

# Telefast Pre-wired system

Modicon ABE7 IP20 connection sub-bases

Modicon ABE9 IP67 passive splitter boxes

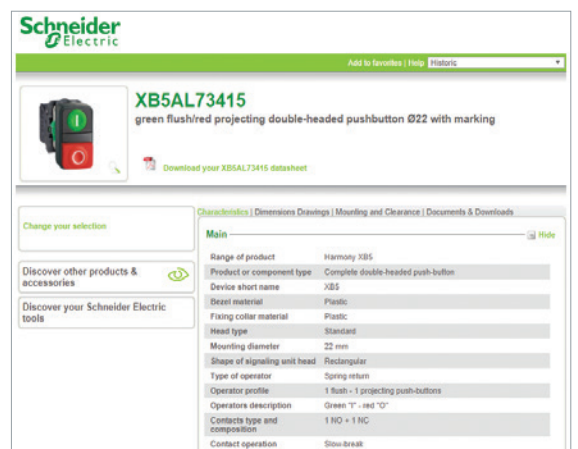
Catalog

April 2019



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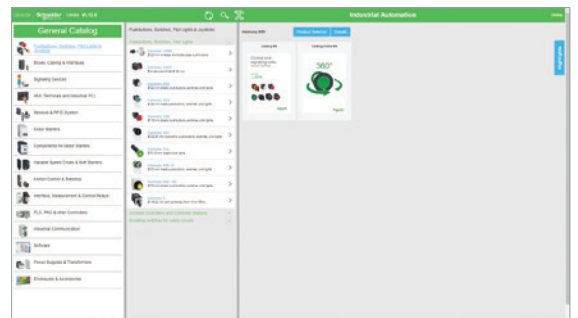
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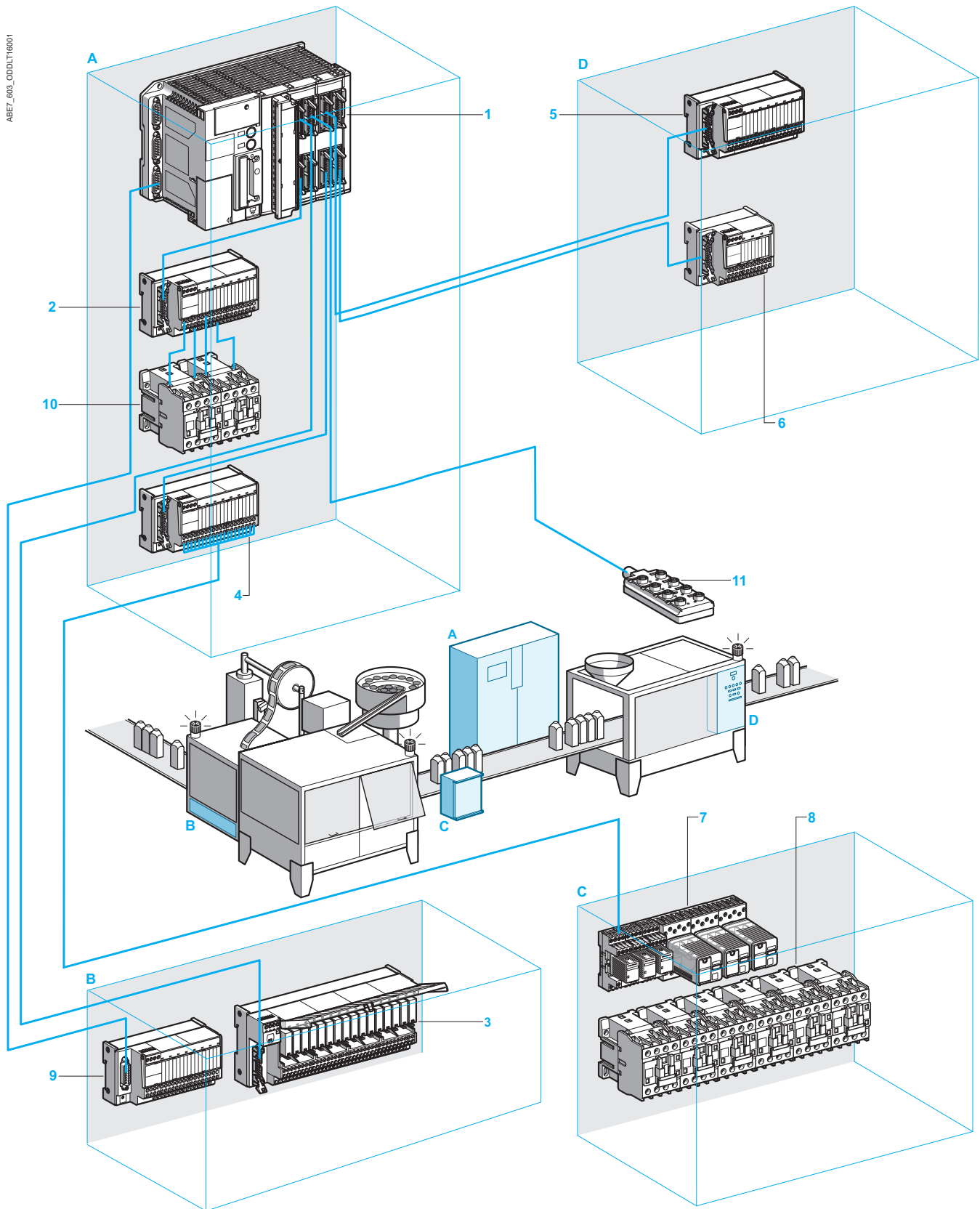
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ABE7\_503\_ODDLT16001

### General presentation

The Telefast system is a set of products for rapid connection of I/O modules (24 V  $\square$  discrete, analog, and counter) to operative parts. It acts as a substitute for screw terminal blocks, remotely locating and partly eliminating the single-wire connection. The Telefast system only connects to channels that have HE 10 and SUB-D connectors or to standard terminal blocks with a cabled connector. It consists of connecting cables and interface sub-bases.

The relay and connection functions, with or without polarity distribution, considerably reduce wiring time and eliminate the risk of error.

### Connections between the PLC and the operative part

#### Connection between the PLC and Telefast sub-bases

Telefast sub-bases connect directly via cables onto all discrete I/O modules equipped with HE 10 connectors **1**.

I/O modules not equipped with HE 10 connectors are connected to Telefast sub-bases by means of a cabled connector, which consists of a cable with conductors (AWG 22/0.34 mm<sup>2</sup> c.s.a.) connected to the standard terminal block at one end and to the HE 10 connectors at the other. These cabled connectors are available in 1.5 and 3 m (4.92 and 9.84 ft) lengths.

#### Connection between Telefast sub-bases and the operative part

The Telefast range is suitable for several types of connection found in control system devices.

##### ■ Connection of I/O located in the PLC cabinet **A** or nearby **B**

Some sub-bases **2** enable two wires (signal and common) or three wires (signal, 24 V, 0 V) to be connected directly from sensors or preactuators when these **10** are installed in the same enclosure or very close by. They effectively eliminate all intermediate terminal blocks.

Other versions offer the possibility of adapting the voltage or current via plug-in relay sub-bases **3**, or of connecting analog signals **9**.

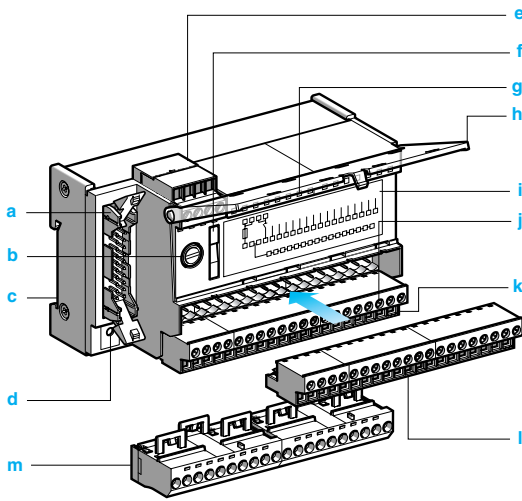
In cases where size is of prime importance **D**, fixed relay sub-bases **ABE7R16S111 5** (125 mm (4.92 in.) long) and passive sub-bases **ABE7H16R50 6** (84 mm (3.31 in.) long) reduce the required surface area by about 50% compared with standard products.

##### ■ Connection of I/O located outside the PLC cabinet **C**

These sub-bases **4** fulfill the same function as traditional terminal blocks and connect connector leads from sensors or preactuators **7, 8**.

##### ■ IP67 dust and damp-proof connections for enclosures and cabinets

8-channel versions offer, in addition, the possibility of directly connecting **Modicon ABE9** dust and damp proof splitter boxes (see page 58) **11** for 8 sensors.



### Description of a Telefast® 2 connection sub-base

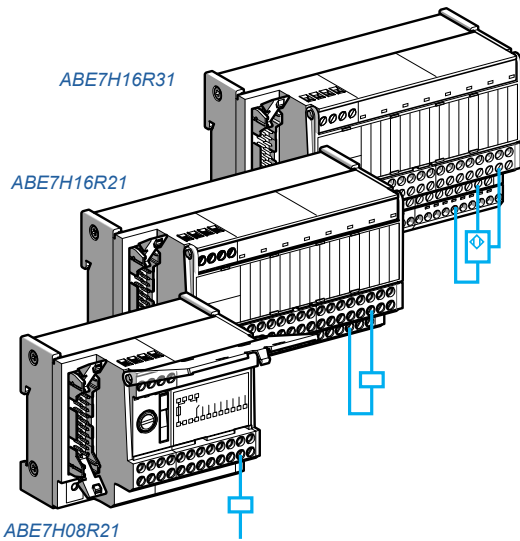
All connection sub-bases in the Telefast family have a standardized design and offer the common functions described below. Some of these functions are optional\*.

- a 20-way HE10 connector
- b 24 V  $\overline{\text{---}}$  power supply circuit fuse
- c DIN rail mounted
- d 24 V  $\overline{\text{---}}$  display LED
- e 24 V  $\overline{\text{---}}$  power supply terminal block (1)
- f Blade type isolator on  $\overline{\text{---}}$  0 V
- g Channel indication LED\*
- h User label-holder/cover
- i Wiring diagram
- j Test point for  $\varnothing$  2.3 mm (0.09 in.) plug
- k Upper terminal block (1)
- l Lower terminal block (1), offset by  $\frac{1}{2}$  step\*
- m Additional snap-on terminal block equipped with 20 screw or spring terminals\*

(1) Removable screw or spring type, according to reference, at 5.08 mm (0.2 in.) intervals.

### Passive connection sub-bases

Designed to simplify I/O connection to a PLC within a control panel, the range of passive sub-bases has the same functions as traditional terminal blocks to which they add, depending on the models: compact size, connection of proximity sensor commons (3-wire and type 2), LED indication, protected and isolated channels. For high sales volume products, screw or spring connections are available (references ending with E).



### Terminal block sub-bases

**ABE7H●●R11/R10:** These products can be used to connect inputs or outputs. The commons are made on the device and brought into the sub-base by a single wire. The output terminals are on a single row. The signal state for each channel can be indicated via an LED (R11) or not (R10). An ABE7BV20 terminal block can be added.

**ABE7H20E●●:** These **economy** products are supplied with a direct connection cable for TSX Micro, Premium, or other PLCs using splitter sub-bases (H20E). The cable is available in various lengths. The output terminals are on 2 rows.

### Compact sub-bases

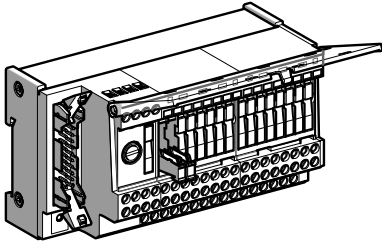
**ABE7H●●R50:** These products fulfill the same functions as the sub-bases above but they are almost half the size. The output terminals are on 2 rows.

**ABE7H16C1●:** These are **miniature** products. The signal state for each channel can be indicated via an LED (C11) or not (C10). The output terminals are on a single row. An ABE7BV20 terminal block can be added.

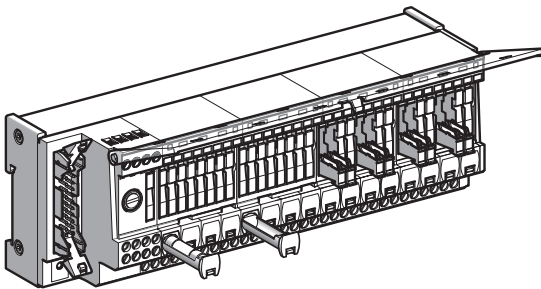
### Universal sub-bases

**ABE7H●●R21/R20:** These sub-bases are used to connect I/O and all the commons. The potential (0 V or 24 V  $\overline{\text{---}}$ ), distributed over the row of screw terminals that allow the commons to be connected, is selected via a jumper. Both wires from the sensor or actuator can be connected to the sub-base. The output terminals are on 2 rows. The signal state for each channel can be indicated via an LED (R21) or not (R20).

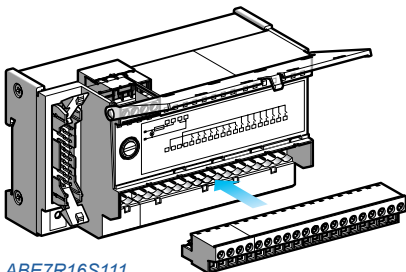
**ABE7H16C21/CM21:** These are **miniature** products. The signal state for each channel can be indicated via an LED. Reference **CM21** has 2 common connections that allow both the inputs and the outputs to be connected at the same time, with a 0 or 24 V common, depending on the customer's wiring. The output terminals are on 2 rows.



ABE7H16S21



ABE7H16S43



ABE7R16S111

### Passive connection sub-bases (continued)

#### Sub-bases for 2-wire sensors

**ABE7H16R23:** This product is identical to the ABE7H16R21 sub-bases but, in addition, enables connection of 2-wire type 2 sensors on the TSX Micro and Premium PLCs, and NUM numerical controllers. The output terminals are on 2 rows.

#### Sub-bases for 3-wire sensors

**ABE7H16R31:** The 24 V  $\overline{\text{---}}$  and 0 V signals are brought into the sub-base for each channel. The output terminals are on 3 rows. This function can also be achieved by adding an ABE7BV20 add-on terminal block to the ABE7H16R21/R20 sub-bases. The signal state for each channel can be indicated via an LED (R31) or not (R30).

**ABE7H16C31:** These are **miniature** products. They also enable connection of inputs equipped with 3-wire proximity sensors. The output terminals are on 3 rows.

#### Sub-bases with isolator for each channel

**ABE7H $\bullet\bullet$ S21:** These products have the same function as the ABE7H16R21 universal sub-base. They also have a blade isolator for each channel.

#### Sub-bases with isolator and protection for each channel

**ABE7H16S43:** These products are used exclusively for connecting 24 V  $\overline{\text{---}}$  **inputs**. Both wires are brought to the screw terminals on a single row. Each channel has 2 blade isolators, attached together, to isolate the signal and its 24 V  $\overline{\text{---}}$  power supply. The 24 V  $\overline{\text{---}}$  power supply to each channel is protected by a 5 x 20 fuse. A red LED indicates if the fuse has blown.

**ABE7H16F43:** These products are designed for connecting 24 V  $\overline{\text{---}}$  **outputs**. Both wires are brought to the screw terminals on a single row. Each channel has 2 blade isolators, attached together, to isolate the signal and its 0 V common.

### Electromechanical relay output sub-bases

Relay output sub-bases are designed to adapt both current and voltage signals. They also have the following functions, depending on the model: various contact combinations (1 NO, 1 C/O, 2 C/O), common potentials, channel protection by 5 x 20 fuse.

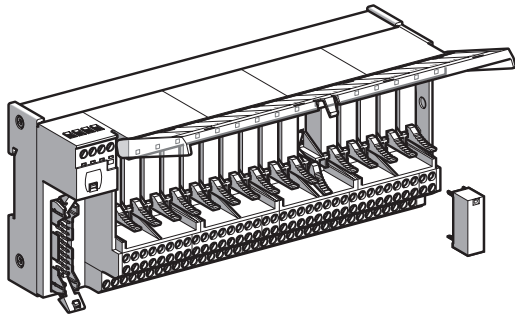
There are 3 ranges of sub-bases: fixed relay, plug-in relay, and high-performance. For high sales volume products, screw or spring connections are available (references ending with E).

#### Sub-bases with fixed relays and removable terminal blocks

**ABE7R $\bullet\bullet$ S21 $\bullet$ :** These products are equipped with a fixed relay with integral NO contact, 10 mm (0.39 in.) wide. Their 5 A Ith characteristic must be derated according to the duty cycles used and the number of operations required. They are available in 8 and 16-channel module formats. All the terminal blocks are removable.

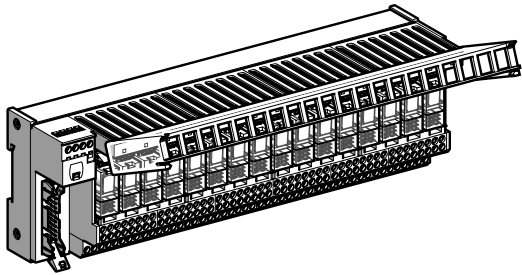
**ABE7R $\bullet\bullet$ S111:** Almost 50% smaller than the standard sub-bases, these products have a fixed relay with integral NO contact, 5 mm (0.2 in.) wide. Their 2 A Ith characteristic must be derated according to the duty cycles used and the number of operations required. They are available in 8 and 16-channel module formats. All the terminal blocks are removable.

816406



ABE7R16T2

816405



ABE7R16T3

### Electromechanical relay output sub-bases (continued)

#### Plug-in relay sub-bases

**ABE7P16T2 and 7R16T2:** These products may or may not be equipped with plug-in relays, with integral NO or C/O contact, 10 mm (0.39 in.) wide. Their 5 A Ith characteristic must be derated according to the duty cycles used and the number of operations required. They are available as 16-channel modules only. It is possible to combine ABR7S2 electromechanical relays and ABS7S2 solid state relays on the same sub-base. Some sub-bases, not equipped with relays, are offered with 5 x 20 fuse protection for each channel.

**ABE716T111/M111:** These **miniature** products use plug-in relays, 5 mm (0.2 in.) wide, with integral NO contact, rated up to 5 A. These products are pre-equipped with relays (R) or not (P). They can accept both electromechanical and solid state relays.

**ABE716M111** sub-bases offer two connection methods, which make it possible to connect both inputs and outputs and obtain 8 inputs (passive connection) and 8 outputs (active relay connection). The signal state for each channel can be indicated via an LED. The terminals are on one row and the commons are brought in in groups of 4. The sub-base is supplied with a relay extractor; this accessory is also available as a spare part.

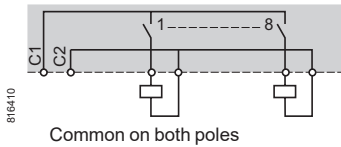
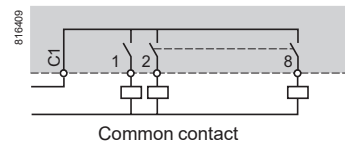
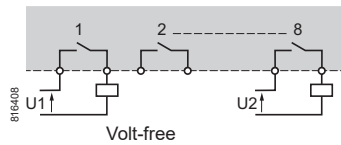
#### High-performance sub-bases for plug-in relays

**ABE7P3T3 and 7R16T3:** These products may or may not be equipped with plug-in relays, with integral 1 C/O or 2 C/O contacts, 12 mm (0.47 in.) wide. Their 8 A Ith characteristic must be derated according to the duty cycles used and the number of operations required.

The relays are equipped with reinforced Faston type clips for easy attachment. They are available in 8 and 16-channel module formats. It is possible to combine ABR7S3 electromechanical relays, ABS7S3 solid state relays, and the ABE7ACC21 continuity block on the same sub-base. Some sub-bases, not equipped with relays, are offered with 5 x 20 fuse protection and isolation for each channel.

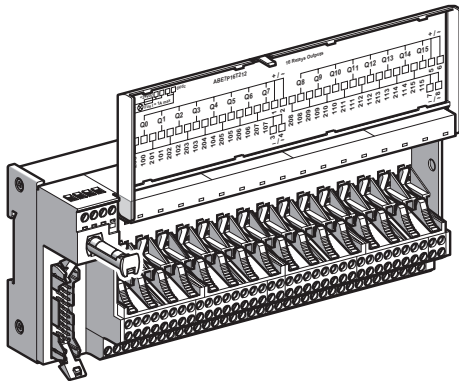
### Connections

These relay sub-bases can be connected according to three possible schemes: volt-free, contact common, and common on both poles.



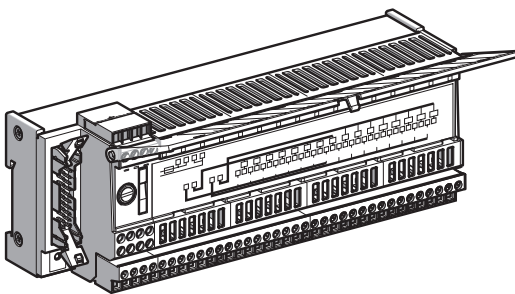


816414



ABE7P16T215

816412



ABE7S16E2B1

### Solid state input or output sub-bases

Solid state input or output sub-bases are designed to adapt both current and voltage signals. They can be used to interface either inputs or outputs. Their technology enables high-speed signal switching, while maintaining a high level of electrical durability. For high sales volume products, screw or spring connections are available (references ending with E).

### Input adapter sub-bases

#### ABE7S16E●● sub-bases equipped with solid state channels:

These sub-bases enable sensors with different voltages to be connected (24 V  $\overline{\text{DC}}$  to 230 V  $\sim$  depending on the reference).

These products provide electrical isolation for the various power supply inputs. They are available as 16-channel modules only and the terminal blocks are removable.

#### ABE7P16F●● sub-bases for plug-in solid state relays:

These sub-bases enable sensors with different voltages to be connected (24 V  $\overline{\text{DC}}$  to 230 V  $\sim$ ), either on each channel or on each group of 8 channels.

They are available as 16-channel modules only.

The solid state relays are available separately. It is also possible to equip the sub-bases with electromechanical relays (please consult your Regional Sales Office).

### Output adapter sub-base

#### ABE7S●●S●● sub-bases equipped with solid state channels:

These sub-bases enable actuators to be connected at 24 V  $\overline{\text{DC}}$ . The outputs are not isolated. The output current is either 0.5 or 2 A per channel depending on the products. The occurrence of overloads or short-circuits on the outputs can be transmitted to the PLC to be managed by program. These "fault signal" functions can only be used with TSX Micro and Premium PLCs, or with any other PLCs that have protected outputs.

They are available in 8 and 16-channel module formats, and the terminal blocks are removable.

### Plug-in solid state relays

ABS7S plug-in relays are not available mounted directly on the sub-bases. They have to be ordered separately.

These relays are available for two power levels:

□ 5 V  $\overline{\text{DC}}$  to 240 V  $\sim$ /0.5 A, 10 mm (0.39 in.) wide. These are for mounting on

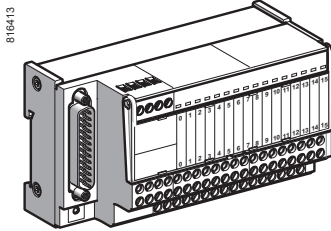
**ABE7P16T2●●** sub-bases.

□ 5 V  $\overline{\text{DC}}$  to 240 V  $\sim$ /1.5 and 2 A, 12 mm (0.47 in.) wide. These are for mounting on

**ABE7P16T3●●** sub-bases.

It is possible to combine electromechanical relays, solid state relays, and continuity blocks on the same sub-base.

They are available as 16-channel modules only.



ABE7CPA02

### Analog sub-bases and special functions

Analog signals are connected on the following products:

- **ABE7CPA01** sub-base for counter modules in the TSX Micro and Premium ranges. This also communicates with the Altivar 18 variable speed drive.
- **ABE7CPA02** sub-base for connection and distribution of 8 channels over screw terminals while maintaining shielding continuity.
- **ABE7CPA21** sub-base with identical functions to the previous sub-base for the 4 analog output channels.
- **ABE7CPA03** sub-base, which can also supply 2 or 4-wire sensors, channel by channel, with 24 V  $\overline{\text{DC}}$  protected voltage and current limiting at 25 mA. It also ensures continuity of the current loops when the 25-way SUB-D connector is unplugged.
- **ABE7CPA31** sub-base for distribution and isolation of the 24 V  $\overline{\text{DC}}$  power supply required for the 8 analog input channels while maintaining isolation between channels of the TSXAEY810 module. All channels are self-limited to 25 mA.
- **ABE7CPA11** sub-base, which enables the value from a parallel output absolute encoder to be read (binary or GRAY code). It is connected to a counter or axis control module in the Premium range.
- **ABE7CPA12** sub-base, which can be used to connect 16 thermocouples and to increase the temperature of the cold junction compensation terminals, either by a probe integrated in the sub-base, or remotely via an external PT100 probe. In the latter case, only 14 thermocouples can be connected.

### Accessories for connection sub-bases

The Modicon Telefast pre-wired system offers a range of accessories to simplify the installation of equipment and to enable full use of all features offered by the connection sub-bases.

#### Cable connections to the PLC

##### Cables

Only **ABFH20H●●●** cables, made from rolled ribbon cable and HE 10 insulation piercing connectors, are truly universal. Owing to their small size, they can be connected to any I/O modules or terminal blocks equipped with 20-way HE 10 connectors. They are available in lengths of 0.5 to 5 m (1.64 to 16.4 ft), but the user can create custom cables up to a maximum length of 30 m (98.43 ft) using additional cable and HE 10 connectors.

**TSXCDP●●3** molded cables are only used with the TSX Micro and Premium ranges. They are multicore cables and have a high quality finish.

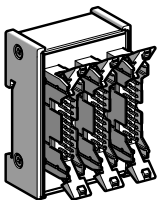
Custom cables are also available for the Allen Bradley and Siemens ranges of PLCs.

#### Splitter sub-bases

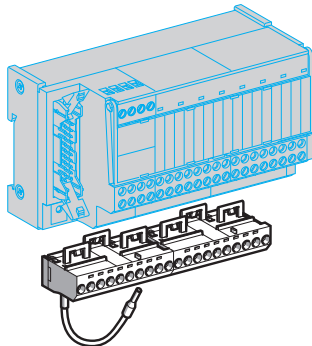
When module configuration and signal distribution are not compatible, the Telefast system can use **ABE7ACC●●** splitter sub-bases:

- 16 channels (2 x 8) for all 16-channel outputs
- 24 channels (3 x 8) for DST2472 modules
- 32 channels (2 x 16) for NUM inputs
- 24 channels (3 x 8) for NUM outputs

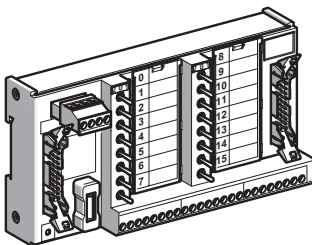
Other sub-bases enable I/O redundancy on 2 input modules in parallel (**ABE7ACC11**) or on 2 output modules in parallel (**ABE7ACC10**).



ABE7ACC02



ABE7BV20



ABE7TES160

### Accessories for connection sub-bases (continued)

#### Cabling accessories

##### Cable gland assembly

Using the cable gland assembly enables 3 cables to run outside the enclosure without the addition of a series connection.

##### ABE7BV10 and ABE7BV20 add-on terminal blocks

With 8 and 16 channels, these products give wider connection options: common, shielding, etc.

#### Other accessories

##### Plug-in continuity blocks

Available in 10 and 12 mm (0.39 and 0.47 in.) widths, the blocks are mounted on ABE7P16T●●● relay sub-bases in place of ABR7 and ABS7 modules. They make use of the sub-base functions to connect the channel without the need to adapt the channel using a relay.

##### ABE7TES160 simulator sub-base

This can be used to force or inhibit the discrete I/O.

##### 5 x 20 fuses

References for all fuses can be found under accessories.

##### Label marking software

This produces finished labels for channels, simplifying installation and reducing the risk of error during maintenance by marking the labels according to the sub-base mounting. The program runs under Windows.

### Sub-base/plug-in output relay combinations

Relays for ABE7●16T●●● sub-bases	Relay width 10 mm (0.39 in.)				Relay width 5 mm (0.2 in.)	
Relays	ABR7S21	ABR7S23	ABS7SA2M	ABS7SC2E	ABR7S11	ABS7SC1B
Function	Relay 1 NO	Relay 1 C/O	Output 230 V ~ - 0.5 A	Output 48 V --- - 0.5 A	Relay 1 NO	Output 24 V --- - 2 A
<b>Sub-bases/modules</b>						
ABE7●16T210	Compatible		Compatible	Compatible		
ABE7●16T111/M111					Compatible	Compatible
ABE7R16T212	Compatible		Compatible	Compatible		
ABE7●16T214	Compatible		Compatible	Compatible		
ABE7●16T215	Compatible		Compatible	Compatible		
ABE7●16T230		Compatible	Compatible	Compatible		
ABE7●16T231		Compatible	Compatible	Compatible		

12.5 mm (0.49 in) width relay for ABE7●16T3●● sub-bases						
Relays	ABR7S33	ABR7S37	ABS7SA3M	ABS7SC3E	ABS7SC3BA	ABE7ACC21 (1)
Function	Relay 1 C/O	Relay 2 C/O	Output 230 V ~ - 1.5 A	Output 48 V --- - 1.5 A	Output 24 V --- - 2 A Protected	Continuity 0.5 A
<b>Sub-bases/modules</b>						
ABE7●16T318	Compatible		Compatible	Compatible		Compatible
ABE7●16T330					Compatible	Compatible
ABE7●16T334	Compatible		Compatible	Compatible		Compatible
ABE7●16T370		Compatible				

Compatible

(1) Product mounted on ABE7P16F3●●● plug-in input sub-bases

# Telefast Pre-wired System

## Modicon ABE7 connection sub-bases

### Discrete input and/or output sub-bases - IP 20

Applications	Discrete inputs or outputs			
	Optimum "Economy"		Optimum "Miniature"	Universal
Compatibility <input type="checkbox"/> Direct	<input type="checkbox"/> Modicon X80 I/O expansion modules (see <a href="#">page 26</a> ) <input type="checkbox"/> Modicon Premium automation platforms (see <a href="#">page 30</a> ) <input type="checkbox"/> Modicon TSX Micro compact/modular PLCs (see <a href="#">page 40</a> )		<input type="checkbox"/> Modicon M221 Book logic controllers (see <a href="#">page 24</a> ) <input type="checkbox"/> Modicon TM3 I/O expansion modules (see <a href="#">page 24</a> ) <input type="checkbox"/> Modicon X80 I/O modules (see <a href="#">page 26</a> ) <input type="checkbox"/> Modicon Premium automation platforms (see <a href="#">page 30</a> ) <input type="checkbox"/> Allen Bradley SLC500 and Siemens automation platforms (see <a href="#">page 36</a> ) <input type="checkbox"/> Modicon TSX Micro compact/modular PLCs (see <a href="#">page 40</a> )	
	<input type="checkbox"/> Indirect	<input type="checkbox"/> Via Modicon X80 I/O modules: - Modicon 340 automation platforms - Modicon 580 automation platforms		<input type="checkbox"/> Via Modicon TM3 I/O expansion modules: - Modicon M241 logic controllers - Modicon M251 logic controllers <input type="checkbox"/> Via Modicon X80 I/O modules: - Modicon 340 automation platforms - Modicon 580 automation platforms - Modicon Quantum automation platforms



Sub-base type	Passive connection sub-bases			
Equipped with relays	-			
Control voltage	24 V $\overline{\text{---}}$			
Output voltage	24 V $\overline{\text{---}}$			
Output current per channel	0.5 A			
Modularity	16 channels		8-12-16 channels	
No. of terminals per channel	1	1 to 3	1	2
Type of connection terminals	Signal	Signal, common (configurable as 24 V $\overline{\text{---}}$ or 0 V)	Signal	Signal, common (configurable as 24 V $\overline{\text{---}}$ or 0 V)
Connectors	20-way HE10 connector			
Terminal block	No Screw		No	
Additional or optional function	Economy version available in kit form (sub-base plus cordset)	Miniature sub-bases	Compact size	Type 2 input (1) Isolator
Type of device	ABE7H20E000	ABE7H16C10, ABE7H16C11, ABE7H16C21, ABE7H16C31	ABE7H16R50	ABE7H08R21, ABE7H16R20, ABE7H16R21, ABE7H16R23
Page	16		16	

(1) For Modicon TSX Micro and Modicon Premium PLCs.

Discrete inputs or outputs	Outputs for solid state and/or electromechanical relays
	Optimum "Miniature"
<input type="checkbox"/> Modicon M221 Book logic controllers (see <a href="#">page 24</a> ) <input type="checkbox"/> Modicon TM3 I/O expansion modules (see <a href="#">page 24</a> ) <input type="checkbox"/> Modicon X80 I/O modules (see <a href="#">page 26</a> ) <input type="checkbox"/> Modicon Premium automation platforms (see <a href="#">page 30</a> ) <input type="checkbox"/> Allen Bradley SLC500 and Siemens automation platforms (see <a href="#">page 36</a> ) <input type="checkbox"/> Modicon TSX Micro compact/modular PLCs (see <a href="#">page 40</a> )	
<input type="checkbox"/> Via Modicon TM3 I/O expansion modules: - Modicon M241 logic controllers - Modicon M251 logic controllers <input type="checkbox"/> Via Modicon X80 I/O modules: - Modicon 340 automation platforms - Modicon 580 automation platforms - Modicon Quantum automation platforms	



Sub-base type	Passive connection sub-bases	Plug-in electromechanical or solid state relays
Equipped with relays	-	Yes
Control voltage	24 V $\overline{\text{---}}$	
Output voltage	24 V $\overline{\text{---}}$	24 V $\overline{\text{---}}$ (solid state) 5...24 V $\overline{\text{---}}$ , 230 V $\sim$ (electromechanical)
Output current per channel	0.5 A	5 A (th)
Modularity	16 channels	16 channels 8 passive inputs 8 relay outputs
No. of terminals per channel	2	1
Type of connection terminals	Signal, common, 2 common connections between the inputs and the outputs	1 NO contact and common, 4 output channels 2 input connection points
Connectors	20-way HE10 connectors	
Terminal block	No Screw	
Additional or optional function	Miniature sub-base Synergy with Tego Power and Micro PLC	Miniature sub-base - Common per group of 4 channels Synergy with Tego Power and Micro PLC
Type of device	ABE7H16CM21	ABE7R16M111
Page	16	18



# Telefast Pre-wired System

## Modicon ABE7 connection sub-bases

### Analog and application-specific sub-bases - IP 20

Applications	Analog signals and special functions				
Compatibility	Modicon TSX Micro: - TSX3722 - TSXCTZ●A	Modicon Premium: - TSXCTY●A - TSXCAY●1	Modicon Premium: - TSXASY800 - TSXAEY1600 - TSXA●Y800 Modicon X80 I/O platforms: - BMXAMI0800 - BMXAMI0810 - BMXAMO0802 Modicon Quantum: - 140AVI03000 - 140ACI03000 - 140ACI04000 - 140ACO13000	Modicon Premium: - TSXASY410 - TSXAEY420 Modicon X80 I/O platforms: - BMXAMO0210 - BMXAMO0410 - BMEAHO0412 Modicon Quantum: - 140AVO02000 - 140ACO02000	Modicon X80 I/O platforms: - BMXAMI0410 - BMXAMI0410 - BMXART0414 - BMXART0814 Modicon Premium: - TSXAEY1614



Type of signal	Counter inputs and analog I/O	Counter inputs Axis control Position control	Analog inputs Current/Voltage Pt 100	Analog outputs Current Voltage	Analog inputs
Functions	Passive connection, point-to-point with shield continuity			Direct connection of 4 thermocouples with cold junction compensation Provision and distribution of isolated power supplies	
Modularity	1 counter channel or 8 analog inputs + 2 analog outputs		8 channels	4 channels	4 channels
Control voltage	24 V ~				-
Output voltage	24 V ~				-
Output current per channel	25 mA				-
No. of terminals per channel	2		2 or 4	2 or 4	2 or 4
Type of connector	15-way SUB-D + 9-way SUB-D		25-way SUB-D		25-way SUB-D
Fuse terminal block	Removable No Screw		No Screw	No Screw	
Type of device	ABE7CPA01		ABE7CPA02	ABE7CPA21	ABE7CPA412 ABE7CPA410
Page	19				

Analog signals and special functions			
Modicon Premium: - TSXAEY800 - TSXAEY1600 Modicon Quantum: - 140AVI03000 - 140ACI03000 - 140ACI04000	Modicon Premium: - TSXAEY810 Modicon X80 I/O platforms: - BMXAMI0800 - BMXAMI0810 - BMEAHI0812 (1) Modicon Quantum: - 140AVI03000 - 140ACI03000 - 140ACI04000	Modicon Premium: - TSXCAY●1 - TSXCTY●A	Modicon Premium: - TSXAEY1614



Type of signal	Analog inputs Current Voltage Pt 100	Isolated analog inputs	Counter inputs	Inputs for thermocouples
Functions	Distribution of sensor power supplies by limiter (25 mA)	Distribution of isolated sensor power supplies by converter	Acquisition of value from an absolute encoder	Direct connection of 16 thermocouples with cold junction compensation
Modularity	8 channels	8 channels	1 channel	16 channels
Control voltage	24 V ~			
Output voltage	24 V ~			
Output current per channel	25 mA			
No. of terminals per channel	2 or 4		-	2 or 4
Type of connector	25-way SUB-D	25-way SUB-D	15-way SUB-D	25-way SUB-D
Fuse terminal block	No Screw	No Screw or spring	No Screw	No Screw
Type of device	ABE7CPA03	ABE7CPA31 ABE7CPA31E	ABE7CPA11	ABE7CPA12
Page	19			

(1) BMEAHI0812 is only supplied with ABE7CPA31.

# Telefast Pre-wired System

## Modicon ABE7 connection sub-bases

### Passive connection sub-bases for discrete signals



ABE7H20E000



ABE7H20E100  
ABE7H20E200



ABE7H34E100  
ABE7H34E200



ABE7H16CM21



ABE7H08R21



ABE7H16R●●



ABE7H16S43



ABE7H16F43

#### Passive connection sub-bases for discrete signals

##### Optimum "Economy" sub-base

Function	No. of channels	No. of terminals per channel	No. of terminals on row	For PLCs	Length of PLC connection cable m/ft	Type of connection	Reference	Weight kg/lb
Input or output	16	1	2	<input type="checkbox"/> Modicon M221 <input type="checkbox"/> TSX Micro <input type="checkbox"/> Modicon Premium <input type="checkbox"/> Modicon X80 I/O modules <input type="checkbox"/> Modicon M340	–	Screw	ABE7H20E000	–

##### Kits (Optimum Economy sub-base + cordset)

Kit contents	Compatibility	Reference	Weight kg/lb
1x 16-channel Economy sub-base (type ABE7H20E000) and 1 cordset (type ABFH20H100, length 1 m/3.28 ft)	<input type="checkbox"/> TSX Micro <input type="checkbox"/> Modicon Premium	ABE7H20E100	0.330 0.728
1x 16-channel Economy sub-base (type ABE7H20E000) and 1 cordset (type ABFH20H200, length 2 m/6.56 ft)	<input type="checkbox"/> TSX Micro <input type="checkbox"/> Modicon Premium	ABE7H20E200	0.410 0.904
2x 16-channel Economy sub-bases (type ABE7H20E000) and 1 Y-cordset (type ABFH34M100, length 1 m/3.28 ft)	<input type="checkbox"/> Modicon X80 I/O modules <input type="checkbox"/> Modicon M340	ABE7H34E100	0.582 1.283
2x 16-channel Economy sub-bases (type ABE7H20E000) and 1 Y-cordset (type ABFH34M200, length 2 m/6.56 ft)	<input type="checkbox"/> Modicon X80 I/O modules <input type="checkbox"/> Modicon M340	ABE7H34E200	0.725 1.598

##### Optimum "Miniature" sub-bases

Function	No. of channels	No. of terminals per channel	No. of terminals on row	LED per channel	Polarity distribution	Type of connection	Reference	Weight kg/lb
Input or output	16	1	1	No	No	Screw	ABE7H16C10	0.160 0.353
				Yes	No	Screw	ABE7H16C11	0.160 0.353
		2	2	Yes	0 or 24 V	Screw	ABE7H16C21	0.205 0.452
		3	3	Yes	0 or 24 V	Screw	ABE7H16C31	0.260 0.573
Input and output (1)	16	2	2	Yes	0 or 24 V	Screw	ABE7H16CM21	0.200 0.441

##### Universal sub-bases

Function	No. of channels	No. of terminals per channel	No. of terminals on row	LED per channel	Polarity distribution	Isolator (S) Fuse (F) per channel	Type of connection	Reference	Weight kg/lb	
Input or output	8	2	2	Yes	0 or 24 V	–	Screw	ABE7H08R21	0.218 0.481	
				No	No	–	Screw	ABE7H16R10	0.274 0.604	
	16	1	1	Yes	No	–	Screw	ABE7H16R11	0.274 0.604	
				No	No	–	Screw	ABE7H16R50	0.196 0.432	
	2	2	2	No	0 or 24 V	–	Screw	ABE7H16R20	0.300 0.661	
				Yes	0 or 24 V	–	Screw	ABE7H16R21	0.300 0.661	
	3	3	3	Yes	0 or 24 V	–	Screw	ABE7H16S21	0.375 0.827	
				Yes	0 or 24 V	–	Screw	ABE7H16R31	0.346 0.763	
	Input type 2 (2)	16	2	2	Yes	0 or 24 V	–	Screw	ABE7H16R23	0.320 0.705
	Input	16	2	1	Yes	24 V	S, F (3)	Screw	ABE7H16S43	0.640 1.411
Output	16	2	1	Yes	0 V	S, F (3)	Screw	ABE7H16F43	0.640 1.411	

(1) 8 I + 8 Q: These products have 2 commons connections that enable inputs and outputs to be connected to the same sub-base at the same time.

(2) For TSX Micro, Modicon Premium.

(3) With LED to indicate blown fuse.

## Telefast Pre-wired System

Modicon ABE7 connection sub-bases

Adapter sub-bases with fixed relays

## Adapter sub-bases with fixed relays and removable terminal blocks

## Universal input sub-bases with solid state relays

Number of channels	Number of terminals per channel	Isolation of PLC/ Operative part	Voltage	Type of connection	Reference	Weight kg lb
16	2	Yes	24 V $\overline{\text{---}}$	Screw	<a href="#">ABE7S16E2B1</a>	0.370 0.816
			48 V $\overline{\text{---}}$	Screw	<a href="#">ABE7S16E2E1</a>	0.370 0.816
			48 V $\sim$	Screw	<a href="#">ABE7S16E2E0</a>	0.386 0.851
			110 V $\sim$	Screw	<a href="#">ABE7S16E2F0</a>	0.397 0.875
			230 V $\sim$	Screw	<a href="#">ABE7S16E2M0</a>	0.407 0.897



ABE7S16E2●●

## Universal output sub-bases with solid state relays

Number of channels	Isolation of PLC/ Operative part	Output voltage	Output current	Fault detection signal (1)	Type of connection	Reference	Weight kg lb
16	No	24 V $\overline{\text{---}}$	0.5 A	Yes (2)	Screw	<a href="#">ABE7S16S2B0</a>	0.405 0.893
				No	Screw	<a href="#">ABE7S16S1B2</a>	0.400 0.882



ABE7S16S●●

## Optimum and Universal output sub-bases with electromechanical relays

Number of channels	Number of contacts	Output current	Polarity distribution/ operative part	Type of connection	Reference	Weight kg lb
8	1 NO	2 A	Contact common per group of 4 channels	Screw	<a href="#">ABE7R08S111</a>	0.252 0.556
	1 NO	5 A	Volt-free	Screw	<a href="#">ABE7R08S210</a>	0.448 0.988
16	1 NO	2 A	Contact common per group of 8 channels	Screw	<a href="#">ABE7R16S111</a>	0.405 0.893
				Spring	<a href="#">ABE7R16S111E</a>	0.405 0.893
	1 NO	5 A	Volt-free	Screw	<a href="#">ABE7R16S210</a>	0.405 0.893
				Common per group of 8 channels on both poles	Screw	<a href="#">ABE7R16S212</a>



ABE7R08S21●

(1) A fault on a sub-base output Qn will set PLC output Qn to safety mode, which will be detected by the PLC.

(2) Can only be used with modules with protected outputs.



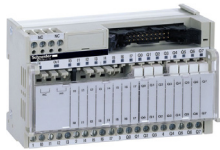
# Telefast Pre-wired System

## Modicon ABE7 connection sub-bases

### Adapter sub-bases with plug-in relays



ABE7P16F31●



ABE7R16M111



ABE7R16T210



ABE7P16T111



ABE7P16●●●●●

#### Adapter sub-bases with plug-in (relays)

##### Universal input sub-bases for solid state relays, supplied without relays

No. of channels	Number of terminals per channel	For relay type	Isolation of PLC/ Operative part	Input connection	Type of connection	Reference	Weight kg/lb
16	2	ABS7E ABR7 ABS7S33E	Yes	Volt-free	Screw	ABE7P16F310	0.850 1.874
				Polarity distribution	Screw	ABE7P16F312	0.850 1.874

##### Optimum and Universal output sub-bases, supplied with electromechanical relays (1)

No. of channels	Relay width	Relay type supplied	Number and type of contacts	Polarity distribution/ operative part	Reference	Weight kg/lb
16	5 mm 0.197 in.	ABR7S11	1 NO	Contact common per group of 4 channels	ABE7R16T111	0.600 1.323
				Contact common per group of 4 output channels + 2 common input terminals	ABE7R16M111 (2)	0.600 1.323
	10 mm 0.394 in.	ABR7S21	1 NO	Volt-free	ABE7R16T210	0.735 1.620
				Common on both poles (3)	ABE7R16T212	0.730 1.609
	12 mm 0.472 in.	ABR7S23	1 C/O	Volt-free	ABE7R16T230	0.775 1.709
				ABR7S33	1 C/O	Volt-free
	ABR7S37	2 C/O	Volt-free	ABE7R16T370	1.300 2.866	

##### Optimum and Universal output sub-bases for solid state relays and/or electromechanical relays (4)

No. of channels	Relay width	For relay type	Isolator per channel	Fuse per channel	Polarity distribution/ operative part	Type of connection	Reference	Weight kg/lb					
16	5 mm 0.197 in.	ABR7S11 ABS7SC1B	No	No	Contact common per group of 4 channels	Screw	ABE7P16T111	0.550 1.213					
					10 mm 0.394 in.	ABR7S2● ABS7SA2● ABS7SC2●	No	No	Volt-free	Screw	ABE7P16T210 (5)	0.615 1.356	
									ABE7P16T230 (5)	0.655 1.444			
				Yes	Volt-free	Screw	ABE7P16T214	0.675 1.488					
				Yes	Common on both poles (3)	Screw	ABE7P16T215	0.670 1.477					
	16	12 mm 0.472 in.	ABR7S33 ABS7A3● ABS7SC3●● ABE7ACC21	No	No	Volt-free	Screw	ABE7P16T330	0.900 1.984				
									ABE7P16T334	0.900 1.984			
								Yes	Yes	Common on both poles (4)	Screw	ABE7P16T318	1.000 2.205

(1) The sub-bases are supplied as standard with electromechanical relays, all or some of which can be replaced by solid state relays of the same width (it is possible to combine these different technologies on a single sub-base).  
 (2) Two connection methods are available, enabling inputs and outputs to be connected to the same sub-base at the same time.  
 (3) Per group of 8 channels.  
 (4) Not equipped with relays.  
 (5) Equipped with ABR7S21 relay for ABE7P16T210 sub-base and ABR7S23 relay for ABE7P16T230 sub-base.



ABE7CPA01



ABE7CPA11



ABE7CPA21/410/412

## Connection sub-bases for counter and analog channels

Functions	For platforms	Compatible modules	Type of connection on Telefast end	Type of connection	Reference	Weight kg/lb			
Counter and analog, axis control, position control	TSX Micro Modicon Premium	TSX3722 TSXCTZ●A TSXCTY●A TSXCAY●1	15-way SUB-D	Screw	<a href="#">ABE7CPA01</a>	0.300 0.661			
Connection of absolute encoder with parallel output	Modicon Premium	TSXCTY●A TSXCAY●1	15-way SUB-D	Screw	<a href="#">ABE7CPA11</a>	0.330 0.728			
Distribution of 4 thermocouples	Modicon X80 I/O	BMXART0414 BMXART0814	25-way SUB-D	Screw	<a href="#">ABE7CPA412</a>	0.180 0.397			
Distribution of 16 thermocouples	Modicon Premium	TSXAEY1614	25-way SUB-D	Screw	<a href="#">ABE7CPA12</a>	0.300 0.661			
Passive distribution of 8 analog I/O channels on screw terminals, with shield continuity	Modicon Premium	TSXASY800 TSXAEY1600 TSXA●Y800	25-way SUB-D	Screw	<a href="#">ABE7CPA02</a>	0.290 0.639			
	Modicon X80 I/O	BMXAMI0800 BMXAMI0810 BMEAHI0812 BMXAMO0802							
Provision and distribution of protected isolated power supplies for 4 analog input channels	Modicon M340	BMXAMI0410	25-way SUB-D	Screw	<a href="#">ABE7CPA410</a>	0.180 0.397			
	Modicon Quantum	140AVI03000 140ACI03000 140ACI04000 140ACO13000							
Distribution of 4 analog output channels	Modicon Premium	TSXASY410 TSXAEY420	25-way SUB-D	Screw	<a href="#">ABE7CPA21</a>	0.210 0.463			
	Modicon X80 I/O	BMXAMO0210 BMXAMO0410 BMEAHO0412							
	Modicon Quantum	140AVO02000 140ACO02000							
Distribution and supply of 8 analog input channels (with limitation of each current loop)	Modicon Premium	TSXAEY800 TSXAEY1600	25-way SUB-D	Screw	<a href="#">ABE7CPA03</a>	0.330 0.728			
	Modicon Quantum	140AVI03000 140ACI03000 140ACI04000							
Distribution and supply of 8 analog input channels isolated from one another with 25 mA limitation per channel	Modicon Premium	TSXAEY810	25-way SUB-D	Screw	<a href="#">ABE7CPA31</a>	0.410 0.904			
	Modicon X80 I/O	BMXAMI0800 BMXAMI0810 BMEAHI0812 (1)					Spring	<a href="#">ABE7CPA31E</a>	0.410 0.904
	Modicon Quantum	140AVI03000 140ACI03000 140ACI04000							

(1) The BMEAHI0812 module is not compatible with the [ABE7CPA31E](#) connection sub-base.

# Telefast Pre-wired System

## Modicon ABE7 connection sub-bases

### Cordsets

#### Cordsets for connection between TSX Micro, Modicon Premium, and sub-bases

Description	Compatibility	Gauge Cross-section	Connector type	Length m/ft	Reference	Weight kg/lb
<b>Cordsets</b> equipped with an HE10 (20-way) connector at each end	TSX Micro or Modicon Premium and ABE7H20E000 sub-base	AWG 28/ 0.08 mm <sup>2</sup>	HE10 - HE10	1/3.28	ABFH20H100	–
				2/6.56	ABFH20H200	–



ABFH20H●00

#### Cordsets for connection between Modicon X80 and Modicon M340 I/O and sub-bases

Description	Compatibility	Gauge Cross-section	Connector type	Length m/ft	Reference	Weight kg/lb
<b>Y-cordsets</b> equipped with one 40-way FCN connector and two HE10 20-way connectors	Modicon X80 and Modicon M340 I/O modules and ABE7H20E000 sub-base	AWG 28/ 0.08 mm <sup>2</sup>	FCN 40-way - 2x HE10	1/3.28	ABFH34M100	–
				2/6.56	ABFH34M200	–



ABFH34M●00

#### Cordsets for connection between TM221M32TK controller, TM3 modules, and sub-bases

Description	Compatibility	Cross-section	Connector type	Length m/ft	Reference	Weight kg/lb
<b>Cordsets for digital inputs</b>	TM221M32TK, TM221ME32TK, TM3DI16K, TM3DI32K	AWG 28/ 0.08 mm <sup>2</sup>	HE10 - HE10	1/3.28	ABFTE20EP100	–
				2/6.56	ABFTE20EP200	–
				3/9.84	ABFTE20EP300	–
<b>Cordsets for digital outputs</b>	TM221M32TK, TM221ME32TK, TM3DQ16TK, TM3DQ32TK	AWG 28/ 0.08 mm <sup>2</sup>	HE10 - HE10	1/3.28	ABFTE20SP100	–
				2/6.56	ABFTE20SP200	–
				3/9.84	ABFTE20SP300	–
<b>Cordsets for digital I/O</b>	TM221M32TK, TM221ME32TK, TM3DI16K, TM3DI32K, TM3DQ16TK, TM3DQ32TK	AWG 22/ 0.035 mm <sup>2</sup>	HE10 - Flying leads	3/9.84	TWDFCW30K	0.405 0.893
				5/16.40	TWDFCW50K	0.670 1.477



ABFTE20●P●00

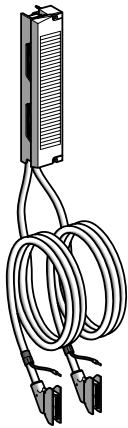


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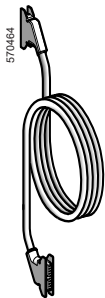
# Telefast Pre-wired System

## Modicon ABE7 connection sub-bases

### Cabled connectors for Modicon Quantum I/O modules



ABFM32H●●1

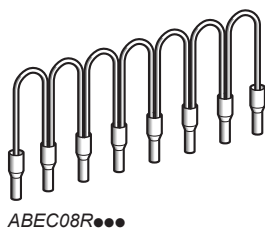
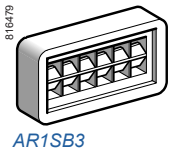
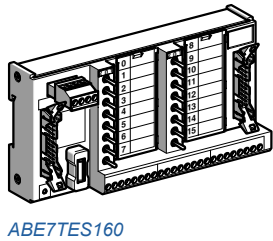
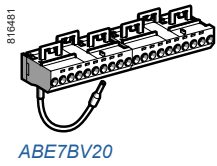
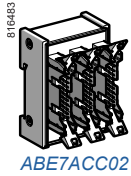


TSXCDP●03

Cabled connectors for Modicon Quantum I/O modules								
Type of signal	I/O modules	Connector types	Gauge AWG	Cross-section mm <sup>2</sup>	Length m/ft	No. of channels	Reference	Weight kg/lb
Relay inputs and outputs	(2)	2 x 20-way HE 10	22	0.324	1.5/4.921	2 x 16	<b>ABFM32H150</b>	0.650 1.433
					3/9.843	2 x 16	<b>ABFM32H300</b>	1.150 2.535
0.5 A outputs	(2)	2 x 20-way HE 10 + external power supply	22	0.324	3/9.843	2 x 16	<b>ABFM32H301</b>	1.150 2.535
Inputs or outputs (96 channels)	140DDI36400 140DDO36400	2 x 20-way HE 10	22	0.324	0.5/1.640	6 x 16	<b>TSXCDP053</b>	0.085 0.187
					1/3.281	6 x 16	<b>TSXCDP103</b>	0.150 0.331
					2/6.562	6 x 16	<b>TSXCDP203</b>	0.280 0.617
					3/9.843	6 x 16	<b>TSXCDP303</b>	0.410 0.904
					5/16.404	6 x 16	<b>TSXCDP503</b>	0.670 1.477
Analog inputs	140AVI03000 140ACI03000	1 x 25-way SUB-D	24	0.22	2/6.562	8	<b>ABFM08S201</b>	0.600 1.323
							<b>ABFM04S200</b>	0.450 0.992
Analog outputs	140AVO02000 140ACO02000 140ACO13000	1 x 25-way SUB-D	24	0.22	2/6.562	4	<b>ABFM04S201</b>	0.450 0.992
							<b>ABFM04S201</b>	0.450 0.992
							<b>ABFM08S202</b>	0.450 0.992

(1) The BMEAHI0812 module is not compatible with the ABE7CPA31E connection sub-base.  
 (2) Please consult our website [www.schneider-electric.com](http://www.schneider-electric.com)

Accessories					
Description	No. of channels	Characteristics	Order in multiples of	Unit reference	Weight kg/lb
Splitter sub-base	–	16 as 2 x 8 channels	1	<b>ABE7ACC02</b>	0.075 0.165
Redundant output sub-base	–	16 as 2 x 16 channels	1	<b>ABE7ACC10</b>	0.075 0.165
Redundant input sub-base	–	16 as 2 x 16 channels	1	<b>ABE7ACC11</b>	0.075 0.165
Plug-in continuity blocks	–	Width 12 mm	4	<b>ABE7ACC21</b>	0.010 0.022
Additional snap-on terminal blocks (shunted terminals)	8	10 screw terminals	5	<b>ABE7BV10</b>	0.030 0.066
	16	20 screw terminals	5	<b>ABE7BV20</b>	0.060 0.132
I/O simulator sub-base	16	For display, forcing, inhibition, continuity	1	<b>ABE7TES160</b>	0.010 0.022
Self-adhesive marker tag holder	–	For 6 characters	50	<b>AR1SB3</b>	0.010 0.022
Quick-blow fuses 5 x 20, 250 V, UL	–	0.125 A	10	<b>ABE7FU012</b>	0.010 0.022
	–	0.5 A	10	<b>ABE7FU050</b>	0.010 0.022
	–	1 A	10	<b>ABE7FU100</b>	0.010 0.022
	–	2 A	10	<b>ABE7FU200</b>	0.010 0.022
	–	4 A	10	<b>ABE7FU400</b>	0.010 0.022
	–	6.3 A	10	<b>ABE7FU630</b>	0.010 0.022



Commoning link accessories					
Description	For common	Color	Distance between cable ends	Reference	Weight kg/lb
Commoning links Modularity 8 x 1 mm <sup>2</sup>	Coil	White	12 cm 4.724 in.	<b>ABFC08R12W</b>	0.020 0.044
			2 cm 0.787 in.	<b>ABFC08R02W</b>	0.010 0.022
	~	Red	12 cm 4.724 in.	<b>ABFC08R12R</b>	0.020 0.044
			2 cm 0.787 in.	<b>ABFC08R02R</b>	0.010 0.022
	---	Blue	12 cm 4.724 in.	<b>ABFC08R12B</b>	0.020 0.044
			2 cm 0.787 in.	<b>ABFC08R02B</b>	0.010 0.022

# Telefast Pre-wired System

## Modicon ABE7 connection sub-bases

### Plug-in solid state relays

### Plug-in electromechanical relays



ABS7SC1B



ABS7SC2E



ABS7SA2M



ABS7EC3B2  
ABS7EC3E2  
ABS7EA3E5  
ABS7EA3F5  
ABS7EA3M5



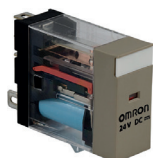
ABS7SC3BA  
ABS7SC3E



ABS7SA3M



ABR7S11  
ABR7S21



ABR7S23  
ABR7S33  
ABR7S37  
ABR7S33E

Plug-in solid state relays								
Relay width	Functions	Input circuit		Output circuit		Unit reference Order in multiples of 4	Weight kg lb	
		Current	Nominal voltage	Current	Nominal voltage (1)			
5 mm 0.197 in.	Output	---	24 V	2 A	24 V ---	ABS7SC1B	0.010 0.022	
10 mm 0.394 in.	Output	---	24 V	0.5 A	5...48 V ---	ABS7SC2E	0.016 0.035	
					24...240 V ~	ABS7SA2M	0.016 0.035	
12 mm 0.472 in.	Input	---	24 V Type 2	-	24 V ---	ABS7EC3B2	0.014 0.031	
			48 V Type 2	-	24 V ---	ABS7EC3E2	0.014 0.031	
			50 Hz ~	48 V	-	24 V ---	ABS7EA3E5	0.014 0.031
			60 Hz ~	110...130 V	-	24 V ---	ABS7EA3F5	0.014 0.031
			50 Hz ~	230...240 V	-	24 V ---	ABS7EA3M5	0.014 0.031
	Output	---	24 V	2 A Self-protected	24 V ---	ABS7SC3BA	0.016 0.035	
				1.5 A	5...48 V ---	ABS7SC3E	0.016 0.035	
				1.5 A	24...240 V ~	ABS7SA3M	0.016 0.035	

Plug-in electromechanical relays						
Relay width	Control voltage	Output current (1)	Number of contacts	Order in multiples of	Unit reference	Weight kg lb
5 mm 0.197 in.	24 V ---	5 A (lth)	1 NO	4	ABR7S11	0.005 0.011
10 mm 0.394 in.	24 V ---	5 A (lth)	1 NO	4	ABR7S21	0.008 0.018
			1 C/O	4	ABR7S23	0.008 0.018
12 mm 0.472 in.	2 V ---	10 A (lth)	1 C/O	4	ABR7S33	0.017 0.037
		8 A (lth)	2 C/O	4	ABR7S37	0.017 0.037
		8 A (lth)	1 C/O	4	ABR7S33E	0.017 0.037

Accessory for relays		
Description	Reference	Weight kg lb
Extractor for 5 mm (0.197 in.) miniature relay	ABE7ACC12	0.010 0.022

(1) In DC mode (---) nominal voltage varies from 5 to 48 V. In AC mode (~) nominal voltage varies between 24 and 240 V.

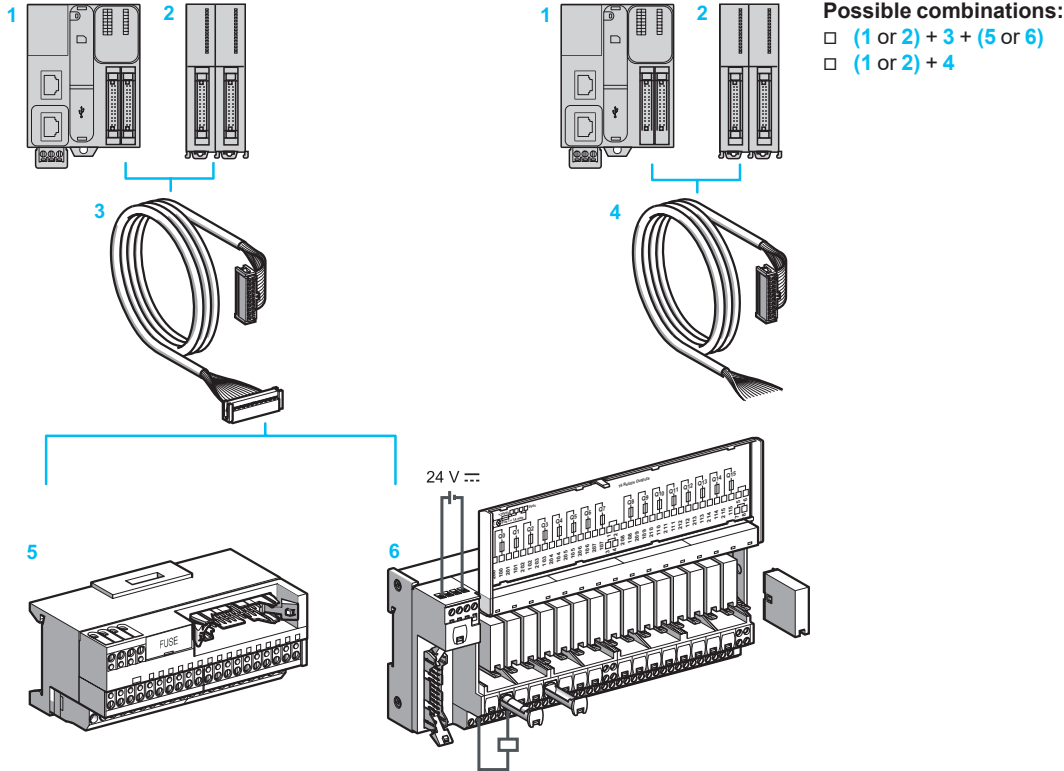
# Telefast Pre-wired System

## Modicon ABE7 connection sub-bases

Connection sub-bases for M221 Book logic controllers and Modicon TM3 expansion modules

### Telefast pre-wired system with Modicon ABE7

For 32-channel Modicon M221 Book logic controller and Modicon TM3 digital I/O expansion modules



- 1 32-channel Modicon M221 Book logic controllers (TM221M32TK, TM221ME32TK), equipped with HE 10 connectors
- 2 Digital I/O modules (TM3D●●●K) with 16 or 32 I/O, equipped with HE 10 connectors
- 3 **ABFTE20●●●** cordsets with one HE 10 connector at each end
- 4 **TWDFCW●●●** cordsets with an HE 10 connector at one end and flying leads at the other end for direct connection to sensors, preactuators, and terminal blocks
- 5 Optimum "miniature" sub-bases
- 6 16-channel sub-base for expansion modules

### Combinations

Combinations of Modicon ABE7 sub-bases with M221 Book logic controllers and Modicon TM3 expansion modules

Modicon Telefast sub-bases		Modicon M221 Book logic controllers		Modicon TM3 I/O expansion modules		
Type	Reference	Inputs	Outputs (Source)	TM3DI16K, TM3DI32K	TM3DQ16TK, TM3DQ32TK	TM3DQ16UK, TM3DQ32UK
Passive sub-bases	<b>ABE7H20E000</b>					
	<b>ABE7H16C10</b>					
	<b>ABE7H16C11</b>					
	<b>ABE7H16C21</b>					
	<b>ABE7H16C31</b>					
Electromechanical relay output sub-bases	<b>ABE7R16S111</b>					
	<b>ABE7R16S111E</b>					
	<b>ABE7R16T111</b>					
Empty sub-base for solid state or electromechanical relay	<b>ABE7P16T111</b>					

Compatible with inputs. For use with **ABFTE20EP●●●●** cordsets (1)

Compatible with outputs. For use with **ABFTE20SP●●●●** cordsets (1)

Not compatible

(1) Available lengths: 1, 2, and 3 m (3.28, 6.56 and 9.84 ft).

# Telefast Pre-wired System

## Modicon ABE7 connection sub-bases

Connection sub-bases for M221 Book logic controllers and Modicon TM3 expansion modules

Combinations						
Combinations of Modicon ABE7 sub-bases with M221/M241/M251 Book logic controllers and Modicon TM3 expansion modules						
Modicon Telefast sub-bases		Other Modicon M221/M241/M251 logic controllers		Other Modicon M221/M241/M251 logic controllers: connection via Modicon TM3 I/O expansion modules		
		No HE10 connectors		TM3DI16K, TM3DI32K	TM3DQ16TK, TM3DQ32TK	TM3DQ16UK, TM3DQ32UK
Type	Reference	–	–	Inputs	Outputs (Source)	Outputs (Sink)
Passive sub-bases	ABE7H16C10					
	ABE7H16C11					
	ABE7H16C21					
	ABE7H16C31					
	ABE7H16F43					
	ABE7H16R10					
	ABE7H16R11					
	ABE7H16R20					
	ABE7H16R21					
	ABE7H16R31					
	ABE7H16R50					
	ABE7H16S21					
	ABE7H16S43					
	ABE7H20E000					
Solid state relay input sub-bases	ABE7P16F310					
	ABE7P16F312					
Output sub-bases for solid state and/or electromechanical relays	ABE7P16T111					
	ABE7P16T210					
	ABE7P16T214					
	ABE7P16T215					
	ABE7P16T318					
	ABE7P16T330					
Electromechanical relay output sub-bases	ABE7R16S111					
	ABE7R16S111E					
	ABE7R16S210					
	ABE7R16S212					
	ABE7R16T111					
	ABE7R16T210					
	ABE7R16T212					
	ABE7R16T230					
	ABE7R16T330					
	ABE7R16T370					
Solid state relay input sub-bases	ABE7S16E2B1					
	ABE7S16E2E0					
	ABE7S16E2E1					
	ABE7S16E2F0					
	ABE7S16E2M0					
	ABE7S16S1B2					
	ABE7S16S2B0					

Compatible with inputs. For use with ABFTE20EP●●●● cordsets (1)

Compatible with outputs. For use with ABFTE20SP●●●● cordsets (1)

Not compatible

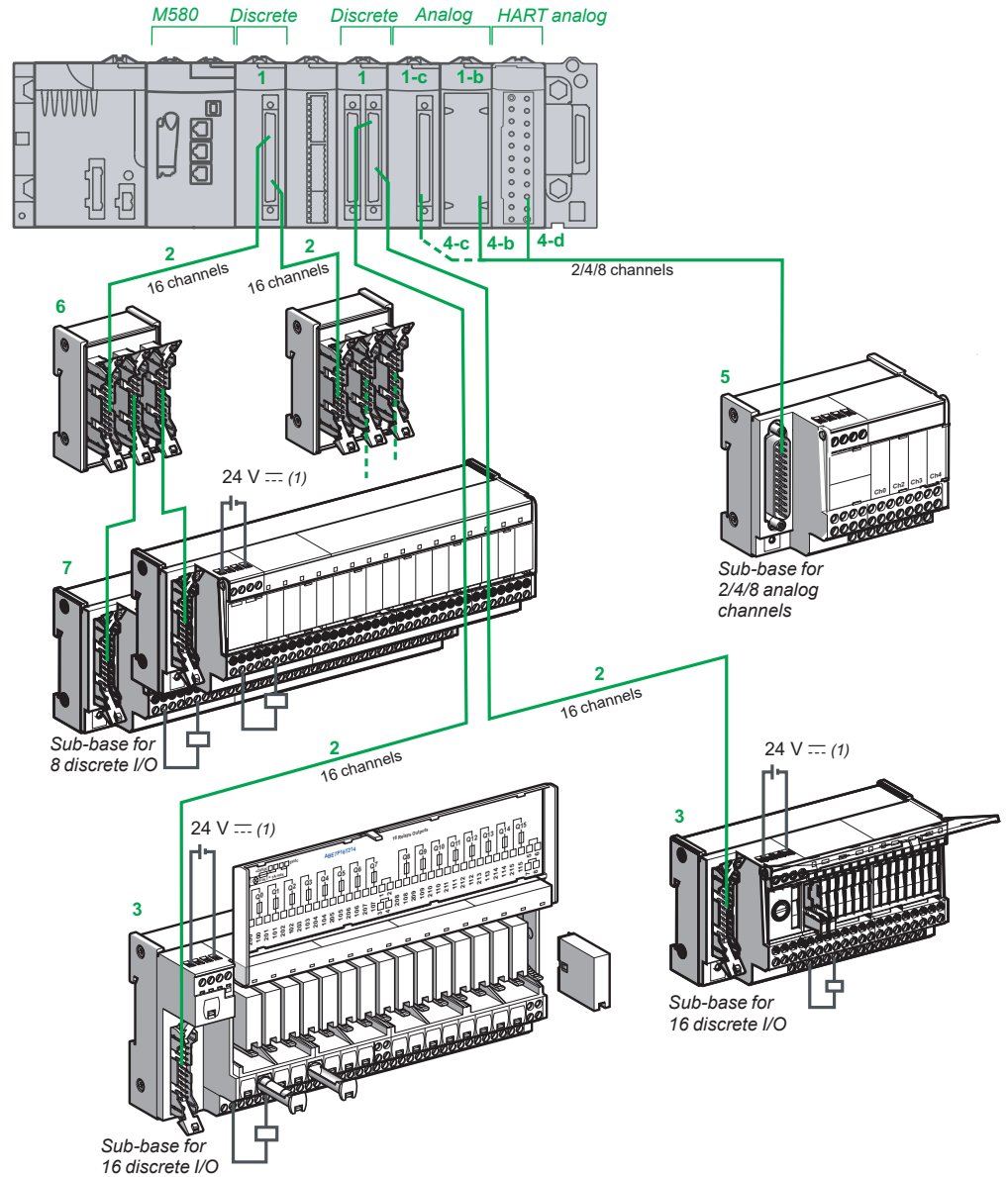
(1) Available lengths: 1, 2, and 3 m (3.28, 6.56 and 9.84 ft).



# Telefast Pre-wired System

## Modicon ABE7 connection sub-bases

### Connection sub-bases for Modicon X80 I/O modules



(1) The 24 V AC power supply is connected using Modicon Telefast ABE7 sub-bases only. The 0 V connections must be equipotential.

#### Presentation

##### I/O modules on the Modicon X80 platform

- 1 Discrete input modules (BMXDDI●●02K), discrete output modules (BMXDDO●●02K), and discrete mixed I/O modules (BMXDDM3202K) equipped with one or two 40-way FCN connectors. The modularity of each module (●●) is 32 or 64 channels.
  - **1-b** Analog input or output modules:
    - Analog inputs: **BMXAMI0410** (4 channels), **BMXAMI0800** (4 channels), and **BMXAMI0810** (8 channels)
    - Analog outputs: **BMXAMO0210** (2 channels), **BMXAMO0410** (4 channels), and **BMXAMO0802** (8 channels)
  - **1-c** Analog input modules **BMXART0414** (4 channels) and **BMXART0814** (8 channels)
  - **1-d** HART analog I/O modules **BMEAH0812** (8 channels) and **BMEAH00412** (4 channels)
- 2 2 types of cordset are available depending on the type of discrete module connected to the sub-base (for combinations, see [page 28](#)). These cordsets are available in 0.5, 1, 2, 3, 5, or 10 m/1.64, 3.28, 6.56, 9.84, 16.40, and 32.81 ft lengths:
  - **BMXFCC●●●1** cordsets with 20-wire sheath (AWG 22) equipped with one 40-way FCN connector on the module end and one HE 10 molded connector on the Telefast sub-base end
  - **BMXFCC●●●3** cordsets with two 20-wire sheaths (AWG 22) equipped with one common 40-way FCN connector on the module end and two HE 10 molded connectors on the Telefast sub-base end
- 3 16-channel Modicon Telefast ABE 7 Optimum or Universal passive connection sub-bases or adapter sub-bases
- 4 4 types of cordset are available depending on the type of analog module connected to the sub-base (for combinations, see [page 29](#))
  - **4-b** : Connection to analog module with 20-way or 28-way removable terminal block:
    - **BMXFCA●●●0** cordsets with a 20-way removable terminal block on the module end and a 25-way SUB-D connector on the Telefast sub-base end. Cordsets are available in 1.5 or 3 m/4.92 or 9.84 ft lengths.
    - **BMXFCA●●●2** cordsets with a 20-way terminal block on the module end and a 25-way SUB-D connector on the Telefast sub-base end. Cordsets are available in 1.5 or 3 m/4.92 or 9.84 ft lengths.
    - **BMXFCA●●●0** cordsets with a 28-way terminal block on the module end and a 25-way SUB-D connector on the Telefast sub-base end. Cordsets are available in 1.5 or 3 m/4.92 or 9.84 ft lengths.
  - **4-c** : Connection to analog module with 40-way FCN connector:
    - **BMXFCA●●●2** cordsets with a 40-way FCN connector on the module end and a 25-way SUB-D connector on the Telefast sub-base end. Cordsets are available in 1.5 or 3 m/4.92 or 9.84 ft lengths.
  - **4-d** : Connection to HART analog input module:
    - **BMXFCA1522/3022** cordsets with a 20-way removable terminal block at the module end and a 25-way SUB-D connector at the Telefast sub-base end. Cordsets are available in 1.5 or 3 m/4.92 or 9.84 ft lengths. Connection to HART analog input module:
    - **BMXFCA●●●0** (see description in section [4-b](#))
- 5 Modicon Telefast ABE7CPA analog and application-specific connection sub-bases (for combinations, see [pages 29](#)):
  - **ABE7CPA410** allows connection on a screw terminal block of 4 current/voltage inputs, with provision and distribution of 4 isolated protected power supplies for the current loop inputs
  - **ABE7CPA412** allows connection on a screw terminal block of 4 thermocouple inputs, with supply of cold-junction compensation for these inputs
  - **ABE7CPA21** allows connection on a screw terminal block of 4 current/voltage outputs
  - **ABE7CPA02** allows connection on a screw terminal block of 8 current/voltage I/O
  - **ABE7CPA03** allows connection on a screw terminal block of 8 inputs, with provision and distribution of the power supply (with limitation of each current loop) for the current/voltage outputs of the **BMXAMO0210** analog module
  - **ABE7CPA31**, **ABE7CPA31E** allow connection on a screw terminal block (**ABE7CPA31**) or a spring-type terminal block (**ABE7CPA31E**) of 8 inputs, with provision and distribution of the power supply (limited to 25 mA per input)
- 6 **ABE7ACC02 sub-base for splitting 16 into 2 x 8 channels**, allowing connection of 8 channels
- 7 8-channel Modicon Telefast ABE 7 Optimum or Universal passive connection sub-bases or adapter sub-bases

Combinations of discrete inputs/outputs on the Modicon X80 platform with ABE7 sub-bases						
(Items 1...7), see Presentation on page 26		Discrete I/O modules for Modicon X80				
		Reference for 24 V DC discrete I/O modules (item 1)				
		Inputs		Outputs		I/O
		2 x 16 I	4 x 16 I	2 x 16 Q	4 x 16 Q	1 x 16 I, 1 x 16 Q
		BMXDDI3202K	BMXDDI6402K	BMXDDO3202K	BMXDDO6402K	BMXDDM3202K
<b>Required cordsets</b>						
Preassembled cordsets (connectors at both ends)	BMXFCC●●1, BMXFCC●●3 (item 2) (1)	Yes	Yes	Yes	Yes	No
	BMXFCC●●3 (item 2) (1)	No	No	No	No	Yes
	Quantities to be ordered	1	2	1	2	1
<b>Passive connection sub-bases</b>						
Optimum 16 channels (item 3)	ABE7H34E100, ABE7H34E200 "Economy" (2)					
	ABE7H16C●● "Miniature"					
Universal 8 channels (item 7)	ABE7H08R21	(3)	(3)	(3)	(3)	(3)
Universal 16 channels (item 3)	ABE7H16R1●●					
	ABE7H16R50					
	ABE7H16R2●●					
	ABE7H16S21					
	ABE7H16S31					
	ABE7H16R23					
	ABE7H16S43					
	ABE7H16F43					
<b>Input adapter sub-bases with solid state relays</b>						
Universal 16 channels (item 3)	ABE7S16E2●●●					
	Fixed solid state relays, removable terminal blocks					
	ABE7P16F310, ABE7P16F312					
	Plug-in solid state relays					
<b>Output adapter sub-bases with fixed relays, removable terminal blocks</b>						
Optimum & Universal 8 channels (item 7)	ABE7R08S111, ABE7R08S210			(3)	(3)	(3)
	Electromechanical relays					
Optimum & Universal 16 channels (item 3)	ABE7S16S●B●●					
	Solid state relays					
	ABE7R16S111●, ABE7R16S210, ABE7R16S212					
	Electromechanical relays					
<b>Output adapter sub-bases with plug-in relays</b>						
Optimum & Universal 16 channels (item 3)	ABE7R16T●●●, ABE7R16M111					
	Electromechanical relays					
	ABE7P16T●●●					
	Solid state and/or electromechanical relays					
<b>Sub-bases for analog I/O</b>						
4 channels (item 5)	ABE7CPA410					
	ABE7CPA412					
2 channels (item 5)	ABE7CPA21					
8 channels (item 5)	ABE7CPA02					
	ABE7CPA03					
	ABE7CPA31, ABE7CPA31E					

Compatible
Not compatible

(1) References for cordsets to be completed; please refer to our "Modicon X80 I/O Platform" offer for Modicon M340, Modicon M580, and Modicon Quantum.  
 (2) ABE7H34E100 kit: ABE7H20E000 Optimum "Economy" sub-base + ABFH34M100 cordset (1 m/3.28 ft) included. ABE7H34E200 kit: ABE7H20E000 Optimum "Economy" sub-base + ABFH34M200 cordset (2 m/6.56 ft) included.  
 (3) Via 6 ABE7ACC02 splitter sub-base used to separate 16 channels into 2 x 8 channels.

Combinations of analog inputs/outputs on the Modicon X80 platform with ABE7 sub-bases											
(Items 1...7), see Presentation on page 26		Analog I/O modules for Modicon X80									
		Reference for analog I/O modules (item 1-b, 1-c and 1-d)									
		Inputs						Outputs			
		4	4	2 x 4	8	8	8	2	4	8	4
BMX AMI 0410	BMX ART 0414	BMX ART 0814	BMX AMI 0800	BMX AMI 0810	BME AHI 0812	BMX AMO 0210	BMX AMO 0410	BMX AMO 0802	BME AHO 0412		
<b>Required cordsets</b>											
Preassembled cordsets (connectors at both ends)	BMXFCA●●0 (item 4-b) (1)	Yes	No	No	No	No	No	Yes	Yes	No	Yes
	BMXFCA●●2 (item 4-c) (1)	No	Yes	Yes	No	No	No	No	No	No	No
	BMXFTA●●0 (item 4-c) (1)	No	No	No	Yes	Yes	No	No	Yes	No	No
	BMXFTA●●2 (item 4-c) (1)	No	No	No	No	No	No	No	No	Yes	No
	BMXFTA●●22 (item 4-d) (1)	No	No	No	No	No	Yes	No	No	No	No
Quantities to be ordered		1	1	2	1	1	1	1	1	1	1
<b>Passive connection sub-bases</b>											
Optimum 16 channels (item 3)	ABE7H16C●● “miniature”										
Universal 8 channels (item 7)	ABE7H08R21										
Universal 16 channels (item 3)	ABE7H16R1●●										
	ABE7H16R50										
	ABE7H16R2●●										
	ABE7H16S21										
	ABE7H16S31										
	ABE7H16R23										
	ABE7H16S43										
	ABE7H16F43										
<b>Input adapter sub-bases with solid state relays</b>											
Universal 16 channels (item 3)	ABE7S16E2●●● Fixed solid state relays, removable terminal blocks										
	ABE7P16F310, ABE7P16F312 Plug-in solid state relays										
<b>Output adapter sub-bases with fixed relays, removable terminal blocks</b>											
Optimum & Universal 8 channels (item 7)	ABE7R08S111, ABE7R08S210 Electromechanical relays										
	ABE7S16S●B●● Solid state relays										
Optimum & Universal 16 channels (item 3)	ABE7R16S111●, ABE7R16S210, ABE7R16S212 Electromechanical relays										
<b>Output adapter sub-bases with plug-in relays</b>											
Optimum & Universal 16 channels (item 3)	ABE7R16T●●●, ABE7R16M111 Electromechanical relays										
	ABE7P16T●●● Solid state and/or electromechanical relays										
<b>Sub-bases for analog I/O</b>											
4 channels (item 5)	ABE7CPA410										
	ABE7CPA412										
2 channels (item 5)	ABE7CPA21										
8 channels (item 5)	ABE7CPA02										
	ABE7CPA03										
	ABE7CPA31										
	ABE7CPA31E										

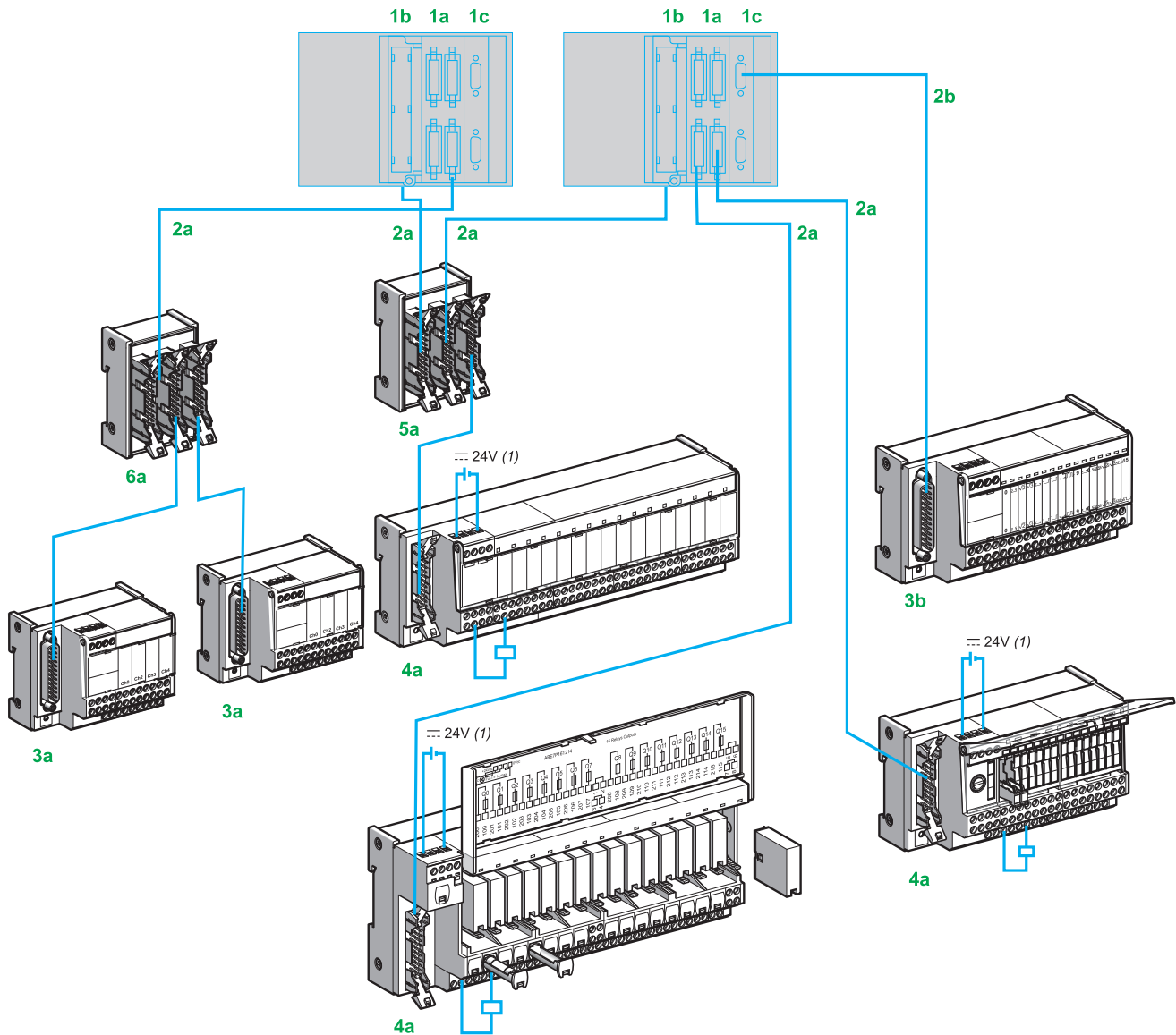
Compatible  
Not compatible

(1) References for cordsets to be completed; please refer to our “Modicon X80 I/O Platform” offer for Modicon M340, Modicon M580, and Modicon Quantum.

# Telefast Pre-wired System

## Modicon ABE7 connection sub-bases

### Connection sub-bases for Modicon Premium platform



- 1a** Discrete I/O modules equipped with HE 10 connectors
- 1b** Analog I/O modules, equipped with 25-way SUB-D connectors
- 1c** Application-specific modules with screw terminals
- 2a** A single type of cordset equipped with 20-way HE 10 connectors, for 8, 12, or 16-channel modularity. The HE 10 connectors can be molded, **TSXCDP●●●** (AWG 22) or insulation piercing, **ABFH20H●●●** (AWG 28). These cordsets are available in various lengths. They use AWG 28 (0.08 mm<sup>2</sup>) for connecting input and output sub-bases rated 100 mA directly, as well as sub-bases with relays.  
Adapter **ABE7ACC02** allows connection of sub-bases with 8-channel modularity.
- 2b** All analog signals are connected with a **TSXCAP030/100** preassembled cordset equipped with 25-way SUB-D connectors, to provide shielding continuity.
- 3a** 8-channel Modicon Telefast ABE7 sub-bases
- 3b** Sub-bases dedicated to counter and analog channels:
  - **ABE7CPA02** for connecting current, voltage, or PT100 inputs on a screw terminal block
  - **ABE7CPA03** with 4-20 mA sensor loop power supply and 25 mA/channel limiter
  - **ABE7CPA21** for connecting output modules with 4 analog channels on a screw terminal block
  - **ABE7CPA31** with the 4-20 mA sensor loop isolated power supply for 8 input channels isolated from one another
  - **ABE7CPA11** for connecting an absolute encoder with parallel outputs
  - **ABE7CPA12** for connecting 16 thermocouple probes
- 4a** 16-channel Modicon Telefast ABE7 sub-bases
- 5a** Splitter sub-bases for connecting discrete I/O in parallel from a Modicon Telefast ABE7 sub-base on 2 different PLCs:
  - **ABE7ACC10** for output redundancy
  - **ABE7ACC11** for input redundancy
- 6a** **ABE7CPA01** sub-base dedicated to connecting axis control and counter inputs on a terminal block

The 24 V  $\overline{\overline{\cdot}}$  power supply is connected using Telefast sub-bases only. The 0 V  $\overline{\overline{\cdot}}$  connections must be equipotential.

Combinations of discrete I/O on the Modicon Premium platform with ABE7 sub-bases								
(For item numbers, see Presentation on page 30)		Discrete I/O modules for Modicon Premium						
Reference for 24 V ~ discrete I/O modules (item 1a)								
		Inputs			Outputs		I/O	
		4 x 16 I 2 x 16 I	2 x 16 I	1 x 16 I	4 x 16 Q 2 x 16 Q	1 x 16 I	1 x 12 Q	
		TSXDEY64D2K TSXDEY32D2K	TSXDEY32DK	TSXDEY16FK	TSXDSY64T2K TSXDSY32T2K	TSXDMY28FK TSXDMY28RFK		
<b>Required cordsets</b>								
Preassembled cordsets (connectors at both ends)	TSXCDP●●3 (item 2a), see page 21	Yes	Yes	Yes	Yes	Yes	Yes	
	ABFH20H●●0 (item 2a), see page 20	Yes	Yes	Yes	Yes	Yes	Yes	
<b>Passive connection sub-bases</b>								
Universal 8 channels (item 3a)	ABE7H08R21	(1)		(1)	(1)	(1)		
Universal 16 channels (item 4a)	ABE7H16R●●		ABE7H16R20					
	ABE7H16C●●		ABE7H16R20					
	ABE7H20E●●● (2)		ABE7H16R20					
	ABE7H16S21							
	ABE7H16R23							
	ABE7H16F43							
	ABE7H16S43							
<b>Input adapter sub-bases with solid state relays</b>								
Universal 16 channels (item 4a)	ABE7S16E2●● Fixed solid state relays, removable terminal blocks							
	ABE7P16F3●● Plug-in solid state relays							
<b>Output adapter sub-bases with fixed relays, removable terminal blocks</b>								
Optimum & Universal 8 channels (item 3a)	ABE7R08S111, ABE7R08S210 Electromechanical relays				(1)			
Optimum & Universal 16 channels (item 4a)	ABE7S16S●●● Solid state relays							
	ABE7R16S●●● Electromechanical relays							
<b>Output adapter sub-bases with plug-in relays</b>								
Optimum & Universal 16 channels (item 4a)	ABE7R16T●●● Electromechanical relays							
	ABE7P16T●●● Solid state and/or electromechanical relays							

Compatible  
Not compatible

(1) Using splitter sub-base ABE7ACC02, which allows 16 channels to be split into 2 x 8 channels.  
(2) ABE7H20E●●● low-cost sub-bases including cordset.

Combinations of analog I/O on the Modicon Premium platform with ABE7 sub-bases									
(For item numbers, see Presentation on page 30)		Analog I/O modules for Modicon Premium							
		Reference for analog I/O modules (item 1b)							
		Inputs				Outputs		Thermocouple inputs	
		2 x 8 I	8 I	8 I	4 I	4 Q	8 Q	2 x 8 I	
		TSXAEY1600	TSXAEY800	TSXAEY810	TSXAEY420	TSXASY410	TSXASY800	TSXAEY1614	
<b>Required cordsets</b>									
Preassembled cordsets (connectors at both ends)		TSXCAP●●0 (item 2b)	Yes	Yes	Yes	Yes	(2)	Yes	Yes
<b>Passive connection sub-bases</b>									
Universal 8 channels (item 3a)		ABE7H08R21							
Universal 16 channels (item 4a)		ABE7H16R●●							
		ABE7H16C●●							
		ABE7H20E●●● (1)							
		ABE7H16S21							
		ABE7H16R23							
		ABE7H16F43							
		ABE7H16S43							
<b>Input adapter sub-bases with solid state relays</b>									
Universal 16 channels (item 4a)		ABE7S16E2●●							
		Fixed solid state relays, removable terminal blocks							
		ABE7P16F3●●							
		Plug-in solid state relays							
<b>Output adapter sub-bases with fixed relays, removable terminal blocks</b>									
Optimum & Universal 8 channels (item 3a)		ABE7R08S111, ABE7R08S210							
		Electromechanical relays							
Optimum & Universal 16 channels (item 4a)		ABE7S16S●●●							
		Solid state relays							
		ABE7R16S●●●							
		Electromechanical relays							
<b>Output adapter sub-bases with plug-in relays</b>									
Optimum & Universal 16 channels (item 4a)		ABE7R16T●●●							
		Electromechanical relays							
		ABE7P16T●●●							
		Solid state and/or electromechanical relays							
<b>Sub-bases for analog channels</b>									
		ABE7CPA01 (item 6a)							
		ABE7CPA11 (item 3b)							
		ABE7CPA02 (item 3b)							
		ABE7CPA21 (item 3b)				(2)			
		ABE7CPA03 (item 3b)				(3)			
		ABE7CPA31 (item 3b)							
		ABE7CPA12 (item 3b)							

Compatible  
Not compatible

(1) ABE7H20E●●● low-cost sub-bases including cordset  
 (2) ABFY25S200 cabled connector equipped with TSXBLY01 terminal block  
 (3) Only the first 4 channels are balanced.

Combinations of application-specific I/O on the Modicon Premium platform with ABE7 sub-bases							
(For item numbers, see Presentation on page 30)		Application-specific I/O modules for Modicon Premium					
		Reference for application-specific I/O modules (item 1c)					
		Axis control		Counter		High-speed counter	
		Speed reference	Auxiliary inputs	Auxiliary inputs	Counter	Auxiliary inputs	Counter
		TSXCAY●1, TSXCFY●A		TSXCTY●A		TSXCTY2C	
<b>Required cordsets</b>							
Preassembled cordsets (connectors at both ends)	TSXCAP030 (item 2b)	Yes	No	No	Yes	No	Yes
	TSXCDP●●3 (item 2a)	No	Yes	Yes	No	Yes	No
<b>Passive connection sub-bases</b>							
Universal 8 channels (item 3a)	ABE7H08R21						
Universal 16 channels (item 4a)	ABE7H16R●●		ABE7H16 R20	ABE7H16 R20 (1)		ABE7H16 R20 (1)	
	ABE7H16C●●		ABE7H16 R20	ABE7H16 R20 (1)			
	ABE7H20E●●● (2)		ABE7H16 R20	ABE7H16 R20 (1)			
	ABE7H16S21						
	ABE7H16R23						
	ABE7H16F43						
	ABE7H16S43						
<b>Input adapter sub-bases with solid state relays</b>							
Universal 16 channels (item 5)	ABE7S16E2●●						
	Fixed solid state relays, removable terminal blocks						
	ABE7P16F3●●						
	Plug-in solid state relays						
<b>Output adapter sub-bases with fixed relays, removable terminal blocks</b>							
Optimum & Universal 8 channels (item 3a)	ABE7R08S111, ABE7R08S210						
	Electromechanical relays						
Optimum & Universal 16 channels (item 4a)	ABE7S16S●●●						
	Solid state relays						
	ABE7R16S●●●						
	Electromechanical relays						
<b>Output adapter sub-bases with plug-in relays</b>							
Optimum & Universal 16 channels (item 4a)	ABE7R16T●●●						
	Electromechanical relays						
	ABE7P16T●●●						
	Solid state and/or electromechanical relays						
<b>Sub-bases for counter channels</b>							
	ABE7CPA01 (item 6a)						
	ABE7CPA11 (item 3b)	(3)					
	ABE7CPA02 (item 3b)						
	ABE7CPA21 (item 3b)						
	ABE7CPA03 (item 3b)						
	ABE7CPA31 (item 3b)						
	ABE7CPA12 (item 3b)						

Compatible  
Not compatible

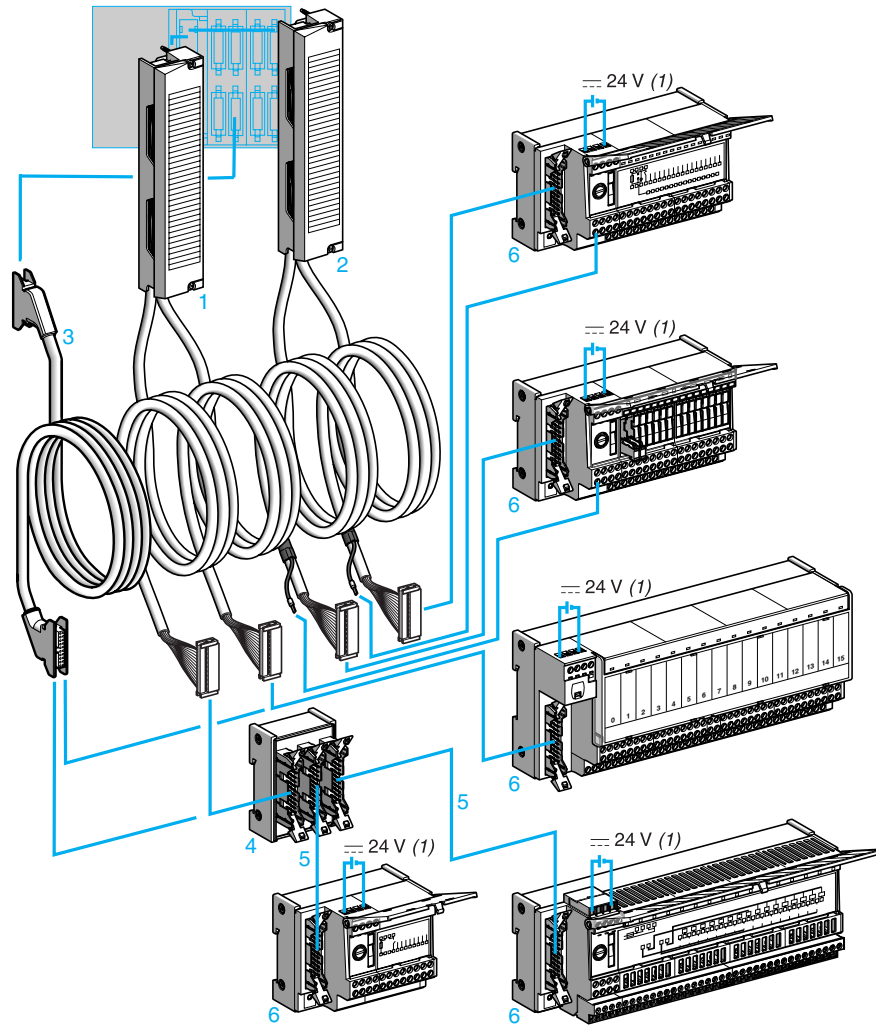
(1) 2-channel connection  
(2) ABE7H20E●●● low-cost sub-bases including cordset  
(3) Compatible with module TSXCAY●1 only.



# Telefast Pre-wired System

## Modicon ABE7 connection sub-bases

### Connection sub-bases for I/O modules for Modicon Quantum platforms





- 1-2** Cabled connectors combining a standard screw terminal block, two multicore (AWG 22) cables and two 20-way HE 10 connectors. Two types of cabled connector are available:
- **ABFM32H150, ABFM32H300** 1 cabled connectors for I/O modules (32 channels) on the Modicon Quantum platform, with 2 HE 10 connectors each integrating 16 channels
  - **ABFM32H301** 2 cabled connector I/O modules (32 channels) on the Modicon Quantum platform, with 2 HE 10 connectors each integrating 16 channels and an external power supply with a direct connection to the terminal marked (1) on the sub-bases **6**.
- ABFM08S202** cabled connector for analog I/O modules (8 channels) on the Modicon Quantum platform equipped with a standard screw terminal block at one end and a 25-way SUB-D connector at the other end
- 3** Cordsets (AWG 22) equipped with a 20-way HE 10 connector **TSXCDP053/03** for 96-channel I/O modules (connected on six 20-way HE 10 connectors)
- 4** **ABE7ACC02** splitter box (16 to 2 x 8 channels) for use with 8-channel sub-bases
- 5** A single type of cordset equipped with 20-way HE 10 connectors, irrespective of the 8 or 16-channel modularity. The HE 10 connectors can be molded **TSXCDP000** or insulation piercing **ABFH20H000**.
- 6** 8 and 16-channel connection sub-bases from the Modicon ABE 7 range

(1) The 24 V  $\overline{\text{---}}$  power supply for the Quantum I/O modules must only be connected via Telefast ABE7 sub-bases. The 0 V  $\overline{\text{---}}$  connections must be equipotential.

# Telefast Pre-wired System

Modicon ABE7 connection sub-bases  
 Connection sub-bases for I/O modules for  
 Modicon Quantum platforms

Quantum I/O modules								
	24 V --- discrete I/O				Analog I/O			
	Inputs	Outputs	Inputs	Outputs	Inputs	Outputs		
	32 I	32 Q	96 I	96 Q	8 I	4 Q	8 Q	
	140DDI35300 140DDI85300	140DDO35300	140DDI36400	140DDO36400	140AVI03000 140ACI03000	140AVO02000	140ACO2000	140ACO13000
Cabled connectors	ABFM32H150 ABFM32H300	ABFM32H301	-	-	ABFM08S201	ABFM04S200	ABFM04S201	ABFM 08S202
Cordsets	-	-	TSXCDP053 TSXCDP●03	-	-	-	-	-
Passive sub-bases								
8 channels	ABE7H08R21	(1)		(1)				
16 channels	ABE7H16R●●, ABE7H16C●● ABE7H16S21							
	ABE7H16R23	(2)						
	ABE7H16F43							
	ABE7H16S43	(3)						
Input adapter sub-bases								
16 channels	ABE7S16E2B1, ABE7P16F310, ABE7P16F312							
Output adapter sub-bases								
8 channels	ABE7R08S●●●	(1)		(1)				
16 channels	ABE7R16S●●●  ABE7R16T●●●, ABE7P16T●●● ABE7S16S●●●							
Sub-bases for analog I/O								
4 channels	ABE7CPA21							
8 channels	ABE7CPA02  ABE7CPA03  ABE7CPA31							

 ABFM32H●● cabled connectors  
 TSXCDP●●● cordsets

**Note:** For harsh environments, **Modicon ABE9** IP67 passive splitter boxes can be used in combination with I/O modules on the Modicon Quantum platform. Main characteristics:

- 8/16 I/O channels
- Connection of 1 to 16 sensors/actuators
- M12 I/O connectors
- Connection to the PLC by connector or multicore cable
- IP67 degree of protection
- Plastic case

Please consult our website [www.schneider-electric.com](http://www.schneider-electric.com).

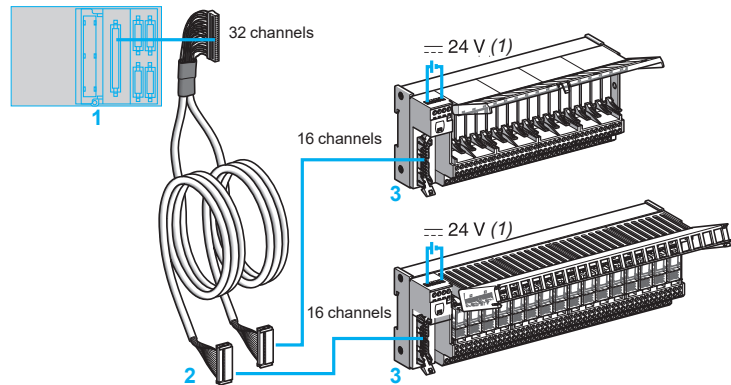
- (1) With the **ABE7ACC02** splitter sub-base (16 channels as 2 x 8).
- (2) With **140DDI35300** module only.
- (3) With **140DDI85300** module only.

# Telefast Pre-wired System

## Modicon ABE7 connection sub-bases

### Connection sub-bases for Allen Bradley SLC500 PLCs

#### Cordsets for Allen Bradley SLC500 PLCs



- 1 For the SLC500 range, specially designed cordsets connect to I/O modules that are equipped with 40-way HE 10 connectors, integrating 32 channels.
- 2 ABFH40H300 cordset for connecting 16-channel sub-bases. These are preassembled with one 40-way HE 10 connector at the PLC end and 2 x 20-way HE 10 connectors at the Telefast end. Available in 3 m (9.84 ft) lengths, AWG 22, there are 2 types of "Y" form cable: one exclusively for inputs and one for outputs.
- 3 16-channel sub-bases. It is possible to use 8-channel sub-bases by inserting the ABE7ACC02 adapter.

(1) The power may be supplied via the PLC terminal block or via the Telefast sub-base.

Combinations			
I/O modules for Allen Bradley PLCs			
		Allen Bradley	
		SLC500	
		Input	
Integrated in the PLCs		32 I	32 Q
		1746 IB32	1746 OB32
			1746 OV32
Connection terminal blocks	None		
Cordsets	ABFH40H300		ABFH40H300
Modularity: 16 channels			
Connection sub-bases			
8 channels	ABE7H08R21	(2)	(2) (1) (2)
16 channels	ABE7H16R●●, ABE7H16C●●		(1)
	ABE7H16S21		
	ABE7H16R23		
	ABE7H16F43		
	ABE7H16S43		
Input adapter sub-bases			
16 channels	ABE7S16E2●●, ABE7P16F3●●		
Output adapter sub-bases			
8 channels	ABE7R08S●●●		(2)
16 channels	ABE7R16S●●●, ABE7R16T●●●		
	ABE7P16T●●●		
	ABE7S16S●●●		(3)
Sub-bases for analog/counter I/O			
	ABE7CPA01		
	ABE7CPA02		
	ABE7CPA03		
	ABE7CPA21		

(1) With Telefast sub-bases with no channel LED.

(2) With ABE7ACC02 splitter sub-base.

(3) ABE7S16S●B2 sub-base only.

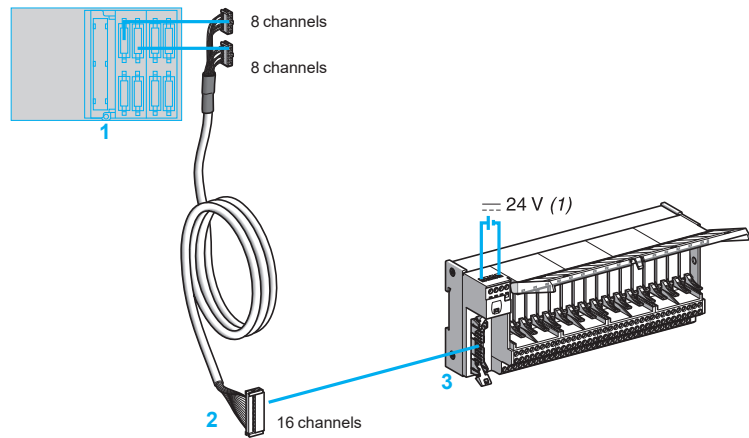
 Preassembled cordsets

# Telefast Pre-wired System

## Modicon ABE7 connection sub-bases

### Connection sub-bases for Siemens S7 PLCs

#### Cordsets for Siemens S7 PLCs



- 1 The 24 V  $\overline{\text{---}}$  power supply can be provided via 6ES7-... terminal blocks connected to the PLC modules.  
For the S7200/300/400 ranges, the specially designed cordsets connect to the manufacturer's terminal blocks with 16-way HE10 connectors. Each connector has 8 channels.
- 2 ABFH32H... cordsets for connecting 16-channel sub-bases. These are preassembled with 2 x 16-way HE 10 connectors at the S7 PLC end and one 20-way HE 10 connectors at the Telefast end. Available in 1.5 and 3 m (4.92 and 9.84 ft) lengths, AWG 26, these "Y" form cables only connect the I/O controlling the relay sub-bases.

(1) The power may be supplied via the PLC terminal block or via the Telefast sub-base.

Combinations							
I/O modules for Siemens S7 PLCs							
		Siemens					
		S7-300		S7-400			
		Input	Input	Output	Output	Input	Output
		16 I	32 I	16 Q	32 Q	32 I	32 Q
Integrated in the PLCs	6ES7	321 1BH01 0AA0	321 1BL00 0AA0	322 1BH01 0AA0	322 1BL00 0AA0	421 1BL00 0AA0	422 1BL00 0AA0
Connection terminal blocks	6ES7	921 3AB00 0AA0	921 3AA20 0AA0	921 3AB00 0AA0	921 3AA20 0AA0	921 4AB00 0AA0	921 4AB00 0AA0
Cordsets Modularity 16 channels		ABFH32H150, ABFH32H300	ABFH32H150, ABFH32H300	ABFH32H150, ABFH32H300	ABFH32H150, ABFH32H300	ABFH32H150, ABFH32H300	ABFH32H150, ABFH32H300
Connection sub-bases							
8 channels	ABE7H08R21						
16 channels	ABE7H16R●●, ABE7H32●●●, ABE7H16C●●						
	ABE7H16S21						
	ABE7H16R23, ABE7H16F43						
	ABE7H16S43						
Input adapter sub-bases							
16 channels	ABE7S16E2●●, ABE7P16F3●●						
Output adapter sub-base							
8 channels	ABE7R08S●●●						
16 channels	ABE7R16S●●●						
	ABE7R16T●●●						
	ABE7P16T●●●						
	ABE7S16S●●●			(1)	(2)		(2)
Sub-bases for analog/counter I/O							
	ABE7CPA01						
	ABE7CPA02						
	ABE7CPA03						
	ABE7CPA21						

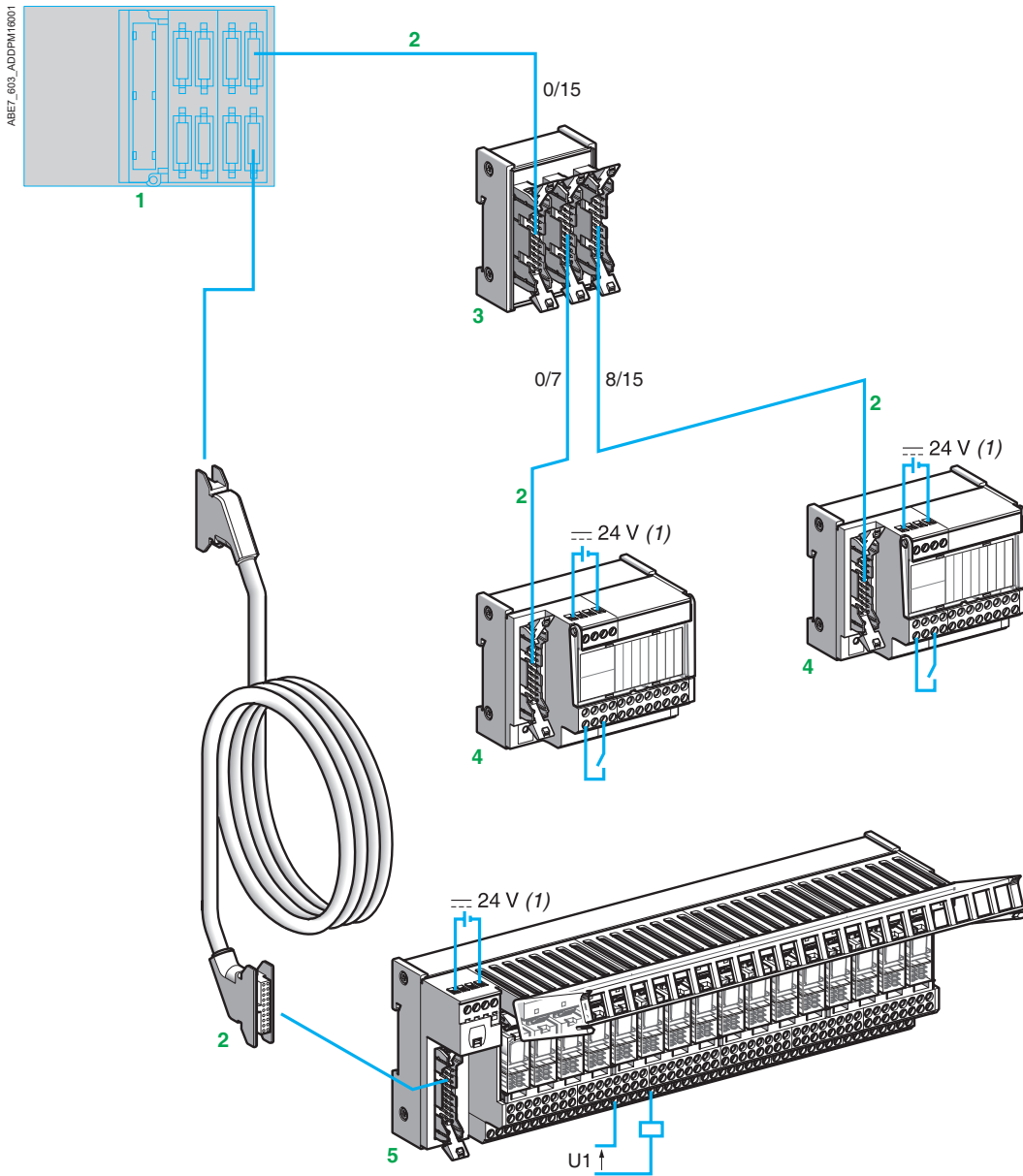
(1) With ABE7S16S2B2 sub-base only  
 (2) Do not use with ABE7ACC21.

 Preassembled cordsets

# Telefast Pre-wired System

## Modicon ABE7 connection sub-bases

Connection sub-bases for Modicon TSX Micro PLCs



- 1** I/O modules equipped with HE 10 connectors. Available in modules of 8, 12, 28, and 64 I/O.
- 2** A single type of cordset equipped with 20-way HE 10 connectors, irrespective of the 8, 12, or 16-channel modularity. The HE 10 connectors may be molded (TSXCDP●●●) or insulation piercing (ABFH20H●●●). These cordsets are available in 0.5 m/1.64 ft, 1 m/3.28 ft, 2 m/6.56 ft, 3 m/9.84 ft and 5 m/16.40 ft lengths. They use AWG 28 (0.08 mm<sup>2</sup>) for connecting inputs and relay sub-bases, and AWG 22 (0.324 mm<sup>2</sup>) for direct connection of 0.5 A outputs of 8 and 28 I/O modules.
- 3** 16 channels may be split into 2 x 8 channels using splitter sub-base [ABE7ACC02](#).
- 4-5** 8-channel and 16-channel sub-bases respectively.

(1) The 24 V  $\overline{\text{---}}$  power supply is connected using Telefast sub-bases only. The 0 V  $\overline{\text{---}}$  connections must be equipotential.

Combinations													
I/O modules for Modicon TSX Micro PLCs													
		24 V --- discrete I/O					Inputs		Outputs		Counter		Analog and counter
									Auxiliary inputs	Counter			
		8 I + 8 Q	1 X 16 I	1 X 12 Q	2 X 16 I	2 X 16 Q	1 X 12 I	1 X 8 Q	-	-	-	-	
Integrated in the PLCs	TSX	-	3710128DTK1		3710164DTK1		-	-	-	-	-	3722001	
		-	-	-	-	-	-	-	-	-	-	3722011	
With modules	TSX	DMZ16DTK	DMZ28DTK		DMZ64DTK		DEZ12D2K	DSZ08T2K	CTZ1A	CTZ1A	-	-	
		-	-	-	-	-	-	-	CTZ2A	CTZ2A	-	-	
<b>Connection sub-bases</b>													
8 channels	ABE7H08R21		(1)		(1)	(1)							
16 channels	ABE7H16R●●								ABE7H16R20	(2)			
	ABE7H16C●●												
	ABE7H20E●●●												
	ABE7H16S21												
	ABE7H16R23												
	ABE7H16F43												
	ABE7H16S43												
<b>Input adapter sub-bases</b>													
16 channels	ABE7S16E2●●						(3)						
	ABE7P16F3●●						(3)						
<b>Input and output adapter sub-bases</b>													
16 channels	ABE7H16CM21												
8 I + 8 Q	ABE7R16M111												
<b>Output adapter sub-bases</b>													
8 channels	ABE7R08S111,					(1)							
	ABE7R08S210												
16 channels	ABE7S16S●●●												
	ABE7R16S●●●			(4)									
	ABE7R16T●●●			(4)									
	ABE7P16T●●●			(4)									
<b>Sub-bases for analog/counter I/O</b>													
	ABE7CPA01												
	ABE7CPA11												
	ABE7CPA02												
	ABE7CPA03												

- (1) Using splitter sub-base ABE7ACC02, which allows 16 channels to be split into 2 x 8 channels
- (2) With module TSXGTZ2A, to be used with sub-bases with no LED.
- (3) The last four channels are not used.
- (4) The last four channels are not used and remain at state 1.

 Preassembled cordsets



# Telefast Pre-wired System

## Modicon ABE7 connection sub-bases

### Connection sub-bases for Twido controller and Modicon TM2 I/O expansion modules

#### Presentation

Relay and connection functions, with or without polarity distribution, significantly reduce wiring time and eliminate the risk of error.

The Telefast pre-wired system allows fast, reliable and economical remote connection of I/O modules (24 V  $\overline{\text{discrete}}$ ) to operative parts, partly eliminating the single-wire connection and intermediate terminal blocks.

The Telefast ABE7 system can only be connected to Twido modules and Modicon TM2 expansion modules equipped with HE 10 connectors. It consists of cordsets and interface sub-bases.

The Telefast ABE7 range is suitable for all types of connection found in control system devices:

- I/O located in the PLC cabinet
- I/O located directly on the machine or in auxiliary enclosures

All the I/O connection sub-bases comprise output terminals on 2 rows:

- 1st row: connection of the signal
- 2nd row: connection of the common
- 24 V  $\overline{\text{discrete}}$  for the inputs
- 0 V for the outputs

A 3rd row of optional terminals [ABE7BV20](#) may be added for connecting another common.

These I/O sub-bases are available in different configurations:

#### Sub-bases for Twido modular base controllers

- **ABE7B20MPN20**: Sub-base with 12 passive inputs + 8 passive outputs
- **ABE7B20MPN22**: Sub-base with 12 passive inputs + 8 passive outputs
  - individual fuse protection for each output (0.315 A)
  - LED indication
  - blade type isolator for the 0 V common
- **ABE7B20MRM20**: Sub-base with 12 soldered relay inputs + 8 soldered relay outputs
  - 2 A solid state relay (1 x 4 A common/2 channels) on 2 outputs
  - electromechanical relays (1 NO 24 V  $\overline{\text{discrete}}$ /250 V  $\sim$ , 3 A) on 6 outputs for adaptation of the current or voltage signal (1 x 10 A common/6 channels)

#### Sub-bases for Modicon TM2 I/O expansion modules

- **ABE7E16EPN20**: Sub-base with 16 passive inputs
- **ABE7E16SPN20**: Sub-base with 16 passive outputs
- **ABE7E16SPN22**: Sub-base with 16 passive outputs
  - individual fuse protection for each output (0.315 A)
  - LED indication
  - blade type isolator for the 0 V common
- **ABE7E16SRM20**: Sub-base with 16 soldered relay outputs
  - electromechanical relays (1 NO 24 V  $\overline{\text{discrete}}$ /250 V  $\sim$ , 3 A) on 16 outputs for adapting the current or voltage signal (1 x 5 A common/4 channels)

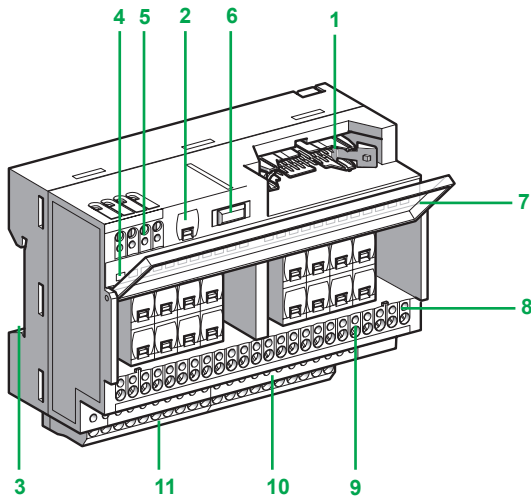
#### Optional terminal block

- **ABE7BV20**
  - 20 shunted screw terminals for connecting a single common

## Telefast Pre-wired System

### Modicon ABE7 connection sub-bases

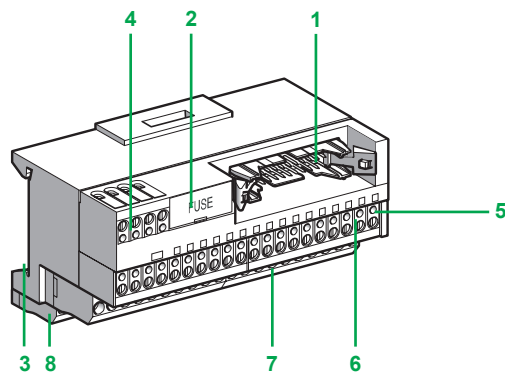
Connection sub-bases for Twido controller and Modicon TM2 I/O expansion modules



#### Description

##### ABE7B20M●●●●, ABE7E16SRM20, and ABE7E16SPN22 connection sub-bases

- 1 HE 10 connector (20-way for ABE7E16●●●●●, 26-way for ABE7B20●●●●●)
- 2 Fuse for the 24 V  $\overline{\text{---}}$  power circuit
- 3 Rail mounting
- 4 LED for channel indication (on ABE7B20MPN22 and ABE7E16SPN22 only)
- 5 24 V  $\overline{\text{---}}$  power supply terminal block
- 6 Blade type isolator on 0 V  $\overline{\text{---}}$  (on ABE7B20MPN22 and ABE7E16SPN22 only)
- 7 Legend holder cover: customer marking on outside and sub-base wiring scheme on inside, providing access to fuses per channel (on ABE7B20MPN22 and ABE7E16SPN22 only)
- 8 Test point for  $\varnothing$  2.3 mm (0.9 in.) plug
- 9 Upper terminal block for connection of signals
- 10 Lower terminal block for connection of commons
- 11 Additional snap-on terminal block equipped with 20 screw or spring terminals



##### ABE7E16EPN20 and ABE7E16SPN20 connection sub-bases

- 1 20-way HE 10 connector
- 2 Fuse for the 24 V  $\overline{\text{---}}$  power circuit
- 3 Rail mounting
- 4 24 V  $\overline{\text{---}}$  power supply terminal block
- 5 Test point for  $\varnothing$  2.3 mm (0.9 in.) plug
- 6 Upper terminal block for connection of signals
- 7 Lower terminal block for connection of commons
- 8 Additional snap-on terminal block equipped with 20 screw or spring terminals

# Telefast Pre-wired System

## Modicon ABE7 connection sub-bases

Connection sub-bases for discrete inputs and outputs

<b>Applications</b>	<b>Connection sub-bases for discrete inputs and outputs</b>	
<b>Compatibility</b>	<input type="checkbox"/> Direct  <input type="checkbox"/> Indirect	
	<input type="checkbox"/> Twido controllers (modular bases): <b>TWDLMDA20DTK, TWDLMDA40DTK</b> (see <a href="#">page 48</a> ) -	



<b>Relay amplification</b>	-	Electromechanical and solid state, fixed
----------------------------	---	--

<b>Control voltage</b>	24 V $\overline{\text{---}}$	
------------------------	------------------------------	--

<b>Output voltage</b>	24 V $\overline{\text{---}}$	24 V $\overline{\text{---}}$ (solid state) 5...30 V $\overline{\text{---}}$ , 250 V $\sim$ (electromechanical)
-----------------------	------------------------------	--

<b>Current per channel</b>	Input	5...7 mA	5...7 mA
	Output	0.3 A	2 A (solid state) 3 A (electromechanical)

<b>Modularity</b>	20 (12 inputs/8 outputs)	
-------------------	--------------------------	--

<b>Type of I/O</b>	- 12 inputs (1 common/12 channels) - 8 outputs (1 common/8 channels)	- 12 inputs (1 common/12 channels) - 8 outputs with fuse protection (1 common/8 channels) LED indication	- 12 inputs (1 common/12 channels) - 2 solid state outputs (1 common/2 channels) - 6 relay outputs (electromechanical) 1 NO (1 common/6 channels)
--------------------	---	--	--

<b>Number of terminals per channel</b>	2, 3 (with optional snap-on terminal block)	
--	---	--

<b>Connection to controllers</b>	26-way HE 10 connector	
----------------------------------	------------------------	--

<b>Terminal type</b>	Fixed screw terminal block	
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<b>Interface type</b>	<b>ABE7B20MPN20</b>	<b>ABE7B20MPN22</b>	<b>ABE7B20MRM20</b>
-----------------------	---------------------	---------------------	---------------------

<b>Page</b>	46	
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<b>Connection sub-bases for discrete inputs</b>	<b>Connection sub-bases for discrete outputs</b>		
	<input type="checkbox"/> ModiconTM2 I/O expansion modules: <b>TM2DDI16DK, TM2DDI32DK</b> (see <a href="#">page 48</a> ) <input type="checkbox"/> ModiconTM2 I/O expansion modules: <b>TM2DDO16TK, TM2DDO32TK</b> (see <a href="#">page 50</a> ) <input type="checkbox"/> Magelis XBTGC HMI controllers (see <a href="#">page 52</a> ) <input type="checkbox"/> Modicon STB (Distributed I/O solution) (see <a href="#">page 54</a> ) <input type="checkbox"/> Via Modicon TM2 I/O expansion modules: - Modicon M238 logic controllers - Magelis XBTGC HMI controllers		



-	Electromechanical, fixed	
---	--------------------------	--

24 V $\overline{\text{---}}$		
------------------------------	--	--

24 V $\overline{\text{---}}$	5...30 V $\overline{\text{---}}$ , 250 V $\sim$ (electromechanical)	
------------------------------	--	--

5 mA	-	-
-	0.1 A	3 A

16 inputs	16 outputs	
-----------	------------	--

16 inputs (1 common/16 channels)	16 outputs (1 common/16 channels)	16 outputs with fuse protection LED indication	16 relay outputs (electromechanical) 1 NO (1 common/4 channels)
----------------------------------	-----------------------------------	--	--

2, 3 (with optional snap-on terminal block)			
---	--	--	--

20-way HE 10 connector			
------------------------	--	--	--

Fixed screw terminal block			
----------------------------	--	--	--

<b>ABE7E16EPN20</b>	<b>ABE7E16SPN20</b>	<b>ABE7E16SPN22</b>	<b>ABE7E16SRM20</b>
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# Telefast Pre-wired System

## Modicon ABE7 connection sub-bases

### Connection sub-bases and cordsets



ABE7B20MPN20



ABE7E16EPN20



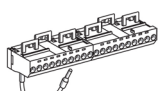
ABE7E16SRM20



ABFT26B0000



ABFT20E000



ABE7BV20



ABE7FU00

### References

#### Connection sub-bases for Twido modular base controllers

Number of I/O	Number, type of input	Number, type of output	Compatibility	LED per channel	Fuse	Reference	Weight kg/lb
20	12, sink, 24 V $\overline{\text{---}}$	8, source, 24 V $\overline{\text{---}}$	TWDLMDA20DTK, TWDLMDA40DTK	No	No	<a href="#">ABE7B20MPN20</a>	0.430 0.947
				Yes	Yes	<a href="#">ABE7B20MPN22</a>	0.430 0.947
	12, sink, 24 V $\overline{\text{---}}$	2, source, 24 V $\overline{\text{---}}$ , 2 A and 6, relay, 24 V $\overline{\text{---}}$ / 250 V $\sim$ , 3 A	TWDLMDA20DTK, TWDLMDA40DTK	No	No	<a href="#">ABE7B20MRM20</a>	0.430 0.947

#### Connection sub-bases for Modicon TM2 digital I/O expansion modules, Magelis XBGTC HMI controllers, and Modicon STB

Number of inputs	Input type	Compatibility	LED per channel	Fuse	Reference	Weight kg/lb
16	Sink, 24 V $\overline{\text{---}}$	TM2DDI16DK, TM2DDI32DK, XBTGC000T, STBDDI3725	No	No	<a href="#">ABE7E16EPN20</a>	0.430 0.947
Number of outputs	Output type	Compatibility	LED per channel	Fuse	Reference	Weight kg/lb
16	Source, 24 V $\overline{\text{---}}$	TM2DDO16TK, TM2DDO32TK, XBTGC000T, STBDDO3705	No	No	<a href="#">ABE7E16SPN20</a>	0.450 0.992
			Yes	Yes	<a href="#">ABE7E16SPN22</a>	0.450 0.992
	Relay, 24 V $\overline{\text{---}}$ / 250 V $\sim$ , 3 A	TM2DDO16TK, TM2DDO32TK, XBTGC000T, STBDDO3705	No	No	<a href="#">ABE7E16SRM20</a>	0.430 0.947

#### Cordsets for Twido modular base controllers

Type of signal	Compatibility	Connection type		Gauge/ c.s.a.	Length (1)	Reference	Weight kg/lb
		Twido end	Telefast end				
Discrete I/O	TWDLMDA20DTK, TWDLMDA40DTK	HE 10 26-way	HE 10 26-way	AWG 28 0.08 mm <sup>2</sup>	0.5 m	<a href="#">ABFT26B050</a>	0.080 0.176
					1 m	<a href="#">ABFT26B100</a>	0.110 0.242
					3.28 ft	<a href="#">ABFT26B200</a>	0.180 0.396
					2 m		

#### Cordsets for Modicon TM2 digital I/O expansion modules

Type of signal	Compatibility	Connection type		Gauge/ c.s.a.	Length (1)	Reference	Weight kg/lb
		TM2 end	Telefast end				
Discrete I/O	TM2DDI16DK, TM2DDI32DK, TM2DDO16TK, TM2DDO32TK	HE 10 20-way	HE 10 20-way	AWG 28 0.08 mm <sup>2</sup>	0.5 m	<a href="#">ABFT20E050</a>	0.060 0.132
					1 m	<a href="#">ABFT20E100</a>	0.080 0.176
					3.28 ft	<a href="#">ABFT20E200</a>	0.140 0.308
					2 m		

#### Separate parts

Description	Number of shunted terminals	Characteristics	Order in multiples of	Unit reference	Weight kg/lb
Optional snap-on terminal block	20	–	5	<a href="#">ABE7BV20</a>	0.060 0.132
Quick-blow fuses for <a href="#">ABE7E16SPN22</a> sub-bases 5 x 20, 250 V, UL	–	0.125 A	10	<a href="#">ABE7FU012</a>	0.010 0.024
		0.315 A	10	<a href="#">ABE7FU030</a>	0.010 0.024
		1 A	10	<a href="#">ABE7FU100</a>	0.010 0.024
		2 A	10	<a href="#">ABE7FU200</a>	0.010 0.024

(1) Please contact us for lengths > 2 m (6.56 ft)

# Telefast Pre-wired System

## Modicon ABE7 connection sub-bases

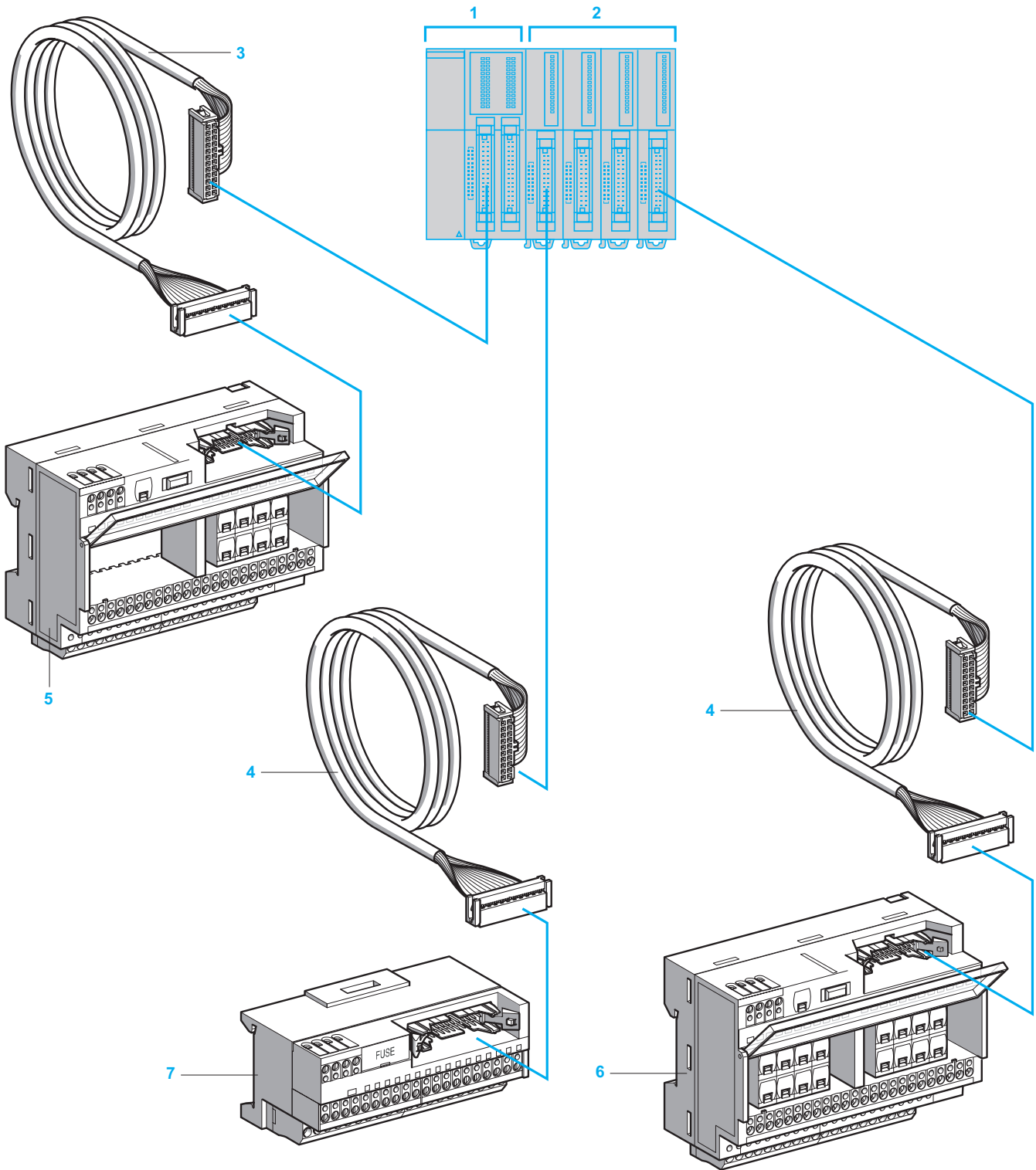
Separate parts

References (continued)							
Separate parts							
Description	Type	Compatibility		Unit reference	Weight kg lb		
<b>Connectors</b> (sold in lots of 5)	HE 10 female 26-way	TWDLMDA20DTK, TWDLMDA40DTK		<a href="#">TWDFCN2K26</a>	-		
	HE 10 female 20-way	TM2DDI16DK, TM2DDI32DK, TM2DDO16TK, TM2DDO32TK		<a href="#">TWDFCN2K20</a>	-		
<b>Screw terminals</b> (sold in lots of 2)	10-way	TM2DDI●DT, TM2DAI8DT, TM2DDO●T, TM2DRA●RT		<a href="#">TWDFTB2T10</a>	-		
	11-way	TM2DMM8DRT, TM2AMI●T, TM2ARI8HT, TM2DAI8DT, TM2DRA8RT		<a href="#">TWDFTB2T11</a>	-		
Description	Compatibility	Connection type		Gauge/ c.s.a.	Length	Reference	Weight kg lb
<b>Cordsets for digital I/O</b>	TWDLMDA20DTK, TWDLMDA40DTK	HE 10 26-way	Flying leads	AWG 22 0.035 mm <sup>2</sup>	3 m 9.84 ft	<a href="#">TWDFCW30M</a>	0.405 0.892
					5 m 16.40 ft	<a href="#">TWDFCW50M</a>	0.670 1.477
	TM2DDI16DK, TM2DDI32DK, TM2DDO16TK, TM2DDO32TK	HE 10 20-way	Flying leads	AWG 22 0.035 mm <sup>2</sup>	3 m 9.84 ft	<a href="#">TWDFCW30K</a>	0.405 0.892
					5 m 16.40 ft	<a href="#">TWDFCW50K</a>	0.670 1.477
<b>Rolled ribbon cable</b>	20 conductors	-	-	AWG 28 0.08 mm <sup>2</sup>	20 m 65.6 ft	<a href="#">ABFC20R200</a>	1.310 2.888



# Telefast Pre-wired System

Modicon ABE7 connection sub-bases  
 Connection sub-bases for Twido controllers and  
 Modicon TM2 I/O expansion modules



- 1 Twido Modular base controller with 26-way HE 10 connectors. The modular sizes available are 20 or 40 I/O.
- 2 Modicon TM2 Discrete I/O modules with 20-way HE 10 connectors. The modular sizes available are 16 or 32 I/O.
- 3 Cable (ABFT26B●●0) equipped with a 26-way HE 10 connector at each end. This cable is available in 0.5, 1 and 2 metre lengths (AWG 28/0.08 mm<sup>2</sup>).
- 4 Cable (ABFT20E●●0) equipped with a 20-way HE 10 connector at each end. This cable is available in 0.5, 1, 2 and 3 metre lengths (AWG 28/0.08 mm<sup>2</sup>).
- 5 20 channel sub-base (ABE7B20MPN2● or ABE7B20MR20) for modular base controllers.
- 6 16 channel sub-base (ABE7E16SPN22 or ABE7E16SRM20) for output extension modules.
- 7 16 channel sub-base (ABE7E16EPN20 or ABE7E16SPN20) for input or output extension modules.

# Telefast Pre-wired System

Modicon ABE7 connection sub-bases  
 Connection sub-bases for Twido controllers and  
 Modicon TM2 I/O expansion modules

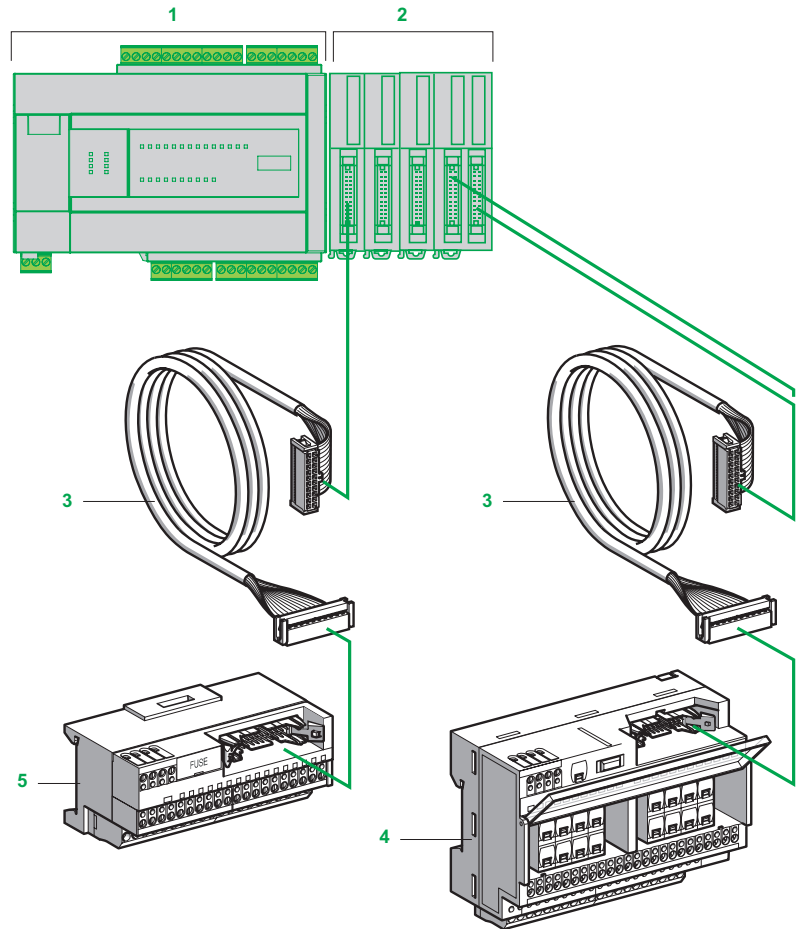
Combinations with Twido controllers and Modicon TM2 I/O modules					
		Twido Modular base controllers		Modicon TM2 Discrete I/O modules	
		Inputs/outputs		Inputs	Outputs
Incorporated in Twido programmable controllers		TWDLMDA20DTK (12 I/8 O) TWDLMDA40DTK (24 I/16 O)		TM2DDI16DK (16 I) TM2DDI32DK (32 I)	TM2DDO16TK (16 O) TM2DDO32TK (32 O)
Terminal block types		HE 10 connector, 26-way		HE 10 connector, 20-way	
Connection to Twido programmable controller		ABFT26B●●0 (HE 10, 26-way)		ABFT20E●●0 (HE 10, 20-way)	
Passive connection sub-bases					
20 channels	ABE7B20MPN2●				
16 channels	ABE7E16EPN20				
	ABE7E16SPN2●				
Output adapter bases					
20 channels	ABE7B20MRM20				
16 channels	ABE7E16SRM20				

Compatible

# Telefast Pre-wired System

Modicon ABE7 connection sub-bases  
 Connection sub-bases for Modicon TM2 expansion  
 modules and Modicon M238 logic controller

**Presentation**



- 1 Modicon M238 logic controller.
- 2 Modicon TM2 Discrete I/O modules with 20-way HE 10 connectors. The modular sizes available are 16 or 32 I/O.
- 3 Cable (**ABFT20E●●0**) equipped with a 20-way HE 10 connector at each end. This cable is available in 0.5, 1, 2 and 3 m lengths (AWG 28/0.08 mm<sup>2</sup>).
- 4 16 channel sub-base (**ABE7E16SPN22** or **ABE7E16SRM20**) for output expansion modules.
- 5 16 channel sub-base (**ABE7E16EPN20** or **ABE7E16SPN20**) for input or output expansion modules.



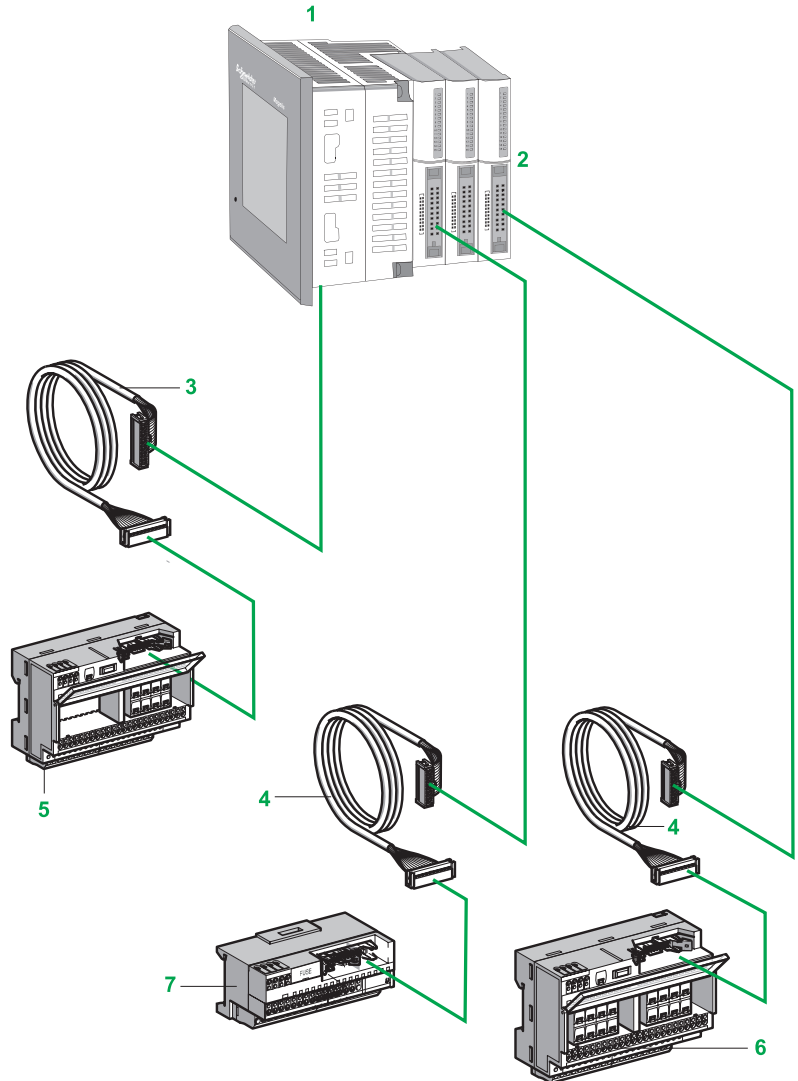
Combinations with Modicon TM2 I/O expansion modules		
	Modicon TM2 Discrete I/O modules	
	Inputs	Outputs (source)
	<b>TM2DDI16DK</b> (16 inputs) <b>TM2DDI32DK</b> (32 inputs)	<b>TM2DDO16TK</b> (16 outputs) <b>TM2DDO32TK</b> (32 outputs)
<b>Terminal block types</b>	HE 10 connectors, 20-ways	
<b>Connection to I/O expansion modules</b>	<b>ABFT20E●●0</b> (HE 10, 20-ways)	
Passive connection sub-bases		
16 channels	<b>ABE7E16EPN20</b>	
	<b>ABE7E16SPN2●</b>	
Output adapter bases		
16 channels	<b>ABE7E16SRM20</b>	

Compatible

# Telefast Pre-wired System

Modicon ABE7 connection sub-bases  
 Connection sub-bases for Magelis XBTGC HMI controllers and Modicon TM2 expansion modules

**Presentation**



- 1 **XBTGC** equipped with 38-way direct I/O connectors. The modularity options offered have 32 I/O.
- 2 Modicon TM2 digital I/O expansion modules equipped with 20-way HE10 connectors. The modularity options offered have 16 or 32 I/O.
- 3 2 m/6.56 ft. AWG 28/0.08 mm<sup>2</sup> cordsets, depending on model:
  - For **XBTGC2●●●T**: **XBTZGABE2** preassembled cordset with two 20-way HE10 connectors and a 38-way direct I/O-XBTGC connector
- 4 **ABFT20E●●●** preassembled cordset with a 20-way HE 10 connector at each end, available in 0.5, 1, 2, and 3 m (1.64, 3.28, 6.56 and 9.84 ft) lengths (AWG 28/0.08 mm<sup>2</sup>)
- 5 Depending on model:
  - For **XBTGC2●●●T**: **ABE7E16EPN20** or **ABE7E16SPN2●** 16-channel sub-base
- 6 **ABE7E16SPN22** or **ABE7E16SRM20** 16-channel sub-base for digital outputs integrated or on expansion modules
- 7 **ABE7E16EPN20** or **ABE7E16SPN20** 16-channel sub-base for digital inputs or outputs integrated or on expansion modules

# Telefast Pre-wired System

Modicon ABE7 connection sub-bases  
 Connection sub-bases for Magelis XBTGC HMI controllers and Modicon TM2 expansion modules

## Combinations involving modular base controllers and I/O expansion modules

	Magelis XBTGC HMI controllers	Modicon TM2 digital I/O expansion modules	
	Integrated digital I/O	Inputs	Outputs (source)
	XBTGC2230T, XBTGC2230T,	TM2DDI16DK (16 E) TM2DDI32DK (32 I)	TM2DDO16TK (16 Q) TM2DDO32TK (32 Q)
Connection block types	Direct I/O, 38-way	HE 10, 20-way	
Connection to XBTGC programmable HMI controller	XBTZGABE2	ABFT20E050, ABFT20E100, ABFT20E200 (HE 10, 20-way)	
<b>Passive connection sub-bases</b>			
16-channel	ABE7E16EPN20	Compatible	Compatible
	ABE7E16SPN20, ABE7E16SPN22	Compatible	Compatible
<b>Output adapter sub-base</b>			
16-channel	ABE7E16SRM20	Compatible	Compatible

 Compatible  
 Not compatible

Note: Telefast cables and modules are not compatible with XBTGC2●●●U units with sink outputs (U suffix).

(1) 6 channels used for 8 available  
 (2) 6 channels used for 8 available with 2 transistor outputs and 4 relay outputs

# Telefast Pre-wired System

## Modicon ABE7 connection sub-bases

### Connection sub-bases for Modicon STB (distributed I/O solution)

#### Presentation (1)

Using the Telefast connector or adapter system rationalizes and simplifies electrical enclosure wiring. Far less space is required in the enclosure and the Modicon ABE7 sub-base replaces the connection terminals at the bottom of the enclosure.

The Telefast wiring system is particularly suitable for applications requiring:

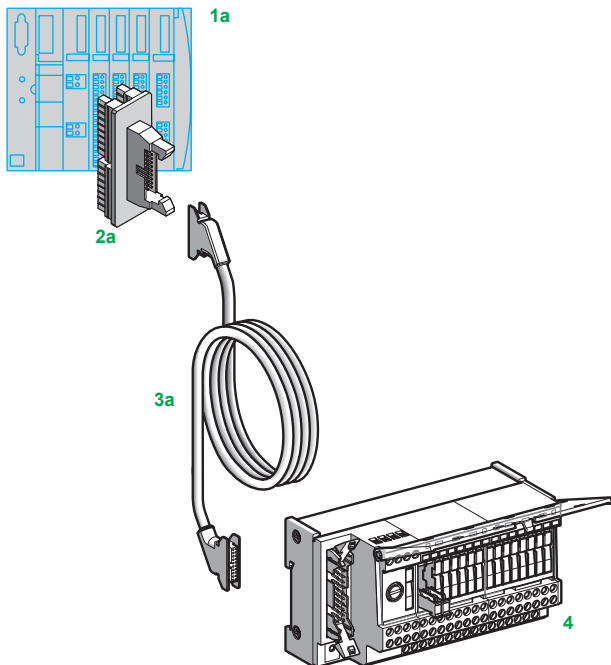
- 48 V  $\overline{\text{---}}$  and 48 V  $\sim$  I/O
- A large number of 115 V  $\sim$  and 230 V  $\sim$  I/O
- A large number of relay outputs

Connection of Modicon STB I/O modules to the Telefast system differs according to the type of module:

- STBDDI3725 and STBDDO3705 16-channel digital I/O: connection via Telefast HE 10 connectors and their associated Telefast cables or ribbon cables. These connection components must be ordered separately (see description below and combinations on [page 55](#)).
- Other Modicon STB digital and analog I/O modules: connection via screw or spring-type 5/6-way removable connectors, supplied with the I/O modules and the associated pre-wired cables. The latter must be ordered separately (see below).

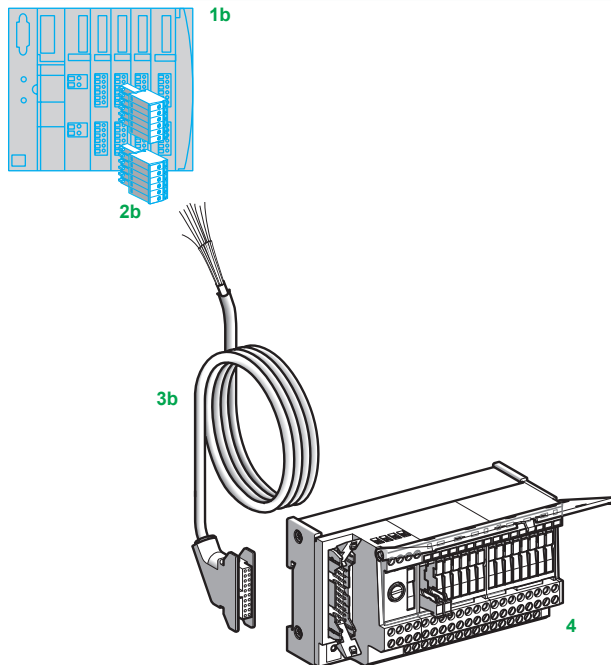
#### Description (1)

##### STBDDI3725 and STBDDO3705 16-channel digital I/O modules



- 1a Modicon STB island incorporating a STBDDI3725 or STBDDO3705 module with 16 I/O
- 2a STBXTS5●10 (DDI) or STBXTS6●90 (DDO) HE 10 connector
- 3a TSXCDP●02 rolled ribbon cable or TSXCDP●03 connection cable equipped with two 20-way HE10 connectors
- 4 Modicon ABE7 connection or adapter sub-base (see compatibility table on [page 55](#))

##### Other Modicon STB digital and analog I/O modules



- 1b STBDDI/DDO●●●●K Modicon STB I/O island incorporating a digital I/O module (except for 16-channel modules) or an STBAVI/ACI/ART/AVO/ACO●●●●K analog I/O module
- 2b Screw or spring-type 5/6-way removable connectors, supplied with the STB I/O module
- 3b TSXCDP301/501/1001 pre-wired cable (3, 5, or 10 m/9.84, 16.4 or 32.8 ft long), with HE10 connector at one end and flying leads at the other end. Cross-section 0.324 mm<sup>2</sup>, AWG24
- 4 Modicon ABE7 connection or adapter sub-base

#### Redundancy solution for Modicon STB I/O (1)

Two Modicon STB I/O modules of the same type, located in two separate islands, can be connected to a single Telefast pre-wired sub-base (I/O redundancy). This configuration is used, for example, in the context of a Premium Hot Standby architecture (please refer to our "Modicon Premium automation platform" catalog).

Digital I/O modules are connected via an [ABE7ACC11](#) (inputs) or [ABE7ACC10](#) (outputs) redundancy sub-base and the same connectors and cables or ribbon cables used for single connections.

STB analog I/O modules are connected via JM Concept JK 3000 N2 (inputs) and GK 3000 D1 (outputs) analog I/O multiplexers.

(1) If you require any more information on the Telefast pre-wired system, please consult our Customer Care Center.

# Telefast Pre-wired System

## Modicon ABE7 connection sub-bases


### Connection sub-bases for Modicon STB (distributed I/O solution)

Combinations of STB modules with 16 digital I/O and Modicon ABE7 sub-bases (1) (2)							
Modicon ABE7 sub-bases (Item 4)		STBDDI3725 (item 1a)	STBDDO3705 (item 1a)	Ribbon cables (item 3a)	Cables (item 3a)		
		Associated STBXTS●●●● connector (item 2a)					
<b>Passive connection sub-bases (16-channel)</b>							
Universal	ABE7H16R●●	STBXTS6510	STBXTS6610	TSXCDP●02 (100 mA total max.) (3)	TSXCDP●●3 (> 500 mA total max.) (4)		
	ABE7H16S21						
	ABE7H16S43						
	ABE7H16F43						
Miniature	ABE7H16C10	STBXTS6510	STBXTS6610	or	ABFH20H●00 (> 500 mA total max.) (3)		
	ABE7H16C11						
	ABE7H16C21						
	ABE7H16C31						
<b>Passive connection sub-bases for Twido controller (16-channel)</b>							
16 passive inputs	ABE7E16EPN20	STBXTS5510		–	ABFT20E●●0 (> 500 mA total max.) (5)		
16 passive outputs	ABE7E16SPN20		STBXTS5610				
	ABE7E16SPN22						
	ABE7E16SRM20						
<b>Input adapter active sub-bases (16-channel)</b>							
Voltage	Modicon ABE7 sub-base						
V							
48 ---	ABE7S16E2E1	STBXTS6510		TSXCDP●02 (100 mA total max.) (3)	TSXCDP●●3 (> 500 mA total max.) (4)		
48 ~	ABE7S16E2E0						
115 ~	ABE7S16E2F0						
230...240 ~	ABE7S16E2M0						
	ABE7P16F310						
	ABE7P16F312			or	ABFH20H●00 (> 500 mA total max.) (3)		
<b>Output adapter active sub-bases (16-channel)</b>							
Type	Voltage	Current per channel	Modicon ABE7 sub-base	Relay			
	V	A					
Relay	24 ---	0.5	ABE7S16S2B0	–	STBXTS6610	TSXCDP●02 (100 mA total max.) (3)	TSXCDP●●3 (> 500 mA total max.) (4)
		0.5	ABE7S16S1B2	–			
		≥ 0.7	ABE7P16T●●●● (6)	–			
Relay	48 ---	0.5	ABE7P16T2●●● (6)	ABS7SC2E		or	ABFH20H●00 (> 500 mA total max.) (3)
Relay	48 ~	0.5	ABE7P16T2●●● (6)	ABS7SA2M			
Relay	115 ~	0.5	ABE7P16T2●●● (6)	ABS7SA2M			
Relay	230...240 ~	0.5	ABE7P16T2●●● (6)	ABS7SA2M			
Solid state	24...240 ~	1.5	ABE7P16T3●●	ABS7SA3MA			
Solid state	24...48 ---	1.5	ABE7P16T3●●	ABS7SC3E			
Solid state	24 ---	2	ABE7P16T3●●	ABS7SC3BA			
Economy relay	30 ---	2	ABE7R16S●●●	–			
	30 ---	2.5	ABE7R16S210/212	–			
Economy relay	230 ~	2	ABE7R16S●●●	–			
	230 ~	2...5	ABE7R16S210/212	–			
<b>Compatible</b>							
<b>Not compatible</b>							



The STB module can provide the 24 V --- power to the Modicon ABE7 block provided the current does not exceed 50 mA per group of 4 channels. Otherwise an external power supply will be required and only the reference 0 V should be connected between the STB module and the ABE 7 block.

(1) Combinations given for 16-channel Modicon STB digital I/O modules (STBDDI3725/STBDDO3705). For other Modicon STB I/O modules (1b), connectors (2b) are included with the modules and the connection is made via TSXCDP●●●● pre-wired cable (3b). See page 54.  
 (2) The item numbers indicated in this table correspond to the item numbers mentioned in the description on page 54.  
 (3) Replace the "●" with "1" for a 1 m (3.28 ft) length, "2" for 2 m (6.56 ft), "3" for 3 m (9.84 ft).  
 (4) Replace the "●●" with "05" for a 0.5 m (1.64 ft) length, "10" for 1 m (3.28 ft), "20" for 2 m (6.56 ft), "30" for 3 m (9.84 ft), "50" for 5 m (16.40 ft).  
 (5) Replace the "●●" with "05" for a 0.5 m (1.64 ft) length, "10" for 1 m (3.28 ft), "20" for 2 m (6.56 ft).  
 (6) Empty sub-bases.

<b>Splitter box and interface type</b>		<b>IP67 passive splitter boxes</b>	
			
<b>Fieldbus type</b>	-		
<b>Inputs/outputs</b>	Discrete	8 I/O (4 channels), 16 I/O (8 channels)	
	Analog	-	
<b>Functions</b>	Connection of 1 to 16 sensors/actuators LED indicator depending on model		
<b>Type of connectors</b>	Sensors/actuators	Female M12, 5-way connectors	
	Control system	Male M23 connector	Multicore cable Length 5 m (16.40 ft)
			Length 10 m (32.81 ft)
<b>Housing type</b>	Plastic		
<b>Module type</b>	<b>ABE 9C12●●C23</b>	<b>ABE 9C12●●L05</b>	<b>ABE 9C12●●L10</b>
<b>Page</b>	59		

### Presentation

■ ABE9 passive splitter boxes for M12 connectors make it possible to eliminate long and difficult cabling operations. Their modularity and dimensions mean they are the ideal solution for a wide variety of customer applications.

Connection to the processing unit can either be made by connector or by multicore cable of different lengths.

IP 67 protection allows these products to be used within processes or machines in harsh environments (splashing water, oil, dust, etc.).

The splitter boxes, available in 4 or 8-channel versions, allow connection of up to 16 signals maximum, depending on the version (2 per channel).

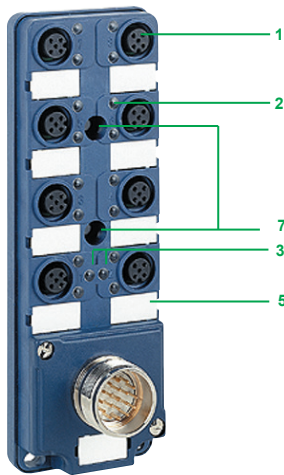
#### The characteristics of ABE9C12 splitter boxes are as follows:

- Connection of sensors and actuators using M12, 5-way connectors
  - Modularity: 4 or 8 channels
  - Mounting system and connection to the processing unit conforming to market standards:
    - center-to-center distances
    - M23, 19-way connector, enabling the use of preassembled cables in order to reduce installation time and the risk of error
    - multicore cable, 5 or 10 meters (16.4 or 32.8 ft) long. The splitter box comprises a connection cover equipped with plug-in terminals, which provides considerable flexibility for replacing damaged parts and changing the cable length.
- ABE9C12●●L●● sub-bases enable the use of 2 separate commons, which can be used for emergency stop management, for example. This function is accessible beneath the terminal cover using 2 removable links. If both links are removed, the 2 supplies become independent.

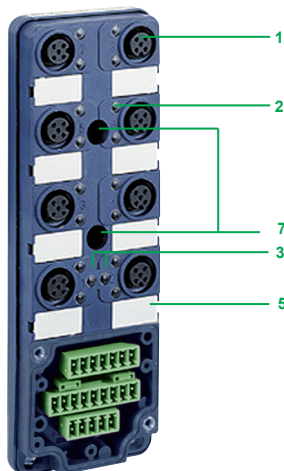
The use of a Y-connector allows 2 signals to be connected to the same M12 channel on the splitter box. For example, the ABE9C1281 splitter box (8 channels) allows 16 signals to be connected to the processing unit.

The Y-connector is available in 2 versions:

- M12-M12 for connection of two M12 connectors to a single M12 channel on the splitter box
- M8-M12 for connection of two M8 connectors to a single M12 channel on the splitter box



ABE9C12●●C23



ABE9C12●●L●●



Complete reference	= Splitter box only	+ Connector with cable
ABE9C1240L05	= ABE9C1240M	+ ABE9XCA1405
ABE9C1240L10	= ABE9C1240M	+ ABE9XCA1410
ABE9C1241L05	= ABE9C1241M	+ ABE9XCA1405
ABE9C1241L10	= ABE9C1241M	+ ABE9XCA1410
ABE9C1280L05	= ABE9C1280M	+ ABE9XCA1805
ABE9C1280L10	= ABE9C1280M	+ ABE9XCA1810
ABE9C1281L05	= ABE9C1281M	+ ABE9XCA1805
ABE9C1281L10	= ABE9C1281M	+ ABE9XCA1810
Connector only		
ABE9CM12C		

### Description

ABE9C12●●C23 passive splitter boxes have the following on the front face:

- 1 Four or eight M12 female connectors (depending on model) for connection of sensors and actuators (2 channels per connector)
- 2 Eight or sixteen channel status indicator lights (depending on model)
- 3 One "Power on" indicator light on the splitter box (depending on model)
- 4 One M23, 19-way male connector
- 5 Four or eight channel marker labels
- 6 One splitter box marker label
- 7 Splitter box mounting holes

ABE9C12●●L●● passive splitter boxes have the following on the front face:

- 1 Four or eight M12 female connectors (depending on model) for connection of sensors and actuators (2 channels per connector)
- 2 Eight or sixteen channel status indicator lights (depending on model)
- 3 Two "Power on" indicator lights on the splitter box (depending on model)
- 4 One removable connection cover equipped with plug-in terminals
- 5 Four or eight channel marker labels
- 6 One splitter box marker label
- 7 Splitter box mounting holes



ABE9C124●C23



ABE9C128●C23



ABE9C124●L●●



ABE9C128●L●●



ABE9C128●M



ABE9XCA1●●●



FTXCY1212

### References

#### Splitter boxes with connection by M23 connector

Number of channels	Connection by	LED indicator	Reference	Weight kg lb
4	4 x M12 female connectors	Yes	<a href="#">ABE9C1241C23</a>	0.080 0.176
8	8 x M12 female connectors	Yes	<a href="#">ABE9C1281C23</a>	0.140 0.309
		No	<a href="#">ABE9C1280C23</a>	0.140 0.309

#### Splitter boxes with connection by cable

Number of channels	Connection by	Length m ft	LED indicator	Reference	Weight kg lb
4	4 x M12 female connectors	5 16.4	Yes	<a href="#">ABE9C1241L05</a>	0.680 1.499
			No	<a href="#">ABE9C1240L05</a>	0.680 1.499
		10 32.8	Yes	<a href="#">ABE9C1241L10</a>	1.700 3.747
			No	<a href="#">ABE9C1240L10</a>	1.700 3.747
8	8 x M12 female connectors	5 16.4	Yes	<a href="#">ABE9C1281L05</a>	1.610 3.549
			No	<a href="#">ABE9C1280L05</a>	1.610 3.549
		10 32.8	Yes	<a href="#">ABE9C1281L10</a>	3.060 6.746
			No	<a href="#">ABE9C1280L10</a>	3.060 6.746

#### Splitter boxes only, M12

Number of channels	For use with connector		LED indicator	Reference	Weight kg lb
	terminal block	with cable			
4	<a href="#">ABE9CM12C</a>	<a href="#">ABE9XCA14●●</a>	Yes	<a href="#">ABE9C1241M</a>	0.060 0.132
			No	<a href="#">ABE9C1240M</a>	0.060 0.132
8	<a href="#">ABE9CM12C</a>	<a href="#">ABE9XCA18●●</a>	Yes	<a href="#">ABE9C1281M</a>	0.100 0.220
			No	<a href="#">ABE9C1280M</a>	0.100 0.220

#### Separate components

Type	No. of channels	For use with splitter box	Length m ft	Reference	Weight kg lb
Terminal block connector (1)	-	<a href="#">ABE9C124●M</a>	-	<a href="#">ABE9CM12C</a>	0.040
		<a href="#">ABE9C128●M</a>	-		0.088
Connectors with cable	4	<a href="#">ABE9C124●M</a>	5 16.4	<a href="#">ABE9XCA1405</a>	1.060 2.337
			10 32.8	<a href="#">ABE9XCA1410</a>	2.080 4.585
	8	<a href="#">ABE9C128●M</a>	5 16.4	<a href="#">ABE9XCA1805</a>	1.510 3.328
			10 32.8	<a href="#">ABE9XCA1810</a>	2.240 4.938

#### Accessories

Description	Composition	Reference	Weight kg lb
Sealing plugs	For M8 connector (lot of 10)	<a href="#">FTXCM08B</a>	0.100 0.220
	For M12 connector (lot of 10)	<a href="#">FTXCM12B</a>	0.100 0.220
Y-connectors	Connection of 2 x M8 connectors to M12 connector on splitter box	<a href="#">FTXCY1208</a>	0.020 0.044
	Connection of 2 x M12 connectors to M12 connector on splitter box	<a href="#">FTXCY1212</a>	0.030 0.066

(1) To be cabled by user.



<b>A</b>			
ABE7ACC02	22	ABE7P16T330	18
ABE7ACC10	22	ABE7P16T334	18
ABE7ACC11	22	ABE7R08S111	17
ABE7ACC12	23	ABE7R08S210	17
ABE7ACC21	22	ABE7R16M111	18
ABE7B20MPN20	46	ABE7R16S111	17
ABE7B20MPN22	46	ABE7R16S111E	17
ABE7B20MRM20	46	ABE7R16S210	17
ABE7BV10	22	ABE7R16S212	17
ABE7BV20	22	ABE7R16T111	18
	46	ABE7R16T210	18
ABE7CPA01	19	ABE7R16T212	18
ABE7CPA02	19	ABE7R16T230	18
ABE7CPA03	19	ABE7R16T330	18
ABE7CPA11	19	ABE7R16T370	18
ABE7CPA12	19	ABE7S16E2B1	17
ABE7CPA21	19	ABE7S16E2E0	17
ABE7CPA31	19	ABE7S16E2E1	17
ABE7CPA31E	19	ABE7S16E2F0	17
ABE7CPA410	19	ABE7S16E2M0	17
ABE7CPA412	19	ABE7S16S1B2	17
ABE7E16EPN20	46	ABE7S16S2B0	17
ABE7E16SPN20	46	ABE7TES160	22
ABE7E16SPN22	46	ABE9C1240L05	58
ABE7E16SRM20	46		59
ABE7FU012	22	ABE9C1240L10	58
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ABE7FU030	46	ABE9C1240M	58
ABE7FU050	22		59
ABE7FU100	22	ABE9C1241C23	59
	46	ABE9C1241L05	58
ABE7FU200	22		59
	46	ABE9C1241L10	58
ABE7FU400	22		59
ABE7FU630	22	ABE9C1241M	58
ABE7H08R21	16		59
ABE7H16C10	16	ABE9C1280C23	59
ABE7H16C11	16	ABE9C1280L05	58
ABE7H16C21	16		59
ABE7H16C31	16	ABE9C1280L10	58
ABE7H16CM21	16		59
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ABE7H16R21	16		59
ABE7H16R23	16	ABE9C1281L10	58
ABE7H16R31	16		59
ABE7H16R50	16	ABE9C1281M	58
ABE7H16S21	16		59
ABE7H16S43	16	ABE9CM12C	58
ABE7H20E000	16		59
ABE7H20E100	16	ABE9XCA1405	58
ABE7H20E200	16		59
ABE7H34E100	16	ABE9XCA1410	58
ABE7H34E200	16		59
ABE7P16F310	18	ABE9XCA1805	58
ABE7P16F312	18		59
ABE7P16T111	18	ABE9XCA1810	58
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		ABFC08R12W	22
		ABFC20R200	47
		ABFH20H100	20
		ABFH20H200	20
		ABFH34M100	20
		ABFH34M200	20
		ABFM04S200	21
		ABFM04S201	21
		ABFM08S201	21
		ABFM08S202	21
		ABFM32H150	21
		ABFM32H300	21
		ABFM32H301	21
		ABFT20E050	46
		ABFT20E100	46
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		ABFT26B050	46
		ABFT26B100	46
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		ABFTE20SP200	20
		ABFTE20SP300	20
		ABR7S11	23
		ABR7S21	23
		ABR7S23	23
		ABR7S33	23
		ABR7S33E	23
		ABR7S37	23
		ABS7EA3E5	23
		ABS7EA3F5	23
		ABS7EA3M5	23
		ABS7EC3B2	23
		ABS7EC3E2	23
		ABS7SA2M	23
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		TWDFCN2K26	47
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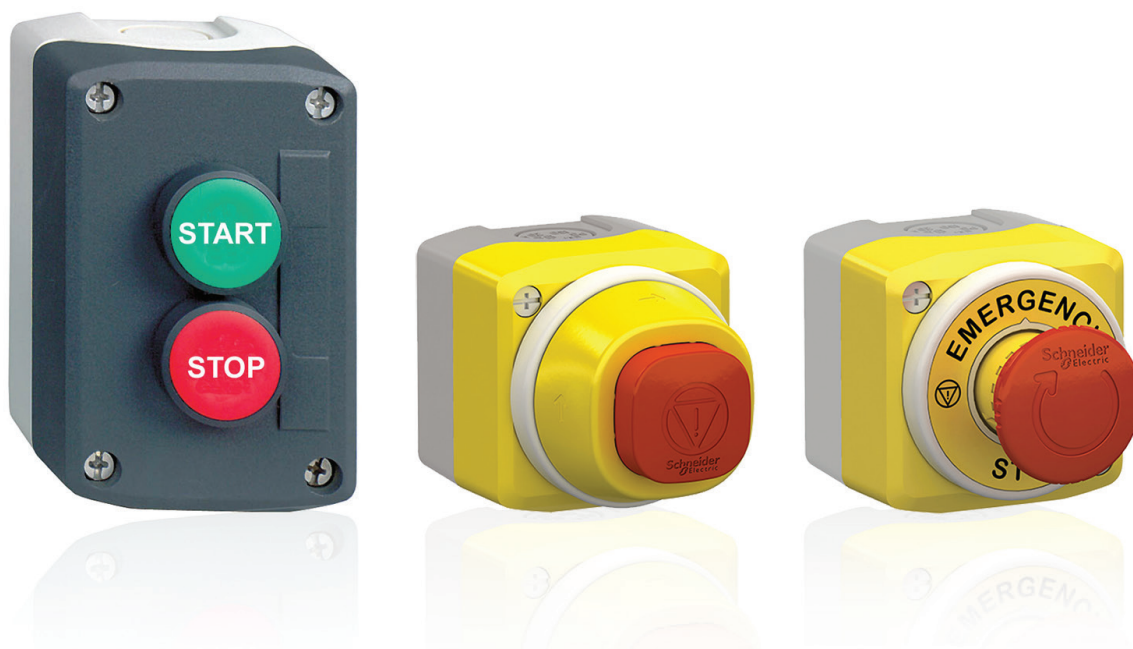
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Design: Schneider Electric  
Photos: Schneider Electric

# Harmony<sup>®</sup> XALD, XALK plastic control stations

For Harmony XB5, control and signaling  
units Ø 22

Catalog  
April 2019





# General contents

## Harmony® XALD, XALK plastic control stations

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Type of applications	All applications	
Enclosures	Plastic	Glass-reinforced polyester
	Complete stations and separate components for customer assembly	Empty insulated enclosures



Main feature	Pre-drilled control stations		Pre-drilled or undrilled enclosures
Associated control and signaling units	Harmony XB5 with plastic bezel		Harmony XB7, monolithic, plastic Harmony XB4 with metal bezel Harmony XB5 with plastic bezel
Number of cut-outs for Ø 22 control and signaling units	1, 2, 3, 4 or 5	1, 2 or 3 (complete stations) 1, 2, 3, 4 or 5 (empty enclosures)	1, 2 or 3 1, 2, 4, 8 or 16
Material	Polycarbonate		ABS Glass-reinforced polyester
Color	Yellow lid Light gray base	Dark gray lid Light gray base	Light gray or yellow lid Light gray base Coloured gray throughout
Degree of protection	IP 65 / NEMA Enclosure type 4, 4X and 13		IP 54 IP 65
Function	Emergency Stop or Emergency switching off	Start or Stop Start-Stop with pilot light Motion control	According to equipment fitted: <input type="checkbox"/> Start or Stop <input type="checkbox"/> Start-Stop with pilot light <input type="checkbox"/> Motion control <input type="checkbox"/> Emergency stop
Cable entries	Knock-outs (CM12)		Knock-outs (ISO 20) Undrilled
Type references	<b>XALK</b>	<b>XALD</b>	<b>XALE</b> <b>XAPA</b>

All applications		Specific applications		
Metal	Metal front plate, insulated protective rear cover	Plastic	Metal	
Empty enclosures	Empty, flush mounting enclosures: front plate + rear cover	Control stations for severe environments	Lift inspection stations	Key operated control stations

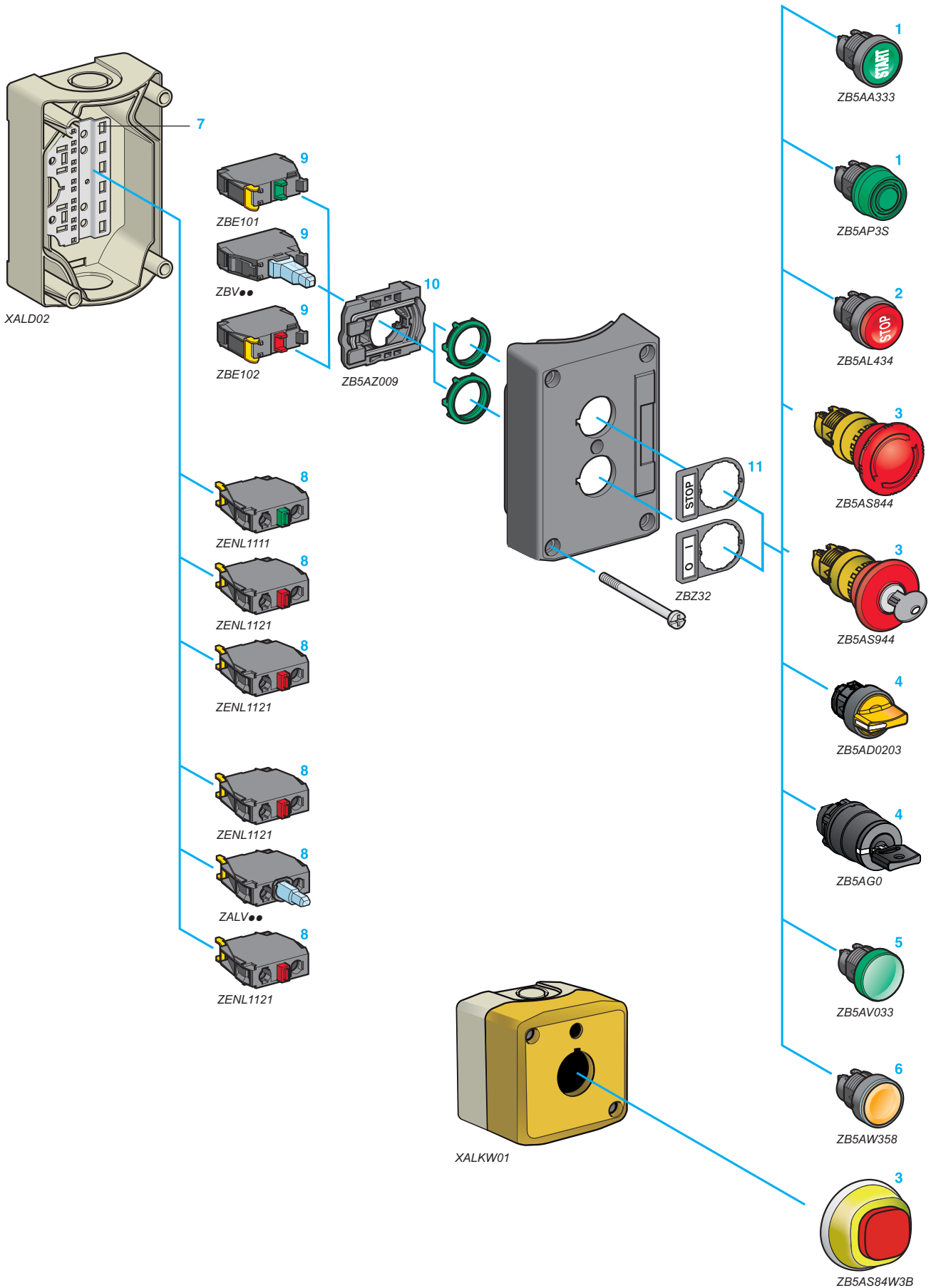


Pre-drilled enclosures	Pre-drilled or undrilled enclosures	Pre-drilled front plates & rear covers	Pre-drilled empty control stations	Pre-drilled empty enclosures or fitted stations	Fitted stations
Harmony XB4 with metal bezel Harmony XB5 with plastic bezel			Harmony XB5 with plastic bezel	Harmony XB5 or XB7 with plastic bezel	With key lock bezel
8, 16, 24, 30 or 40	1, 2, 3, 4, 6, 8 or 12	1, 2, 3, 4 or 5	1, 2, 3, 4 or 5	1, 2, 3, 4, 5 or 6 with or without power socket	-
Aluminium alloy or sheet steel	Zinc or aluminium alloy	Front plate: brushed aluminium Rear cover: polystyrene	Mineral reinforced polyamide	Polycarbonate	Zinc alloy
Blue lid and base	<b>XAPM:</b> Blue lid Blue base <b>XAPJ:</b> Yellow lid Blue base	Unpainted aluminium	Black lid Black base	Yellow lid Light gray base	Gray
IP 54	IP 65		IP 66 IP 69K	IP 44 (with power socket) IP 55 or IP 66 depending on model	IP 54
According to equipment fitted: <input type="checkbox"/> Start or Stop <input type="checkbox"/> Start-Stop with pilot light <input type="checkbox"/> Motion control <input type="checkbox"/> Emergency stop					Start-Stop
<input type="checkbox"/> Tapped entries for cable-glands <input type="checkbox"/> or undrilled	Tapped entries for cable-glands	Knock-outs (with protective rear cover)	Two ISO 20 open entries	<input type="checkbox"/> Knock-outs (CM12) <input type="checkbox"/> or undrilled	Tapped for cable-glands
<b>XB2SL</b>	<b>XAPM, XAPJ</b>	<b>XAPE</b>	<b>XALG</b>	<b>XALF</b>	<b>XAPS</b>

# Control stations and enclosures

Plastic control stations XALD and XALK

For Harmony® XB5 control and signaling units Ø 22



# Control stations and enclosures

## Plastic control stations XALD and XALK

### For Harmony XB5 control and signaling units Ø 22

#### Presentation

Harmony® XALD and XALK control stations are available in two forms:

- Complete
- For customer assembly

These control stations use the plastic bezel pushbuttons, switches and pilot lights of the Harmony XB5 range, which offers a wide choice of circular and square types of head.

#### Complete pre-assembled stations

These are complete, ready to install, stations fitted with 1 to 3 buttons to cater for the most commonly encountered functions:

■ **Start or Stop**, with:

- 1 flush spring return pushbutton,
- 1 red, spring return, mushroom head pushbutton.

■ **Emergency stop or Emergency switching off**, with:

- 1 red, latching, mushroom head pushbutton **3**, either push-pull or turn to release, with or without key.

■ **Start-Stop**, with:

- 2 flush spring return pushbuttons,
- 1 flush spring return pushbutton **1** + 1 projecting spring return pushbutton **2**,
- 1 2-position selector switch **4** + 1 pilot light with integral red LED, if required.

■ **Two functions**, with:

- 2 flush spring return pushbuttons **1**.

■ **Three functions**, with:

- 3 flush spring return pushbuttons **1**,
- 2 flush spring return pushbuttons **1** + 1 projecting spring return pushbutton **2**,
- 2 flush spring return pushbuttons **1** + 1 red, latching, mushroom head pushbutton **3**.

These pushbuttons, switches and pilot lights comprise plastic heads from the Harmony XB5 range and electrical blocks (contact or light) **8** that are mounted in the back of the enclosure.



#### Presentation (Continued)

#### Stations for customer assemblies

These stations are for assembly by the user and offer a choice of 2 assembly methods:

##### ■ Box method

Identical to the pre-assembled versions. The electrical blocks 8 are mounted on a metal mounting plate in the back of the enclosure 7.

##### ■ Station method

The electrical blocks 9 are mounted directly beneath the heads using a body/fixing collar 10.

It is possible to assemble stations with 1 to 5 heads, each of which can be combined with 3 electrical blocks 8 or 9 (contact or light).

The XAL range offers a wide choice of head types for:

- Spring return pushbuttons 1 or 2, either marked or unmarked
- Spring return mushroom head pushbuttons
- Latching mushroom head pushbuttons 3
- Selector switches with standard or long handle and key switches 4
- Toggle switches
- Pilot lights 5
- Illuminated spring return pushbuttons 6

Illuminated selector switches with standard handle 4.

#### Accessories for heads

Markings can be customised by using legend holders 11 which can either be fitted with pre-marked legends or legends engraved by the user. Alternatively, paper legends (protected), prepared using "SIS Label" software 12, or peel-off legends (supplied on sheet for marking by laser printer) can be used.

XALD-X\_CP19045



Customized products

### Presentation (Continued)

#### Customization

- Markings on pushbutton, illuminated pushbuttons, and pilot lights caps
- Markings on accessories, like legend plates and legend panels
- Color plated bezel pushbuttons
- Marking on control station

#### Material and colors

- **Start-Stop** control stations (**XALD**): light gray base "RAL 7035", dark gray lid "RAL 7016"
- Control stations with **Emergency stop** or **Emergency switching off** functions (**XALK**): light gray "RAL 7035" base, yellow "RAL 7021" lid
- Lid fixing screws and nut material: stainless steel type A4, AISI 316.

#### Environment

- Protection degree: IP66, IP69 (EN/IEC 60529) and IP69K (ISO20653) and UL/CSA Enclosure type 4, 4X and 13
- Mechanical shock protection level: up to IK08 (EN50102/IEC60068-2-75)
- High pressure cleaning resistance: 70 x 10<sup>5</sup> Pa (70 bars), distance 0.1 m (temp. 55° C)
- Ambient air temperature for operation: - 40 to + 70° C
- Conformity to standards :
  - EN/IEC 60947-5-1, 60947-5-4 for **Start-Stop** control stations,
  - EN/IEC 60204-1 and EN/ISO 13850 for control stations with **Emergency stop** function,
  - IEC 60364-5-53 for control stations with **Emergency switching off** function
- Product certifications : UL Listed, CSA, GOST

#### Connection

- Knock-out entries for cable-gland (CM 12, Pg 13.5 and tapped ISO 20).
- Knock-outs for cable entry through rear.

# Control stations and enclosures

Plastic control stations XALD and XALK

For Harmony XB5 control and signaling units Ø 22

Complete stations (screw clamp terminal connections)

## Start or Stop function

■ Light gray "RAL 7035" base, dark gray "RAL 7016" lid

Description	Type of push	Dimensions (1) w x h x d mm/in.	Type of contact		Marking	Reference	Weight kg/lb
			NO	NC			

### Marking on pushbutton

1 spring return pushbutton	Flush, green	68 x 68 x 62/ 2.68 x 2.68 x 2.44	1	-	I	<b>XALD102 (2)</b>	0.135/0.298
					Marche	<b>XALD104 (2)</b>	0.156/0.344
					Start	<b>XALD103 (2)</b>	0.156/0.344
	Flush, red	68 x 68 x 62/ 2.68 x 2.68 x 2.44	-	1	I	<b>XALD102E</b>	0.165/0.364
					Arrêt	<b>XALD117</b>	0.156/0.344
					Stop	<b>XALD114 (2)</b>	0.165/0.364
	Projecting, red	68 x 68 x 66.5/ 2.68 x 2.68 x 2.62	-	1	O	<b>XALD112E</b>	0.165/0.364
					Stop	<b>XALD114E</b>	0.165/0.364
					Arrêt	<b>XALD115 (2)</b>	0.157/0.346
			1	1	O	<b>XALD118</b>	0.157/0.346
					Stop	<b>XALD116</b>	0.157/0.346

### Marking on legend holder and legend below head

1 spring return pushbutton	Flush, green	68 x 68 x 62/ 2.68 x 2.68 x 2.44	1	-	Marche	<b>XALD101 (2)</b>	0.157/0.346
					Start	<b>XALD101H29 (2)</b>	0.157/0.346
	Flush, red	68 x 68 x 62/ 2.68 x 2.68 x 2.44	-	1	Arrêt	<b>XALD111</b>	0.157/0.346
					Stop	<b>XALD111H29 (2)</b>	0.157/0.346
1 mushroom head pushbutton, Ø 40 mm/1.57 in., spring return	Red	68 x 68 x 86/ 2.68 x 2.68 x 3.39	-	1	Arrêt	<b>XALD164 (2)</b>	0.182/0.401
					Stop	<b>XALD164H29H7</b>	0.182/0.401

(1) Please see our website [www.schneider-electric.com](http://www.schneider-electric.com) for more precised information about dimensions of components.

(2) Please add H7 for UL/CSA conformity, example: XALK102H7.



XALD102



XALD115



XALD101



XALD111



XALD164

# Control stations and enclosures

## Plastic control stations XALD and XALK

### For Harmony XB5 control and signaling units Ø 22

Complete stations (screw clamp terminal connections)

#### Emergency stop and Emergency switching off functions conforming to EN/IEC 60204-1, 60364-5-53, EN/ISO 13850, and Machinery Directive 2006/42/EC

Emergency stop function: Mushroom head Emergency stop trigger action and mechanical latching pushbuttons conform to standards EN/IEC 60204-1 and EN/ISO 13850, to Machinery Directive 2006/42/EC and to standard EN/IEC 60947-5-5.

Emergency switching off function: Mushroom head switching off mechanical latching pushbuttons conform to standards IEC 60364-5-53 and EN/IEC 60947-5-5.


Please consult our Customer Care Centre for a full explanation of these standards and directives.

#### Emergency stop and Emergency switching off functions with trigger action and mechanical latching

■ Light gray "RAL 7035" base, yellow "RAL 1021" lid

■ Conformity to standards EN/IEC 60204-1, EN/ISO 13850 (1), EN/IEC 60947-5-5 and to Machinery directive 2006/42/CE (2)

Description	Dimensions (3) w x h x d mm/in.	Type of contact		Marking	Reference	Weight kg/lb
		NO	NC			
<b>Unmarked</b>						
1 mushroom head pushbutton, Ø 40 mm/1.57 in., red Turn to release	68 x 68 x 92.5/ 2.68 x 2.68 x 3.64	–	1	–	<b>XALK178 (4)</b>	0.194/0.428
		–	2	–	<b>XALK178F (4)</b>	0.194/0.428
		1	1	–	<b>XALK178E (4)</b>	0.194/0.428
		1	2	–	<b>XALK178G (4)</b>	0.194/0.428
1 mushroom head pushbutton, Ø 40 mm/1.57 in., red Key release (key no. 455)	68 x 68 x 114.5/ 2.68 x 2.68 x 4.51	–	1	–	<b>XALK188 (4)</b>	0.188/0.414
		–	2	–	<b>XALK188F</b>	0.188/0.414
		1	1	–	<b>XALK188E (4)</b>	0.188/0.414
		1	2	–	<b>XALK188G</b>	0.188/0.414
1 mushroom head pushbutton, Ø 40 mm/1.57 in., red Push-pull	68 x 68 x 91.5/ 2.68 x 2.68 x 3.60	–	1	–	<b>XALK198 (4)</b>	0.193/0.425
<b>Marked</b>						
1 mushroom head pushbutton, Ø 40 mm/1.57 in., red Turn to release	68 x 68 x 92.5/ 2.68 x 2.68 x 3.64	–	1	NODSTOP	<b>XALK178H26</b>	0.194/0.428
		–	1	EMERGENCY STOP	<b>XALK178H29 (4)</b>	0.194/0.428
		–	1	NOT HALT	<b>XALK178H44</b>	0.194/0.428
		–	1	NODSTOPP	<b>XALK178H49</b>	0.194/0.428
		–	2	NODSTOP	<b>XALK178FH26</b>	0.194/0.428
		–	2	EMERGENCY STOP	<b>XALK178FH29</b>	0.194/0.428
		–	2	NOT HALT	<b>XALK178FH44</b>	0.194/0.428
		–	2	NODSTOPP	<b>XALK178FH49</b>	0.194/0.428
		1	2	ARRET D'URGENCE	<b>XALK178GTHFR (5)</b>	0.197/0.434
		1	2	NODSTOP	<b>XALK178GTH26 (5)</b>	0.197/0.434
		1	2	EMERGENCY STOP	<b>XALK178GTH29 (5)</b>	0.197/0.434
		1	2	NOT HALT	<b>XALK178GTH44 (5)</b>	0.197/0.434
		–	2	NODSTOP	<b>XALK188GTH26 (5)</b>	0.188/0.414

(1) Our Customer Care Centre may provide a control station type XALK188 with marking of the Emergency stop function and of the logo  in conformity with the requests of EN/ISO 13850 standard, paragraph 4.4.6.

(2) Please consult our Customer Care Centre for full details of these standards and directives.

(3) Please see our website [www.schneider-electric.com](http://www.schneider-electric.com) for more precised information about dimensions of components.

(4) Please add H7 for UL/CSA conformity, example: XALK178H7.

(5) T for direct head mounting on cover with ZB5AZ009 fixing base.



XALK178●



XALK188●



XALK198

# Control stations and enclosures

Plastic control stations XALD and XALK

For Harmony XB5 control and signaling units Ø 22

Complete stations (screw clamp terminal connections)

**Emergency stop and Emergency switching off functions conforming to EN/IEC 60204-1, 60364-5-53, EN/ISO 13850, and Machinery Directive 2006/42/EC**

Emergency stop function: Mushroom head Emergency stop trigger action and mechanical latching pushbuttons conform to standards EN/IEC 60204-1 and EN/ISO 13850, to Machinery Directive 2006/42/EC and to standard EN/IEC 60947-5-5.

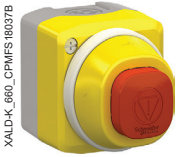
Emergency switching off function: Mushroom head switching off mechanical latching pushbuttons conform to standards IEC 60364-5-53 and EN/IEC 60947-5-5.

Please consult our Customer Care Centre for a full explanation of these standards and directives.

**Illuminated Emergency stop and Emergency switching off pushbuttons with trigger action and mechanical latching**

■ Light gray "RAL 7035" base, yellow "RAL 1021" lid

■ Conformity to standards EN/IEC 60204-1, EN/ISO 13850 (1), EN/IEC 60947-5-5 and to Machinery directive 2006/42/CE (2)



XALK84W3BE



XALK178W3B140E

Description	Type of reset	Signalling type	Type of contact		Supply voltage	Reference	Weight kg/lb
			NO	NC			
<b>Complete control station for Ø 22 mm/ 0.866 in. XB5 Emergency stop and Emergency switching off pushbuttons</b>	Turn to release	Fixed white + fixed red, bi-color	1	1	24 V ~	<b>XALK84W3BE</b>	0.182/0.401
			1	2	24 V ~	<b>XALK84W3BG</b>	0.182/0.401
	Fixed, red	Fixed, red	1	1	230 V ~	<b>XALK84W2ME</b>	0.182/0.401
			1	2	230 V ~	<b>XALK84W2MG</b>	0.182/0.401
			1	1	24V ~	<b>XALK178W3B140E</b>	0.180/0.397
			1	2	24V ~	<b>XALK178W3B140G</b>	0.180/0.397

(1) For compliance with EN/ISO 13850 standard, paragraph 4.4.6 Emergency Stop function logo  has been added.

(2) Please consult our Customer Care Centre for full details of these standards and directives.

# Control stations and enclosures





## Plastic control stations XALD and XALK

### For Harmony XB5 control and signaling units Ø 22

Complete stations (screw clamp terminal connections)

#### Start-Stop function

■ Light gray "RAL 7035" base, yellow "RAL 1021" lid

Description	Dimensions (3) w x h x d mm/in.	Type of contact		Marking	Reference	Weight kg/lb	
							
<b>Marking on pushbutton (2)</b>							
2 spring return pushbuttons: - 1 flush, green - 1 flush, red	68 x 106 x 62/ 2.68 x 4.17 x 2.44	1	–	I O	<b>XALD213 (3)</b>	0.233/0.514	
		–	1	Marche Arrêt Start Stop	<b>XALD224 (3)</b>	0.233/0.514	
2 spring return pushbuttons: - 1 flush, green - 1 projecting, red	68 x 106 x 66.5/ 2.68 x 4.17 x 2.62	1	1	I O	<b>XALD213E</b>	0.252/0.556	
		1	–	Start Stop	<b>XALD214</b>	0.234/0.516	
2 spring return pushbuttons: - 1 flush, green - 1 projecting, red	68 x 106 x 62/ 2.68 x 4.17 x 2.44	1	–	Marche Arrêt	<b>XALD211 (3)</b>	0.233/0.514	
		–	1	Start Stop	<b>XALD211H29 (3)</b>	0.233/0.514	
2 spring return pushbuttons, - 1 flush, green - 1 flush, red	68 x 106 x 62/ 2.68 x 4.17 x 2.44	1	–	Ouverture Fermeture	<b>XALD241</b>	0.233/0.514	
		–	1				
1 selector switch with standard handle 2-position stay put	68 x 106 x 80/ 2.68 x 4.17 x 3.15	1	–	O-I	<b>XALD134 (3)</b>	0.163/0.359	
		1	–	Arrêt-Marche	<b>XALD132 (3)</b>	0.163/0.359	
1 key switch (key no. 455), key withdrawal from left-hand position	68 x 106 x 105.5/ 2.68 x 4.17 x 4.15	1	–	Start Stop	<b>XALD133H7</b>	0.163/0.359	
		1	–	O-I	<b>XALD144 (3)</b>	0.187/0.412	
1 key switch (key no. 455), key withdrawal from left-hand position	68 x 106 x 105.5/ 2.68 x 4.17 x 4.15	1	1	Arrêt-Marche	<b>XALD142</b>	0.196/0.432	
		1	1	O-I	<b>XALD144E (3)</b>	0.196/0.432	
<b>Description</b>							
Description	Dimensions (3) w x h x d mm/in.	Type of contact		Marking	Pilot light supply V	Reference	Weight kg/lb
							
<b>With pilot light and marking on pushbutton (2)</b>							
2 spring return pushbuttons and 1 pilot light with integral red LED	68 x 136 x 64.5/ 2.68 x 5.35 x .54	1	–	I	24 ~	<b>XALD363B</b>	0.261/0.575
		–	1	O	120 ~	<b>XALD363G (3)</b>	0.261/0.575
		–	1		230 ~	<b>XALD363M</b>	0.261/0.575
<b>With pilot light and marking on legend holder and legend below head</b>							
2 spring return pushbuttons and 1 pilot light with integral red LED	68 x 136 x 64.5/ 2.68 x 5.35 x .54	1	–	Marche	24 ~	<b>XALD361B</b>	0.261/0.575
		–	1	Arrêt	230 ~	<b>XALD361M (3)</b>	0.261/0.575

(1) Please see our website [www.schneider-electric.com](http://www.schneider-electric.com) for more precised information about dimensions of components.

(2) Push supplied with cap not clipped-in, allowing orientation through 90° in 360° steps.

(3) Please add H7 for UL/CSA conformity, example: XALD213H7.



XALD224



XALD211H29



XALD134



XALD144



XALD363B

# Control stations and enclosures



Plastic control stations XALD and XALK

For Harmony XB5 control and signaling units Ø 22

Complete stations (screw clamp terminal connections)



## Two function

■ Light gray "RAL 7035" base, yellow "RAL 1021" lid

Description	Dimensions (1) w x h x d mm/in.	Type of contact		Marking	Reference	Weight kg/lb
						
2 spring return pushbuttons: - 1 flush, white - 1 flush, black	68 x 106 x 62/ 2.68 x 4.17 x 2.44	1	–	↑	<b>XALD222 (4)</b>	0.233/0.514
		1	–	↓		
		1	1	→	<b>XALD223</b>	0.233/0.514
		1	1	←		
		1	1	↑	<b>XALD222E</b>	0.233/0.514
		1	1	↓		

## Three function

■ Light gray "RAL 7035" base, yellow "RAL 1021" lid

Description	Dimensions (1) w x h x d mm/in.	Type of contact		Marking	Reference	Weight kg/lb
						
3 spring return pushbuttons: - 1 flush, green - 1 flush, red - 1 flush, green	68 x 136 x 62/ 2.68 x .35 x 2.44	1	–	I	<b>XALD339 (4)</b>	0.298/0.657
		–	1	O		
3 spring return pushbuttons: - 1 flush, white - 1 flush, red - 1 flush, black	68 x 136 x 62/ 2.68 x .35 x 2.44	1	–	↑	<b>XALD324 (4)</b>	0.298/0.657
		–	1	O		
		1	–	↓	<b>XALD326 (4)</b>	0.298/0.657
		1	–	↑		
		1	1	Stop	<b>XALD334 (4)</b>	0.298/0.657
		1	1	↓		
		1	1	→	<b>XALD324E</b>	0.317/0.699
		1	1	O		
		1	1	↓	<b>XALD325</b>	0.299/0.659
		1	–	↑		
3 spring return pushbuttons: - 1 flush, white - 1 projecting, red - 1 flush, black	68 x 136 x 62/ 2.68 x .35 x 2.44	1	–	↑	<b>XALD325</b>	0.299/0.659
		–	1	O		
		1	–	↓	<b>XALD328 (4)</b>	0.317/0.699
		1	–	↑		
2 spring return + 1 mushroom head pushbuttons: - 1 flush, white - 1 mushroom head, red (3) - 1 flush, black	68 x 136 x 87.5/ 2.68 x .35 x 3.44	1	–	↑	<b>XALD328 (4)</b>	0.317/0.699
		–	1	O		
		1	–	↓		
		1	–	↑		
3 spring return pushbuttons: - 1 flush, green - 1 flush, red - 1 flush, green	68 x 136 x 62/ 2.68 x .35 x 2.44	1	–	Avant	<b>XALD311 (4)</b>	0.299/0.659
		–	1	Arrêt		
		1	–	Arrière	<b>XALD311H29H7</b>	0.299/0.659
				FORWARD		
				STOP	<b>XALD321</b>	0.299/0.659
				REVERSE		
				Montée	<b>XALD321H29H7</b>	0.299/0.659
				Arrêt		
				Descente		
				UP		
				STOP		
				DOWN		

(1) Please see our website [www.schneider-electric.com](http://www.schneider-electric.com) for more precised information about dimensions of components.

(2) Push supplied with cap not clipped-in, allowing orientation through 90° in 360° steps.

(3) Standard turn to release, latching, Ø 30 mm/1.181 in.

(4) Please add H7 for UL/CSA conformity, example: XALD22H7.



XALD222



XALD339



XALD334

## Control stations and enclosures

Plastic control stations XALD and XALK

For Harmony XB5 control and signaling units Ø 22

Stations for customer assembly: empty enclosures



XALD02



XALK01H29

## Empty control stations with metal mounting plate in the back of enclosure


Description	Text and logo	Dimensions (1) w x h x d mm/in.	Number of cut-outs	Reference	Weight kg/lb
Light gray "RAL 7035" base Dark gray "RAL 7016" lid	Without	68 x 68 x 53/ 2.68 x 2.68 x 2.09	1	<b>XALD01</b> (6)	0.136/0.300
		68 x 106 x 53/ 2.68 x 4.17 x 2.09	2	<b>XALD02</b> (6)	0.193/0.425
		68 x 136 x 53/ 2.68 x 5.35 x 2.09	3	<b>XALD03</b> (6)	0.238/0.525
		68 x 166 x 53/ 2.68 x 6.54 x 2.09	4	<b>XALD04</b> (6)	0.278/0.613
		68 x 196 x 53/ 2.68 x 7.72 x 2.09	5	<b>XALD05</b> (6)	0.322/0.710
Light gray "RAL 7035" base Yellow "RAL 1021" lid For Emergency stop function (7)	Without	68 x 68 x 53/ 2.68 x 2.68 x 2.09	1	<b>XALK01</b> (5) (6)	0.136/0.300
		68 x 106 x 53/ 2.68 x 4.17 x 2.09	2	<b>XALK02</b>	0.193/0.425
		68 x 136 x 53/ 2.68 x 5.35 x 2.09	3	<b>XALK03</b> (5)	0.238/0.525
		68 x 166 x 53/ 2.68 x 6.54 x 2.09	4	<b>XALK04</b>	0.278/0.613
		68 x 196 x 53/ 2.68 x 7.72 x 2.09	5	<b>XALK05</b>	0.322/0.710
	With text "ARRET D'URGENCE" (2) and logo (3)	68 x 68 x 53/ 2.68 x 2.68 x 2.09	1	<b>XALK01HFR</b>	0.136/0.300
	With text "EMERGENCY STOP" (2) and logo (3)	68 x 68 x 53/ 2.68 x 2.68 x 2.09	1	<b>XALK01H29</b>	0.136/0.300
	With text "NOT HALT" (2) and logo (3)	68 x 68 x 53/ 2.68 x 2.68 x 2.09	1	<b>XALK01H44</b>	0.136/0.300
<b>CSA + UL certified (4)</b>					
Light gray "RAL 7035" base Dark gray "RAL 7016" lid	Without	68 x 68 x 53/ 2.68 x 2.68 x 2.09	1	<b>XALD01H7</b>	0.136/0.300
		68 x 106 x 53/ 2.68 x 4.17 x 2.09	2	<b>XALD02H7</b>	0.205/0.425
		68 x 136 x 53/ 2.68 x 5.35 x 2.09	3	<b>XALD03H7</b>	0.238/0.525
		68 x 136 x 53/ 2.68 x 5.35 x 2.09	3	<b>XALD04H7</b>	0.238/0.525
		68 x 136 x 53/ 2.68 x 5.35 x 2.09	3	<b>XALD05H7</b>	0.238/0.525

## Empty control stations with direct head mounting on cover with ZB5AZ009 fixing base

Light gray "RAL 7035" base Yellow "RAL 1021" lid For Emergency stop function	Without	68 x 68 x 53/ 2.68 x 2.68 x 2.09	1	<b>XALK01T</b>	0.136/0.300
	With text "ARRET D'URGENCE" (2) and logo (3)	68 x 68 x 53/ 2.68 x 2.68 x 2.09	1	<b>XALK01THFR</b>	0.136/0.300
	With text "NODSTOP" (2) and logo (3)	68 x 68 x 53/ 2.68 x 2.68 x 2.09	1	<b>XALK01TH26</b>	0.136/0.300
	With text "EMERGENCY STOP" (2) and logo (3)	68 x 68 x 53/ 2.68 x 2.68 x 2.09	1	<b>XALK01TH29</b>	0.136/0.300

(1) Please see our website [www.schneider-electric.com](http://www.schneider-electric.com) for more precised information about dimensions of components.

(2) For supply of the text in an other language, please consult our Customer Care Centre.

(3) For complying with ISO 13850 standard, paragraph 4.4.6., Emergency Stop function logo  has been added.

(4) Volt-free commoning/earth terminal included.

(5) Please add H7 for UL/CSA conformity, example: XALD01H7.

(6) To add customized markings on these references through web customization tool, see page 7.

(7) Red color pushbutton must be used only for Emergency stop function with XALK yellow background.



# Control stations and enclosures

Plastic control stations XALD and XALK

For Harmony XB5 control and signaling units Ø 22

Stations for customer assembly: electrical blocks

Electrical blocks and accessories for mounting in back of enclosure					
Description	Supply Voltage	Color	Sold in lots of	Unit reference	Weight kg/lb
<b>Electrical blocks with screw clamp terminal connections</b>					
<b>Standard contact blocks (1)</b>	NO contact	–	5	<b>ZENL1111</b>	0.015/0.033
	NC contact	–	5	<b>ZENL1121</b>	0.015/0.033
<b>Light blocks with integral LED (1)</b>	24 V ~	White	5	<b>ZALVB1</b>	0.015/0.033
		Green	5	<b>ZALVB3</b>	0.015/0.033
		Red	5	<b>ZALVB4</b>	0.015/0.033
		Yellow	5	<b>ZALVB5</b>	0.015/0.033
		Blue	5	<b>ZALVB6</b>	0.015/0.033
		110...120 V ~	White	5	<b>ZALVG1</b>
	Green	5	<b>ZALVG3</b>	0.015/0.033	
	Red	5	<b>ZALVG4</b>	0.015/0.033	
	Yellow	5	<b>ZALVG5</b>	0.015/0.033	
	Blue	5	<b>ZALVG6</b>	0.015/0.033	
	230...240 V ~	White	5	<b>ZALVM1</b>	0.015/0.033
		Green	5	<b>ZALVM3</b>	0.015/0.033
		Red	5	<b>ZALVM4</b>	0.015/0.033
		Yellow	5	<b>ZALVM5</b>	0.015/0.033
		Blue	5	<b>ZALVM6</b>	0.015/0.033



Electrical blocks and accessories for mounting in back of enclosure					
Description	Supply Voltage	Color	Sold in lots of	Unit reference	Weight kg/lb
<b>Electrical blocks with screw clamp terminal connections</b>					
<b>Standard contact blocks</b>	NO contact	–	5	<b>ZBE101</b>	0.016/0.035
	NC contact	–	5	<b>ZBE102</b>	0.016/0.035
<b>Light blocks with integral LED</b>	24 V ~	White	5	<b>ZBVB1</b>	0.016/0.035
		Green	5	<b>ZBVB3</b>	0.016/0.035
		Red	5	<b>ZBVB4</b>	0.016/0.035
		Orange	5	<b>ZBVB5</b>	0.016/0.035
		Yellow	5	<b>ZBVB8</b>	0.016/0.035
		Blue	5	<b>ZBVB6</b>	0.016/0.035
	110...120 V ~	White	5	<b>ZBVG1</b>	0.016/0.035
		Green	5	<b>ZBVG3</b>	0.016/0.035
		Red	5	<b>ZBVG4</b>	0.016/0.035
		Orange	5	<b>ZBVG5</b>	0.016/0.035
		Yellow	5	<b>ZBVG8</b>	0.016/0.035
		Blue	5	<b>ZBVG6</b>	0.016/0.035
	230...240 V ~	White	5	<b>ZBVM1</b>	0.016/0.035
		Green	5	<b>ZBVM3</b>	0.016/0.035
		Red	5	<b>ZBVM4</b>	0.016/0.035
		Orange	5	<b>ZBVM5</b>	0.016/0.035
		Yellow	5	<b>ZBVM8</b>	0.016/0.035
		Blue	5	<b>ZBVM6</b>	0.016/0.035




Description	For use with	Supply voltage V	Level of protection	Sold in lots of	Unit reference	Weight kg/lb
<b>Electrical blocks with screw clamp terminal connections</b>						
<b>LED suppressors for high powers (≥ 30 VA)</b>	Electrical light blocks with integral LED	120 V ~ 25...120 VA	–	–	<b>ZBZVG</b>	0.010/0.022
		230 V ~ 30...230 VA	–	–	<b>ZBZVM</b>	0.010/0.022
<b>Body/fixing collar</b> Sold in lots of 10	Electrical blocks (contact or light)	–	–	10	<b>ZB5AZ009</b>	0.006/0.013

(1) A maximum of 3 electrical blocks can be fitted per associated head.

(2) For electrical blocks for printed circuit board connection: please consult our Customer Care Centre.

## Heads and mounting base for potentiometer (1) (2)

Shape of head	Description	For use with	Reference		Weight kg/lb
			For black bezel	For gray bezel (3)	
	For potentiometer with shaft length 45 to 50 mm/ 1.772 to 1.968 in.	Ø 6 mm/ 0.236 in. shaft	<b>ZB5AD912</b>	<b>ZB5AD912C0</b>	0.032/0.071
		Ø 6.35 mm/ 0.250 in. shaft	<b>ZB5AD922</b>	<b>ZB5AD922C0</b>	0.032/0.071

## Timers

Description	Output type	Supply voltage V	Time delay type	Time delay range	Reference	Weight kg/lb
Panel-mounted timer function with status LED and 1 static output in 22.5 mm/0.886 in. hole	1 static output	24 $\overline{\text{---}}$	Type A (delay on energization)	0.5...10 s	<b>XB5DTB22</b>	0.027/0.060
				3...60 s	<b>XB5DTB23</b>	0.027/0.060
				0.5...10 min	<b>XB5DTB24</b>	0.027/0.060
				3...60 min	<b>XB5DTB25</b>	0.027/0.060
				0.5...10 s	<b>XB5DTGM2</b>	0.027/0.060
				3...60 s	<b>XB5DTGM3</b>	0.027/0.060
	100...240 $\overline{\sim}$ - 50/60 Hz		Type A (delay on energization)	0.5...10 min	<b>XB5DTGM4</b>	0.027/0.060
				3...60 min	<b>XB5DTGM5</b>	0.027/0.060

## Hour counters

Description	Supply voltage V	Reference	Weight kg/lb
Indication 0...9999.9	12...24 $\overline{\sim}$ - 50 or 60 Hz	<b>XB5DSB</b>	0.045/0.099
	120 $\overline{\sim}$ - 60 Hz	<b>XB5DSG</b>	0.045/0.099
	230...240 $\overline{\sim}$ - 50 Hz	<b>XB5DSM</b>	0.045/0.099

## USB and RJ45 ports

Description	Interface type	Connection type	Degree of protection	Reference	Weight kg/lb
Panel-mounted USB and RJ45 ports in 22.5 mm/0.886 in. hole with notch	USB interface, jack type A	USB port 3.0 A-A	IP20	<b>XB5PUSB3</b>	0.017/0.037
			IP65, IP67, IP69K with protection cover (4)		
	Ethernet interface, RJ45 jack	RJ45 port Cat. 6	IP20	<b>XB5PRJ45</b>	0.027/0.060
			IP65, IP67, IP69K with protection cover (4)		

(1) Potentiometer not included.

(2) To add customized markings on these references using web customization tool, see page 7.

(3) For white color plated bezel replace C0 with C1, and for other color plated bezels using the web customization tool, see page 7.

(4) For protection covers refer to the product instruction sheet of ZBSP1, ZBSP2, and ZBSP3 on www.schneider-electric.com.



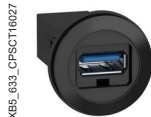
XB5\_633\_CPSCT16045

XB5DTB22



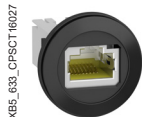
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XB5DSB



XB5\_633\_CPSCT16027

XB5PUSB3



XB5\_633\_CPSCT16027

XB5PRJ45

# Control stations and enclosures

Plastic control stations XALD and XALK

For Harmony XB5 control and signaling units Ø 22

Stations for customer assembly: heads



ZB5AA0



ZB5AA5



ZB5AP2S



ZB5AL3



ZB5CA2



ZB5CA5

## Heads for spring return pushbuttons - unmarked

Shape of head	Type of push	Color of cap	Reference		Weight kg/lb
			For black bezel	For gray bezel (4)(5)	
	Without cap (1)	–	ZB5AA0	–	0.022/0.049
	Flush, with set of 6 colored caps	6 colors (2)	ZB5AA9	–	0.027/0.060
	Flush	White	ZB5AA1	ZB5AA1C0	0.018/0.040
		Black	ZB5AA2	ZB5AA2C0	0.018/0.040
		Green	ZB5AA3	ZB5AA3C0	0.018/0.040
		Red	ZB5AA4	ZB5AA4C0	0.018/0.040
		Yellow	ZB5AA5	ZB5AA5C0	0.018/0.040
		Blue	ZB5AA6	ZB5AA6C0	0.018/0.040
		Gray	ZB5AA8	ZB5AA8C0	0.018/0.040
	Flush with transparent cap, for insertion of legend (3)	White	ZB5AA18	ZB5AA18C0	0.018/0.040
Green		ZB5AA38	ZB5AA38C0	0.018/0.040	
Red		ZB5AA48	ZB5AA48C0	0.018/0.040	
Yellow		ZB5AA58	ZB5AA58C0	0.018/0.040	
Booted (colored silicone) Can be replaced without dismantling the head	White	ZB5AP1S	–	0.014/0.031	
	Black	ZB5AP2S	–	0.014/0.031	
	Green	ZB5AP3S	–	0.014/0.031	
	Red	ZB5AP4S	–	0.014/0.031	
	Yellow	ZB5AP5S	–	0.014/0.031	
	Blue	ZB5AP6S	–	0.014/0.031	
Projecting	White	ZB5AL1	ZB5AL1C0	0.019/0.042	
	Black	ZB5AL2	ZB5AL2C0	0.019/0.042	
	Green	ZB5AL3	ZB5AL3C0	0.019/0.042	
	Red	ZB5AL4	ZB5AL4C0	0.019/0.042	
	Yellow	ZB5AL5	ZB5AL5C0	0.019/0.042	
	Blue	ZB5AL6	ZB5AL6C0	0.019/0.042	
Flush (high guard)	White	ZB5AA14	ZB5AA14C0	0.020/0.044	
	Black	ZB5AA24	ZB5AA24C0	0.020/0.044	
	Green	ZB5AA34	ZB5AA34C0	0.020/0.044	
	Red	ZB5AA44	ZB5AA44C0	0.020/0.044	
	Yellow	ZB5AA54	ZB5AA54C0	0.020/0.044	
	Blue	ZB5AA64	ZB5AA64C0	0.020/0.044	
Recessed (high guard)	White	ZB5AA16	ZB5AA16C0	0.019/0.042	
	Black	ZB5AA26	ZB5AA26C0	0.019/0.042	
	Green	ZB5AA36	ZB5AA36C0	0.019/0.042	
	Red	ZB5AA46	ZB5AA46C0	0.019/0.042	
	Yellow	ZB5AA56	ZB5AA56C0	0.019/0.042	
	Blue	ZB5AA66	ZB5AA66C0	0.019/0.042	
	Flush	White	ZB5CA1	–	0.019/0.042
		Black	ZB5CA2	–	0.019/0.042
		Green	ZB5CA3	–	0.019/0.042
		Red	ZB5CA4	–	0.019/0.042
		Yellow	ZB5CA5	–	0.019/0.042
		Blue	ZB5CA6	–	0.019/0.042
	Projecting	White	ZB5CL1	–	0.021/0.046
		Black	ZB5CL2	–	0.021/0.046
		Green	ZB5CL3	–	0.021/0.046
		Red	ZB5CL4	–	0.021/0.046
		Yellow	ZB5CL5	–	0.021/0.046
		Blue	ZB5CL6	–	0.021/0.046

(1) Cap to be ordered separately, see page 37.

(2) Head supplied with 6 different colored caps (white, black, green, red, yellow, blue).

(3) For legend ordering information, see page 32.

(4) For white color plated bezel replace C0 with C1, and for other color plated bezels using the web customization tool, see page 7.

(5) To add customized markings on these references using the web customization tool, see page 7.

# Control stations and enclosures

Plastic control stations XALD and XALK

For Harmony XB5 control and signaling units Ø 22

Stations for customer assembly: heads



ZB5AA331



ZB5AA432



ZB5AL232







ZB5AC24




ZB5AC2

## Heads for spring return pushbuttons - marked

Shape of head	Type of push	Marking		Color of cap	Reference		Weight kg/lb
		Text	Color		For black bezel	For gray bezel (2)/(3)	
	Flush (1)	I	White	Green	<b>ZB5AA331</b>	<b>ZB5AA331C0</b>	0.018/0.040
			Black	White	<b>ZB5AA131</b>	<b>ZB5AA131C0</b>	0.018/0.040
		II	White	Green	<b>ZB5AA336</b>	–	0.018/0.040
			Black	White	<b>ZB5AA136</b>	–	0.018/0.040
		START	White	Green	<b>ZB5AA333</b>	<b>ZB5AA333C0</b>	0.018/0.040
			Black	White	<b>ZB5AA133</b>	–	0.018/0.040
		ON	White	Green	<b>ZB5AA341</b>	–	0.018/0.040
			Black	White	<b>ZB5AA141</b>	–	0.018/0.040
		MARCHE	White	Green	<b>ZB5AA342</b>	–	0.018/0.040
			Black	White	<b>ZB5AA142</b>	–	0.018/0.040
			White	Black	<b>ZB5AA245</b>	–	0.018/0.040
			Black	White	<b>ZB5AA145</b>	–	0.018/0.040
		O	White	Red	<b>ZB5AA432</b>	<b>ZB5AA432C0</b>	0.018/0.040
			Black	White	<b>ZB5AA232</b>	–	0.018/0.040
		ARRET	White	Red	<b>ZB5AA433</b>	–	0.018/0.040
			Black	White	<b>ZB5AA233</b>	–	0.018/0.040
		STOP	White	Red	<b>ZB5AA434</b>	<b>ZB5AA434C0</b>	0.018/0.040
			Black	White	<b>ZB5AA234</b>	–	0.018/0.040
		OFF	White	Red	<b>ZB5AA435</b>	–	0.018/0.040
			Black	White	<b>ZB5AA235</b>	–	0.018/0.040
		UP	Black	White	<b>ZB5AA343</b>	–	0.018/0.040
			White	Black	<b>ZB5AA344</b>	–	0.018/0.040
		↓	White	Black	<b>ZB5AA335</b>	<b>ZB5AA334C0</b>	0.018/0.040
			Black	White	<b>ZB5AA334</b>	<b>ZB5AA335C0</b>	0.018/0.040
	Projecting (1)	O	White	Red	<b>ZB5AL432</b>	<b>ZB5AL432C0</b>	0.019/0.042
			Black	White	<b>ZB5AL232</b>	–	0.019/0.042
		ARRET	White	Red	<b>ZB5AL433</b>	–	0.019/0.042
			Black	White	<b>ZB5AL233</b>	–	0.019/0.042
		STOP	White	Red	<b>ZB5AL434</b>	–	0.019/0.042
			Black	White	<b>ZB5AL234</b>	–	0.019/0.042
		OFF	White	Red	<b>ZB5AL435</b>	–	0.019/0.042
			Black	White	<b>ZB5AL235</b>	–	0.019/0.042
	Flush (1)	I	White	Green	<b>ZB5CA331</b>	–	0.019/0.042
			Black	White	<b>ZB5CA131</b>	–	0.019/0.042
		O	White	Red	<b>ZB5CA432</b>	–	0.019/0.042
			Black	White	<b>ZB5CA232</b>	–	0.019/0.042
		+	White	Black	<b>ZB5CA2934</b>	–	0.019/0.042
↓	White	Black	<b>ZB5CA2912</b>	–	0.019/0.042		
R	White	Blue	<b>ZB5CA6939</b>	–	0.019/0.042		

## Mushroom heads for spring return pushbuttons

Shape of head	Type of push	Diameter of push mm/in.	Color of push	Reference	Weight kg/lb
		<b>30/1.181</b>	Black	<b>ZB5AC24</b>	0.027/0.060
			Green	<b>ZB5AC34</b>	0.027/0.060
			Red	<b>ZB5AC44</b>	0.027/0.060
			Yellow	<b>ZB5AC54</b>	0.027/0.060
			Blue	<b>ZB5AC64</b>	0.027/0.060
			Black	<b>ZB5AC2</b>	0.046/0.101
		<b>40/1.575</b>	Green	<b>ZB5AC3</b>	0.046/0.101
			Red	<b>ZB5AC4</b>	0.046/0.101
			Yellow	<b>ZB5AC5</b>	0.046/0.101
			Blue	<b>ZB5AC6</b>	0.046/0.101

(1) Push supplied with cap not clipped-in, allowing orientation through 90° in 360° steps.

(2) For white color plated bezel replace C0 with C1, and for other color plated bezels using the web customization tool, see page 7.

(3) To add customized markings on these references using the web customization tool, see page 7.

# Control stations and enclosures

Plastic control stations XALD and XALK  
 For Harmony XB5 control and signaling units Ø 22  
 Stations for customer assembly: heads



ZB5AT2



ZB5AS62



ZB5AS72



ZB5AW733



ZBZ48

## Mushroom head pushbuttons (1) (2)

Shape of head	Type of reset	Push		Reference	Weight kg/lb
		Diameter Ø mm/in.	Color		
<b>Heads only</b>					
	Push-pull	30/1.181	Black	<b>ZB5AT24</b>	0.044/0.097
		40/1.575	Black	<b>ZB5AT2</b>	0.049/0.108
		60/2.362	Black	<b>ZB5AX2</b>	0.067/0.148
	Turn to release	30/1.181	Black	<b>ZB5AS42</b>	0.040/0.088
		40/1.575	Black	<b>ZB5AS52</b>	0.044/0.097
		40/1.575	Yellow	<b>ZB5AS55</b>	0.044/0.097
		60/2.362	Black	<b>ZB5AS62</b>	0.064/0.141
	Key release (key no. 455) (2 keys included with head) (3) (5)	30/1.181	Black	<b>ZB5AS72</b>	0.040/0.088
		40/1.575	Black	<b>ZB5AS12 (4)</b>	0.044/0.097
		60/2.362	Black	<b>ZB5AS22</b>	0.064/0.141

## Illuminated mushroom head pushbuttons (2)

Shape of head	Type of reset	Push		Reference	Weight kg/lb
		Diameter Ø mm/in.	Color		
	Turn to release	40/1.575	White	<b>ZB5AW713</b>	0.022/0.049
			Green	<b>ZB5AW733</b>	0.022/0.049
			Orange	<b>ZB5AW753</b>	0.022/0.049
			Blue	<b>ZB5AW763</b>	0.022/0.049

## Bellows for harsh environment

For use in	Material	Color	Sold in lots of	Reference	Weight kg/lb
Environment subject to humidity, dust, high pressure cleaning, etc.	Silicone	Red	2	<b>ZBZ48</b>	0.009/0.020

(1) These pushbuttons and heads cannot be used for an Emergency stop function. Therefore, it is recommended that a legend with a black or white background is used.

(2) Recommended maximum number of contacts constituting the body (fixing collar and contact) associated with the head, see Harmony XB5 catalog, page 22.

(3) For specific keys with other numbers, please contact our Customer Care Center.

(4) Other key numbers:

- key no. 421E: add suffix **12** to the reference.
- key no. 458A: add suffix **10** to the reference.
- key no. 520E: add suffix **14** to the reference.
- key no. 3131A: add suffix **20** to the reference.

Example: To order a Ø 40 mm/1.575 in. black mushroom head for a latching pushbutton, with release by key no. 421E, the reference becomes: ZB5AS1212.

(5) The symbol indicates key withdrawal position(s).

(6) Only for use with bodies comprising a light source with integral LED.

# Control stations and enclosures

## Plastic control stations XALD and XALK

For Harmony XB5 control and signaling units Ø 22  
Emergency stop and Emergency switching off heads and circular yellow legends

### Emergency stop and Emergency switching off functions conforming to EN/IEC 60204-1, 60364-5-53, EN/ISO 13850, and Machinery Directive 2006/42/EC

Emergency stop function: Mushroom head Emergency stop trigger action and mechanical latching pushbuttons conform to standards EN/IEC 60204-1 and EN/ISO 13850, Machinery Directive 2006/42/EC, and standard EN/IEC 60947-5-5.

Emergency switching off function: Mushroom head switching off mechanical latching pushbuttons conform to standards IEC 60364-5-53 and EN/IEC 60947-5-5.

Please contact our Customer Care Center for an explanation of these standards and directives.



Emergency stop and switching off pushbuttons with trigger action and mechanical latching (1) (2)						
Screw clamp terminal connections (Schneider Electric anti-loosening system)						
Shape of head	Type of reset	Push		Reference	Weight kg/lb	
		Diameter Ø mm/in.	Color			
<b>Heads only</b>						
	Push-pull	30/1.181	Red	<b>ZB5AT844</b>	0.049/0.108	
		40/1.575	Red	<b>ZB5AT84</b>	0.049/0.108	
		60/2.362	Red	<b>ZB5AX84</b>	0.067/0.148	
	Turn to release	30/1.181	Red	<b>ZB5AS834</b>	0.042/0.002	
		40/1.575	Red	<b>ZB5AS844</b>	0.046/0.002	
		60/2.362	Red	<b>ZB5AS934</b>	0.068/0.003	
	Key release (key no. 455) (2 keys included with head) (5)(3)	30/1.181	Red	<b>ZB5AS934</b>	0.068/0.003	
		40/1.575	Red	<b>ZB5AS944 (4)</b>	0.071/0.003	
		60/2.362	Red	<b>ZB5AS964</b>	0.092/0.004	
		40/1.575	Red	<b>ZB5AS944D</b>	0.071/0.003	

Circular yellow legends for Emergency stop (6)						
Description	Marking	Color	Sold in lots of	Reference	Weight kg/lb	
Ø 60 mm/2.362 in. legend for Emergency stop function	–	Yellow	5	<b>ZBY9121</b>	0.007/0.015	
	EMERGENCY STOP	Yellow	5	<b>ZBY9320</b>	0.007/0.015	
	ARRET D'URGENCE	Yellow	5	<b>ZBY9120</b>	0.007/0.015	
	NOT HALT	Yellow	5	<b>ZBY9220</b>	0.007/0.015	
	PARADA DE EMERGENCIA	Yellow	5	<b>ZBY9420</b>	0.007/0.015	
	ARRESTO DI EMERGENZA	Yellow	5	<b>ZBY9620</b>	0.007/0.015	

Illuminated rings for Emergency stop (6) (7)							
Description	Marking	Marking	Signaling	Color	Sold in lots of	Reference	Weight kg/lb
Ø 60 mm/2.362 in. illuminated ring for Emergency stop	EMERGENCY STOP	Fixed, red 24 V ~		Yellow	1	<b>ZBY9W2B330</b>	0.031/0.068
	ARRET D'URGENCE	Fixed, red 24 V ~		Yellow	1	<b>ZBY9W2B130</b>	0.031/0.068
	NOT HALT	Fixed, red 24 V ~		Yellow	1	<b>ZBY9W2B230</b>	0.031/0.068

(1) For recommended maximum number of contacts constituting the body (fixing collar and contact) associated with the head, see Harmony XB5 catalog, page 22.

(2) It is recommended that a legend or yellow background is used.

(3) The symbol indicates key withdrawal position(s).

(4) Other key numbers:

- Key no. 421E: add suffix **12** to the reference.
- Key no. 458A: add suffix **10** to the reference.
- Key no. 520E: add suffix **14** to the reference.
- Key no. 3131A: add suffix **20** to the reference.
- Key no. 4A185: add suffix **D** to the reference.

For example, to order a Ø 40 mm/1.575 in. red mushroom head for a trigger action and mechanical latching Emergency stop pushbutton, with release by key no. 421E, the reference becomes ZB5AS94412.

(5) For specific keys with other numbers, please contact our Customer Care Center.

(6) For compliance with standard EN/ISO 13850, paragraph 4.4.6, the Emergency Stop function logo has been added.

(7) For additional references, see page 34.

# Control stations and enclosures

## Plastic control stations XALD and XALK

For Harmony XB5 control and signaling units Ø 22


Emergency stop and Emergency switching off heads and circular yellow legends

### Emergency stop and Emergency switching off functions conforming to EN/IEC 60204-1, 60364-5-53, EN/ISO 13850, and Machinery Directive 2006/42/EC

Emergency stop function: Mushroom head Emergency stop trigger action and mechanical latching pushbuttons conform to standards EN/IEC 60204-1 and EN/ISO 13850, Machinery Directive 2006/42/EC, and standard EN/IEC 60947-5-5. Emergency switching off function: Mushroom head switching off mechanical latching pushbuttons conform to standards IEC 60364-5-53 and EN/IEC 60947-5-5.

Please contact our Customer Care Center for an explanation of these standards and directives.

### Illuminated and non illuminated Emergency stop and Emergency switching off pushbuttons with trigger action and mechanical latching

Shape of head	Type of reset	Signaling type	Type of contact	Supply voltage V	Diameter Ø mm/in.	Color of the push	Reference	Weight kg/lb
<b>Heads only</b>								
	Turn to release	–		–	60/2.362	Red	<b>ZB5AS84W00</b>	0.055/0.121
	Fixed, red			24 ~	60/2.362	Red	<b>ZB5AS84W2B</b>	0.055/0.121
	Fixed, red			120 ~	60/2.362	Red	<b>ZB5AS84W2G</b>	0.055/0.121
	Fixed, red			230 ~	60/2.362	Red	<b>ZB5AS84W2M</b>	0.055/0.121
	Fixed white + fixed red, bi-color			24 ~	60/2.362	Red	<b>ZB5AS84W3B</b>	0.055/0.121

XB5\_633\_CPFER18128A



ZB5AS84W2B

### Empty control stations with metal mounting plate in the back of enclosure (1) (2)

Description	Dimensions (4) w x h x d mm/in.	Number of cut-outs	Reference	Weight kg/lb
Light gray “RAL 7035” base Yellow “RAL 1021” lid For Emergency stop function (3)	68 x 68 x 53/ 2.68 x 2.68 x 2.09	1	<b>XALKW01</b>	0.116/0.56

(1) For compliance with standard EN/ISO 13850, paragraph 4.4.6, the Emergency Stop function logo  has been added.

(2) Compatible only with illuminated Emergency stop pushbuttons ZB5AS84W●● and legend plate ZBY9W●●.

(3) Red color pushbutton must be used only for Emergency stop function with XALK yellow background.

(4) Please see our website [www.schneider-electric.com](http://www.schneider-electric.com) for more precised information about dimensions of components.

#### Emergency stop and Emergency switching off functions conforming to EN/IEC 60204-1, 60364-5-53, EN/ISO 13850, and Machinery Directive 2006/42/EC

Emergency stop function: Mushroom head Emergency stop trigger action and mechanical latching pushbuttons conform to standards EN/IEC 60204-1 and EN/ISO 13850, Machinery Directive 2006/42/EC, and standard EN/IEC 60947-5-5.

Emergency switching off function: Mushroom head switching off mechanical latching pushbuttons conform to standards IEC 60364-5-53 and EN/IEC 60947-5-5.


Please contact our Customer Care Center for an explanation of these standards and directives.

#### Illuminated Emergency stop and Emergency switching off functions, mechanical latching pushbuttons with mechanical state indicator (1)

For elevator inspection box applications

Shape of head	Type of reset	Push Diameter Ø mm/in.	Color	Unit reference	Weight kg/lb
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#### Heads only (2)

	<b>Push-pull (1)(3)</b> For Emergency stop and Emergency switching off function	40/1.575	Red	<b>ZB5AT8643M</b>	0.034/0.075
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Description	Conforming to standards	Marking on yellow background	Sold in lots of	Reference	Weight kg/lb
Illuminated Emergency stop function ZB5AT8643M with Ø 60mm / 2.362 in. legend plate	EN/IEC 60204-1 - and EN/ISO 13850		10	<b>ZB5AT8643M140</b>	0.034/0.075
		ARRET D'URGENCE	10	<b>ZB5AT8643M130</b>	0.034/0.075
		EMERGENCY STOP	10	<b>ZB5AT8643M330</b>	0.034/0.075
		NOT HALT	10	<b>ZB5AT8643M230</b>	0.034/0.075
		PARADA DE EMERGENCIA	10	<b>ZB5AT8643M430</b>	0.034/0.075
		ARRESTO DI EMERGENZA	10	<b>ZB5AT8643M630</b>	0.034/0.075

#### Illuminated Emergency switching off function only, mechanical latching pushbuttons Screw clamp terminal connections (Schneider Electric anti-loosening system)

Shape of head	Type of reset	Push Diameter Ø mm/in.	Color	Reference	Weight kg/lb
---------------	---------------	------------------------	-------	-----------	--------------

	<b>Turn to release</b>	40/1.575	Red	<b>ZB5AW743</b>	0.022/0.049
---	------------------------	----------	-----	-----------------	-------------

#### Circular yellow legends for ZB5AW743

Diameter mm/in.	Conforming to standards	Marking on yellow background	Sold in lots of	Reference	Weight kg/lb
<b>Used for "Emergency switching off" function</b>					
60/2.362	EN/IEC 60204-1 -		10	<b>ZBY9101</b>	0.004/0.009
		COUPURE D'URGENCE	10	<b>ZBY9160</b>	0.004/0.009
		EMERGENCY SWITCHING OFF	10	<b>ZBY9360</b>	0.004/0.009
		NOT-AUS	10	<b>ZBY9260</b>	0.004/0.009
		DESCONEXION DE EMERGENCIA	10	<b>ZBY9460</b>	0.004/0.009
		INTERRUZIONE DI EMERGENZA	10	<b>ZBY9660</b>	0.004/0.009

(1) For recommended maximum number of contacts constituting the body (fixing collar and contact) associated with the head, see Harmony XB5 catalog, page 22.

(2) Only for use with bodies comprising a light source with integral LED.

(3) Cannot be used with metal guards ZBZ160.



ZB5AT8643M



ZB5AT8643M330



ZB5AW743



ZBY9360



# Control stations and enclosures

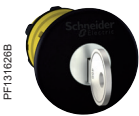
Plastic control stations XALD and XALK  
 For Harmony XB5 control and signaling units Ø 22  
 General safe stops

## General safe stops

General safe stops are used to stop the operation of a machine in a safe manner. These devices cannot be used as an Emergency stop and must not be associated with a yellow background. General safe stops comprise a yellow bezel and black head.



ZB5AT82Y



ZB5AS942Y

Shape of head	Type of reset	Push		Reference	Weight kg/lb
		Diameter Ø mm/in.	Color		
	Push-pull	40/1.575	Black	ZB5AT82Y	0.050/0.110
	Turn to release	40/1.575	Black	ZB5AS842Y	0.046/0.101
	Key release (key no. 455) (2 keys included with head) (1)	40/1.575	Black	ZB5AS942Y	0.071/0.157

## Bellows for harsh environments (2)

Description	Material	For use with	Color	Sold in lots of	Unit reference	Weight kg/lb
For use in environments subject to humidity, dust, high pressure cleaning, etc.	Silicone	Other functions	Black	2	ZBZ28	0.009/0.020
		Emergency stop/switching off function	Yellow	2	ZBZ58	0.009/0.020



ZBZ58

(1) The symbol indicates key withdrawal position(s).  
 (2) Not compatible with Ø 30 mm/1.181 in. pushbuttons.

## Control stations and enclosures

Plastic control stations XALD and XALK

For Harmony XB5 control and signaling units Ø 22

Stations for customer assembly: heads



ZB5AD2



ZB5AD204

Heads for selector switches (1)						
Shape of head	Type of operator	Number and type of positions	Reference		Weight kg/lb	
			For black bezel	For gray bezel (2) (3)		
	Standard handle, black	2 - stay put	ZB5AD2	ZB5AD2C0	0.017/0.037	
		2 - spring return from right to left	ZB5AD4	ZB5AD4C0	0.020/0.044	
		3 - stay put	ZB5AD3	ZB5AD3C0	0.017/0.037	
		3 - spring return to centre	ZB5AD5	ZB5AD5C0	0.017/0.037	
		3 - spring return from left to centre	ZB5AD7	ZB5AD7C0	0.017/0.037	
		3 - spring return from right to centre	ZB5AD8	ZB5AD8C0	0.017/0.037	
		Standard handle, white	2 - stay put	ZB5AD201	ZB5AD201C0	0.017/0.037
		2 - spring return from right to left	ZB5AD401	ZB5AD401C0	0.020/0.044	
3 - stay put	ZB5AD301	ZB5AD301C0	0.017/0.037			
3 - spring return to centre	ZB5AD501	ZB5AD501C0	0.017/0.037			
3 - spring return from left to centre	ZB5AD701	ZB5AD701C0	0.017/0.037			
3 - spring return from right to centre	ZB5AD801	ZB5AD801C0	0.017/0.037			
Standard handle, green	Standard handle, green	2 - stay put	ZB5AD203	ZB5AD203C0	0.017/0.037	
		2 - spring return from right to left	ZB5AD403	ZB5AD403C0	0.020/0.044	
		3 - stay put	ZB5AD303	ZB5AD303C0	0.017/0.037	
		3 - spring return to centre	ZB5AD503	ZB5AD503C0	0.017/0.037	
		3 - spring return from left to centre	ZB5AD703	ZB5AD703C0	0.017/0.037	
		3 - spring return from right to centre	ZB5AD803	ZB5AD803C0	0.017/0.037	

(1) Can only be used for actuation of end of row (side) mounted contacts.

(2) For white color plated bezel replace C0 with C1, and for other color plated bezels using the web customization tool, see page 7.

(3) To add customized markings on these references using the web customization tool, see page 7.

# Control stations and enclosures

Plastic control stations XALD and XALK

For Harmony XB5 control and signaling units Ø 22

Stations for customer assembly: heads



ZB5AD204

Heads for selector switches (1) (continued)						
Shape of head	Type of operator	Number and type of positions	Reference		Weight kg/lb	
			For black bezel	For gray bezel (2) (3)		
	<b>Standard handle, red</b>	2 - stay put		ZB5AD204	ZB5AD204C0	0.017/0.037
		2 - spring return from right to left		ZB5AD404	ZB5AD404C0	0.020/0.044
		3 - stay put		ZB5AD304	ZB5AD304C0	0.017/0.037
		3 - spring return to centre		ZB5AD504	ZB5AD504C0	0.017/0.037
		3 - spring return from left to centre		ZB5AD704	ZB5AD704C0	0.017/0.037
		3 - spring return from right to centre		ZB5AD804	ZB5AD804C0	0.017/0.037
	<b>Standard handle, yellow</b>	2 - stay put		ZB5AD205	ZB5AD205C0	0.017/0.037
		2 - spring return from right to left		ZB5AD405	ZB5AD405C0	0.020/0.044
		3 - stay put		ZB5AD305	ZB5AD305	0.017/0.037
		3 - spring return to centre		ZB5AD505	ZB5AD505	0.017/0.037
		3 - spring return from left to centre		ZB5AD705	ZB5AD705	0.017/0.037
		3 - spring return from right to centre		ZB5AD805	ZB5AD805	0.017/0.037
	<b>Standard handle, blue</b>	2 - stay put		ZB5AD206	ZB5AD206	0.017/0.037
		2 - spring return from right to left		ZB5AD406	ZB5AD406	0.020/0.044
		3 - stay put		ZB5AD306	ZB5AD306	0.017/0.037
		3 - spring return to centre		ZB5AD506	ZB5AD506	0.017/0.037
		3 - spring return from left to centre		ZB5AD706	ZB5AD706	0.017/0.037
		3 - spring return from right to centre		ZB5AD806	ZB5AD806	0.017/0.037
	<b>Long handle, black</b>	2 - stay put		ZB5AJ2	ZB5AJ2C0	0.017/0.037
		2 - spring return from right to left		ZB5AJ4	ZB5AJ4C0	0.020/0.044
		3 - stay put		ZB5AJ3	ZB5AJ3C0	0.017/0.037
		3 - spring return to centre		ZB5AJ5	ZB5AJ5C0	0.017/0.037
		3 - spring return from left to centre		ZB5AJ7	ZB5AJ7C0	0.017/0.037
		3 - spring return from right to centre		ZB5AJ8	ZB5AJ8C0	0.017/0.037

(1) Can only be used for actuation of end of row (side) mounted contacts.

(2) For white color plated bezel replace C0 with C1, and for other color plated bezels using the web customization tool, see page 7.

(3) To add customized markings on these references using the web customization tool, see page 7.



ZB5AJ

# Control stations and enclosures

Plastic control stations XALD and XALK

For Harmony XB5 control and signaling units Ø 22

Stations for customer assembly: heads



ZB5AD39



ZB5AG2



ZB5AG3

## Heads for selector switches (1) (continued)

Shape of head	Type of operator	Number and type of positions (2)	Reference		Weight kg/lb
			For black bezel	For gray bezel (5) (6)	
	Knurled knob, black (4)	2 - stay put	ZB5AD29	ZB5AD29C0	0.020/0.044
		2 - spring return from right to left	ZB5AD49	ZB5AD49C0	0.024/0.053
		3 - stay put	ZB5AD39	ZB5AD39C0	0.020/0.044
		3 - spring return to centre	ZB5AD59	ZB5AD59C0	0.020/0.044
		3 - spring return from left to centre	ZB5AD79	ZB5AD79C0	0.020/0.044
		3 - spring return from right to centre	ZB5AD89	ZB5AD89C0	0.020/0.044
			Key switch with key no. 455 (3) (4)	2 - stay put	ZB5AG2
	ZB5AG02			-	0.057/0.126
	ZB5AG4			ZB5AG4C0	0.057/0.126
2 - spring return from right to left	ZB5AG6			ZB5AG6C0	0.061/0.134
3 - stay put	ZB5AG0			ZB5AG0C0	0.057/0.126
	ZB5AG3			ZB5AG3C0	0.057/0.126
	ZB5AG5			-	0.057/0.126
	ZB5AG9			ZB5AG9C0	0.057/0.126
	ZB5AG09			-	0.057/0.126
3 - spring return from left to centre	ZB5AG1			-	0.057/0.126
3 - spring return to centre	ZB5AG7			ZB5AG7C0	0.057/0.126
3 - spring return from right to centre	ZB5AG8			-	0.057/0.126
	ZB5AG05			ZB5AG05C0	0.057/0.126
	ZB5AG08			ZB5AG08C0	0.057/0.126

(1) Can only be used for actuation of end of row (side) mounted contacts.

(2) The symbol "U" indicates key withdrawal position(s).

(3) Other key numbers:

- key no. 421E: add suffix 12 to the reference,
- key no. 458A: add suffix 10 to the reference,
- key no. 520E: add suffix 14 to the reference,
- key no. 3131A: add suffix 20 to the reference.

Example:

For a key switch head with key no. 421E, 2-position stay put with key withdrawal from the left-hand position, the reference becomes: **ZB5AG212**.

(4) For specific keys with other numbers, please consult our Customer Care Centre.

(5) For white color plated bezel replace C0 with C1, and for other color plated bezels using the web customization tool, see page 7.

(6) To add customized markings on these references using the web customization tool, see page 7.

# Control stations and enclosures

Plastic control stations XALD and XALK

For Harmony XB5 control and signaling units Ø 22

Stations for customer assembly: heads



## Heads for selector switches (1) (continued)

Shape of head	Type of operator	Number and type of positions (2)		Reference		Weight kg/lb
				For black bezel	For gray bezel (3) (4)	
	Key switch with key no. 8D1	2 - stay put		ZB5AG2D	ZB5AG2DC0	0.057/0.126
				ZB5AG02D	–	0.057/0.126
				ZB5AG4D	ZB5AG4DC0	0.057/0.126
		2 - spring return from right to left		ZB5AG6D	–	0.061/0.134
			3 - stay put		ZB5AG0D	–
				ZB5AG3D	–	0.057/0.126
				ZB5AG5D	–	0.057/0.126
		3 - spring return from left to centre		ZB5AG9D	–	0.057/0.126
				ZB5AG09D	–	0.057/0.126
				ZB5AG03D	–	0.057/0.126
		3 - spring return from right to centre		ZB5AG04D	–	0.057/0.126
				ZB5AG06D	–	0.057/0.126
				ZB5AG1D	–	0.057/0.126
		3 - spring return to centre		ZB5AG07D	–	0.057/0.126
				ZB5AG8D	–	0.057/0.126
	ZB5AG08D		–	0.057/0.126		
	ZB5AG05D	–	0.057/0.126			
	ZB5AG7D	–	0.057/0.126			

## Heads for toggle switches

Shape of head	Description	Lever	Type of position	Reference		Weight kg/lb
				For black bezel	For gray bezel (3) (4)	
	2-position	Black	Stay put	ZB5AD28	ZB5AD28C0	0.023/0.051
			Spring return	ZB5AD48	ZB5AD48C0	0.023/0.051
	White	Stay put		ZB5AD2801	ZB5AD2801C0	0.023/0.051
				ZB5AD2804	ZB5AD2804C0	0.023/0.051
				ZB5AD2806	ZB5AD2806C0	0.023/0.051

(1) Can only be used for actuation of end of row (side) mounted contacts.

(2) The symbol “Ø” indicates key withdrawal position(s).

(3) For white color plated bezel replace C0 with C1, and for other color plated bezels using the web customization tool, see page 7.

(4) To add customized markings on these references using the web customization tool, see page 7.

## Control stations and enclosures

Plastic control stations XALD and XALK

For Harmony XB5 control and signaling units Ø 22

Stations for customer assembly: heads



## Heads for pilot lights

Shape of head	For use with body comprising light source type	Color of lens	Reference	Weight kg/lb
<b>With plain lens</b>				
	With integral LED <b>Protected LED</b>	White	ZB5AV013	0.017/0.037
		Green	ZB5AV033	0.017/0.037
		Red	ZB5AV043	0.017/0.037
		Orange	ZB5AV053	0.017/0.037
		Yellow	ZB5AV083	0.017/0.037
		Blue	ZB5AV063	0.017/0.037
	With integral LED <b>Protected LED</b>	White	ZB5CV013	0.020/0.044
		Green	ZB5CV033	0.020/0.044
		Red	ZB5CV043	0.020/0.044
		Orange	ZB5CV053	0.020/0.044
		Blue	ZB5CV063	0.020/0.044
		5 colors (1)	ZB5CV003	0.028/0.062
<b>With plain lens, for insertion of legend (2)</b>				
	With integral LED <b>Protected LED</b>	White	ZB5AV013E	0.017/0.037
		Green	ZB5AV033E	0.017/0.037
		Red	ZB5AV043E	0.017/0.037
		Orange	ZB5AV053E	0.017/0.037
		Yellow	ZB5AV083E	0.017/0.037
		Blue	ZB5AV063E	0.017/0.037
<b>With grooved lens (3)</b>				
	With integral LED <b>Protected LED</b>	White	ZB5AV013S	0.017/0.037
		Green	ZB5AV033S	0.017/0.037
		Red	ZB5AV043S	0.017/0.037
		Orange	ZB5AV053S	0.017/0.037
		Yellow	ZB5AV083S	0.017/0.037
		Blue	ZB5AV063S	0.017/0.037



## Heads for spring return illuminated pushbuttons

Shape of head	Type of push	Color	Reference		Weight kg/lb
			For black bezel	For gray bezel (4) (5)	
<b>Only for use with bodies comprising a light source with integral LED</b>					
	Flush, plain lens <b>Protected LED</b>	White	ZB5AW313	ZB5AW313C0	0.017/0.037
		Green	ZB5AW333	ZB5AW333C0	0.017/0.037
		Red	ZB5AW343	ZB5AW343C0	0.017/0.037
		Orange	ZB5AW353	ZB5AW353C0	0.017/0.037
		Yellow	ZB5AW383	ZB5AW383C0	0.017/0.037
		Blue	ZB5AW363	ZB5AW363C0	0.017/0.037
	Flush, grooved lens (3) <b>Protected LED</b>	White	ZB5AW313S	ZB5AW313SC0	0.016/0.035
		Green	ZB5AW333S	ZB5AW333SC0	0.016/0.035
		Red	ZB5AW343S	ZB5AW343SC0	0.016/0.035
		Orange	ZB5AW353S	ZB5AW353SC0	0.016/0.035
		Yellow	ZB5AW383S	ZB5AW383SC0	0.016/0.035
		Blue	ZB5AW363S	ZB5AW363SC0	0.016/0.035
	Flush for insertion of legend (1) <b>Protected LED</b>	White	ZB5AA18	ZB5AA18C0	0.018/0.040
		Green	ZB5AA38	ZB5AA38C0	0.018/0.040
		Red	ZB5AA48	ZB5AA48C0	0.018/0.040
		Orange	ZB5AA58	ZB5AA58C0	0.018/0.040
		Yellow	ZB5AA88	ZB5AA88C0	0.018/0.040
		Blue	ZB5AA68	ZB5AA68C0	0.018/0.040
	Projecting <b>Protected LED</b>	White	ZB5AW113	ZB5AW113C0	0.018/0.040
		Green	ZB5AW133	ZB5AW133C0	0.018/0.040
		Red	ZB5AW143	ZB5AW143C0	0.018/0.040
		Orange	ZB5AW153	ZB5AW153C0	0.018/0.040
		Yellow	ZB5AW183	ZB5AW153C0	0.018/0.040
		Blue	ZB5AW163	ZB5AW163C0	0.018/0.040
	Flush for insertion of legend (1) <b>Protected LED</b>	White	ZB5CW313	–	0.023/0.051
		Green	ZB5CW333	–	0.023/0.051
		Red	ZB5CW343	–	0.023/0.051
		Orange	ZB5CW353	–	0.023/0.051
		Blue	ZB5CW363	–	0.023/0.051

Other versions Heads for flush pushbuttons with illuminated ring. Please consult our Customer Care Centre.

(1) Head supplied with 5 different colored lenses (white, green, red, yellow, blue) for insertion of legend. For legend ordering information: see page 32.

(2) For legend ordering information: see page 32.

(3) For use in bright ambient light conditions (for example, outdoors in sunlight).

(4) For white color plated bezel replace C0 with C1, and for other color plated bezels using the web customization tool, see page 7.









(5) To add customized markings on these references using the web customization tool, see page 7.

# Control stations and enclosures

Plastic control stations XALD and XALK

For Harmony XB5 control and signaling units Ø 22

Stations for customer assembly: heads

Heads for illuminated selector switches with standard handle (1)								
Shape of head	Number and type of positions	Color of handle	Reference		Weight kg/lb			
			For black bezel	For gray bezel (2)(3)				
 <p>Only for use with bodies comprising a light source with integral LED</p>								
 ZB5AK1263	2 - stay put		White	ZB5AK1213	ZB5AK1213C0	0.016/0.035		
			Green	ZB5AK1233	ZB5AK1233C0	0.016/0.035		
			Red	ZB5AK1243	ZB5AK1243C0	0.016/0.035		
			Orange	ZB5AK1253	ZB5AK1253C0	0.016/0.035		
			Yellow	ZB5AK1283	ZB5AK1283C0	0.016/0.035		
			Blue	ZB5AK1263	ZB5AK1263C0	0.016/0.035		
			2 - spring return from right to left		White	ZB5AK1413	ZB5AK1413C0	0.017/0.037
					Green	ZB5AK1433	ZB5AK1433C0	0.017/0.037
					Red	ZB5AK1443	ZB5AK1443C0	0.017/0.037
					Orange	ZB5AK1453	ZB5AK1453C0	0.017/0.037
Yellow	ZB5AK1483	ZB5AK1483C0			0.017/0.037			
Blue	ZB5AK1463	ZB5AK1463C0			0.017/0.037			
3 - stay put		White	ZB5AK1313	ZB5AK1313C0	0.016/0.035			
		Green	ZB5AK1333	ZB5AK1333C0	0.016/0.035			
		Red	ZB5AK1343	ZB5AK1343C0	0.016/0.035			
		Orange	ZB5AK1353	ZB5AK1353C0	0.016/0.035			
		Yellow	ZB5AK1383	ZB5AK1383C0	0.016/0.035			
		Blue	ZB5AK1363	ZB5AK1363C0	0.016/0.035			
3 - spring return to centre		White	ZB5AK1513	ZB5AK1513C0	0.016/0.035			
		Green	ZB5AK1533	ZB5AK1533C0	0.016/0.035			
		Red	ZB5AK1543	ZB5AK1543C0	0.016/0.035			
		Orange	ZB5AK1553	ZB5AK1553C0	0.016/0.035			
		Yellow	ZB5AK1583	ZB5AK1583C0	0.016/0.035			
		Blue	ZB5AK1563	ZB5AK1563C0	0.016/0.035			
3 - spring return from right to centre		White	ZB5AK1813	ZB5AK1813C0	0.016/0.035			
		Green	ZB5AK1833	ZB5AK1833C0	0.016/0.035			
		Red	ZB5AK1843	ZB5AK1843C0	0.016/0.035			
		Orange	ZB5AK1853	ZB5AK1853C0	0.016/0.035			
		Yellow	ZB5AK1883	ZB5AK1883C0	0.016/0.035			
		Blue	ZB5AK1863	ZB5AK1863C0	0.016/0.035			
3 - spring return from left to centre		White	ZB5AK1713	ZB5AK1713C0	0.016/0.035			
		Green	ZB5AK1733	ZB5AK1733C0	0.016/0.035			
		Red	ZB5AK1743	ZB5AK1743C0	0.016/0.035			
		Orange	ZB5AK1753	ZB5AK1753C0	0.016/0.035			
		Yellow	ZB5AK1783	ZB5AK1783C0	0.016/0.035			
		Blue	ZB5AK1763	ZB5AK1763C0	0.016/0.035			

(1) For recommended maximum number of contacts constituting the body (fixing collar and contact) associated with the head, see Harmony XB5 catalog, page 22.

(2) For white color plated bezel replace C0 with C1, and for other color plated bezels using the web customization tool, see page 7.

(3) To add customized markings on these references using the web customization tool, see page 7.



ZB5AK1263



ZB5AK1313



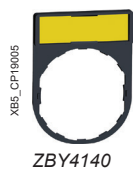
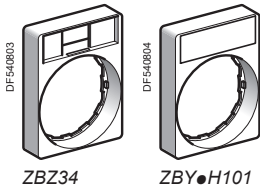
ZB5AK1783

# Control stations and enclosures

## Plastic control stations XALD and XALK

For Harmony XB5 control and signaling units Ø 22

Stations for customer assembly: accessories



30 x 40 mm legend holders (flush mounting with bezel) for 8 x 27 mm legends (1)							
Description	Legend		Sold in lots of	Unit reference		Weight kg/lb	
	Background color						
Without legend	-		10	ZBZ34	-	0.003/0.007	
With blank legend	Black or red		10	ZBY2H101	-	0.004/0.009	
	White or yellow		10	ZBY4H101	-	0.004/0.009	
With blank legend for square heads	-		10	ZBCZ34	-	0.002/0.004	
	Black or red background		10	ZBCY2H101	-	0.002/0.004	
	White or yellow background		10	ZBCY4H101	-	0.002/0.004	
Standard 30 x 40 mm legend holders for 8 x 27 mm legends (1)							
Description	Legend		Sold in lots of	Unit reference		Weight kg/lb	
	Color	Marking		For black bezel	For gray bezel (4) (5)		
Without legend	-	-	10	ZBZ32	ZBZ32C0	0.001/0.002	
With blank legend (for engraving)	Black or red		10	ZBY2101	ZBY2101C0	0.002/0.004	
	White or yellow		10	ZBY4101	ZBY4101C0	0.002/0.004	
With 8 x 27 mm/ 0.315 x 1.063 in. legend (with international marking)	Black or red (2)	O (black background)	10	ZBY2146	-	0.002/0.004	
		O (red background)	10	ZBY2931	-	0.002/0.004	
	I	I	10	ZBY2147	-	0.002/0.004	
		II	10	ZBY2148	-	0.002/0.004	
	O-I	O-I	10	ZBY2178	ZBY2178C0	0.002/0.004	
		I-II	10	ZBY2179	-	0.002/0.004	
	I-O-II	I-O-II	10	ZBY2186	ZBY2186C0	0.002/0.004	
		AUTO	10	ZBY2115	-	0.002/0.004	
	Yellow	STOP	10	ZBY2304	ZBY2304C0	0.002/0.004	
		(V)	10	ZBY4140 (3)	-	0.002/0.004	
	With 8 x 27 mm/ 0.315 x 1.063 in. legend (with French language marking)	Black or red (2)	ARRET (red background)	10	ZBY2104	ZBY2104C0	0.002/0.004
			ARRET (black background)	10	ZBY0104	-	0.002/0.004
			ARRET GENERAL	10	ZBY2129	-	0.002/0.004
ARRET REARMEMENT			10	ZBY2133	-	0.002/0.004	
ARRET-MARCHE			10	ZBY2166	ZBY2166C0	0.002/0.004	
ARRIERE			10	ZBY2106	-	0.002/0.004	
AUTO CYCLE-CYCLE			10	ZBY2198	-	0.002/0.004	
AUTO CYCLE-MAIN			10	ZBY2199	-	0.002/0.004	
AUTO-MAIN			10	ZBY2164	-	0.002/0.004	
AUTO-O-MAIN			10	ZBY2185	-	0.002/0.004	
AVANT			10	ZBY2105	-	0.002/0.004	
AVANT-O-ARRIERE			10	ZBY2184	-	0.002/0.004	
C-P-C-NORMAL			10	ZBY2165	-	0.002/0.004	
CYCLE-MAIN			10	ZBY2197	-	0.002/0.004	
DECLenchement			10	ZBY2132	-	0.002/0.004	
DEFAULT (black background)			10	ZBY2134	-	0.002/0.004	
DEFAULT (red background)			10	ZBY2135	-	0.002/0.004	
DEPART CYCLE			10	ZBY2195	-	0.002/0.004	
DESCENTE			10	ZBY2108	-	0.002/0.004	
DROITE			10	ZBY2109	-	0.002/0.004	
ENclenchement			10	ZBY2131	-	0.002/0.004	
EN SERVICE			10	ZBY2111	-	0.002/0.004	
FERMETURE			10	ZBY2114	-	0.002/0.004	
GAUCHE			10	ZBY2110	-	0.002/0.004	
HORS SERVICE			10	ZBY2112	-	0.002/0.004	
HORS-EN			10	ZBY2167	-	0.002/0.004	
LENT			10	ZBY2127	-	0.002/0.004	
MAIN			10	ZBY2116	-	0.002/0.004	
MARCHE	10	ZBY2103	ZBY2103C0	0.002/0.004			
MONTEE	10	ZBY2107	-	0.002/0.004			
Ouverture	10	ZBY2113	-	0.002/0.004			
PHASE/PHASE	10	ZBY2196	-	0.002/0.004			
REARMEMENT (red background)	10	ZBY2123	-	0.002/0.004			
REARMEMENT (black background)	10	ZBY0123	-	0.002/0.004			
SOUS TENSION	10	ZBY2126	-	0.002/0.004			
VITE	10	ZBY2128	-	0.002/0.004			
Red	ARRET D'URGENCE	10	ZBY2130 (3)	-	0.002/0.004		

(1) For legends, see pages 31 to 32.

(2) "Start" functions: white letters on black background. "Stop" functions: white letters on red background (unless otherwise specified above).

(3) For compliance with standard EN/ISO 13850, paragraph 4.4.6, the Emergency Stop function logo (V) has been added.

(4) For white color plated bezel replace C0 with C1, and for other color plated bezels using the web customization tool, see page 7.

(5) To add customized markings on these references using the web customization tool, see page 7.



## Control stations and enclosures

Plastic control stations XALD and XALK

For Harmony XB5 control and signaling units Ø 22

Stations for customer assembly: accessories

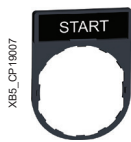
Standard 30 x 40 mm legend holders with 8 x 27 mm legends (continued)						
Description	Legend		Sold in lots of	Reference		Weight kg/lb
	Color	Marking		For black bezel	For gray bezel (3) (4)	
<b>With legend</b> (with English language marking)	Black or red background (1)	AUTO-HAND	10	ZBY2364	–	0.002/0.004
		AUTO-O-HAND	10	ZBY2385	–	0.002/0.004
		CLOSE	10	ZBY2314	–	0.002/0.004
		DOWN	10	ZBY2308	–	0.002/0.004
		FAST	10	ZBY2328	–	0.002/0.004
		FORWARD	10	ZBY2305	–	0.002/0.004
		HAND	10	ZBY2316	–	0.002/0.004
		HAND-OFF-AUTO	10	ZBY2387	–	0.002/0.004
		INCH	10	ZBY2321	–	0.002/0.004
		LEFT	10	ZBY2310	–	0.002/0.004
		OFF	10	ZBY2312	–	0.002/0.004
		OFF-ON	10	ZBY2367	ZBY2367C0	0.002/0.004
		ON	10	ZBY2311	–	0.002/0.004
		OPEN	10	ZBY2313	–	0.002/0.004
		POWER ON	10	ZBY2326	–	0.002/0.004
		RESET (red background)	10	ZBY2323	–	0.002/0.004
		RESET (black background)	10	ZBY2322	–	0.002/0.004
		REVERSE	10	ZBY2306	–	0.002/0.004
		RIGHT	10	ZBY2309	–	0.002/0.004
		RUN	10	ZBY2334	–	0.002/0.004
		SLOW	10	ZBY2327	–	0.002/0.004
		START	10	ZBY2303	ZBY2303C0	0.002/0.004
		STOP-START	10	ZBY2366	–	0.002/0.004
		UP	10	ZBY2307	–	0.002/0.004
<b>With legend</b> (with German language marking)	Black or red background (1)	EMERGENCY STOP	10	ZBY2330 (2)	–	0.002/0.004
		AB	10	ZBY2208	–	0.002/0.004
		AUF	10	ZBY2207	–	0.002/0.004
		AUS	10	ZBY2204	–	0.002/0.004
		AUS-EIN	10	ZBY2266	–	0.002/0.004
		AUS-IN BETRIEB	10	ZBY2267	–	0.002/0.004
		AUS-RÜCKSTELLUNG	10	ZBY2233	–	0.002/0.004
		AUSSCHALTEN	10	ZBY2232	–	0.002/0.004
		AUTO-HAND	10	ZBY2364	–	0.002/0.004
		AUTO-O-HAND	10	ZBY2385	–	0.002/0.004
		AUTOZYKL-HAND	10	ZBY2299	–	0.002/0.004
		AUTOZYKL- 1 ZYKL	10	ZBY2298	–	0.002/0.004
		C-P-C-NORMAL	10	ZBY2265	–	0.002/0.004
		EIN	10	ZBY2203	–	0.002/0.004
		EINSCHALTEN	10	ZBY2231	–	0.002/0.004
		HAND	10	ZBY2316	–	0.002/0.004
		LANGSAM	10	ZBY2227	–	0.002/0.004
		LINKS	10	ZBY2210	–	0.002/0.004
		NOT-AUS (red background)	10	ZBY2230	–	0.002/0.004
		ÖFFNEN	10	ZBY2213	–	0.002/0.004
		RECHTS	10	ZBY2209	–	0.002/0.004
		RÜCKSTELLUNG	10	ZBY2223	–	0.002/0.004
		SCHLIESSEN	10	ZBY2214	–	0.002/0.004
		SCHNELL	10	ZBY2228	–	0.002/0.004
		SPANNUNG EIN	10	ZBY2226	–	0.002/0.004
		STEUERUNG AUS	10	ZBY2212	–	0.002/0.004
		STEUERUNG EIN	10	ZBY2211	–	0.002/0.004
		STÖRUNG (black background)	10	ZBY2234	–	0.002/0.004
		STÖRUNG (red background)	10	ZBY2235	–	0.002/0.004
		VOR	10	ZBY2205	–	0.002/0.004
		VOR-O-ZURÜCK	10	ZBY2284	–	0.002/0.004
		ZURÜCK	10	ZBY2206	–	0.002/0.004
		ZYKLUS-HAND	10	ZBY2297	–	0.002/0.004
		ZYKLUSSTART	10	ZBY2295	–	0.002/0.004
Red background	NOT-HALT	10	ZBY2229 (2)	–	0.002/0.004	
Yellow background	NOT-HALT	10	ZBY22420001 (2)	–	0.002/0.004	

(1) "Start" functions: white letters on black background. "Stop" functions: white letters on red background (unless otherwise specified above).

(2) For compliance with standard EN/ISO 13850, paragraph 4.4.6, the Emergency Stop function logo  has been added.

(3) For white color plated bezel replace C0 with C1, and for other color plated bezels using the web customization tool, see page 7.

(4) To add customized markings on these references using the web customization tool, see page 7.

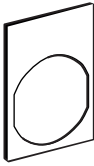


ZBY2303



ZBY2228

522035



ZALY4

**Legends (30 x 42 mm) for engraving**

Description	Color of background	Sold in lots of	Unit reference	Weight kg/lb
Legends for engraving 2 lines of text	Black or red	10	ZALY2	0.001/0.002
	White or yellow	10	ZALY4	0.001/0.002

**Legends (8 x 27 mm) for engraving**

For use with	Color of background	Sold in lots of	Unit reference	Weight kg/lb
30 x 40 mm/1.181 x 1.575 in. legend holder	Black or red	10	ZBY0101	0.001/0.002
	White or yellow	10	ZBY0102	0.001/0.002
	Yellow	10	ZBY0140 (1)	0.001/0.002

**Sheets of 76 (8 x 27 mm) peel-off legends**

For use with	Supplied with	Sold in lots of	Unit reference	Weight kg/lb
30 x 40 mm/1.181 x 1.575 in. legend holders ZBZ32 and ZBZ34	Backing board and protective transparent cover	10	ZBY4100	0.043/0.095

**8 x 27 mm marked legends (for 30 x 40 mm legend holders ZBZ32 and ZBZ34)**

Language	Color of background	Marking	Reference	Weight kg/lb
International	Black or red (2)	O (black background)	ZBY02146	0.001/0.002
		O (red background)	ZBY02931	0.001/0.002
		I	ZBY02147	0.001/0.002
		II	ZBY02148	0.001/0.002
		O-I	ZBY02178	0.001/0.002
		I-II	ZBY02179	0.001/0.002
		I-O-II	ZBY02186	0.001/0.002
		AUTO	ZBY02115	0.001/0.002
		STOP	ZBY02304	0.001/0.002
French	Black or red (2)	ARRET (red background)	ZBY02104	0.001/0.002
		ARRET (black background)	ZBY00104	0.001/0.002
		ARRET GENERAL	ZBY02129	0.001/0.002
		ARRET REARMEMENT	ZBY02133	0.001/0.002
		ARRET-MARCHE	ZBY02166	0.001/0.002
		ARRIERE	ZBY02106	0.001/0.002
		AUTO CYCLE-CYCLE	ZBY02198	0.001/0.002
		AUTO CYCLE-MAIN	ZBY02199	0.001/0.002
		AUTO-MAIN	ZBY02164	0.001/0.002
		AUTO-O-MAIN	ZBY02185	0.001/0.002
		AVANT	ZBY02105	0.001/0.002
		AVANT-O-ARRIERE	ZBY02184	0.001/0.002
		C-P-C-NORMAL	ZBY02165	0.001/0.002
		CYCLE-MAIN	ZBY02197	0.001/0.002
		DECLenchement	ZBY02132	0.001/0.002
		DEFAULT (black background)	ZBY02134	0.001/0.002
		DEFAULT (red background)	ZBY02135	0.001/0.002
		DEPART CYCLE	ZBY02195	0.001/0.002
		DESCENTE	ZBY02108	0.001/0.002
		DROITE	ZBY02109	0.001/0.002
		ENCLenchement	ZBY02131	0.001/0.002
		EN SERVICE	ZBY02111	0.001/0.002
		FERMETURE	ZBY02114	0.001/0.002
		GAUCHE	ZBY02110	0.001/0.002
		HORS SERVICE	ZBY02112	0.001/0.002
		HORS-EN	ZBY02167	0.001/0.002
		LENT	ZBY02127	0.001/0.002
		MAIN	ZBY02116	0.001/0.002
		MARCHE	ZBY02103	0.001/0.002
		MONTEE	ZBY02107	0.001/0.002
		OUVERTURE	ZBY02113	0.001/0.002
		PHASE / PHASE	ZBY02196	0.001/0.002
		REARMEMENT (red background)	ZBY02123	0.001/0.002
REARMEMENT (black background)	ZBY00123	0.001/0.002		
SOUS TENSION	ZBY02126	0.001/0.002		
VITE	ZBY02128	0.001/0.002		
Red	ARRET D'URGENCE	ZBY02130 (1)	0.001/0.002	

(1) For compliance with standard EN/ISO 13850, paragraph 4.4.6, the Emergency Stop function logo (Ⓢ) has been added.

(2) "Start" functions: white characters on black background. "Stop" functions: white characters on red background (unless otherwise stated above).

816339



ZBY02178

816340



ZBY02104

## Control stations and enclosures

Plastic control stations XALD and XALK

For Harmony XB5 control and signaling units Ø 22

Stations for customer assembly: accessories

## 8 x 27 mm marked legends (for 30 x 40 mm legend holders ZBZ32 and ZBZ34) (continued) (3)

Language	Color of background	Marking	Reference	Weight kg/lb
English	Black or red (1)	AUTO-HAND	ZBY02364	0.001/0.002
		AUTO-O-HAND	ZBY02385	0.001/0.002
		CLOSE	ZBY02314	0.001/0.002
		DOWN	ZBY02308	0.001/0.002
		FAST	ZBY02328	0.001/0.002
		FORWARD	ZBY02305	0.001/0.002
		HAND	ZBY02316	0.001/0.002
		HAND-OFF-AUTO	ZBY02387	0.001/0.002
		INCH	ZBY02321	0.001/0.002
		LEFT	ZBY02310	0.001/0.002
		OFF	ZBY02312	0.001/0.002
		OFF-ON	ZBY02367	0.001/0.002
		ON	ZBY02311	0.001/0.002
		OPEN	ZBY02313	0.001/0.002
		POWER ON	ZBY02326	0.001/0.002
		RESET (red background)	ZBY02323	0.001/0.002
		RESET (black background)	ZBY02322	0.001/0.002
		REVERSE	ZBY02306	0.001/0.002
		RIGHT	ZBY02309	0.001/0.002
		RUN	ZBY02334	0.001/0.002
		SLOW	ZBY02327	0.001/0.002
		START	ZBY02303	0.001/0.002
		STOP-START	ZBY02366	0.001/0.002
UP	ZBY02307	0.001/0.002		
	Red	EMERGENCY STOP	ZBY02330 (2)	0.001/0.002
German	Black or red (1)	AB	ZBY02208	0.001/0.002
		AUF	ZBY02207	0.001/0.002
		AUS	ZBY02204	0.001/0.002
		AUS-EIN	ZBY02266	0.001/0.002
		AUS-IN BETRIEB	ZBY02267	0.001/0.002
		AUS-RUCKSTELLUNG	ZBY02233	0.001/0.002
		AUSSCHALLEN	ZBY02232	0.001/0.002
		AUTO-HAND	ZBY02364	0.001/0.002
		AUTO-O-HAND	ZBY02385	0.001/0.002
		AUTOZYKL-HAND	ZBY02299	0.001/0.002
		AUTOZYKL- 1 ZYKL	ZBY02298	0.001/0.002
		C-P-C-NORMAL	ZBY02265	0.001/0.002
		EIN	ZBY02203	0.001/0.002
		EINSCHALTEN	ZBY02231	0.001/0.002
		HAND	ZBY02316	0.001/0.002
		LANGSAM	ZBY02227	0.001/0.002
		LINKS	ZBY02210	0.001/0.002
		NOT-AUS (red background)	ZBY02230	0.001/0.002
		ÖFFNEN	ZBY02213	0.001/0.002
		RECHTS	ZBY02209	0.001/0.002
		RUCKSTELLUNG	ZBY02223	0.001/0.002
		SCHLIESSEN	ZBY02214	0.001/0.002
		SCHNELL	ZBY02228	0.001/0.002
		SPANNUNG EIN	ZBY02226	0.001/0.002
		STEUERUNG AUS	ZBY02212	0.001/0.002
		STEUERUNG EIN	ZBY02211	0.001/0.002
		STORUNG (black background)	ZBY02234	0.001/0.002
		STORUNG (red background)	ZBY02235	0.001/0.002
		VOR	ZBY02205	0.001/0.002
		VOR-O-ZURUCK	ZBY02284	0.001/0.002
		ZURUCK	ZBY02206	0.001/0.002
		ZYKLUS-HAND	ZBY02297	0.001/0.002
		ZYKLUS-START	ZBY02295	0.001/0.002
	Red	NOT-HALT	ZBY02229 (2)	0.001/0.002
	Yellow	NOT-HALT	ZBY022420001 (2)	0.001/0.002

(1) "Start" functions: white characters on black background. "Stop" functions: white characters on red background (unless otherwise stated above).

(2) For compliance with standard EN/ISO 13850, paragraph 4.4.6, the Emergency Stop function logo  has been added.

(3) To add customized markings on these references using the web customization tool, see page 7.

816341

START

ZBY02303

816342

SCHNELL

ZBY02228

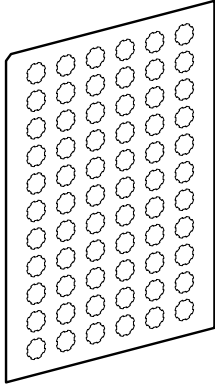
## Control stations and enclosures

Plastic control stations XALD and XALK

For Harmony XB5 control and signaling units Ø 22

Stations for customer assembly: accessories

8115344



ZBY1●●●

## Legends for pushbuttons, switches and pilot lights XB5A

Description	Marking	Sold in lots of	Unit reference	Weight kg/lb		
Sheets of 66 circular peel-off transparent self-adhesive legends	Without	10	ZBY1101	0.017/0.037		
	International	O	10	ZBY1146	0.017/0.037	
		I	10	ZBY1147	0.017/0.037	
		II	10	ZBY1148	0.017/0.037	
		III	10	ZBY1149	0.017/0.037	
		AUTO	10	ZBY1115	0.017/0.037	
		STOP	10	ZBY1304	0.017/0.037	
		†	10	ZBY1912	0.017/0.037	
		French	ARRET	10	ZBY1104	0.017/0.037
			ARRIERE	10	ZBY1106	0.017/0.037
			AVANT	10	ZBY1105	0.017/0.037
	AUTO		10	ZBY1115	0.017/0.037	
	DESCENTE		10	ZBY1108	0.017/0.037	
	MAIN		10	ZBY1116	0.017/0.037	
	MARCHE		10	ZBY1103	0.017/0.037	
	MONTEE		10	ZBY1107	0.017/0.037	
	English	HAND	10	ZBY1316	0.017/0.037	
		OFF	10	ZBY1312	0.017/0.037	
		ON	10	ZBY1311	0.017/0.037	
		START	10	ZBY1303	0.017/0.037	
German	AB	10	ZBY1208	0.017/0.037		
	AUF	10	ZBY1207	0.017/0.037		
	AUS	10	ZBY1204	0.017/0.037		
	EIN	10	ZBY1203	0.017/0.037		
	ZU	10	ZBY1214	0.017/0.037		
Strip of 66 square peel-off transparent self-adhesive legends	Without	10	ZBCY1101	0.017/0.037		

## Circular yellow legends for mushroom head pushbuttons

## Used for "Emergency stop" function (1)

Diameter mm/in.	Conforming to standards	Marking on yellow background	Unit reference	Weight kg/lb
60/2.362 (2)	EN/IEC 60204-1 and EN/ISO 13850	–	ZBY9121	0.004/0.009
		ARRET D'URGENCE	ZBY9120	0.004/0.009
		EMERGENCY STOP	ZBY9320	0.004/0.009
		NOT-HALT	ZBY9220	0.004/0.009
		PARADA DI EMERGENCIA	ZBY9420	0.004/0.009
		ARRESTO DE EMERGENZA	ZBY9620	0.004/0.009

## Used for "Emergency switching off" function

60/2.362	EN/IEC 60204-1	–	ZBY9101	0.004/0.009
		COUPURE D'URGENCE	ZBY9160	0.004/0.009
		EMERGENCY SWITCHING OFF	ZBY9360	0.004/0.009
		NOT-AUS	ZBY9260	0.004/0.009
		DESCONEXION DE EMERGENCIA	ZBY9460	0.004/0.009
		INTERRUZIONE DI EMERGENZA	ZBY9660	0.004/0.009

(1) For compliance with standard EN/ISO 13850, paragraph 4.4.6, the Emergency Stop function logo  has been added.



ZBY9160

XB4\_632\_CPF-IR18300

# Control stations and enclosures

Plastic control stations XALD and XALK

For Harmony XB5 control and signaling units Ø 22

Stations for customer assembly: accessories

Illuminated rings for Emergency stop (1) (2)							
Description	Marking	Signaling	Supply voltage	Color	Sold in lots of	Reference	Weight kg/lb
Ø 60 mm/2.362 in. illuminated ring for Emergency stop	EMERGENCY STOP	Fixed, red	24 V ~	Yellow	1	<b>ZBY9W2B330</b>	0.031/0.068
	ARRET D'URGENCE	Fixed, red	24 V ~	Yellow	1	<b>ZBY9W2B130</b>	0.031/0.068
	NOT HALT	Fixed, red	24 V ~	Yellow	1	<b>ZBY9W2B230</b>	0.031/0.068
	PARADA DE EMERGENCIA	Fixed, red	24 V ~	Yellow	1	<b>ZBY9W2B430</b>	0.031/0.068
	ARRESTO DI EMERGENZA	Fixed, red	24 V ~	Yellow	1	<b>ZBY9W2B630</b>	0.031/0.068
	-	Fixed, red	24 V ~	Yellow	1	<b>ZBY9W2B140</b>	0.031/0.068
	EMERGENCY STOP	Fixed, red	120 V ~	Yellow	1	<b>ZBY9W2G330</b>	0.031/0.068
	ARRET D'URGENCE	Fixed, red	120 V ~	Yellow	1	<b>ZBY9W2G130</b>	0.031/0.068
	NOT HALT	Fixed, red	120 V ~	Yellow	1	<b>ZBY9W2G230</b>	0.031/0.068
	PARADA DE EMERGENCIA	Fixed, red	120 V ~	Yellow	1	<b>ZBY9W2G430</b>	0.031/0.068
	ARRESTO DI EMERGENZA	Fixed, red	120 V ~	Yellow	1	<b>ZBY9W2G630</b>	0.031/0.068
	-	Fixed, red	120 V ~	Yellow	1	<b>ZBY9W2G140</b>	0.031/0.068
	EMERGENCY STOP	Fixed, red	230 V ~	Yellow	1	<b>ZBY9W2M330</b>	0.031/0.068
	ARRET D'URGENCE	Fixed, red	230 V ~	Yellow	1	<b>ZBY9W2M130</b>	0.031/0.068
	NOT HALT	Fixed, red	230 V ~	Yellow	1	<b>ZBY9W2M230</b>	0.031/0.068
	PARADA DE EMERGENCIA	Fixed, red	230 V ~	Yellow	1	<b>ZBY9W2M430</b>	0.031/0.068
ARRESTO DI EMERGENZA	Fixed, red	230 V ~	Yellow	1	<b>ZBY9W2M630</b>	0.031/0.068	
-	Fixed, red	230 V ~	Yellow	1	<b>ZBY9W2M140</b>	0.031/0.068	
EMERGENCY STOP	Fixed, red + white	24 V ~	Yellow	1	<b>ZBY9W3B330</b>	0.031/0.068	
ARRET D'URGENCE	Fixed, red + white	24 V ~	Yellow	1	<b>ZBY9W3B130</b>	0.031/0.068	
NOT HALT	Fixed, red + white	24 V ~	Yellow	1	<b>ZBY9W3B230</b>	0.031/0.068	
PARADA DE EMERGENCIA	Fixed, red + white	24 V ~	Yellow	1	<b>ZBY9W3B430</b>	0.031/0.068	
ARRESTO DI EMERGENZA	Fixed, red + white	24 V ~	Yellow	1	<b>ZBY9W3B630</b>	0.031/0.068	
-	Fixed, red + white	24 V ~	Yellow	1	<b>ZBY9W3B140</b>	0.031/0.068	

XB4\_632\_CPMFS18026A



ZBY9W2B330

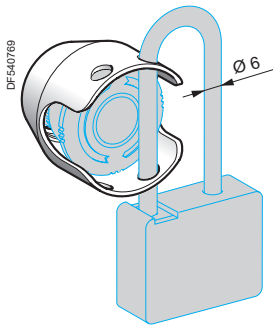
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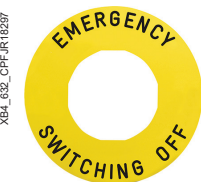
ZBY9W3B140

(1) For compliance with standard EN/ISO 13850, paragraph 4.4.6, the Emergency Stop function logo  has been added.

(2) Compatible only with XALKW01.



ZBZ160●

XB5\_633\_CFOODA01602Z  
ZBZ1605XB4\_632\_CPFJR16307  
ZBY9330MXB4\_632\_CPFJR16287  
ZBY9360M

## Accessories for mushroom head pushbuttons (continued)

Description	Exclusive use with the following Ø 40 mm/1.575 in. trigger action pushbuttons	Color	Reference	Weight kg/lb
Metal guards for Emergency stop function, padlockable (1)	XB5AT8● XB5AS8● XB5AS9● ZB5AT8● ZB5AS8● ZB5AS9●	Chromium plated	<b>ZBZ1600</b>	0.046/0.101
		Black	<b>ZBZ1602</b>	0.046/0.101
		Red	<b>ZBZ1604</b>	0.046/0.101
		Yellow	<b>ZBZ1605</b>	0.046/0.101
		Blue	<b>ZBZ1606</b>	0.046/0.101

## Circular yellow legends for metal guard ZBZ16●● (2)

Description	Marking	Color	Sold in lots of	Reference	Weight kg/lb
<b>For Emergency stop function</b>					
Ø 60 mm/2.362 in. legend for metal guard ZBZ16●●	Without	Yellow	<b>10</b>	<b>ZBY9140M</b>	0.004/0.009
	ARRET D'URGENCE	Yellow	<b>10</b>	<b>ZBY9130M</b>	0.004/0.009
	EMERGENCY STOP	Yellow	<b>10</b>	<b>ZBY9330M</b>	0.004/0.009
	NOT-HALT	Yellow	<b>10</b>	<b>ZBY9230M</b>	0.004/0.009
	PARADA DE EMERGENZA	Yellow	<b>10</b>	<b>ZBY9430M</b>	0.004/0.009
	NOODSTOP	Yellow	<b>10</b>	<b>ZBY9530M</b>	0.004/0.009
	ARRESTO DI EMERGENZA	Yellow	<b>10</b>	<b>ZBY9630M</b>	0.004/0.009
	NODSTOPP	Yellow	<b>10</b>	<b>ZBY9730M</b>	0.004/0.009
	NODSTOP	Yellow	<b>10</b>	<b>ZBY9830M</b>	0.004/0.009
<b>For Emergency switching off function</b>					
Ø 60 mm/2.362 in. legend for metal guard ZBZ16●●	Without	Yellow	<b>10</b>	<b>ZBY9101M</b>	0.004/0.009
	COUPURE D'URGENCE	Yellow	<b>10</b>	<b>ZBY9160M</b>	0.004/0.009
	EMERGENCY SWITCHING OFF	Yellow	<b>10</b>	<b>ZBY9360M</b>	0.004/0.009
	NOT-AUS	Yellow	<b>10</b>	<b>ZBY9260M</b>	0.004/0.009
	DESCONEXION DE EMERGENCIA	Yellow	<b>10</b>	<b>ZBY9460M</b>	0.004/0.009
	INTERRUZIONE DI EMERGENZA	Yellow	<b>10</b>	<b>ZBY9660M</b>	0.004/0.009

(1) No isolation function is possible when this guard is fitted.

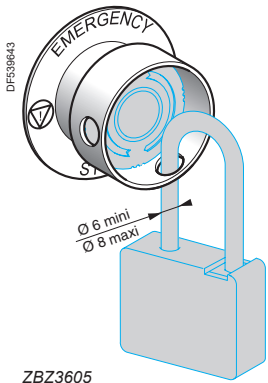
(2) To add customized markings on these references through web customization tool, see page 7.

# Control stations and enclosures

Plastic control stations XALD and XALK

For Harmony XB5 control and signaling units Ø 22

Stations for customer assembly: accessories



ZBZ3605



ZBY9330T



ZBY9360T

## Accessories for mushroom head pushbuttons (5)

Description	Exclusive use with the following Ø 40 mm/1.575 in. trigger action pushbuttons	Color	Reference	Weight kg/lb
<b>Padlocking kit (1) (2)</b> for Emergency stop (3) and Emergency switching off function (4), (padlockable)	XB5AS844● XB5AS944● ZB5AS844 ZB5AS944●	Yellow	<b>ZBZ3605</b>	0.045/0.099

Description	Marking	Color	Reference	Weight kg/lb
<b>Ø 60 mm/2.363 in. legend for padlocking device ZBZ3605</b> for Emergency stop function (3)	-	Yellow	<b>ZBY9140T</b>	0.004/0.009
	ARRET D'URGENCE	Yellow	<b>ZBY9130T</b>	0.004/0.009
	EMERGENCY STOP	Yellow	<b>ZBY9330T</b>	0.004/0.009
	NOT-HALT	Yellow	<b>ZBY9230T</b>	0.004/0.009
<b>Ø 60 mm/2.363 in. legend for padlocking device ZBZ3605</b> for Emergency switching off function (4)	-	Yellow	<b>ZBY9101T</b>	0.004/0.009
	COUPURE D'URGENCE	Yellow	<b>ZBY9160T</b>	0.004/0.009
	EMERGENCY SWITCHING OFF	Yellow	<b>ZBY9360T</b>	0.004/0.009
	NOT-AUS	Yellow	<b>ZBY9260T</b>	0.004/0.009

(1) Standard circular legends are not compatible with this product. Use special legends **ZBY9●●●T**.

(2) No isolation function is possible when this guard is fitted.

(3) For conformity with standards EN/IEC 60204-1 and EN/ISO 13850.

(4) For conformity with standard EN/IEC 60204-1.

(5) To add customized markings on these references using the web customization tool, see page 7.

## Control stations and enclosures

Plastic control stations XALD and XALK

For Harmony XB5 control and signaling units Ø 22

Stations for customer assembly: accessories

Pushbutton caps - unmarked						
For use with	Cap		Sold in lots of	Unit reference	Weight kg/lb	
	Type	Color				
Circular pushbutton heads ZB5AA supplied without cap	Flush	White	10	ZBA1	0.001/0.002	
		Black	10	ZBA2	0.001/0.002	
		Green	10	ZBA3	0.001/0.002	
		Red	10	ZBA4	0.001/0.002	
		Yellow	10	ZBA5	0.001/0.002	
		Blue	10	ZBA6	0.001/0.002	
		6 colors (1)	1	ZBA9	0.006/0.013	
		Projecting	White	10	ZBL1	0.001/0.002
			Black	10	ZBL2	0.001/0.002
	Green		10	ZBL3	0.001/0.002	
	Red		10	ZBL4	0.001/0.002	
	Yellow		10	ZBL5	0.001/0.002	
	Blue		10	ZBL6	0.001/0.002	
	6 colors (1)		1	ZBL9	0.006/0.013	

Pushbutton caps - marked (2) (sold in lots of 10)						
For use with	Type of push	Marking		Color of cap	Unit reference	Weight kg/lb
		Text	Color			
Circular pushbutton heads ZB5AA supplied without cap	Flush	I	White	Green	ZBA331	0.001/0.002
			Black	White	ZBA131	0.001/0.002
		II	White	Green	ZBA336	0.001/0.002
			Black	White	ZBA136	0.001/0.002
		III	White	Green	ZBA337	0.001/0.002
			Black	White	ZBA137	0.001/0.002
		IV	White	Green	ZBA338	0.001/0.002
			Black	White	ZBA138	0.001/0.002
		START	White	Green	ZBA333	0.001/0.002
			Black	White	ZBA133	0.001/0.002
		ON	White	Green	ZBA341	0.001/0.002
			Black	White	ZBA141	0.001/0.002
		MARCHE	White	Green	ZBA342	0.001/0.002
			Black	White	ZBA142	0.001/0.002
		⊕	White	Black	ZBA245	0.001/0.002
			Black	White	ZBA145	0.001/0.002
		UP	Black	White	ZBA343	0.001/0.002
			DOWN	White	Black	ZBA344
		†		White	Black	ZBA335
				Black	White	ZBA334
		O		White	Red	ZBA432
			Black		ZBA232	0.001/0.002
		ARRET	White	Red	ZBA433	0.001/0.002
				Black	ZBA233	0.001/0.002
		STOP	White	Red	ZBA434	0.001/0.002
				Black	ZBA234	0.001/0.002
		OFF	White	Red	ZBA435	0.001/0.002
				Black	ZBA235	0.001/0.002
		⚠	White	Green	ZBA346	0.001/0.002
				R	White	Blue
		+	White	Black	ZBA2934	0.001/0.002
				-	White	Black

(1) Set of 6 different colored caps: white, black, green, red, yellow and blue.

(2) To add customized markings on these references using the web customization tool, see page 7.





## Control stations and enclosures

Plastic control stations XALD and XALK

For Harmony XB5 control and signaling units Ø 22

Stations for customer assembly: accessories



## Colored boots

Description	Color	Sold in lots of	Unit reference	Weight kg/lb
Colored boots (can be replaced without dismantling the head)	Black	10	ZB2BP012	0.003/0.007
	Green	10	ZB2BP013	0.003/0.007
	Red	10	ZB2BP014	0.003/0.007
	Yellow	10	ZB2BP015	0.003/0.007
	Blue	10	ZB2BP016	0.003/0.007

## Lens caps

## Circular lens caps for light sources with integral LED

Pilot lights	White	10	ZBV0113	0.002/0.004
	Green	10	ZBV0133	0.002/0.004
	Red	10	ZBV0143	0.002/0.004
	Orange	10	ZBV0153	0.002/0.004
	Blue	10	ZBV0163	0.002/0.004
	5 different colored grooved lenses (1)	1	ZBV0103S	0.010/0.022
	Illuminated pushbuttons, with flush push	White	10	ZBW9113
Green		10	ZBW9133	0.002/0.004
Red		10	ZBW9143	0.002/0.004
Orange		10	ZBW9153	0.002/0.004
Blue		10	ZBW9163	0.002/0.004
Illuminated pushbuttons, with projecting push	White	10	ZBW9313	0.002/0.004
	Green	10	ZBW9333	0.002/0.004
	Red	10	ZBW9343	0.002/0.004
	Orange	10	ZBW9353	0.002/0.004
	Blue	10	ZBW9363	0.002/0.004

## Square lens caps for light sources with integral LED

Pilot lights	White	10	ZBCV0113	0.002/0.004
	Green	10	ZBCV0133	0.002/0.004
	Red	10	ZBCV0143	0.002/0.004
	Orange	10	ZBCV0153	0.002/0.004
	Blue	10	ZBCV0163	0.002/0.004
Illuminated pushbuttons, with flush push	White	10	ZBCW9113	0.002/0.004
	Green	10	ZBCW9133	0.002/0.004
	Red	10	ZBCW9143	0.002/0.004
	Orange	10	ZBCW9153	0.002/0.004
	Blue	10	ZBCW9163	0.002/0.004
Illuminated pushbuttons, with projecting push	White	10	ZBCW9313	0.002/0.004
	Green	10	ZBCW9333	0.002/0.004
	Red	10	ZBCW9343	0.002/0.004
	Orange	10	ZBCW9353	0.002/0.004
	Blue	10	ZBCW9363	0.002/0.004

(1) Set of 5 different colored lenses: clear, green, red, orange and blue.

# Control stations and enclosures

## Plastic control stations XALD and XALK

### For Harmony XB5 control and signaling units Ø 22

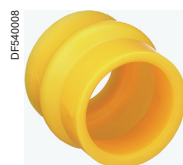
#### Stations for customer assembly: accessories



ZB5AZ905



ZB5SZ3



ZBZ58



ZBG455

### Miscellaneous accessories

Description	For use with	Sold in lots of	Color	Unit reference	Weight kg/lb
<b>Bezel tool</b>	ZB5AZ901 head	10	–	<b>ZB5AZ905</b>	0.016/0.035
<b>Nut</b>	Fixing ZB5A head	10	Green	<b>ZB5AZ903</b>	0.002/0.004
<b>Plastic blanking plugs</b> (with fixing nut)	Square shape for Ø 22/0.866 in. units (1)	10	Black	<b>ZB5SZ5</b>	0.009/0.020
	Circular shape for Ø 22/0.866 in. units	10	Black	<b>ZB5SZ3 (4)(5)</b>	0.009/0.020
<b>Terminal branch</b>	XALD and XALK control stations	10		<b>XALZ09</b>	0.003/0.007
<b>Bellow seals (IP 69K)</b> (2)	Control station with 1 cut-out, installed in harsh environment + Emergency Stop pushbutton type ZB5 (see page 16)	2	Black	<b>ZBZ28</b>	0.009/0.020
			Yellow	<b>ZBZ58</b>	0.009/0.020

### Replacement keys for Emergency stop key release heads and key switches

Description	Key number	Reference	Weight kg/lb
<b>Set of 2 keys (3)</b>	455	<b>ZBG455</b>	0.013/0.029
	421E	<b>ZBG421E</b>	0.014/0.031
	458A	<b>ZBG458A</b>	0.014/0.031
	520E	<b>ZBG520E</b>	0.014/0.031
	3131A	<b>ZBG3131A</b>	0.014/0.031

(1) Body/fixing collar ZB5AZ009 necessary for fixation, to be ordered separately.

(2) Not compatible with Ø 30 mm/1.181 in. Emergency Stop heads.

(3) Other key numbers are available.

(4) For white color plated bezel replace C0 with C1, and for other color plated bezels using the web customization tool, see page 7.

(5) To add customized markings on these references using the web customization tool, see page 7.

<b>X</b>			
XALD102	8	XALK01	13
XALD104	8	XALK01H29	13
XALD103	8	XALK01H44	13
XALD102E	8	XALK01HFR	13
XALD112	8	XALK01T	13
XALD117	8	XALK01TH26	13
XALD114	8	XALK01TH29	13
XALD112E	8	XALK01THFR	13
XALD114E	8	XALK02	13
XALD115	8	XALK03	13
XALD118	8	XALK04	13
XALD116	8	XALK05	13
XALD101	8	XALK84W2ME	10
XALD101H29	8	XALK84W2MG	10
XALD111	8	XALK84W3BE	10
XALD111H29	8	XALK84W3BG	10
XALD164	8	XALK178	9
XALD164H29H7	8	XALK178E	9
XALD01	13	XALK178F	9
XALD01H7	13	XALK178FH26	9
XALD02	13	XALK178FH29	9
XALD02H7	13	XALK178FH44	9
XALD03	13	XALK178FH49	9
XALD03H7	13	XALK178G	9
XALD04	13	XALK178GTH26	9
XALD04H7	13	XALK178GTH29	9
XALD05	13	XALK178GTH44	9
XALD05H7	13	XALK178GTHFR	9
XALD132	11	XALK178H26	9
XALD133H7	11	XALK178H29	9
XALD134	11	XALK178H44	9
XALD142	11	XALK178H49	9
XALD144	11	XALK178H49	9
XALD144E	11	XALK178W3B140E	10
XALD211	11	XALK178W3B140G	10
XALD211H29	11	XALK188	9
XALD213	11	XALK188E	9
XALD213E	11	XALK188F	9
XALD214	11	XALK188G	9
XALD215	11	XALK188GTH26	9
XALD222	12	XALK198	9
XALD222E	12	XALK209	39
XALD223	12	XB5DSB	15
XALD224	11	XB5DSG	15
XALD225	11	XB5DSM	15
XALD241	11	XB5DTB22	15
XALD311	12	XB5DTB23	15
XALD311H29H7	12	XB5DTB24	15
XALD321	12	XB5DTB25	15
XALD321H29H7	12	XB5DTGM2	15
XALD324	12	XB5DTGM3	15
XALD324E	12	XB5DTGM4	15
XALD325	12	XB5DTGM5	15
XALD326	12	XB5PRJ45	15
XALD328	12	XB5PUSB3	15
XALD334	12		
XALD339	12		
XALD361B	11		
XALD361M	11		
XALD363B	11		
XALD363G	11		
XALD363M	11		
		<b>Z</b>	
		ZALVB1	14
		ZALVB3	14
		ZALVB4	14
		ZALVB5	14
		ZALVB6	14
		ZALVG1	14
		ZALVG3	14
		ZALVG4	14
		ZALVG5	14
		ZALVG6	14
		ZALVM1	14
		ZALVM3	14
		ZALVM4	14
		ZALVM5	14
		ZALVM6	14
		ZALY2	31
		ZALY4	31
		ZB2BP012	38
		ZB2BP013	38
		ZB2BP014	38
		ZB2BP015	38
		ZB2BP016	38
		ZB5AA0	16
		ZB5AA1	16
		ZB5AA1C0	16
		ZB5AA2	16
		ZB5AA2C0	16
		ZB5AA3	16
		ZB5AA3C0	16
		ZB5AA4	16
		ZB5AA4C0	16
		ZB5AA5	16
		ZB5AA5C0	16
		ZB5AA6	16
		ZB5AA6C0	16
		ZB5AA8	16
		ZB5AA8C0	16
		ZB5AA9	16
		ZB5AA14	16
		ZB5AA14C0	16
		ZB5AA16	16
		ZB5AA16C0	16
		ZB5AA18	16
		ZB5AA18C0	16
		ZB5AA24	16
		ZB5AA24C0	16
		ZB5AA26	16
		ZB5AA26C0	16
		ZB5AA34	16
		ZB5AA34C0	16
		ZB5AA36	16
		ZB5AA36C0	16
		ZB5AA38	16
		ZB5AA38C0	16
		ZB5AA44	16
		ZB5AA44C0	16
		ZB5AA46	16
		ZB5AA46C0	16
		ZB5AA48	16
		ZB5AA48C0	16
		ZB5AA54	16
		ZB5AA54C0	16
		ZB5AA56	16
		ZB5AA56C0	16
		ZB5AA58	16
		ZB5AA58C0	16
		ZB5AA64	16
		ZB5AA64C0	16
		ZB5AA66	16
		ZB5AA66C0	16
		ZB5AA68	16
		ZB5AA68C0	16
		ZB5AA88	27
		ZB5AA88C0	27
		ZB5AA131	17
		ZB5AA131C0	17
		ZB5AA133	17
		ZB5AA136	17
		ZB5AA141	17
		ZB5AA142	17
		ZB5AA145	17
		ZB5AA232	17
		ZB5AA233	17
		ZB5AA234	17
		ZB5AA235	17
		ZB5AA245	17
		ZB5AA331	17
		ZB5AA331C0	17
		ZB5AA333	17
		ZB5AA333C0	17
		ZB5AA334	17
		ZB5AA334C0	17
		ZB5AA335	17
		ZB5AA335C0	17
		ZB5AA336	17
		ZB5AA341	17
		ZB5AA342	17
		ZB5AA343	17
		ZB5AA344	17
		ZB5AA432	17
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		ZB5AA433	17
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		ZB5AA434C0	17
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		ZB5AC6	17
		ZB5AC24	17
		ZB5AC34	17
		ZB5AC44	17
		ZB5AC54	17
		ZB5AC64	17
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		ZB5AD2C0	23
		ZB5AD3	23
		ZB5AD3C0	23
		ZB5AD4	23
		ZB5AD4C0	23
		ZB5AD5	23
		ZB5AD5C0	23
		ZB5AD7	23
		ZB5AD7C0	23
		ZB5AD8	23
		ZB5AD8C0	23
		ZB5AD28	26
		ZB5AD28C0	26
		ZB5AD29	25
		ZB5AD29C0	25
		ZB5AD39	25
		ZB5AD39C0	25
		ZB5AD48	26
		ZB5AD48C0	26
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