fax +60 3 5638 8213
info@hphmaterials.com

Maldives
please contact WAGO India

Mexico

WAGO SA de CV
Av. Del Marques 38 Bodega 3
P. I. Bernardo Quintana
76246 El Marques, Querétaro
Phone +52 442 221 5946
Fax +52 442 221 5063
info.mx@wago.com

Moldova

Electroservice Slavinschi T.T.
str. Bolgarskaia 9, office 6
2001 Kishinev
Phone +373 22 274427
Fax +373 22 224481
es@es.mldnet.com

Morocco

Automatisme & Connection Maroc
23, Rue Bourd, 2ème étage, appt4
Roche Noire
20300 Casablanca
Phone +212 522 24 21 72/73
Fax +212 522 24 21 75
info-fr@wago.com

Nepal

please contact WAGO India

Netherlands

WAGO Nederland B.V.
Laan van de Ram 19
7234 BV APELDOORN
Phone +31 55 36 83 500
Fax +31 55 36 83 599
info-nl@wago.com

New Zealand

please contact WAGO Australia

NHP NZ

7 Lockhart Place
Mt Wellington
New Zealand
Phone +64 9 2761967
Fax +64 9 2761992
export@wago.com

Nigeria

GIL Automations Ltd.
Daily Times Complex
2 Lateef Jakande Rd., Agidingbi
100271 Ikeja, Lagos State
Phone +234 17132672335
sales@gilautomation.com

Norway

WAGO Norge AS
Jerikoveien 20
1067 Oslo
Phone +47 22 30 94 50
Fax +47 22 30 94 51
info.no@wago.com

Oman

please contact WAGO Middle East

Pakistan

FuziLogiX Automation & Control
Suit No. 14, 5th Floor, Shan Arcade
New Garden Town, Lahore
Pakistan
Phone +92 42 594 1503 - 4
Fax +92 42 585 1431
info@fuzilogix.com

Paraguay

AESA
Av. Madame Lynch
c/Antolin Irala
2309 Asunción
Tel. +59 521674524
info@aesa.com.py

Peru

Manufacturas Eléctricas S.A.
Av O.R. Benavides 1215
15000 Lima
Phone +511 6196200
Fax +511 6196247

Philippines

please contact WAGO Singapore

Poland

WAGO ELWAG sp. z o. o.
ul. Piekna 58 a
50-506 Wrocław
Phone +48 71 3602970
Fax +48 71 3602999
wago.elwag@wago.com

Portugal

MORGADO & CA. LDA - SEDE
Estrada Exterior da
Circunvalação 3558/3560
Apartado 1057
4435 Rio Tinto
Phone +351 22 9770600
Fax +351 22 9770699
geral@morgadocli.pt

Quatar

please contact WAGO Middle East

Romania

WAGO Kontakttechnik GmbH & Co. KG
Representative Office Romania
Sos. Pipera-Tunari nr. 1/1
building 1, 2nd floor
077190 Voluntari, Ilfov
Tel. +40-(0)31 421 85 68
info-RO@wago.com

VDR & Servicii srl

Str. Valeriu Braniște, nr. 60, ap.1, sector 3
Romania
Phone +40 21 3225074/6
Fax +40 21 3225075
office@componente-automatizari.ro

Russia

OOO WAGO Contact Rus
Dmitrovskoe shosse, 157,
bldg. 12/5
127411 Moscow
Russia
Phone +7 495 663-3305
Fax +7 495 663-3308
info.ru@wago.com

OOO Decima

Projesd 4922, d. 4, str. 1
124460 Moscow / Selenograd
Phone +7 495 988 4858
Fax +7 495 988 4858
decima@decima.ru

OOO Prosoft

ul. Profsovnaya, 108
117437 Moscow
Phone +7 495 2340636
Fax +7 495 2340640
info@prosoft.ru

ITC Electronics: Moscow

Radio str. 24
105005 Moscow
Phone +7 495 775 1845
Fax +7 495 775 1848
moscow@itc-electronics.com

WAGO Branch office

Ekaterinburg
Phone +7 343 216 3426

WAGO Branch office

Novosibirsk
Phone +7 383 217 9244

WAGO Branch office

St. Petersburg
Phone +7 812 312 1918

Saudi Arabia

Saudi Electronic Trading Company
(SETRA), P.O. Box 60712
11555-Riyadh
Phone +966 1 2062277
Fax +966 1 2062277
khaled.wafai@setra.com.sa

Serbia

please contact WAGO Bulgaria

Avalon Partners doo

Patrijarha Dimitrija 24
11000 Beograd
Phone +381 11 268 5311
Fax +381 11 268 5311
office@avalon.rs

Sigma doo

Balzakova 3
21000 Novi Sad
Phone +381 21 468 431
Fax +381 21 636 1785
office@sigmadoo.co.rs

Singapore

WAGO Electronic Pte Ltd
No. 10 Upper Aljunied Link #04-04
Singapore 367904
Phone +65 62866776
Fax +65 62842425
info-sing@wago.com

Slovakia

Proelektro spol. s r.o.
Na barine 22
841 03 Bratislava - Lamač
Phone +421 2 4569 2503
info@wago.sk

Slovenia

IC elektronika d.o.o.
Vodovodna cesta 100
1000 Ljubljana
Phone +386 1568 0126
Fax +386 1568 9107
info@ic-elect.si

GENERA d.o.o.

Prevale 10
1236 Trzin
Phone +386 14393050
Fax +386 14393090
genera@genera.si

Slovenia

Elektronabava d.o.o.
Cesta 24 junija 3
1231 Ljubljana
Phone +386 1 58 99 300
Fax +386 1 58 99 409
info@elektronabava.si

South Africa

Shorrock Automation (Pty) Ltd
Postnet Suite # 219
Private Bag X 8, Elardus Park
0047 PRETORIA
Phone +27 12 4500300
Fax +27 12 4500322
sales@shorrock.co.za

Spain

DICOMAT S.L.
Avda. de la Industria, 36
Apartado Correos, 1.178
28108-Alcobendas (Madrid)
Phone +34 91 662 1362
Fax +34 91 661 0089
info@dicomat-asetyc.com

Sweden

WAGO Sverige AB
Tyskland Filial
Box 11127, 161 11 BROMMA
Besöksadress: Adolfsbergsv. 31
Phone +46 858410680
Fax +46 858410699
info.se@wago.com

Switzerland

WAGO CONTACT SA
Rte. de l'Industrie 19
Case Postale 168
1564 Domdidier
Phone +41 26 676 75 00
Fax +41 26 676 75 01
info.switzerland@wago.com

Sri Lanka

please contact WAGO India

Syria

Zahabi Co.
8/5 Shouhadaa St., P.O. Box 8262
Aleppo
Phone +963 21 22 235 / 6
Fax +963 21 22 237
info.uae@wago.com

Taiwan R.O.C.

WAGO Contact, Ltd.
5F., No.168, Jiankang Rd
Zhonghe City
Taipei County 23585, Taiwan
Phone +886 2 2225 0123
Fax +886 2 2225 1511
info.taiwan@wago.com

Thailand

WAGO Representative Office Thailand
4th Floor, KS Building
213/6-8 Rachada-Phisek Road
Dingdaeng, Bangkok 10400
Phone +66 2 6935611
Fax +66 2 6935612
warongkon.khankham@wago.com

US Power Distribution Co., Ltd.

4th Floor, KS Building
213/6-8 Rachada-Phisek Road
Dingdaeng, Bangkok 10400
Phone +66 2 2763040
Fax +66 2 2763049
uspowers2014@gmail.com

Thailand

Itthirrit Technology Co., Ltd.
Vision Business Park 2 Floor 4
Soi Raminthra 55/8, Watcharapon Road
Tharaeng, Bangkok District
Bangkok Thailand 10220
Tel. +66 2 347 0780
Fax +66 2 347 0772
sales@itthirrittechnology.com

Tunisia

please contact WAGO France

Turkey

WAGO Elektronik Sanayi ve Ticaret
Ltd. Şti.
Yukan Dudullu Mahallesi Bayraktar
Bulvarı
Cad. Hattat Sok. No. 10
34775 Ümraniye - İstanbul
Phone +90 216 472 1133
Fax +90 216 472 9910
info.tr@wago.com

Ukraine

NPP Logicon
Predslavinskaya street, 39, office 303
03150 Kiev
Phone +380 44 5228019
Fax +380 44 2611803
info@logicon.ua

OOO Micropribor

ul. Kotelnikova, 4
03115 Kiev
Phone +380 44 5369386
Fax +380 44 5369387
sales@micropribor.kiev.ua

United Arab Emirates (UAE)

WAGO Middle East (FZC)
SAIF Zone, Q4-282
P.O. Box 120665
Sharjah, UAE
Phone +971 6 5579920
Fax +971 6 5579921
info.uae@wago.com

Uruguay

Fivisa Electricidad
Avda. Uruguay 1274
11100 Montevideo
Phone +59 829 020 808
Fax +59 829 021 230
info@fivisa.com.uy

USA

WAGO CORPORATION
N120 W19129 Freistadt Road
Germantown, WI 53022
Phone +1 262 255 6222
Fax +1 262 255 3232
Toll-Free: 1-800 DIN Rail (346-7245)
info.us@wago.com

Venezuela

PETROBORNAS, C.A.
C.C. PLAZA AEROPUERTO - PISO 1 -
LOCAL P1-B-03
(8015) UNARE - PUERTO ORDAZ -
ESTADO BOLÍVAR
REPÚBLICA BOLIVARIANA DE
VENEZUELA
Phone +58 286 951 3382
Fax +58 286 951 3382
info@petrobornas.com

Vietnam

please contact WAGO Germany
(Minden)

Notes

13

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DEXY

WAGO Kontakttechnik GmbH & Co. KG
Postfach 2880 · D · 32385 Minden
Hansastraße 27 · D · 32423 Minden
info@wago.com
www.wago.com

Headquarters	+49 571 887 - 0
Sales	+49 571 887 - 44222
Order Service	+49 571 887 - 44333
Technical Support	+49 571 887 - 44555
Fax	+49 571 887 - 844169