

4 - Connection interfaces Telefast® 2 pre-wired system

Presentation and compatibility

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Connection interfaces

Telefast® 2 pre-wired system

Discrete input and/or output sub-bases

Applications **Discrete input or output**



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Relay amplification	-			
Equipped with relay	-			
Control voltage	= 24 V			
Output voltage	= 24 V			
Output current per channel	0.5 A			
Modularity	16	8 -12 -16		
No. of terminals per channel	1	1 to 3	1	2
Type of connection terminals	Signal	Signal, common (configurable = 24 V or 0 V)	Signal	Signal, Common (configurable = 24 V or 0 V)
Connectors	20-way HE10 connector			
Terminal block	Removable		No	
	Type of terminals		Screw	
Additional or optional* function	Low cost version fitted with cable	Miniature sub-bases	Compact size *	Type 2 input * (1)
	Isolator *			
Device type	ABE-7H20E●●● 7H32E●●●	ABE-7H16C●●	ABE-7H●●R1● 7H●●R50	ABE-7H●●R2● ABE-7H●●S21
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(1) For TSX Micro and TSX Premium PLCs.

Discrete Input and output



-		Removable electromechanical or solid state	
-		No	Yes
--- 24 V			
--- 24 V		--- 24 V (solid state) --- 5... 24 V, ~ 230 V (electromechanical)	
0.5 A	0.5 A	5 A (E.M.), 2 A (solid state)	5 A (th)
16		16 8 passive inputs 8 relay outputs	
1	2	1	
Signal, 2 common connections between the inputs and the outputs.	Signal, common, 2 common connections between the inputs and the outputs.	1 N/O contact and common, 4 output channels 2 input connection points	
20-way HE10 connectors			
No			
Screw			
Miniature sub-base Synergy with Tego Power and API Micro PLC		Miniature sub-base - Common per 4 channels Synergy with Tego Power and API Micro PLC	
ABE-7H16CM11	ABE-7H16CM21	ABE-7P16M111	ABE-7R16M111
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Connection interfaces

Telefast® 2 pre-wired system

Discrete input and output sub-bases

Applications **Discrete output**



4

Relay amplification	Electromechanical, fixed		Electromechanical or solid state			
Equipped with relay	Yes		Yes	No	No	
Control voltage	≡ 24 V					
Output voltage	≡ 5 V... 30 V ~ 230 V	≡ 5 V... 150 V ~ 230 V	≡ 24 V (solid state) ≡ 5 V... 24 V, ~ 230 V (E.M.)	≡ 5 V... 150 V ~ 230 V		
Output current per channel	2 A (th)	3 A (th)	5 A (th)	2 A (solid state), 6 A (electromechanical)	Depends on relay mounted 0.5 to 10 A	
Modularity	8	8 - 16	16	8 or 16		
No. of terminals per channel	2	1	2	1	2 to 3	
Type of connection terminals	1 N/O contact and common Volt-free	1 N/O contact	1 N/O contact and common	1 N/O contact	Signal, Polarities	
Connectors	20-way HE 10 connector					
Terminal block						
Removable	Yes	Yes	Yes	No	No	
Type of terminals	Screw or spring			Screw	Screw or spring	
Additional or optional* function	Miniature sub-base Bistable relay	Volt-free or common per 8 channels		Miniature sub-bases Common per 4 channels	Isolator and fuse	
Device type	ABE- 7R08S216●	ABE- 7R●S1●●	ABE- 7R●S2●●	ABE- 7R16T111	ABE- 7P16T111	ABE- 7P16T2●●● 7P08T3●●●
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(1) For TSX Micro and TSX Premium PLCs.

Discrete Input

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Electromechanical, removable	Solid state, fixed	–	–	Solid state, fixed	Solid state, removable
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Yes	Yes	–	–	Yes	No
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From \sim 24 V to \sim 230 V From 5 V TTL to \sim 230 V

\sim 5 V... 150 V \sim 230 V	\sim 24 V				
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5A (th)	8 A (th)	from 0.5 to 2 A	125 mA	0.5 A	125 mA	12 mA
---------	----------	-----------------	--------	-------	--------	-------

16

2 to 3	2 to 6	2	3	2
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1 C/O contact or 1 N/O contact and common	1 C/O contact or 2 C/O contacts and common	Signal and 0 V	Signal \sim 24 V and 0 V	Signal can be isolated, Protected common	Signal	Signal and common
---	--	----------------	----------------------------	--	--------	-------------------

No	Yes	No	No	Yes	No
----	-----	----	----	-----	----

Screw	Screw or spring		Screw	Screw or spring	
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Volt-free or common per: 8 channels	4 channels	Fault signal	Isolator and fuse (indicator)	3-wire proximity sensor	Isolator and fuse (indicator)	–
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ABE-7R16T2●●	ABE-7R16T3●●	ABE-7S●●S2B●	ABE-7H16F43	ABE-7H16R3●	ABE-7H16S43	ABE-7S16E2●●	ABE-7P16F31●
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Applications Analogue signals and special functions



4

Compatibility	TSX Micro	TSX Premium	Standard	
Type of signal	Counter inputs and analogue I/O	Counter inputs Axis control Position control	Analogue inputs Current Voltage Pt 100	Analogue outputs Current Voltage
Functions	Passive connection, point-to-point with shield continuity			
Modularity	1 counter channel or 8 analogue inputs + 2 analogue outputs	8 channels	4 channels	
Control voltage	--- 24 V			
Output voltage	--- 24 V			
Output current per channel	25 mA			
Number of terminals per channel	2	2 or 4	2 or 4	
Type of connector	15-way SUB-D + 9-way SUB-D		25-way SUB-D	
Terminal block	Removable		No	
	Type of terminals		Screw	
Device type	ABE-7CPA01	ABE-7CPA02	ABE-7CPA21	
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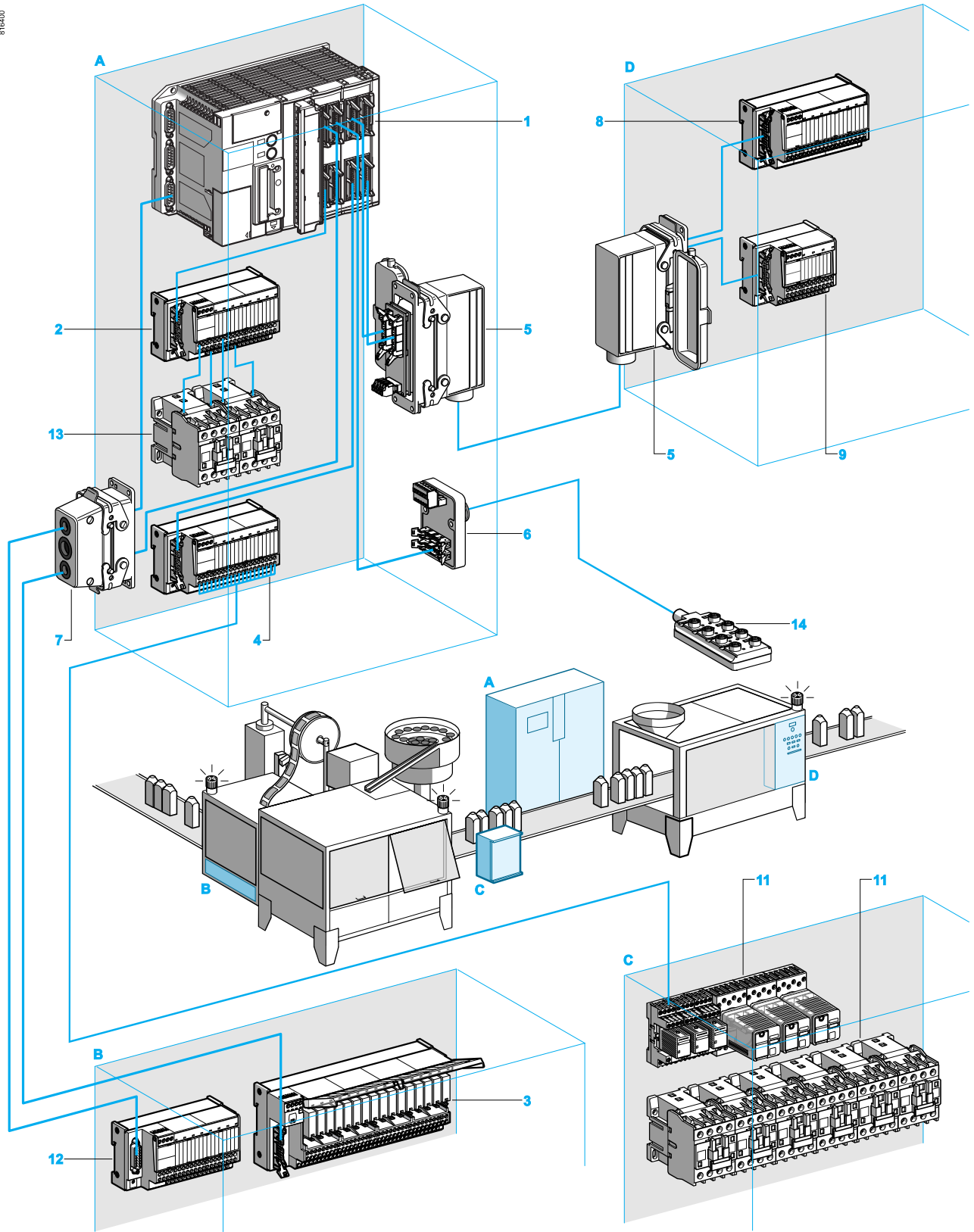


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	TSX Premium TSX AEY810	TSX Premium TSX CAY01 TSX CTY2C	TSX Premium TSX AEY1614	TSX Premium TSX PAY202
Analogue inputs Current Voltage Pt 100	Isolated analogue inputs	Inputs Counter	Inputs for thermocouples	I/O
Distribution of sensor power supplies per limiter (25 mA)	Distribution of isolated sensor power supplies per converter	Acquisition of value from an absolute encoder	Connection of 16 thermocouples with cold junction compensation	Safety module (BG)
8 channels	8 channels	1 channel	16 channels	12 Emergency stops
				-
		-	2 or 4	1
25-way SUB-D	25-way SUB-D	15-way SUB-D	25-way SUB-D	50-way SUB-D
No	No	No	No	No
Screw	Screw or spring	Screw	Screw	Screw
ABE-7CPA03	ABE-7CPA31	ABE-7CPA11	ABE-7CPA12	ABE-7CPA13

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General presentation

The Telefast 2 system is a set of products for rapid connection of I/O modules (≡ 24 V discrete, analogue 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 2 system only connects to channels which 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 2 sub-bases

Telefast 2 sub-bases connect directly via cables onto all discrete I/O modules fitted with HE 10 connectors **1**.

I/O modules not fitted with HE 10 connectors are connected to Telefast 2 sub-bases by means of cabled connectors. These consist of a cable whose conductors (0.34 mm c.s.a.) are connected to the standard terminal block at one end and to the HE 10 connectors at the other. They are available in 1.5 and 3-metre lengths.

Connection between Telefast 2 sub-bases and the operative part

The Telefast 2 range is suitable for all 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 3 wires (signal, 24 V, 0 V) to be connected directly from sensors or preactuators when the latter **13** 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 removable relay sub-bases **3** or of connecting analogue signals **12**.

In cases where size is of prime importance **D**, fixed relay sub-bases ABE-7R1 6S111 **8** (125 mm long) and passive sub-bases ABE-7H16R50 **9** (84 mm 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** which connect connector leads from sensors or preactuators **11** fulfil the same function as traditional terminal blocks.

IP65 dust and damp-proof connections for enclosures and cabinets

When the operative part has to be separate from the control part, enclosure feedthroughs are used to join HE 10 connectors and:

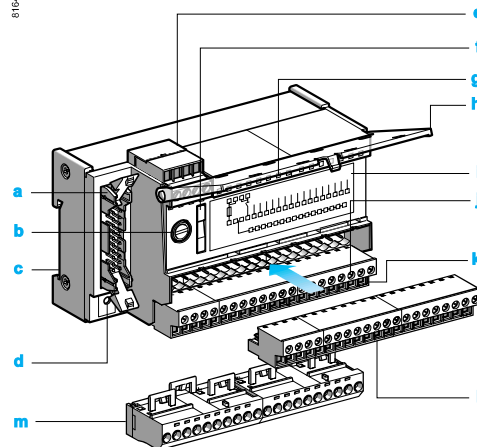
- 40-way, rectangular, industrial connectors for 32-channel versions **5**,

- 19-way, cylindrical, CNOMO M23 connectors, for 8, 12 and 16-channel versions **6**. Eight-channel versions offer, in addition, the possibility of directly connecting the XSZ dust and damp-proof splitter blocks **14** for 8 sensors.

In applications where the control cabinet is integral to the operative part, the cable gland assembly **7** enables the direct output of 3 Telefast 2 cables without additional connections.

Description of a Telefast 2 connection sub-base

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All connection sub-bases in the Telefast 2 family have a standardised design and offer the common functions described below.

Some of these functions are optional*.

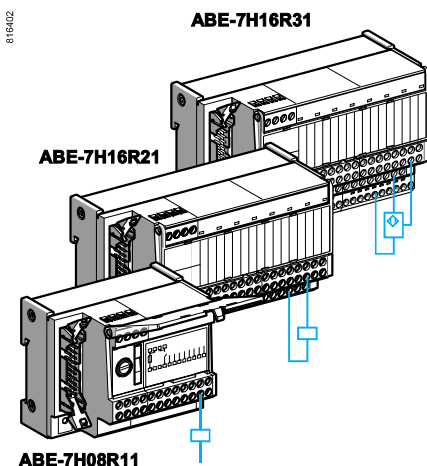
- a 20-way HE 10 connector
- b ≡ 24 V power supply circuit fuse
- c Fixing on DIN rail
- d ≡ 24 V display LED
- e ≡ 24V power supply terminal block (1)
- f Blade type isolator on ≡ 0 V
- g Channel indication LED*
- h Customer label-holder/cover
- i Wiring diagram
- j Test point for 0.2.3 mm plug
- k Upper terminal block (1)
- l Lower terminal block (1), offset by 1/2 step*
- m Additional clip-on terminal block fitted with 20 screw or spring terminals*

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

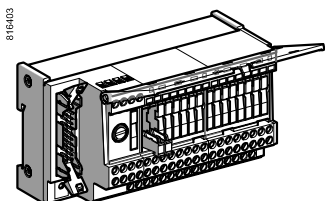
Connection interfaces

Telefast® 2 pre-wired system
Passive connection sub-bases

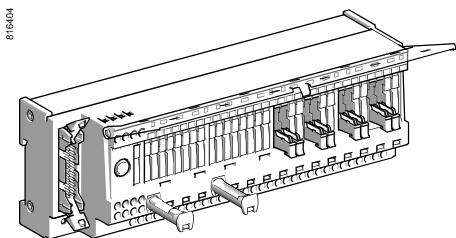
Designed to simplify I/O connection to a PLC within a control panel, the range of passive sub-bases has the same functions as traditional terminal blocks to which they add, depending on the models, compact size, connection of proximity sensor commons (3-wire and type 2), LED indication, protected and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



ABE-7H08R11



ABE-7H16S21



ABE-7H16S43

Terminal block sub-bases

ABE-7H●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 a LED (R11) or not (R10).

A terminal block sub-base ABE-7BV●0 can be added.

ABE-7H20E●●/7H32E●●●: these extremely economical products are supplied with a direct connection cable for ModiconTSX Micro, Premium or other PLCs using splitter sub-base HE20E, or for Siemens S7 PLCs using splitter sub-base H32E. The cable is available in 3 or 2 metre lengths respectively. The output terminals are on 2 rows.

Compact sub-bases

ABE-7H●R50: these products fulfil the same functions as the previous sub-bases but their size is reduced by almost half.

The output terminals are in fact on two rows.

ABE-7H16C1●/CM11: these are miniature products. The signal state for each channel can be indicated via an LED (C11/CM11) or not (C10). The output terminals are on one row. A terminal block sub-base ABE-7BV●0 can be added.

Universal sub-bases

ABE-7H●R21/R20: these sub-bases are used to connect I/O, and all the commons.

The potential (0 V or 24 V), distributed over the row of screw terminals which allow the commons to be connected, is selected via a jumper (see page 4/54). Both wires of the sensor or actuator can be connected to the sub-base. The output terminals are on two rows. The state of the signal for each channel can be indicated via an LED (R21) or not (R20).

ABE-7H16C21/CM2: these are miniature products. The signal state for each channel can be indicated via an LED. Reference CM21 has two commons connections which allow both the inputs and outputs to be connected at the same time, with a 0 or 24 V common, according to the customer's wiring. The output terminals are on 2 rows.

Sub-bases for 2-wire sensors

ABE-7H16R23: this product is identical to the ABE-7H16R21 sub-bases but, in addition, enables connection of 2-wire type 2 sensors on the ModiconTSX Micro and Premium and Num N.C. The output terminals are on two rows.

Sub-bases for 3-wire detectors

ABE-7H16R31/R30: the signals, \pm 24 V and 0 V, are brought into the sub-base for each channel. The output terminals are on three rows. This function can also be achieved by adding an ABE-7BV20 add-on terminal block to the ABE-7H16R21/R20 sub-bases.

The state of the signal for each channel can be indicated via an LED (R31) or not (R30).

ABE-7H16C31: 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

ABE-7H●S21: these products have the same function as the ABE-7H16R21 universal sub-base. In addition, they also have, a blade isolator for each channel.

Sub-bases with isolator and protection for each channel

ABE-7H16S43 : these products are used exclusively for connecting \pm 24 V inputs.

Both wires are brought to the screw terminals on a single row.

Each channel has 2 blade isolators, fixed together, to isolate the signal and its \pm 24 V supply. The 24 V supply to each channel is protected by a 5 x 20 fuse. A red LED indicates if the fuse has blown.

ABE-7H16F43: these products are designed for connecting \pm 24 V outputs. Both wires are brought to the screw terminals on a single row.

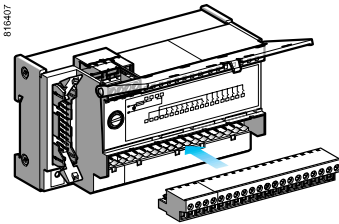
Each channel has 2 blade isolators, fixed together, to isolate the signal and its 0 V common.

Connection interfaces

Telefast® 2 pre-wired system
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 N/O, 1 C/O, 2 C/O), common potentials, channel protection by 5 x 20 fuse. There are 3 ranges of sub-bases: fixed relay, removable 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



ABE-7R16S111

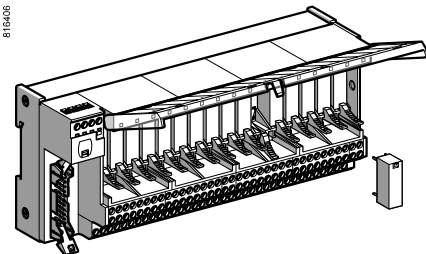
ABE-7R●●S21●: these products are equipped with a fixed relay, with integral N/O contact, 10 mm wide. Their 5A Ith characteristic must be derated according to the duty cycles used and the number of operations required.

They are available in 8 and 16-channel modules. All the terminal blocks are removable.

ABE-7R●●S11: almost 50% smaller than the standard sub-bases, these products have a fixed relay, integrating an N/O contact, 5 mm wide. Their 2A 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 modules. All the terminal blocks are removable.

ABE-7R08S216: these miniature products are equipped with latching relays which can withstand a current of 2A at ~ 230 V. They enable 2 output wires to be connected on a removable terminal block. Two PLC outputs are used per channel: one for tripping the relay, the other for resetting it. The relay stays in the de-energised position. The state of the signal for each channel can be indicated via an LED.

Removable relay sub-bases



ABE-7R16T2●●

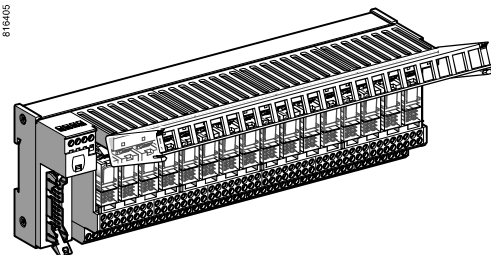
ABE-7P16T2●● and **7R16T2●●**: these products may or may not be equipped with a removable relay, with integral N/O or C/O contact, 10 mm wide. Their 5A Ith characteristic must be derated according to the duty cycles used and the number of operations required. They are available in 16-channel modules only.

ABR-7S2● electromechanical relays, **ABS-7S●2●** solid state relays and **ABE-7ACC20** continuity block can all be combined on the same sub-base. Some sub-bases, not equipped with relays, are offered with 5 x 20 fuse protection for each channel.

ABE-7●16T111/M111: these miniature products use removable relays, 5 mm wide, with integral N/O contact, rated up to 5A. These products may be pre-equipped with relays (R) or not (P). They can be fitted with both electromechanical and solid state relays.

Sub-bases **ABE-7●16M111** 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 state of the signal for each channel can be indicated via a LED. The terminals are on one row and the commons are brought 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 with removable relays



ABE-7R16T3●●

ABE-7P●●T3●● and **7R16T3●●**: these products may or may not be equipped with removable relays, with integral 1 C/O or 2 C/O contacts, 12 mm wide. Their 8A Ith characteristic must be derated according to the duty cycles used and the number of operations required.

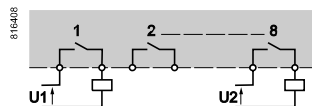
The relays are equipped with reinforced Faston type clips for easy attachment.

They are available in 8 and 16-channel modules.

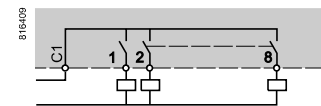
ABR-7S3● electromechanical relays, **ABS-7S●3●** solid state relays and **ABE-7ACC21** continuity block can all be combined on the same sub-base. Some sub-bases, not equipped with relays, are offered with 5 x 20 fuse protection and isolation for each channel.

Connections

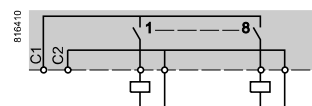
These relay sub-bases can be connected according to three possible schemes: volt-free, contact common and common on both poles.



Volt-free



Contact common



Common of both poles

Connection interfaces

Telefast® 2 pre-wired system
Solid state input or output sub-bases. Analogue sub-bases

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 end with E).

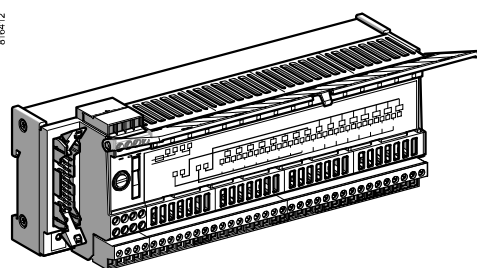
Input adaptor sub-bases

Sub-bases equipped with solid state channels ABE-7S16E●●: these sub-bases enable sensors with different voltages to be connected ($\approx 24\text{ V}$ to $\sim 230\text{ V}$ according to the reference).

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

Sub-bases equipped with removable solid state relays ABE-7P16F●●: these sub-bases enable sensors with different voltages to be connected ($\approx 24\text{ V}$ to $\sim 230\text{ V}$), either on each channel or on each group of 8 channels.

They are available in 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).



ABE-7S16E2B1

Output adaptor sub-base

Sub-bases equipped with solid state channels ABE-7S●●S●●: these sub-bases enable actuators to be connected at $\approx 24\text{ V}$. The outputs are not isolated. The output current is, depending on the products, 0.5 or 2 A per channel.

The occurrence of overloads or short-circuits on the outputs can be transmitted to the PLC to be managed by program. These "fault report" functions can only be used with Modicon TSX Micro and Premium PLCs or with any other PLCs which have protected outputs.

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

Removable solid state relays

ABS-75 removable relays are not available mounted directly on the sub-bases. They must be ordered separately.

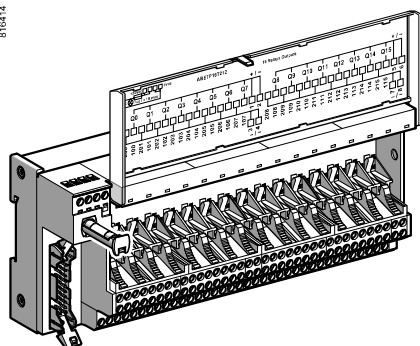
These relays are available for two power levels:

- from $\approx 5\text{ V}$ to $\sim 240\text{ V}/0.5\text{ A}$, 10 mm wide. These are for mounting on ABE-7P16T2●● sub-bases,

- from $\approx 5\text{ V}$ to $\sim 240\text{ V}/1.5$ and 2 A, 2mm wide. These are for mounting on ABE-7P16T3●● or ABE-7P08T330 sub-bases.

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

They are available in 16-channel modules only.

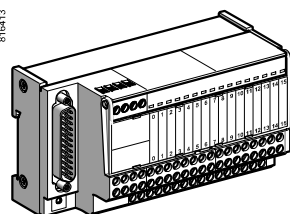


ABE-7P16T212

Analogue sub-bases and special functions

Analogue signals are connected on the following products :

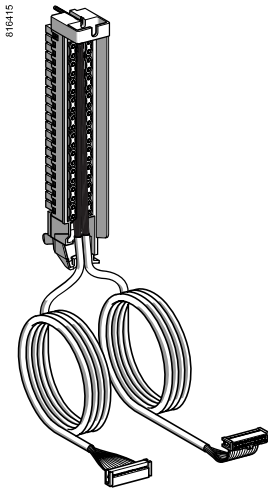
- Sub-base **ABE-7CPA01** for the counter modules in the Modicon TSX Micro and premium range. It also communicates with the Altivar 18 variable speed drives.
- Sub-base **ABE-7CPA02** for connection and distribution of 8 channels over the screw terminals while maintaining shielding continuity.
- Sub-base **ABE-7CPA21** with identical functions to the previous sub-base for the 4 analogue output channels.
- Sub-base **ABE-7CPA03** can also supply 2 or 4-wire sensors, channel by channel, with $\approx 24\text{ V}$ protected voltage and current limiting at 25 mA. In addition, it ensures continuity of the current loops when the 25-way SUB-D connector is unplugged.
- Sub-base **ABE-7CPA31** enables distribution and isolation of the $\approx 24\text{ V}$ power supply required for the 8 analogue input channels while maintaining isolation between channels of the TSX AEY810 module. Limitation for all channels is 25 mA.
- Sub-base **ABE-7CPA11** 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 Modicon TSX Premium range.
- Sub-base **ABE-7CPA12** can be used to connect 16 thermocouples and to increase the temperature of the terminal blocks for cold junction compensation, 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.
- Sub-base **ABE-7CPA13** simplifies connection of safety module TSX PAY2●2 on the Modicon TSX Premium. It allows the connection of 12, double contact emergency stops.



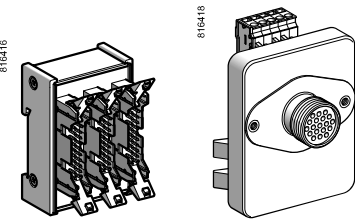
ABE-7CPA02

Connection interfaces

Telefast® 2 pre-wired system
Accessories for connection sub-bases

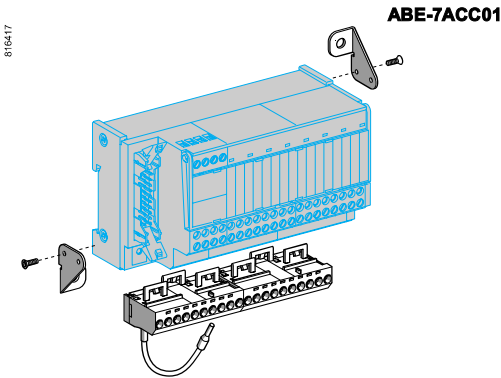


ABF-A32H00

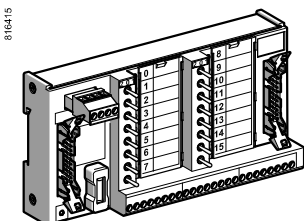


ABE-7ACC02

ABE-7ACC82



ABE-7BV20



ABE-7TES160

The telefast 2 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.

Connection to the PLC: cables and cabled connectors

Cables

Only **ABF-H20H000** 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 fitted with 20-way HE 10 connectors. They are available in lengths of 0.5 to 5 m, but the user can create custom cables up to a maximum length of 30 m using additional cable and HE 10 connectors.

TSX-CDP003 moulded cables are only used with the Modicon 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.

Cabled connectors

When the PLC I/O modules do not have rapid connection features, the cables and terminal blocks are pre-assembled by us to produce a pre-wired solution. Telefast 2 can therefore offer cabled connectors suitable for the Modicon, April (**ABF-A32H000**) and Telemecanique ranges of analogue modules.

Splitter sub-bases

When module configuration and signal distribution are not compatible, the Telefast 2 system can use **ABE-7ACC00** 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 (**ABE-7ACC11**) or on 2 output modules in parallel (**ABE-7ACC10**).

Wiring accessories

Enclosure feedthroughs

The IP65 **ABE-7ACC80** product range comprises:

- two compact devices, one for 8-12 channel configurations and the other for 16 channel configurations, enabling Telefast 2 sub-bases to be connected to the outside of the enclosure. They provide the connection between HE 10 connectors (inside the enclosure) and the cylindrical CNOMO M23 type connector (outside the enclosure). These products can also be used to connect dust and damp proof splitter blocks with M12 cylindrical connectors for sensors.
- a second device which uses a 40-way rectangular industrial connector to connect 2 x 16 channels.

Cable gland assembly

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

ABE-7ACC01 mounting kit for solid mounting plate

This provides an alternative solution for mounting sub-bases without using an additional rail.

Additional terminal blocks ABE-7BV10 and ABE-7BV20

With 8 and 16 channels, these products give wider connection alternatives: common, screening, etc..

Other accessories

Removable continuity blocks

Available in 10 and 12 mm widths, the blocks are mounted on **ABE-7P16T000** relay sub-bases in place of **ABR-7** and **ABS-7** modules. They make use of the sub-base functions to connect the channel without the need to adapt the channel using a relay.

ABE-7TES160 simulation sub-base

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

5 x 20 fuses

References for all fuses can be found under accessories.

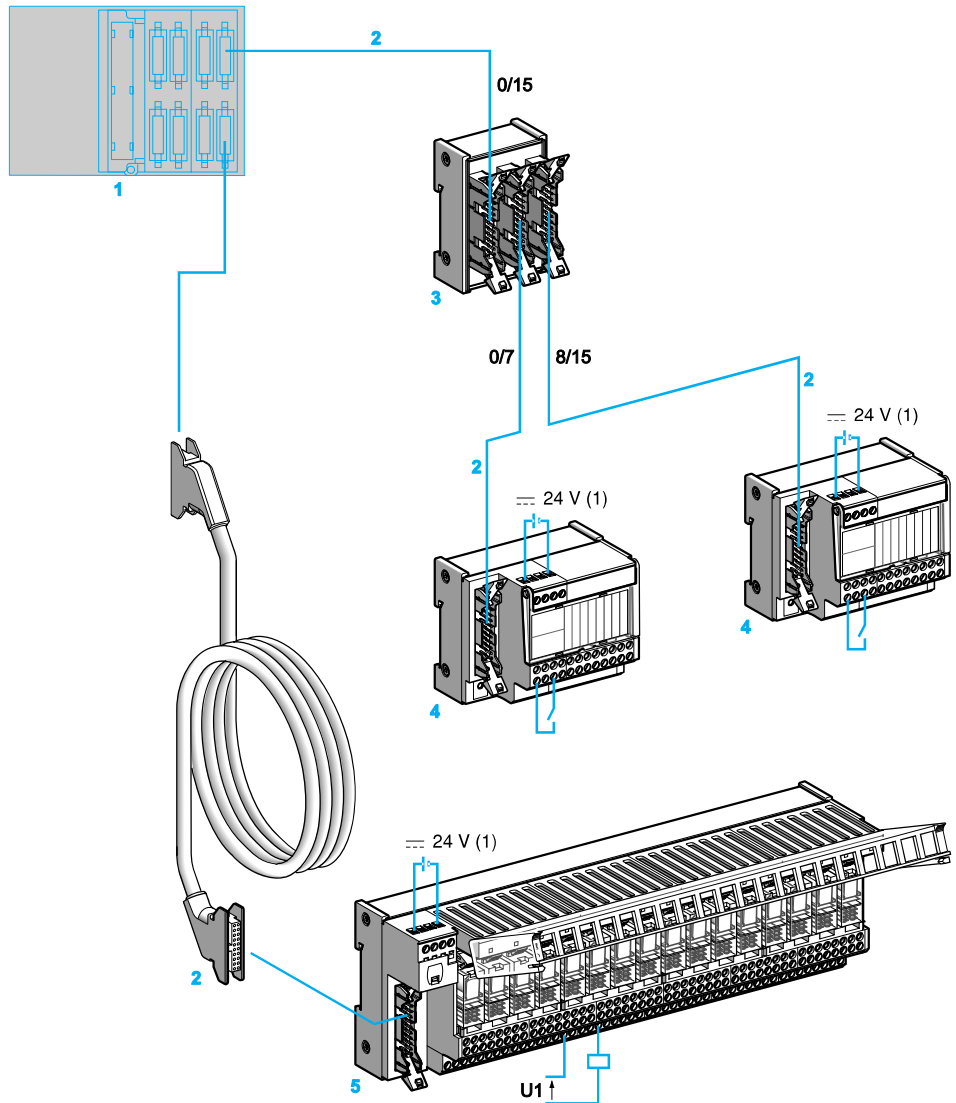
Label marking software

This produces finished labels for marking 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.

Connection interfaces

Telefast® 2 pre-wired system
Connection cables for Micro PLCs

4



- 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 cable equipped with 20-way HE 10 connectors irrespective of the 8, 12 or 16-channel modularity. The HE 10 connectors may be moulded (TSX CDP●●●) or self-perforating (ABF-H20H●●●). These cables are available in 0.5, 1, 2, 3 and 5 metre lengths. They use AWG 28 (0.08 mm²) for connection of inputs and relay sub-bases, and AWG 22 (0.324 mm²) for direct connection of the 8 and 28 I/O module 0.5 A outputs.
- 3 16 channels may be split into 2 x 8 channels using splitter sub-base ABE-7ACC02.
- 4-5 8-channel and 16-channel sub-bases respectively.

(1) The 24 V power supply is connected using Telefast 2 sub-bases only. The 0 V connections must be equipotential.

I/O modules for TSX Micro PLCs

		24 V discrete I/O					Inputs		Outputs		Counter		Analogue and counter
		I/O								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	–	37 10 128DTK1		37 10 164DTK1		–	–	–	–	–	–	37 22 001
	TSX	–	–	–	–	–	–	–	–	–	–	–	37 22 101
With modules	TSX	DMZ 16DTK	DMZ 28DTK		DMZ 64DTK		DEZ 12D2K	DSZ 08T2K	CTZ 1A	CTZ 1A	–	–	–
	TSX	–	–	–	–	–	–	–	CTZ 2A	CTZ 2A	–	–	–

Connection sub-bases

8 chans.	ABE-7H08R●●		(1)		(1)	(1)			ABE- (2) 7H08R10			
	ABE-7H08S21		(1)		(1)	(1)						
12 chans.	ABE-7H12R●●											
	ABE-7H012S21											
16 chans.	ABE-7H16R●●/H16C●●/H20E●●								ABE- (3) 7H016R20			
	ABE-7H16S21											
	ABE-7H16R23											
	ABE-7H16F43											
	ABE-7H16S43											

Input adaptor sub-bases

16 chans.	ABE-7S16E2●●						(5)					
	ABE-7P16F3●●						(5)					

Input and output adaptor sub-bases

16 chans. 8 I + 8 Q	ABE-7H16CM●1											
	ABE-7●16M111											

Output adaptor sub-bases

8 chans.	ABE-7S08S2●●					(1)						
	ABE-7R08S●●●					(1)						
	ABE-7P08T330					(1)						
16 chans.	ABE-7S16S●●●											
	ABE-7R16S●●●			(4)								
	ABE-7R16T●●●			(4)								
	ABE-7P16T●●●			(4)								

Sub-bases for analogue/counter I/O

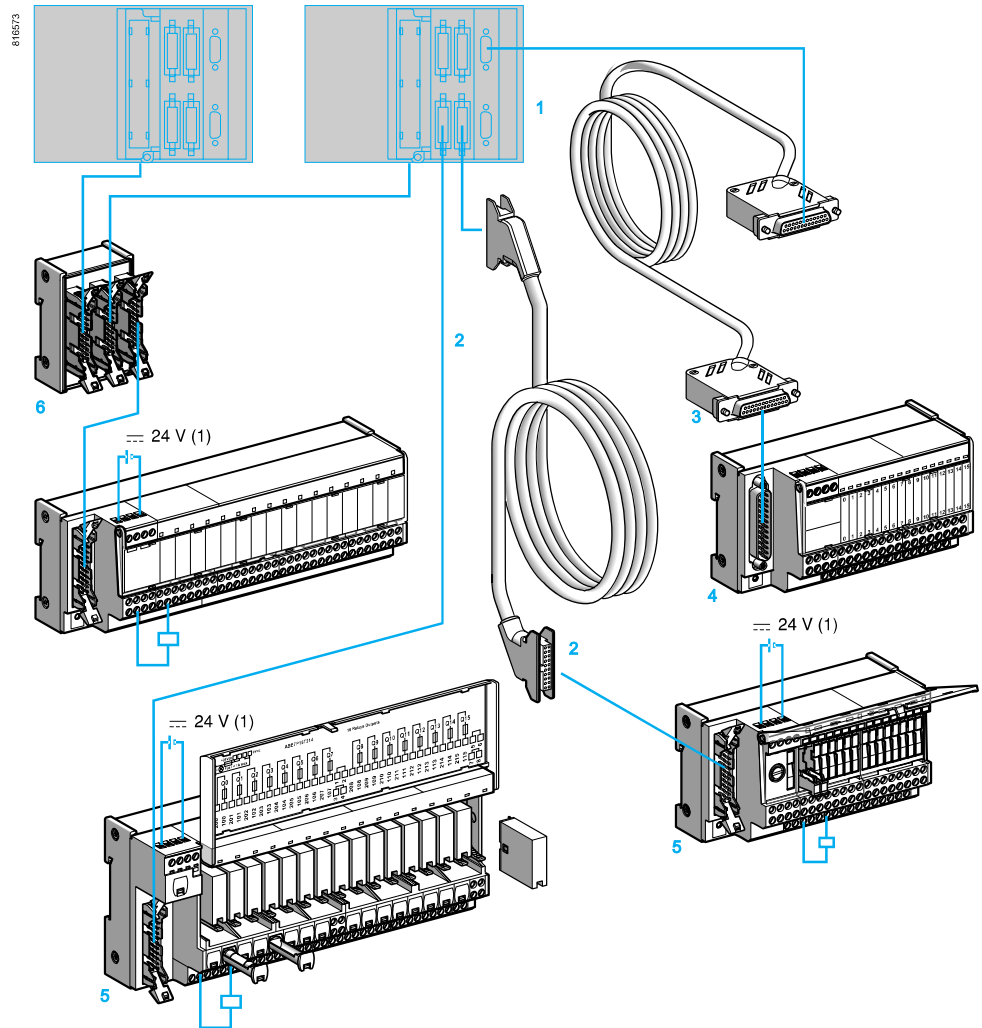
ABE-7CPA01												
ABE-7CPA11												
ABE-7CPA02												
ABE-7CPA03												

- (1) Via splitter sub-base ABE-7ACC02, which allows 16 channels to be split into 2 x 8 channels.
- (2) With module TSX CTZ 1A, to be used with sub-bases with no LED.
- (3) With module TSX CTZ 2A, to be used with sub-bases with no LED.
- (4) The last four channels are not used and remain at 1.
- (5) The last four channels are not used.

 Pre-wired cables

Connection interfaces

Telefast® 2 pre-wired system
Connection cables for TSX Premium



- 1 Input and output modules fitted with HE 10 connectors available for 16, 32 and 64 I/O.
- 2 A single type of cable fitted with 20-way HE 10 connectors, whether the modularity is 8, 12 or 16 channels. The HE 10 connectors can be moulded, TSX CDP●●● (AWG 22) or self-perforating, ABF-H20H●●● (AWG 28). These cables are available in 0.5, 1, 2, 3 and 5 metre lengths (the same as those used with the Modicon TSX Micro). AWG 28 gauge (0.08 mm²) enables 100 mA input and output sub-bases to be connected directly, as well as sub-bases fitted with relays.
The ABE-7ACC02 adaptor is used to connect 8-channel sub-bases.
- 3 All analogue signal connections are made using a TSX CAP030 pre-wired cable fitted with 25-way SUB-D connectors, which ensure the continuity of the shielding.
- 4 There are several types of sub-base for counter and analogue channels:
 - ABE-7CPA02 for connecting current, voltage or PT100 inputs to screw terminals
 - ABE-7CPA03 with 4-20 mA sensor circuit supply and 25 mA limiter for each channel
 - ABE-7CPA21 for connecting 4-channel analogue output modules to screw terminals
 - ABE-7CPA31 with isolated 4-20 mA sensor circuit supply for 8 individually isolated channels
 - ABE-7CPA11 for connecting an absolute encoder with parallel outputs
 - ABE-7CPA12 for connecting 16 thermocouple probes
- 5 16-channel Telefast sub-bases.
- 6 Splitter sub-bases for the parallel connection of discrete I/O from a Telefast 2 sub-base to 2 different PLCs :
 - ABE-7ACC10 for output redundancy
 - ABE-7ACC11 for input redundancy

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

Connection interfaces

Telefast® 2 pre-wired system
Modicon TSX Premium PLC I/O modules and interface sub-bases

Premium PLC I/O modules

		24 V discrete						Analogue						Axis control			Counting		Fast counting		Safety		
		Inputs			Outputs			Inputs/outputs			Inputs			Outputs			Thermo-couple inputs	Speed reference	Auxiliary input	Auxiliary inputs	Counter	Auxiliary inputs	Counter
		4x16 I 2x16 I	2x16 I	1x16 I	4x16 Q 2x16 Q	1x16 I	1x12 Q	2x8 I	8 I	4 I	4 Q	8Q	2x8 I										
With modules	TSX	DEY 64D2K 32D2K	DEY 32D3K	DEY 16FK	DSY 64T2K 32T2K	DMY 28 FK 28 RFK		AEY 1600	AEY 800	AEY 810	AEY 420	ASY 410	ASY 800	AEY 1614	CAY1 CFY1	CA CF	CTY1 CTY2				CTY2C		PAY 2x2
Cables with connectors		TSX CDP ^{●●●} 3 or ABF-H20H ^{●●●} 0						TSX CAP030			-			TSX CAP030			TSX CDP ^{●●●} 3		TSX CAP 030	TSX CDP ●●●3	TSX CAP 030		
Cabled conn. with PLC term. blk. supplied		-										(4)	-										

Connection sub-base

8 channels	ABE-7H08R ^{●●}	(1)		(1)	(1)	(1)																H08 R10 (2)					
	ABE-7H08S21	(1)		(1)	(1)	(1)																					
12 channels	ABE-7H12R ^{●●} /7H12S21																										
16 channels	ABE-7H16R ^{●●} /H16C ^{●●} / H20E ^{●●●}		H16 R20																				H16 R20	H16 R20 (3)		H16 R20 (3)	
	ABE-7H16S21																										
	ABE-7H16R23																										
	ABE-7H16F43																										
	ABE-7H16S43																										

Input adaptor sub-bases

16 channels	ABE-7S16E2 ^{●●} /7P16F3 ^{●●}																											
-------------	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Output adaptor sub-bases

8 channels	ABE-7S08S2 ^{●●} /7R08S ^{●●●}				(1)																							
	ABE-7P08T330				(1)																							
16 channels	ABE-7S16S ^{●●●} /7R16S ^{●●●}																											
	ABE-7R16T ^{●●●} /7P16T ^{●●●}																											

Sub-bases for analogue/counter Inputs

	ABE-7CPA01																											
	ABE-7CPA11																											
	ABE-7CPA02																											
	ABE-7CPA21																											
	ABE-7CPA03																											
	ABE-7CPA31																											
	ABE-7CPA12																											
	ABE-7CPA13																											

- (1) Via splitter sub-base ABE-7ACC02, which allows 16 channels to be split into 2 x 8 channels.
- (2) 1-channel connection.
- (3) 2-channel connection.
- (4) ABF-Y25S200 cabled connector fitted with a TSX BLY terminal block.
- (5) Can only be used with the CAY[●]1 module.
- (6) Only the first 4 channels are used.

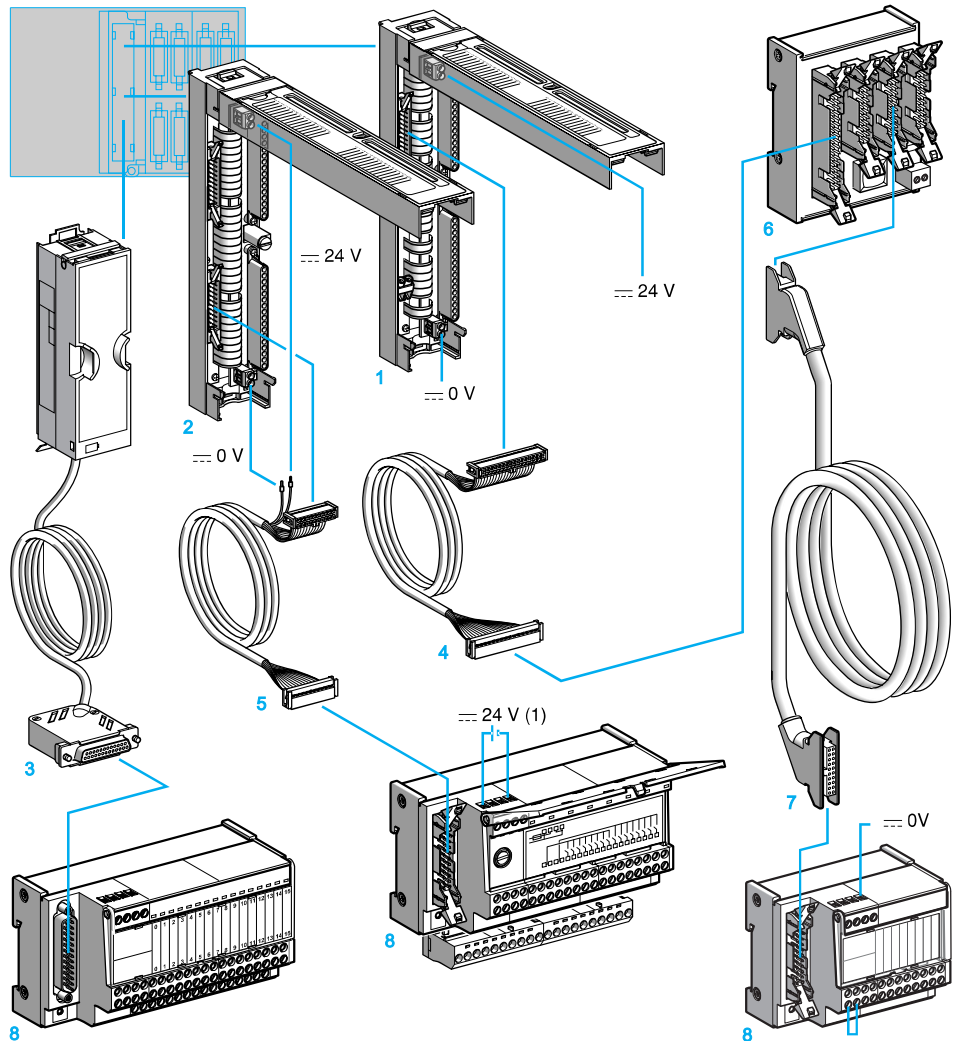
 Pre-wired cables

Connection interfaces

Telefast® 2 pre-wired system

Connection cables for Telemecanique TSX 47 to 107 PLCs

4



- 1 TSX BLK 81 terminal block connected to TSX DST 24 modules. Outputs are connected using a 34-way HE 10 connector, integrating all 24 channels. The \approx 24 V power can only be supplied via the screw terminals of the terminal block.
- 2 TSX BLK 71/91 terminal blocks connected respectively to TSX DET 32 and TSX DST 3292 modules. I/O are connected using two 20-way HE 10 connectors, each integrating 16 channels.
- 3 ABF-B25S cabled connector, for TSX AEM8 analogue counters, comprising a standard TSX BLK 4 terminal block, a screened multicore cable (AWG 22) and a 25-way SUB-D connector, providing continuity of shielding. An ABF-B50S cabled terminal block, fitted with two SUB-D connectors, enables connection to TSX AEM 160 modules.
- 4 ABF-H34H cables (AWG 28) fitted with 34-way HE 10 connectors, supplied in 1, 2 and 3 metre lengths.
- 5 ABF-H20H connection cable fitted with 20-way HE 10 connectors and a rolled ribbon cable (AWG 28). This cable is used specifically to carry power supplies so that they may be connected to the TSX BLK 71 and TSX BLK 91 terminal blocks. If these cables are used, it is essential that both polarities are connected to the Telefast 2 sub-base.
- 6 ABE-7ACC03 splitter sub-base enabling 24 channels to be connected to Telefast 2 sub-bases with 8-channel modularity. In this case, it is essential to connect the \approx 0 V to the Telefast 2 sub-bases.
- 7 TSX CDP or ABF-H20H cables.
- 8 ABE-7CPA02, ABE-7R16S111 sub-bases with ABE-7BV20 and ABE-7H08R11 terminal blocks. The ABE-7CPA02 sub-base enables the current, voltage or PT 100 inputs to be connected whilst maintaining continuity of shielding.

(1) The \approx 24 V power supply is connected using Telefast 2 sub-bases only. The \approx 0 V connection must be equipotential.

Connection interfaces

Telefast® 2 pre-wired system
I/O modules for Telemecanique TSX 47 to 107 PLCs,
April Series 1000 and interface sub-bases

I/O modules (Series 7 and Series 1000)

		Telemecanique TSX 47 to 107 PLC modules						APRIL Series 1000 PLC modules			
		Discrete			Analogue			Discrete		Analogue	
		Inputs	Outputs		Inputs			Inputs, Outputs < 0.5 A	Outputs = 0.5 A	Inputs	
Integrated in PLCs	TSX	32 channels	32 channels	24 channels		16 channels	16 channels	8 channels	32 channels	32 channels	16 channels
		DET 32 32	DST 32 92	DST 24 72		AEM 16 13	AEM 16 0●	AEM 8 ●●	QDB 32 05	QDB 32 05	DXA 16 00
		TSX DET 32 42	–	DST 24 82		–	–	–	QPA 3205	QPA 3205	IRA 1600
		TSX DET 32 52	–	–		–	–	–	IDB 32 24	–	–
Connection terminal blocks	TSX	BLK 71	BLK 91	BLK 81		None	Included	Included	Included	Included	None
Connection cables	ABF-	H20H●●1				S25S301	B50S●01	B25S●01	A32H●00	A32H●●1	S25S302

Connection sub-bases

8 channels	ABE-7H08R●●/7H08S21	(1)	(1)	(2)					(1)		
12 channels	ABE-7H12R●●/7H12S21										
16 channels	ABE-7H16R●●/7H16S21/ H16C●●/H20E●●●										
	ABE-7H16R23										
	ABE-7H16F43										
	ABE-7H16S43	(4)							(5)		

Input adaptor sub-bases

16 channels	ABE-7S16E2●●/7P16F3●●										
-------------	-----------------------	--	--	--	--	--	--	--	--	--	--

Output adaptor sub-bases

8 channels	ABE-7S08S2●●			(2)					(1)		
	ABE-7R08S●●●/7P08T330		(1)	(2)					(1)		
16 channels	ABE-7S16S●●●		(3)								
	ABE-7R16S●●●										
	ABE-7R16T●●●/7P16T●●●										

Sub-bases for analogue/counter I/O

	ABE-7CPA01										
	ABE-7CPA02										
	ABE-7CPA03										

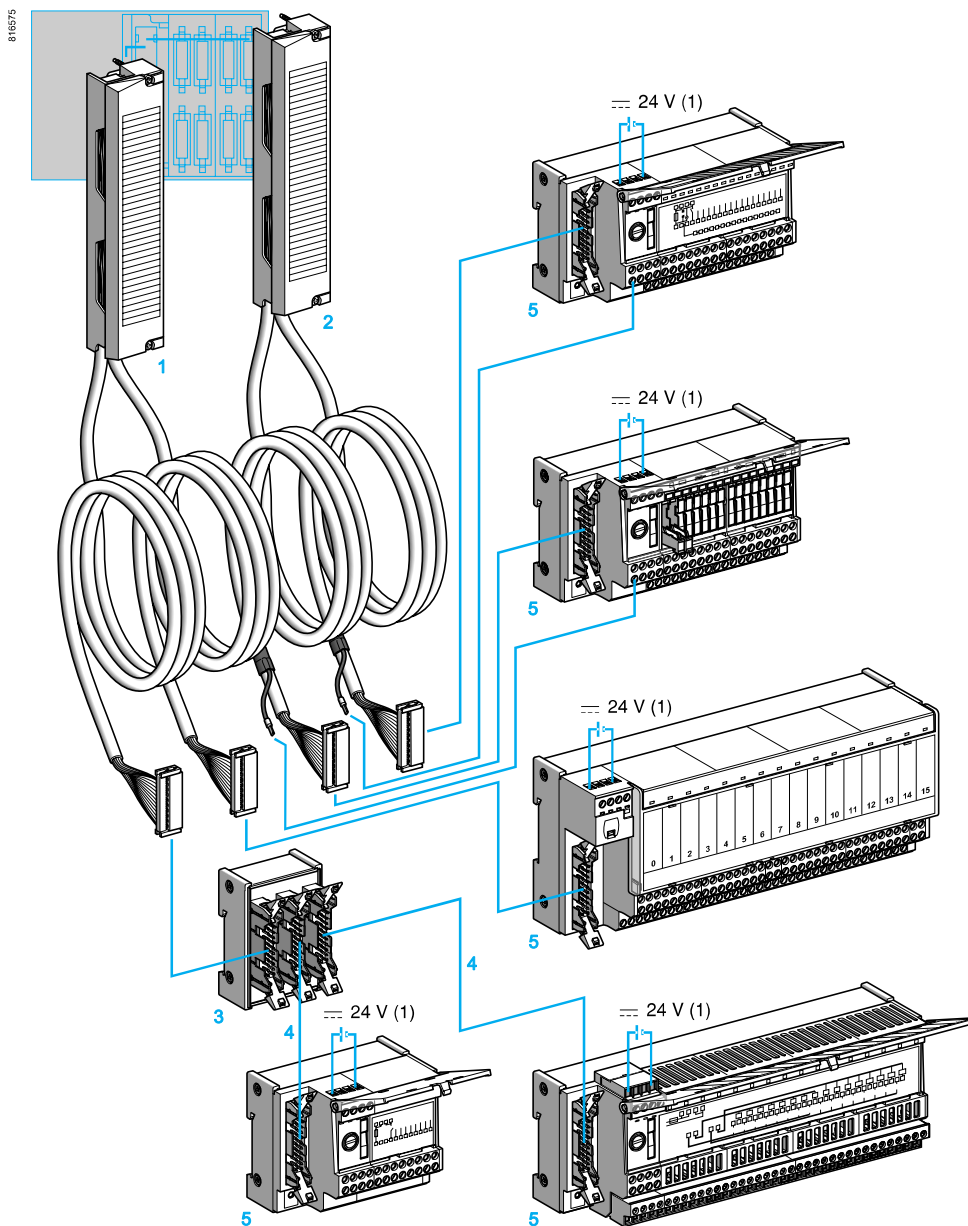
- (1) Via splitter sub-base ABE-7ACC02 which enables 16 channels to be split into 2 x 8 channels.
- (2) Via splitter sub-base ABE-7ACC03 which enables 24 channels to be split into 3 x 8 channels.
- (3) With module ABE-7S16S2B2 only.
- (4) Except DET 32 52.
- (5) Input only.

 Pre-wired cables

Connection interfaces

Telefast® 2 pre-wired system
Connector cables for Modicon PLCs

4



1-2 Cabled connectors combine a standard terminal block equipped with screw terminals, two multicore (AWG 22) cables and two 20-way HE 10 connectors. Two cabled connectors are available for the Quantum range and two others for the 984-A120-Compact range.

The 4 products have the following functions:

- ABF-M32H●●0 **1** for Quantum relay inputs or outputs, with 2 x HE 10 connectors each integrating 16 channels.
- ABF-M32H●●1 **2** for outputs directly connected to the Quantum, with 2 x HE 10 connectors each integrating 16 channels and an external power supply with a direct connection to the output terminal marked 1.
- ABF-M16H●●0 for 984-A120-Compact inputs or relay outputs, with 1 x HE 10 connector each integrating 16 channels.
- ABF-M16Hpp1 for 984-A120-Compact directly connected outputs, with 2 x HE 10 connectors each integrating 8 channels.

3 The splitter sub-base ABE-7ACC02 may be used to connect sub-bases with 8-channel modularity.

4 A single type of cable equipped with 20-way HE 10 connectors irrespective of the 8, 12 or 16-channel modularity. The HE 10 connectors may be moulded (TSX-CDP●●●) or self-perforating (ABF-H20H●●●).

5 8 and 16-channel sub-bases from the Telefast 2 range.

(1) The 24 V power supply is connected using Telefast 2 sub-bases only. The 0 V connections must be equipotential.

Connection interfaces

Telefast® 2 pre-wired system
Modicon PLC and NUM numerical control I/O modules with interface sub-bases

I/O modules	Modicon PLCs														NUM numerical controllers												
	984-A120-Compact										Quantum				NUM 1050/1060		NUM 1020										
	Inputs					Outputs					TOR In-put		TOR Out-put		Analogue Inputs		Outputs		Inputs/Outputs		Inputs/Outputs						
	16 E		16 S			32 E		32 S			96 E		96 S		8 E		16E		4 S		8 S		64 E + 48 S		32 E + 24 S		
	DEP 220	DEP 217	DAO 216	DAO 216	DAP 216	DDI 353	DDI 853	DDO 353		DDI 384	DDO 384	140 AVI 03000	140 ACI 04000	140 AVO 02000	140 ACO 02000	140 ACO 13000			64 I	48 O	32 I	24 O					
Connection terminal blocks	Included														NUM cables not supplied												
Cabled connectors	ABF-M16 H00		M16 H001			M32 H00		M32 H001			-		M08 S201	M16 S201	M04 S200	M04 S201	M08 S202			-	-	-	-				
Splitter sub-bases	ABE-7		-			-		-			CDP003		-		-		-		ACC04	ACC05	ACC04	ACC05					

Connection sub-bases

8 channels	ABE-7H08R00	(5)	(1)			(1)	(2)			(2)									(2)		(2)				
	ABE-7H08S21	(5)								(2)									(2)		(2)				
12 channels	ABE-7H12R00																								
	ABE-7H12S21																								
16 channels	ABE-7H16R00/H16C00		(1)																						
	ABE-7H16S21																								
	ABE-7H16R23					(4)																			
	ABE-7H16F43																								
	ABE-7H16S43					(3)																			

Input adaptor sub-bases

16 channels	ABE-7S16E200/7P16F300																								
	ABE-7P08T330						(2)																		

Output adaptor sub-bases

8 channels	ABE-7S08S200									(2)															
	ABE-7R08S000/7P08T330						(2)			(2)															
16 channels	ABE-7R16S000																								
	ABE-7R16T000/7P16T330																								
	ABE-7S16S000																								

Sub-bases for analogue/counter I/O

	ABE-7CPA01																								
	ABE-7CPA02											(6)													
	ABE-7CPA03											(6)													
	ABE-7CPA21																								
	ABE-7CPA31												(6)												

- (1) With Telefast 2 sub-bases with no channel LED.
- (2) With the splitter sub-base ABE-7ACC02.
- (3) Only with module DDI 853.
- (4) Only with module DDI 353.
- (5) With the splitter sub-base ABE-7ACC02 or with a cabled connector ABF-M16H001 directly.
- (6) 2 sub-bases are required.

Pre-wired cabled connectors

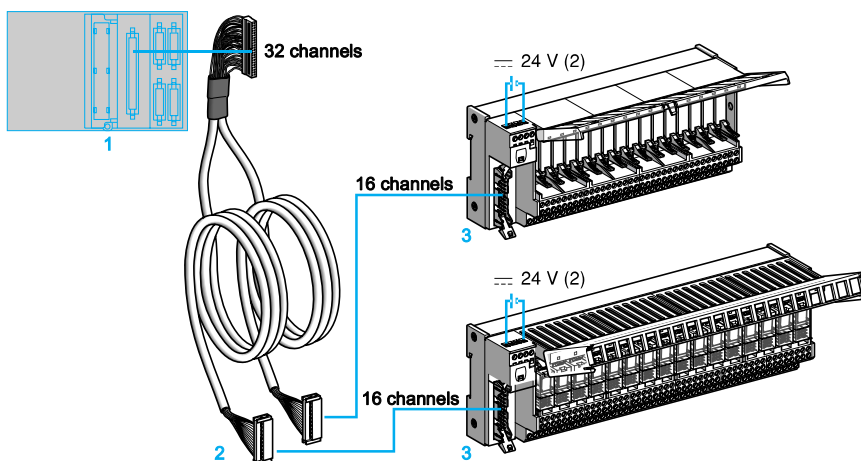


Connection interfaces

Telefast® 2 pre-wired system
 Connection cables for Allen Bradley SLC500 PLCs
 Connection cables for Siemens S5 PLCs

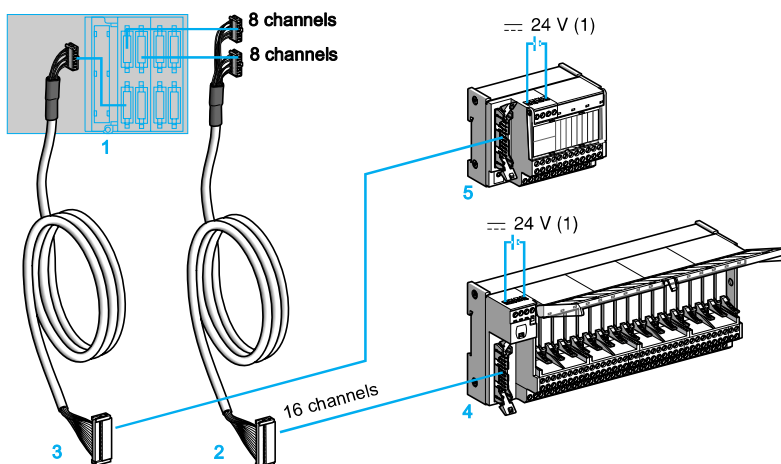
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Connection cables for Allen Bradley SLC500 PLCs



- 1 For the SLC500 range, the specially designed cables connect to the I/O modules which are equipped with 40-way HE 10 connectors, integrating 32 channels.
- 2 Cables ABF-H40H●●● to connect 16-channel sub-bases. They are supplied 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 1.5 and 3 metre lengths, AWG 22, there are 2 types of "Y" form cables: one exclusively for inputs and one for outputs.
- 3 16-channel sub-bases. It is possible to use 8-channel sub-bases by inserting adaptor ABE-7ACC02.

Connection cables for Siemens S5 PLCs



- 1 The \sim 24 V power supply may be provided via 6EP5-●●● terminal blocks connected to the PLC modules. For the 95U/100U/115U/135U/155U ranges, manufacturers cables are connected to terminal blocks via 14-way HE 10 connectors (6EP5-●●●-1AA00). Each connector integrates 8 channels.
- 2 Cables ABF-H28H●●● to connect 16-channel sub-bases. They are supplied with 2 x 14-way HE 10 connectors, fitted at the S5 PLC end and one 20-way HE 10 connector, at the Telefast end. Available in 1.5 and 3 metre lengths, AWG 26, these "Y" form cables only connect the I/O controlling the relay sub-bases.
- 3 Cables ABF-H14H●●● to connect 16-channel sub-bases. They are supplied with one 14-way HE 10 connector, at the S5 PLC end and one 20-way HE 10 connector, at the Telefast end. Available in 1.5 and 3 metre lengths, AWG 26, these cables are used to connect the I/O directly to the sub-bases.

(1) The \sim 24 V power supply is connected using Telefast sub-bases only. The \sim 0 V connections must be equipotential.
 (2) The power may be supplied via the PLC terminal block or the Telefast sub-base.

Connection interfaces

Telefast® 2 pre-wired system
Allen Bradley and Siemens S5 PLC I/O modules

I/O modules for Allen Bradley and Siemens S5 PLCs

		Allen Bradley					Siemens											
		SLC500					S5-95U/100U					S5-115U		S5-135U/155U				
		Input		Output			I/O	Input	Input	Output	Ana. Inp.	Input	Output	Input	Output	Ana. Inp.	Ana. out	
		32 I	16 I	16 Q	32 Q	1746	16 I + 16 Q	16 I	8 I	8 Q	4 I	32 I	32 Q	32 I	32 Q	8 I	8 Q	
Integral to the PLCs		1746 IB32	1746 IB16	1746 OB16	1746 OB32	1746 OV32	6ES5-095 8MA03 6ES-5-482 8MA13	6ES5-422 8MA11	6ES5-421 8MA12	6ES5-441 8MA11	6ES5-464 8ME11	6ES5-430 7LA12	6ES5-441 7LA11	6ES5-460 4UA14	6ES5-470 4UA13	6ES5-470 4UA12		
	Connection terminal blocks	None					6EP5-100-1AA00	6EP5-100-1AA00	Included	Included	6ES5-700-8MA11	6EP5-115-1AA00	6EP5-115-1AA00	6EP5-135-1AA00	6EP5-135-1AA00	6ES5-497-4UB12	6ES5-497-4UB12	
Connection cables Modularity	16 channels	ABF-H40H00	R16 H201	R16 H200	H40H00		H28H00	H28H00				H28H00		H28H00				
	8 channels	ABF-H14H00					H14H00	H14H00	S16H00	S16H00		H14H00	H14H00	H14H00	H14H00			
	(7) ABF-										F25S200					F25S200	F25S200	

Connection sub-bases

8 channels	ABE-7H08R00	(2)	(2)		(2)	(1) (2)												
	ABE-7H08S21	(2)	(2)		(2)													
12 channels	ABE-7H12R00/7H12S21																	
16 channels	ABE-7H16R00/16C00			(5)		(1) (4)												
	ABE-7H16S21					(4)												
	ABE-7H16R23																	
	ABE-7H16F43																	
	ABE-7H16S43																	

Input adaptation sub-bases

16 channels	ABE-7S16E200/7P16F300																	
-------------	-----------------------	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Output adaptation sub-bases

8 channels	ABE-7S08S200																	
	ABE-7R08S000				(2)													
	ABE-7P08T330				(2)						(2)		(2)					
16 channels	ABE-7R16S000/7R16T000																	
	ABE-7P16T000 (6)																	
	ABE-7S16S000				(3)		(3)				(3)		(3)					

Sub-bases for analogue/counter I/O

	ABE-7CPA01																	
	ABE-7CPA02																	
	ABE-7CPA03																	
	ABE-7CPA21																	

(1) With Telefast 2 sub-bases with no channel LED.

(2) With splitter sub-base ABE-7ACC02.

(3) Sub-base ABE-7S16S2B2 only.

(4) Input only.

Pre-wired cables

(5) Power supply --- 24 V without cable.

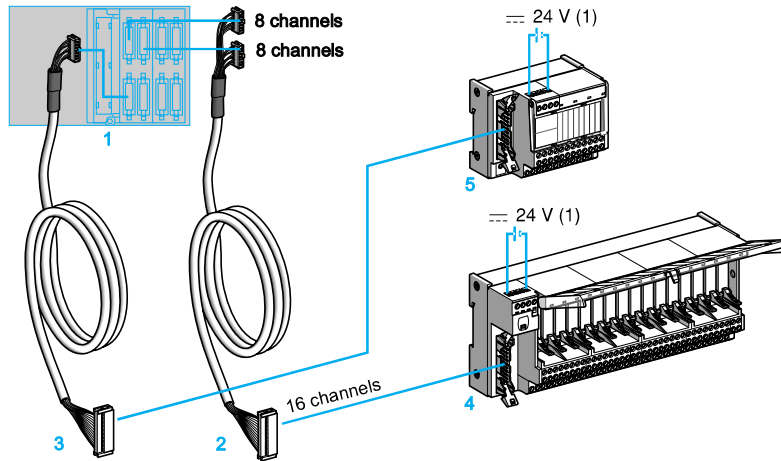
(6) Do not use with ABE-7ACC21/20.

(7) Cable with 25-way SUB-D connector at Telefast end. Labelled bare wires at PLC end.

Connection interfaces

Telefast® 2 pre-wired system
 Connection cables for Siemens S7 PLCs

Connection cables for Siemens S7 PLCs



- 1 The \sim 24 V power supply may be provided via 6EP5-... terminal blocks connected to the PLC modules. For the S7200/300/400 ranges, manufacturers cables are connected to terminal blocks via 16-way HE 10 connectors (6EP5-...-1AA00). Each connector integrates 8 channels.
- 2 Cables ABF-H28H... to connect 16-channel sub-bases. They are supplied with 2 x 16-way HE 10 connectors, fitted at the S7 PLC end and one 20-way HE 10 connector, at the Telefast end. Available in 1.5 and 3 metre lengths, AWG 26, these "Y" form cables only connect the I/O controlling the relay sub-bases.
- 3 Cables ABF-H14H... to connect 8-channel sub-bases. They are supplied with one 14-way HE 10 connector, at the S7 PLC end and one 20-way HE 10 connector, at the Telefast end. Available in 1.5 and 3 metre lengths, AWG 26, these cables are used to connect the I/O directly to the sub-bases.

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

Connection interfaces

Telefast® 2 pre-wired system
Siemens S7 PLC I/O modules

I/O modules for Siemens S7 PLCs

		Siemens											
		S7-200				S7-300				S7-400		00	
		Input/Output 14 I + 10 Q	Input 8 I	Output 8 Q	Input 16 I	Input 32 I	Output 16 Q	Output 32 Q	Ana. out. 4 Q	Input 32 I	Output 32 Q	Ana. inp. 8 I	Ana. out. 8 Q
Integral to the PLCs	6ES7-	214-1AC01-0XB0	221-1BF00-0XA0	222-1BF00-0XA0	321-1BH01-0AA0	321-1BL00-0AA0	322-1BH01-0AA0	322-1BL00-0AA0	332-5HD01-0AA0	421-1BL00-0AA0	422-1BL00-0AA0	431-1KF00-0AB0	432-1HF00-0AB0
Connection terminal blocks	6ES7-	Included	Included	Included	921-3AB00-0AA0	921-3AA20-0AA0	921-3AB00-0AA0	921-3AA20-0AA0	392-1AJ00-0AA0	921-4AB00-0AA0	921-4AB00-0AA0	492-1AL00-0AA0	492-1AL00-0AA0
Connection cables													
Modularity	16 channels	ABF-			H32 Hee0	H32 Hee0	H32 Hee0	H32 Hee0		H32 Hee0	H32 Hee0		
	8 channels	ABF-	S08 Hee2	S08 Hee3	H16 Hee0	H16 Hee0	H16 Hee0	H16 Hee0		H16 Hee0	H16 Hee0		
	Others	ABF-	S24 Hee0						F25 S200 (4)			F25 S200 (4)	F25 S200 (4)

Connection sub-bases

8 channels	ABE-7H08R●●/7H08S21												
12 channels	ABE-7H12R●●												
	ABE-7H12S21												
16 channels	ABE-7H16R●●/32E●●●/16C●●												
	ABE-7H16S21												
	ABE-7H16R23/7H16F43												
	ABE-7H16S43												

Input adaptation sub-bases

16 channels	ABE-7S16E2●●/7P16F3●●												
-------------	-----------------------	--	--	--	--	--	--	--	--	--	--	--	--

Output adaptation sub-bases

8 channels	ABE-7S08S2●●												
	ABE-7R08S●●●												
	ABE-7P08T330							(1)			(1)		
16 channels	ABE-7R16S●●●												
	ABE-7R16T●●●												
	ABE-7P16T●●● (3)												
	ABE-7S16S●●●							(2)	(2)		(2)		

Sub-bases for analogue/counter I/O


	ABE-7CPA01												
	ABE-7CPA02												
	ABE-7CPA03												
	ABE-7CPA21												

(1) With splitter sub-base ABE-7ACC02.

(2) Sub-base ABE-7S16S2B2 only.

(3) Do not use with ABE-7ACC21/20.

(4) Cable with 25-way SUB-D connector at Telefast end. Labelled bare wires at PLC end (see diagram on page 4/62)

 Pre-wired cables

4

Sub-base/removable output relay compatibility

Relay for sub-bases ABE-7●16T●●	Relay width 10 mm					Relay width 5 mm	
Relay	ABR-7S21	ABR-7S23	ABS-7SA2M	ABS-7SC2E	ABE-7ACC20	ABR-7S11	ABS-7SC1B
Function	Relay 1 N/O	Relay 1 C/O	Output ~ 230 V-0.5 A	Output ≡ 48 V-0.5 A	Continuity 0.5 A	Relay 1 N/O	Output ≡ 24 V-2 A

Sub-bases/modules

ABE-7●16T210		no effect					
ABE-7●16T111/M111							
ABE-7●16T212		no effect					
ABE-7●16T214		no effect					
ABE-7●16T215		no effect					
ABE-7●16T230							
ABE-7●16T231							

12.5 mm wide relays for sub-bases ABE-7●16T3●●

Relay	ABR-7S33	ABR-7S37	ABS-7SA3M	ABS-7SC3E	ABS-7SC3BA	ABE-7ACC21 (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-2A Protected	Continuity 0.5 A

Sub-bases/modules

ABE-7●16T318						
ABE-7●16T330						
ABE-7●16T332						
ABE-7●16T334						
ABE-7●16T370						
ABE-7P08T330						

Compatible

(1) Product mounted on removable input sub-bases ABE-7P16F3●●

General system environment

Approvals	UL, CSA		Entire range of sub-bases, except ABE-7●●●●E. Sub-bases with fixed screw terminal block only.
	LR0S, BV, GL, DNV		
Degree of protection	Conforming to IEC 60529		IP 2X
Protective treatment			"TC"
Resistance to incandescent wire	Conforming to IEC 60695-2-11	°C	750: extinguish time < 30 s
Shock resistance	Conforming to IEC 60068-2-27	ms	11 (half sine wave), 15 g (acceleration)
Vibration resistance	Conforming to IEC 60068-2-6	Hz	10...150, 2 g (acceleration)
Resistance to electrostatic discharge	Conforming to IEC 61000-4-2		Level 3
Resistance to radiated fields	Conforming to IEC 61000-4-3	MHz V/m	26...1000-Level 3 10
Resistance to fast transients	Conforming to IEC 61000-4-4		Level 3
Resistance to shockwaves	Conforming to IEC 61000-4-5	µs	1.2/50 - 8/20
Ambient air temperature	For operation, conforming to IEC 61131-2	°C	- 5...+ 60
	For storage, conforming to IEC 61131-2	°C	- 40...+ 80
Insulation voltage (for 1 minute)	Terminal/mounting rails	kV	2
Installation category	Conforming to IEC 60664-1		II
Degree of pollution	Conforming to IEC 60664-1		2
Mounting	Standard rail (conforming to IEC 60715)		15 mm high rail or solid plate with ABE-7ACC01
			1 conductor 2 conductors (1)
Cable c.s.a. Screw or spring terminals	Flexible cable without cable end	mm ² AWG	0.14...2.5 26...14 -
	Flexible cable with cable end	mm ² AWG	0.09...1.5 28...16 0.09...0.75 28...20
	Solid cable	mm ² AWG	0.14...2.5 26...12 0.2...2.5 24...14
Tightening torque	Using 3.5 mm screwdriver blade	Nm	0.6

(1) On screw terminal blocks only.

Presentation, compatibility:
pages 4/8 to 4/23

References :
pages 4/36 to 4/49

Dimensions, schemes :
pages 4/52 to 4/63

Connection interfaces

Telefast® 2 pre-wired system
 Passive connection sub-bases for discrete signals
 Removable relay sub-bases, equipped or non equipped

General characteristics

Type of sub-base	Passive connection sub-base for discrete signals							Removable relay sub-bases			
	H20E●●● H32E●●●	H16C●● H16CM	H16R●● H16S21 H16C31	H16R23	H16F43 H16S43	H12R●● H12S21	H08R●● H08S21	R16T2●● P16T2●● ●16T111 ●16M111	R16T3●● P08T330 P16T3●●	R16T370	P16F31●
Number of channels	16	16	16	16	16	12	8	16/8	16/8	16	16
Function											
Input	●	H16C	●	Type2(1)	H16S43	●	●	–	–	–	●
Output	●	H16C	●	–	H16F43	●	●	R16T2●● P16T2●● ●16T111 ●16M111	●	●	–
Input and output	–	H16CM●1	–	–	–	–	–	●16M111	–	–	–
Channel and power supply indication	Via green LED (for products equipped with indication)										
Blown fuse indication	–				Via red LED		–				

Power supply characteristics (PLC end)

Supply voltage	---	V	19 to 30 conforming to IEC 61131-2 (Un = 24)								
Maximum permissible supply current to each sub-base	---	A	1.8			6.1		4.1		1	
Voltage drop on power supply fuse	---	V	0.3			0.2		0.3			
Protection against power supply overloads and short-circuits by quick-blow fuse (supplied)	A		2		F43: 2 S43: 1		6.3		1		

Output circuit characteristics

Maximum voltage drop per channel	---	V	–			F43: 2 S43: 0.1		–		See relay characteristics on page 4/29			
Maximum permissible current per channel	---	mA	500			125		500		See temperature derating curves on page 4/32			
Maximum permissible current per output common	---	A	1.8			6.1		4.1		16 (screw terminals) 12 (spring terminals)		–	
Current drawn by channel LED at Un	---	mA	3.2		10		3.2						
Permissible leakage current without illuminating channel LED (PLC I/O connected)	---	mA	1.5		4		1.5						
Opening of blade isolators	Under no load												
Channel fuse protection (supplied with product)	A		–			0.125		–		0.5 (2)		2 (2)	–
Rated Insulation voltage conforming to IEC 60947-1 Coil circuit/contact circuits	V		–								300		
Rated impulse withstand voltage (1.2/50)	kV		–								2.5		

(1) Compatible with Modicon TSX Micro and Premium PLC inputs only, for connection of 2-wire sensors, d.c.
 (2) If the sub-bases are supplied with fuses (depending on model).

Connection interfaces

Telefast® 2 pre-wired system
 Solid state input sub-bases, soldered
 Removable input relays

Type of sub-base and relay	Solid state input sub-bases, soldered					Removable input relays							E.M. (1)
	ABE-7S16					ABS-7							
	E2B1	E2E1	E2E0	E2F0	E2M0	EC3AL	EC3B2	EC3E2	EA3E5	EA3F5	EA3M5	S33E	
	-					For mounting on sub-bases ABE-7P16F31●							

Control circuit characteristics for 1 channel (sensor end)

Rated voltage U_s	\equiv V	24	48	-	-	-	5 (TTL)	24	48	-	-	-	48
	50/60 Hz \sim V	-	-	48	110/130	230/240	-	-	-	48	110/130	230/240	-
Maximum voltage (IEC 61131-2) (including ripple)	\equiv V	30	60	-	-	-	6	30	60	-	-	-	60
	\sim V	-	-	53	143	264	-	-	-	53	143	264	-
Maximum current (Ie) at U_s	\equiv mA	12	13	-	-	-	15	15	15	-	-	-	13
	\sim mA	-	-	12	8.3	8	-	-	-	12	8.3	8	-
State 1 guaranteed $U \geq \dots / I \geq \dots$	\equiv V/mA	15/2	30/6	-	-	-	3.75/4.5	11/6	30/6	-	-	-	34/8.2
	\sim V/mA	-	-	32/5	79/5	164/4.5	-	-	-	32/5	79/5	164/4.5	-
State 0 guaranteed $U \leq \dots / I \leq \dots$	\equiv V/mA	5/2	10/2	-	-	-	2/0.09	5/2	10/2	-	-	-	3.6/0.8
	\sim V/mA	-	-	10/1.5	30/2	40/2	-	-	-	10/1.5	30/2	40/2	-
Conforming to IEC 61131-2		Type 1	Type 2	Type 1	Type 1	Type 1	-	Type 2	Type 2	Type 1	Type 1	Type 1	-
External protection	Quick-blow fuse (sized according to sensors)												
Removable terminal block	Yes						No						

Output circuit characteristics (PLC end)

Rated operational voltage U_e	\equiv V	24											
Minimum/maximum voltage (IEC 61131-2)	\equiv V	19/30											
Minimum/maximum switching current	\equiv mA	1/15											
Maximum residual current at state 0	\equiv mA	0.1											
Maximum voltage drop at state 1	\equiv V	1											
Internal protection		Against short-circuits	-										
Power supply protection		5 x 20 quick-blow fuse, 1 A											

Other characteristics

Maximum response time	0 → 1	ms	0.05	20	0.05	20	13 (2)
	1 → 0	ms	0.4	20	0.4	20	13 (2)
Maximum switching rate Duty cycle 50 %	Hz	1000	25	1000	25	5 (no load) 0.5 (at Ie)	
Dielectric strength to IEC 60947-1 Between input/output	V	2000 (50/60 Hz) - 1 mm					
Rated impulse withstand voltage (1.2/50) to IEC 60947-1 Input/output	kV	2.5					
Mechanical durability In millions of operating cycles		-					20

(1) Electromechanical.
 (2) Including bounce (max. 1.6 ms).

Type of sub-base and relay	Solid state output sub-bases, soldered			Removable solid state output relays					
	ABE-7S			ABS-7					
	●●S2B0 (1)	16S1B2	08S2B1 (1)	SC1B	SC2E	SA2M	SC3BA	SC3E	SA3M
	-			-	For sub-base ABE-7●16T21●		For mounting on sub-base ABE-7●16T3●●		

Control circuit characteristics for 1 channel (PLC end)

Number of channels		8 or 16	16	8	-	-	-	-	-	-
Rated voltage Us	≡ V	24								
Min/max voltage (IEC 61131-2)	≡ V	19/30								
Current per channel at Us (Channel + LED)	≡ mA	4.5 (including LED)			7 + 3.2	4 + 3.2	9 + 3.2	4 + 3.2	4 + 3.2	9 + 3.2
State 1 guaranteed (2)	≡ V	16.9			16	18.6		-	-	-
	≡ mA	3.1			5.5	2.9	6.5	2.9	2.9	6.5
State 0 guaranteed	≡ V	3.4			10	3.8	2.8	3.8	3.8	2.8
	≡ mA	0.4			-	-	-	-	-	-
Compatible with PLC output (1)	≡ mA	≤ 100	-	≤ 500	All types of output					
Power supply protection		2 A quick-blow fuse			See sub-base characteristics page 4/27					

Output circuit characteristics (preactor end)

Maximum current per common	Spring	A	≡ 8	≡ 9	≡ 10	-	≡ 12	~ 12	≡ 12	≡ 12	~ 12
	Screw	A	≡ 8	≡ 9	≡ 10	12	≡ 16	~ 16	≡ 16	≡ 16	~ 16
Switching current per channel (5)		A	≡ 0.5	≡ 0.7	≡ 2	≡ 2	≡ 0.5	~ 0.5	≡ 2	≡ 1.5	~ 1.5
Rated operational voltage Ue		V	24			≡ 24	≡ 5-48	~ 24/240	≡ 24	≡ 5 to 48	~ 24 to 240
Maximum voltage (IEC 61131-2)		V	30			≡ 30	≡ 57.6	~ 264	≡ 30	≡ 60	~ 264
Maximum residual voltage at In		V	0.6	0.3	0.5	≡ 0.12	≡ 1	~ 1.1	0.3	≡ 1.3	~ 1.3
Rated operational current Ie ≤ 60 °C Maximum per channel	DC12	A	0.5	0.7	2	2	0.5	-	2	1.5	-
	DC13	A	0.5	0.7	1 (3)	2	0.5	-	2	1.5	-
	AC12	A	-	-	-	-	-	0.5	-	-	1.5
	AC14	A	-	-	-	-	-	0.5	-	-	0.7
	DC6	W	10	-	-	-	10	-	10	-	-
Minimum current per channel		mA	1			≡ 1	≡ 1	~ 10	≡ 10	≡ 1	~ 10
Maximum residual current		mA	0.3	0.5	-	0.1	≡ 0.5	~ 2	≡ 2	≡ 0.3	~ 2
Faults detected			Auto-protected Overload and short-circuit			-	-	-	Auto-protected Overload & short-circuit	-	-
Report of fault detected (4)			Yes	No	Yes	Non	-	-	-	-	-
Switchable inductive energy L/R (without additional discharge device)		ms	≤ 400/(U.I)		≤ 1700/(U.I)	2 (U.I)	-	-	≤ 1700/(U.I)	-	-
Circuit-breaker threshold		A	≥ 0.75		≥ 2.6	-	-	-	2.5	-	-
External protection			By adjustable quick-blow fuse								
Removable terminal block			Yes			No					

Other characteristics

Rated Insulation voltage Conforming to IEC 60947-1	V	Not insulated			300						
Maximum response times on resistive loads	0 → 1	ms	0.1	0.2	0.1	0.01	0.1	10	0.2	0.1	10
	1 → 0	ms	0.02	0.1	0.02	0.4	0.6	10	0.1	0.6	10
Switching frequency on inductive loads	Hz	< 0.6/ Lp			< 0.5/ Lp	300					
Rated impulse withstand voltage	V	-			2.5	-					

- (1) Only for use on PLC modules (output interfaces) with integral protection (auto-protected outputs).
 (2) On versions with LED indication.
 (3) With free-wheel diode on load, the DC13 value is equal to the value of DC12 x 0.9.
 (4) A fault on a sub-base output Qn will set PLC output Qn to safety mode, which will be detected by the PLC.
 (5) See derating curves page 4/32.

Connection interfaces

Telefast® 2 pre-wired system
 Electromechanical output relay sub-bases, soldered
 Removable electromechanical output relays

Type of sub-base and relay	E.M. output relay sub-bases, soldered			Removable electromechanical output relays				
	ABE-7			ABR-7				
	R00S111	R00S210	R00S216	S21	S23	S33	S37	S11
			For mounting on sub-base ABE-7					
			P16T210	P16T230	P16T300	R16T370	P16T111	P16M111

Control circuit characteristics for 1 channel (PLC end)

Rated voltage Us		V	24					
Tripping threshold at 40 °C		V	19.2	19.7	19.2 (1)	19.7	16.8	16.8
Drop-out voltage at 20 °C		V	2.4			2.4	3.6	2
Maximum operational voltage		V	30					
Maximum current at Us per channel	Coil + LED	mA	9 + 3.2	15 + 3.2	12.5 + 3.2	15 + 3.2	25 + 3.2	7 + 3.2
Drop-out current at 20 °C		mA	0.5	1	–	1	3.5	0.5
Maximum dissipated power at Us		W	0.22	0.36	0.3	0.36	0.6	0.170
Loss of voltage	Max. time not affecting the hold	ms	5		3	5		1
Power supply protection			1A quick-blow fuse					

Contact characteristics (preactuator side, at ambient temperature of 20 °C)

Contact composition			1N/O	1N/O	1N/O	1N/O	1C/O	1C/O	2C/O	1N/O
Maximum switching voltage	To IEC 60947-5-1	V	250		380	250		264		250
		V	30		220	130		130		30
Frequency of operational current		Hz	50/60							
			4 (08S111)		Volt-free		4		4	
			8 (16S111)		8					
Maximum current per channel (limited by sub-base)	Volt-free	A	–	5	2 A	5	5	5	5	5
	With common	A	2	4	–	4	4	5	–	3
Maximum current per common	Screw	A	12	10	–	16	16	12		12
	Spring	A	12	10	–	12	–	12		–
Relay maximum current (Ith)		A	2	5	5	5	5	10	8	6
Current for 500 000 operating cycles	24 V DC 12	A	0.6	1.5	2	1.5	1.2	3	2.5	3
	24 V L/R = 10 ms DC 13	A	0.2	0.6	1.5	0.6	0.45	1.4	1	0.5
	230 V AC 12	A	0.6	1.5	2	1.5	1.2	3	2.5	2
	230 V AC 15	A	0.4	0.9	1	0.9	0.7	1.7	1.3	0.4
Minimum switching current	At 5 V minimum voltage	mA	1	10	2	10		100		100
Short-circuit protection	For I _k < 1 kA (–) and < 100 A (–)		High breaking capacity fuse							
Fuse fitted as standard/channel		A	–		–	0.5		2		–
Low level contact reliability			17 V/5 mA		10 V/2 mA	17 V/10 mA				Please consult us
Number of faults	(1/n million operating cycles)		1/100		1/2	1/100		1/100		
Removable terminal block			Yes			No				

Other characteristics (at ambient temperature of 20 °C)

Maximum operating time at Us (including bounce)	Between energisation of the coil and closing of the N/O contact	ms	10		5	10		13	15	5
	Between de-energisation of the coil and opening of the N/O contact	ms	6	5	4	5		13	20	2.5
Maximum bounce time	N/O contact	ms	5		2	5		1.6	4	1.5
	N/C contact	ms	–		–	–	7.5	5.5	7.5	–
Maximum operating rate	No load		10 Hz		180/min	10 Hz		5 Hz		1200/min
	At I _e		0.5 Hz		30/min	0.5 Hz				6/min
Mechanical durability	In millions of operating cycles		20		20	20				20
Dielectric strength	Conforming to IEC 60947-1	V	2000 (50/60 Hz) - 1 mm							4
Rated impulse withstand voltage (1.2/50)	Conforming to IEC 60947-1	kV	2.5		5	2.5				6
(1) latching										

Presentation, compatibility: pages 4/8 to 4/23

References : pages 4/36 to 4/49

Dimensions, schemes : pages 4/52 to 4/63

General characteristics

Type of accessory	ABE-7	ACC02	ACC20 (1)	ACC21 (1)	ACC80	ACC81	ACC82	ACC83	BV10	BV20
Description		Splitter sub-base	Removable continuity blocks with internal fuse		Enclosure feedthrough				Additional clip-In terminal block	
Number of channels		16/2 x 8	1	1	32/2 x 16	32/2 x 16	16	8 or 12	8	16
Type of connector/number of ways at PLC end		1 x HE 10 20-way	–	–	2 x HE 10 20-way	–	1 x HE 10 20-way	1 x HE 10 20-way	–	–
Type of connector/number of ways at operative part end		2 x HE 10 20-way	–	–	Industrial 40-way Female	Male	Cylind. M23 CNOMO 19-way, female		–	–
Min/max connectable c.s.a.	mm ²	–	–	–	0.75/2.5	0.5/1.5	0.75/2.5		0.14/2.5	
Min/max cable diameter	mm	–	–	–	–	10...19	–		–	
Type of terminal block		–	–	–	Spring or screw	Spring or screw	Spring or screw	Spring or screw	Screw	Screw
Protection Index		IP 20	IP 20	IP 20	IP 65	IP 65	IP 65	IP 65	IP 65	IP 65
Rated voltage Us	V	– 24	– 24	– 24	– 24	– 24	– 24	– 24	– 24	– 24
Maximum current at Us per channel	A	0.5	–	–	0.5	0.5	0.5	0.5	0.5	0.5
Maximum supply current at Us	A	2	–	–	4 (2 x HE 10)	4	2	6	16	16
Switching capacity	A	–	0.5	–	–	–	–	–	–	–
Circuit-breaker threshold	V	–	0.5	–	–	–	–	–	–	–

General characteristics (continued)

Type of sub-base	ABE-7	CPA01	CPA11	CPA12	CPA02	CPA21	CPA03	CPA31	CPA13	TES 160
Description		Analogue counter	Counter/motion	Thermo-couple	Analogue signal connection sub-base				Safety	Simulation and forcing sub-base
Number of channels		(2)	1	16 (Telefast CJC mode) (3) 14 (external CJC mode)	8 passive connection point to point	4 passive connection point to point	8 sensor supply distribution	8 isolated, isolated sens. supply distribution	12 double contact emergency stops	16
Protection Index		IP 20								
Power supply	V	–	11...30 5...6	–	–	–	24 IEC	24 IEC Isolated –/–	24 IEC –20+25 %	–
Automatic limitation perchannel	mA	–	–	–	–	–	25	–	–	–
Maximum consumption	mA	–	130	–	–	–	300	–	–	–
Operating temperature	°C	–	0...60	–	–	–	–	–	–10...+ 60	–
Dielectric strength, channel/earth	V	–	1000	–	–	–	1000	–	700	–
Isolation between channels	V	–	–	–	–	–	1000	–	–	–
Logic		Positive or negative (4)								
Compatibility with encoder output		Totem-pole 10...30 V 5V DC RS422	Totem-pole 11...30 V TTL 5 V transistors open collectors 11...30 V	–	–	–	–	–	–	–
Low input voltage (VIL)	V	–	0<VIL<2.4	–	–	–	–	–	–	–
High input voltage (VIH)	V	–	3.9<VIH<30	–	–	–	–	–	–	–
Connection, process side		Fixed screw terminal block						Removable screw term.	Fixed screw terminals	–
Connection, PLC side		SUB D 15-way female	SUB D 15-way male	2 x SUB D 25-way male	1 x SUB D, 25-way male			–	1 x SUB D 50-way	1 x HE 10, 20-way and screw term.
Overvoltage protection on current inputs		–	–	–	–	–	Zener 8.5 V		–	
Current loop continuity		–	–	–	–	–	Zener 8.5 V		–	
Maximum overvoltage on inputs	V	–	–	–	–	–	± 30		–	
Maximum current on inputs	mA	–	–	–	–	–	± 30		–	
Standards		–	–	–	–	–	IEC 601131, CSA22 2, UL 508 (5)			
Permissible common mode voltage between channels	V	–	–	– 250	–	–	–	–	–	
Permissible common mode voltage between channel and earth	V	–	–	– 250	–	–	–	–	–	
Maximum current on integrated commons	A	–	–	–	–	–	–	–	2	
Rated voltage Us	V	–	–	–	–	–	–	–	–	– 24

(1) See sub-base compatibility, page 4/26.

(2) 1 channel for TSX CTZ1A, 2 for TSX CTZ2A, 8 for TSX 37-22

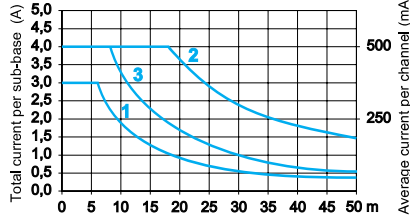
(3) CJC: Cold Junction Compensation

(4) Positive: U < 2.4 V 0L, U > 3.9 V 1L; Negative: U < 2.4 V 1L, U > 3.9 V 0L

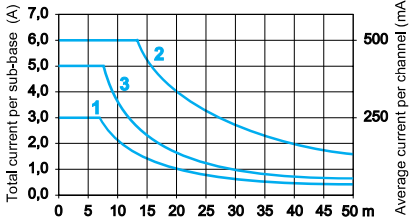
(5) Add standard BG for ABE-7CPA13

Calculation curves to determine the cable and its length according to the current (1)

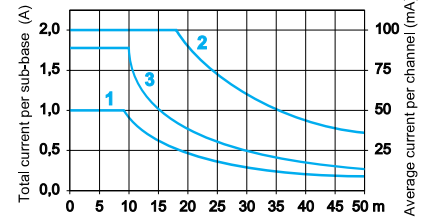
8-channel sub-base



12-channel sub-base



16-channel sub-base

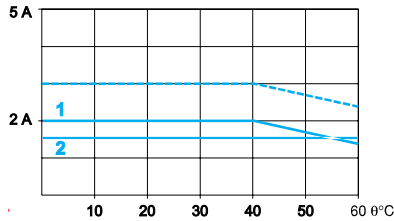


1 TSX CDP●●2 and ABF-H20H●●0 cables with 0.08 mm² c.s.a. (AWG 28).
 2 TSX CDP●●3 cables with 0.34 mm² c.s.a. (AWG 22).

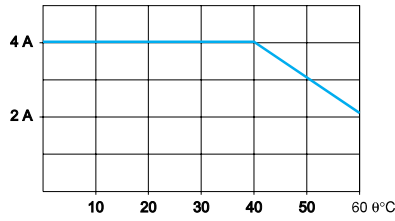
3 Cables with 0.13 mm² c.s.a. (AWG 26).

Temperature derating curves for sub-bases and removable relays (2)

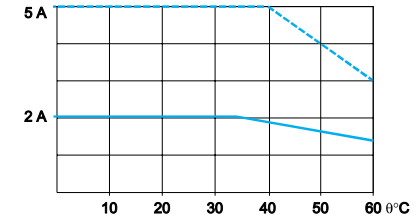
ABE-7R●●S111 1, ABE-7R1●●S212 2



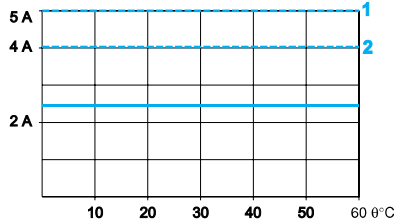
ABE-7P16T214



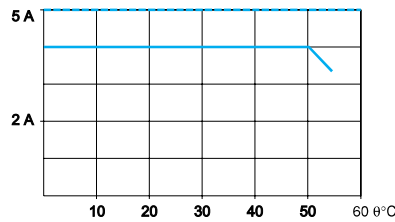
ABE-7P16T215, ABE-7P16T23●



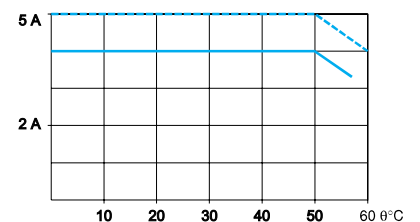
ABE-7●16T21● 1, ABE-7P16T334 2



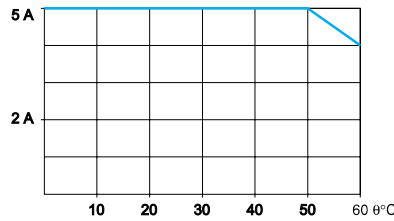
ABE-7●16T332, ABE-7P16T318



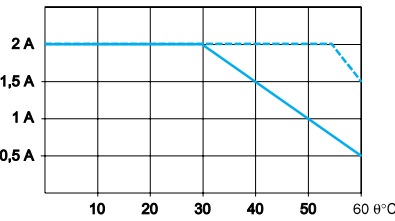
ABE-7●16T330



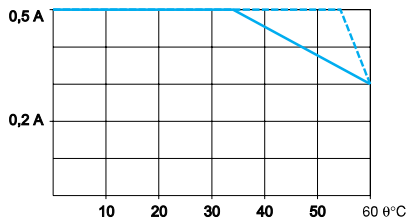
ABE-7R16T370



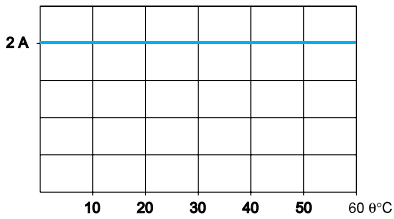
ABS-7SC1B



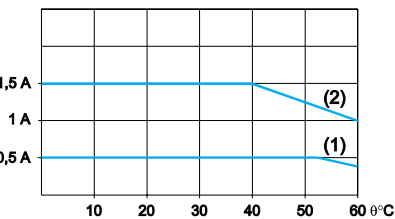
ABE-7SA2M



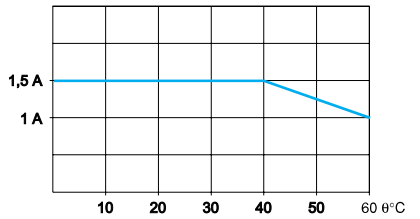
ABS-7SC3BA



ABS-7SC2E (1) + ABS-7SC3E (2)



ABS-7SA3M



———— 100 % of channels used
 - - - - 50 % of channels

(1) The curves are given for a voltage drop of 1 V in the cable. For n volts tolerance, multiply the length determined from the graph by n.
 (2) There is no derating for ABE-7S08S2B1, ABE-7S●●S2B0, ABE-7S16S2B2 output sub-bases, or for ABS-7EC●●● and ABE-7EA●●● solid state input relays.

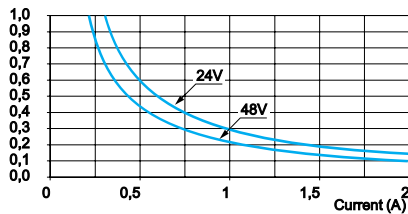
Presentation, compatibility:
 pages 4/8 to 4/23

References :
 pages 4/36 to 4/49

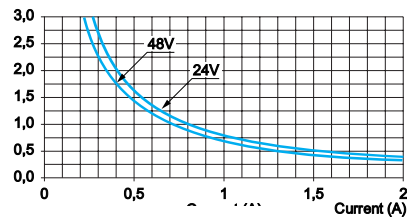
Dimensions, schemes :
 pages 4/52 to 4/63

Electrical durability (in millions of operating cycles) (conforming to IEC 60947-5-1)

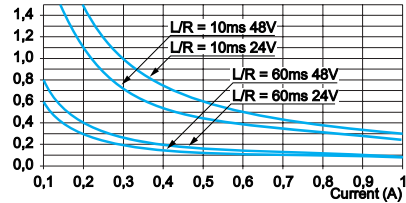
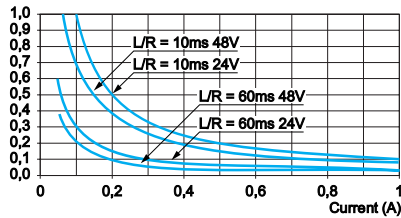
ABE-7R●●S111
d.c. loads
DC12 curves (1)



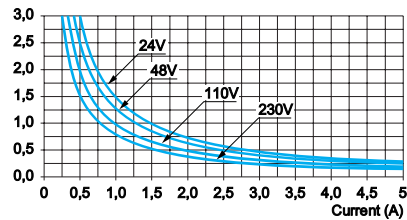
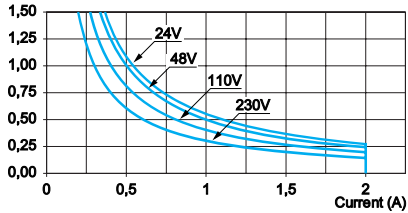
ABE-7R●●S2●●, ABR-7S2● (6), ABE-7R16T2●●



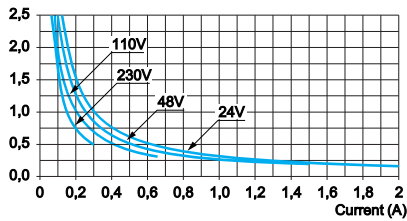
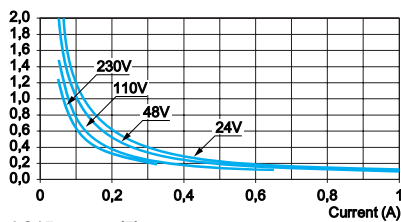
DC13 curves (2)



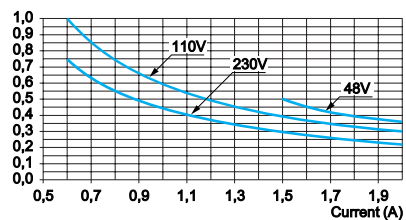
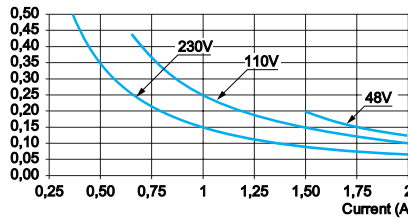
a.c. loads
AC12 curves (3)



AC14 curves (4)



AC15 curves (5)



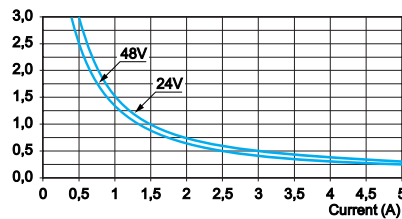
- (1) DC12: control of resistive loads and of solid state loads isolated by optocoupler, $I/R \leq 1$ ms
- (2) DC13: control of electromagnets, $L/R \leq 2 \times (U_e \times I_e)$ in ms, U_e : rated operational voltage, I_e : rated operational current (with a protective diode on the load, DC12 curves must be used with a coefficient of 0.9 applied to the number in millions of operating cycles).
- (3) AC12: control of resistive loads and of solid state loads isolated by optocoupler, $\cos \varphi \geq 0.9$
- (4) AC14: control of small electromagnetic loads ≤ 72 VA, make: $\cos \varphi = 0.3$, break: $\cos \varphi = 0.3$
- (5) AC15: control of electromagnetic loads > 72 VA, make: $\cos \varphi = 0.7$, break: $\cos \varphi = 0.4$
- (6) Multiply all durability values by 0.75 for ABS-7S23 and for ABR-7S37

Electrical durability (in millions of operating cycles) (conforming to IEC 60947-5-1)

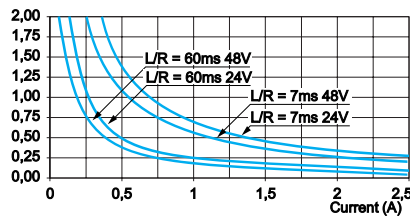
ABR-7S3● (1), ABE-7P16T3●● and ABE-7R16T3●●

d.c. loads

DC12 curves (2)

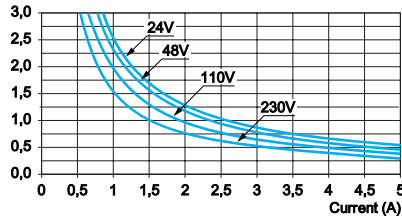


DC13 curves (3)

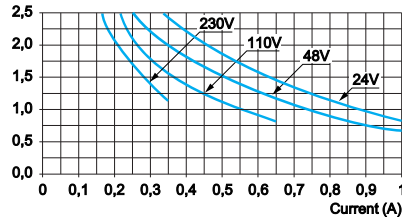


a.c. loads

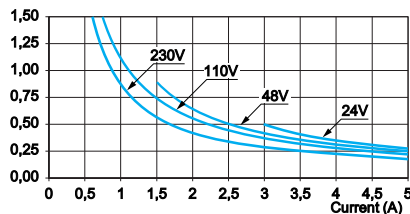
AC12 curves (4)



AC14 curves (5)



AC15 curves (6)



(1) Multiply all the durability values by 0.75 for ABS-7S23 and for ABR-7S37

(2) DC12: control of resistive loads and of solid state loads isolated by optocoupler, $I/R \leq 1$ ms

(3) DC13: control of electromagnets, $L/R \leq 2 \times (U_e \times I_e)$ in ms, U_e : rated operational voltage, I_e : rated operational current (with a protective diode on the load, DC12 curves must be used with a coefficient of 0.9 applied to the number in millions of operating cycles).

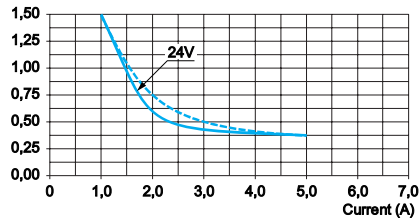
(4) AC12: control of resistive loads and of solid state loads isolated by optocoupler, $\cos \varphi \geq 0.9$

(5) AC14: control of small electromagnetic loads ≤ 72 VA, make: $\cos \varphi = 0.3$, break: $\cos \varphi = 0.3$

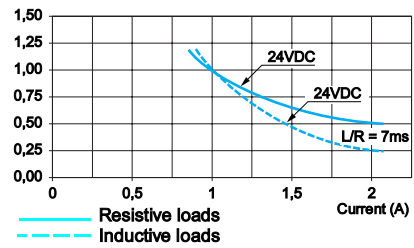
(6) AC15: control of electromagnetic loads > 72 VA, make: $\cos \varphi = 0.7$, break: $\cos \varphi = 0.4$

Electrical durability (in millions of operating cycles) (conforming to IEC 60947-5-1)

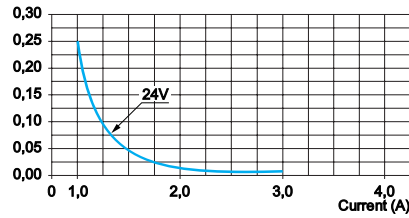
ABE-7R16●111
d.c. loads
DC12 curves (1)



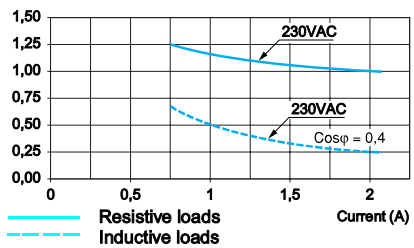
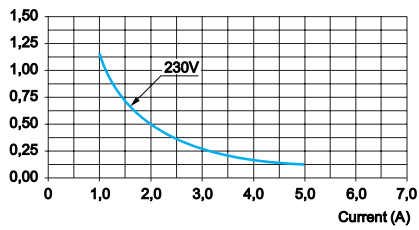
ABE-7R08S216



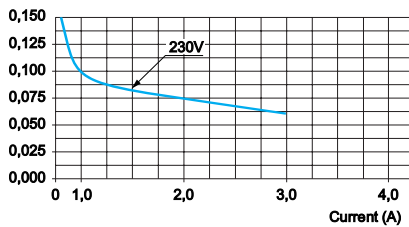
DC13 curves (2)



a.c. loads
AC12 curves (3)



AC15 curves x(4)



(1) DC12: control of resistive loads and of solid state loads isolated by optocoupler, $I/R \leq 1$ ms
 (2) DC13: control of electromagnets, $L/R \leq 2 \times (U_e \times I_e)$ in ms, U_e : rated operational voltage, I_e : rated operational current (with a protective diode on the load, DC12 curves must be used with a coefficient of 0.9 applied to the number in millions of operating cycles).
 (3) AC12: control of resistive loads and of solid state loads isolated by optocoupler, $\cos \varphi \geq 0.9$
 (4) AC15: Control of electromagnetic loads > 72 VA, make: $\cos \varphi = 0.7$, break: $\cos \varphi = 0.4$



Connection interfaces

Telefast® 2 pre-wired system
Passive connection sub-bases

Passive connection sub-bases for discrete signals



ABE-7H20E...

"Low cost" sub-bases

Function	No. of channels	No. of terminals per channel	For PLCs on row number	For PLCs	Length of PLC connection cable m	Type of connection	Reference	Weight kg		
Input or Output	16	1	2	Modicon TSX Micro/Premium	1	Screw	ABE-7H20E100	0.330		
					2	Screw	ABE-7H20E200	0.410		
					3	Screw	ABE-7H20E300	0.480		
						Siemens S7	1.5	Screw	ABE-7H32E150	0.360
							3	Screw	ABE-7H32E300	0.460

"Miniature" sub-bases

Function	No. of channels	No. of terminals per channel	LED per channel	Polarity distribution	Type of connection	Reference	Weight kg	
Input or Output	16	1	1	No	No	Screw	ABE-7H16C10	0.160
				Yes	No	Screw	ABE-7H16C11	0.160
				Yes	0 or 24 V	Screw	ABE-7H16C21	0.205
		3	3	Yes	0 and 24 V	Screw	ABE-7H16C31	0.260
Input and Output(1)	16	1	1	Yes	No	Screw	ABE-7H16CM11	0.160
							2	2

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

Connection interfaces

Telefast® 2 pre-wired system
Passive connection sub-bases



816464
ABE-7H16R50



816465
ABE-7H16R31



816466
ABE-7H16S43

Passive connection sub-bases for discrete signals (continued)

Function	No. of channels	No. of terminals per channel	No. of rows	LED per channel	Polarity	Isolator (I) distribution Fuse (F) per channel	Type of connection	Reference	Weight kg
Input or Output	8	1	1	No	No	–	Screw	ABE-7H08R10	0.187
				Yes	No	–	Screw	ABE-7H08R11	0.187
	2	2	2	Yes	0 or 24 V	–	Screw	ABE-7H08R21	0.218
						I	Screw	ABE-7H08S21	0.245
				No	No	–	Screw	ABE-7H12R10	0.274
						–	Screw	ABE-7H12R11	0.274
	2	2	2	No	0 or 24 V	–	Screw	ABE-7H12R20	0.300
						–	Screw	ABE-7H12R21	0.300
				Yes	0 or 24 V	–	Screw	ABE-7H12S21	0.375
						I	Screw	ABE-7H12S21	0.375
				No	No	–	Screw	ABE-7H16R10	0.274
						–	Screw	ABE-7H16R11	0.274
No	No	–	Spring	ABE-7H16R11E	0.274				
		–	Screw	ABE-7H16R50	0.196				
No	No	–	Spring	ABE-7H16R50E	0.196				
		–	Screw	ABE-7H16R20	0.300				
Yes	0 or 24 V	–	Screw	ABE-7H16R21	0.300				
		–	Spring	ABE-7H16R21E	0.300				
No	No	–	Screw	ABE-7H16S21	0.375				
		–	Spring	ABE-7H16S21E	0.375				
No	0 and 24 V	–	Screw	ABE-7H16R30	0.346				
		–	Screw	ABE-7H16R31	0.346				
Type 2 Input (1)	16	2	2	Yes	0 and 24 V	–	Screw	ABE-7H16R23	0.320
Input	16	2	1	Yes	24 V	I, F (2)	Screw	ABE-7H16S43	0.640
Output	16	2	1	Yes	0 V	I, F (2)	Screw	ABE-7H16F43	0.640

(1) For Modicon TSX Micro, Premium and Numerical Controller NUM 1020/1060.
(2) With LED to indicate blown fuse.

Connection interfaces

Telefast® 2 pre-wired system
Connection sub-bases with soldered relays and plug-in terminal blocks

816457



ABE-7S16E2●●

Sub-bases with soldered solid state inputs, plug-in terminal blocks

Number of channels	No. of terminals per channel	Isolation PLC/application	Voltage V	Type of connection	Reference	Weight kg
16	2	Yes	--- 24	Screw	ABE-7S16E2B1	0.370
				Spring	ABE-7S16E2B1E	0.370
			--- 48	Screw	ABE-7S16E2E1	0.370
				Spring	ABE-7S16E2E1E	0.370
			~ 48	Screw	ABE-7S16E2E0	0.386
				Spring	ABE-7S16E2E0E	0.386
			~ 110	Screw	ABE-7S16E2F0	0.397
				Spring	ABE-7S16E2F0E	0.397
			~ 230	Screw	ABE-7S16E2M0	0.407
				Spring	ABE-7S16E2M0E	0.407

Sub-bases with soldered solid state outputs, plug-in terminal blocks

No. of channels	Isolation PLC/application	Output voltage V	Output current A	Fault detection signal (1)	Type of connection	Reference	Weight kg
8	No	--- 24	0.5	Yes (2)	Screw	ABE-7S08S2B0	0.252
					Spring	ABE-7S08S2B0E	0.252
			2	Yes (2)	Screw	ABE-7S08S2B1	0.448
					Spring	ABE-7S08S2B1E	0.448
16	No	--- 24	0.5	Yes (2)	Screw	ABE-7S16S2B0	0.405
					Spring	ABE-7S16S2B0E	0.405
			No		Screw	ABE-7S16S1B2	0.400
					Spring	ABE-7S16S1B2E	0.400

Sub-bases with soldered electromechanical relays, plug-in terminal blocks

No. of channels	Relay width mm	No. of contacts	Output current A	Polarity distribution/application	Type of connection	Reference	Weight kg	
8	5	1 "N/O"	2	Contact common per group of 4 channels	Screw	ABE-7R08S111	0.244	
					Spring	ABE-7R08S111E	0.244	
		Bistable	2	Volt-free	Screw	ABE-7R08S216	0.250	
					Spring	ABE-7R08S216E	0.250	
		10	1 "N/O"	5	Volt-free	Screw	ABE-7R08S210	0.352
						Spring	ABE-7R08S210E	0.352
16	5	1 "N/O"	2	Contact common per group of 8 channels	Screw	ABE-7R16S11	0.352	
					Spring	ABE-7R16S111E	0.352	
	10	1 "N/O"	5	Volt-free	Screw	ABE-7R16S210	0.547	
					Spring	ABE-7R16S210E	0.547	
	Common per group of 8 chan. on both poles				Screw	ABE-7R16S212	0.547	
					Spring	ABE-7R16S212E	0.547	

(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.

Presentation, compatibility:
pages 4/8 to 4/23

Characteristics:
pages 4/26 to 4/35

Dimensions, schemes:
pages 4/52 to 4/63

Connection interfaces

Telefast® 2 pre-wired system
Plug-in relay sub-bases

816489



ABE-7R16T210

Sub-bases for plug-in solid state input relays (1)

No. of channels	Terminals/channel	For relay type	Isolation PLC/application	Input connection	Type of connection	Reference	Weight kg
16	2	ABS-7E ABR-7 ABS-7S33E	Yes	Volt-free	Screw	ABE-7P16F310	0.850
					Spring	ABE-7P16F310E	0.850
					Polarity distribution	Screw	ABE-7P16F312

816471



ABE-7R16M111

Output sub-bases, equipped with plug-in electromechanical relays (2)

No. of channels	Relay width mm	Type of relay	No. and type of contacts	Polarity distribution/application	Reference	Weight kg
16	5	ABR-7S11	1 N/O	Contact common per group of 4 channels	ABE-7R16T111	0.600
				Contact common per group of 4 output channels + 2 input common terminals	ABE-7R16M111 (3)	0.600
10	ABR-7S21	1 N/O	1 N/O	Volt-free	ABE-7R16T210	0.735
				Common on both poles (4)	ABE-7R16T212	0.730
				ABR-7S23	1 C/O	Contact common (4)
12	ABR-7S33	1 C/O	1 C/O	Volt-free	ABE-7R16T230	0.775
				Volt-free	ABE-7R16T330	1.300
				Common on both poles (5)	ABE-7R16T332	1.200
	ABR-7S37	2 C/O		Volt-free	ABE-7R16T370	1.300

(1) Not equipped with relays.

(2) Both technologies (electromechanical and solid state) may be combined on the same sub-base.

(3) 2 connection methods are available, enabling inputs and outputs to be connected to the same sub-base at the same time.

(4) Per group of 8 channels.

(5) Per group of 4 channels.

Connection interfaces

Telefast® 2 pre-wired system
Plug-in relay sub-bases

Sub-bases for solid state and/or electromechanical output relays, plug-in (1)

No. of Relay chan- nels	width mm	For relay type	Isolator per channel	Fuse per channel	Polarity distribution/ application	Type of connection	Reference	Weight kg		
16	5	ABR-7S11 ABS-7SC1B	No	No	Contact common per group of 4 channels		ABE-7P16T111	0.550		
							ABE-7P16M111 (2)	0.550		
10		ABR-7S2● ABS-7SA2● ABS-7SC2● ABE-7ACC20	No	No	Volt-free	Screw	ABE-7P16T210 (3)	0.615		
							ABE-7P16T230 (3)	0.655		
						Spring	ABE-7P16T230E (3)	0.655		
					Yes	Volt-free	Screw	ABE-7P16T214	0.675	
					No	Common on both poles (4)	Screw	ABE-7P16T212	0.615	
					Yes	Common on both poles (4)	Screw	ABE-7P16T215	0.670	
8	12	ABR-7S33 ABS-7SA3● ABS-7SC3●● ABE-7ACC21	No	No	Volt-free	Screw	ABE-7P08T330	0.450		
						Spring	ABE-7P08T330E	0.450		
16	12	ABR-7S33 ABS-7SA3● ABS-7SC3●● ABE-7ACC21	No	No	Volt-free	Screw	ABE-7P16T330	0.900		
						Spring	ABE-7P16T330E	0.900		
							ABE-7P16T332	0.900		
						Common on both poles (5)	Screw	ABE-7P16T334	0.900	
					Yes	Yes	Common on both poles (5)	Screw	ABE-7P16T318	1.000
							Spring	ABE-7P16T318E	1.000	

816473



ABE-7P16T200

- (1) Not equipped with relays
(2) 2 connection methods are available, enabling inputs and outputs to be connected to the same sub-base at the same time.
(3) With relay ABR-7S21 for sub-base ABE-7P16T210, with relay ABR-7S23 for sub-base ABE-7P16T230.
(4) Per group of 8 channels.
(5) Per group of 4 channels.

Presentation, compatibility:
pages 4/8 to 4/23

Characteristics:
pages 4/26 to 4/35

Dimensions, schemes:
pages 4/52 to 4/63

Connection interfaces

Telefast® 2 pre-wired system
Plug-in relays

Plug-in solid state relays (Order in multiples of 4)

Relay width mm	Func-tions	Input circuit		Output circuit		Unit reference	Weight kg	
		Current	Nominal voltage V	Current (1) A	Nominal voltage V			
5	Output	---	24	2	--- 24	ABS-7SC1B	0.010	
10	Output	---	24	0.5	--- 5...48	ABS-7SC2E	0.016	
					~ 24...240	ABS-7SA2M	0.016	
12	Input	---	5 TTL		--- 24	ABS-7EC3AL	0.014	
			24 Type 2	-	--- 24	ABS-7EC3B2	0.014	
			48 Type 2	-	--- 24	ABS-7EC3E2	0.014	
			~ 50 Hz	48	-	--- 24	ABS-7EA3E5	0.014
			~ 60 Hz	110...130	-	--- 24	ABS-7EA3F5	0.014
			~ 50 Hz	230...240	-	--- 24	ABS-7EA3M5	0.014
Output	---	24		2 Self-protected	--- 24	ABS-7SC3BA	0.016	
				1.5	--- 5...48	ABS-7SC3E	0.016	
				1.5	~ 24...240	ABS-7SA3MA	0.016	

Plug-in electromechanical relays

Relay width mm	Control voltage V	Output current (1) A (lth)	No. of contacts	Order in multiples of	Unit reference	Weight kg
5	--- 24	5	1 N/O	4	ABR-7S11	0.005
10	--- 24	5	1 N/O	4	ABR-7S21	0.008
			1 C/O	4	ABR-7S23	0.008
12	--- 24	10	1 C/O	4	ABR-7S33	0.017
		8	2 C/O	4	ABR-7S37	0.017
		--- 48	8	1 C/O	4	ABR-7S33E

Accessory

Description	Reference	Weight kg
Extractor for 5 mm miniature relays	ABE-7ACC12	0.010

(1) See characteristics table for specifications of relays in the sub-bases



ABS-7SC1B



ABR-7S21



ABR-7S33

Connection interfaces

Telefast® 2 pre-wired system
Connection sub-bases for counter and analogue channels

816477



ABE-7CPA02

Connection sub-bases for counter and analogue channels (1)

Functions	For PLCs	Compatible modules	Type of connection Telefast 2 side	Type of connection	Reference	Weight kg
Counting and analogue	Modicon TSX Micro (1)	Integrated analogue and counter TSX 37.22 TSX CTZ●A	15-way SUB-D	Screw	ABE-7CPA01 (2)	0.300
Counting Axis control Position control	Modicon TSX Premium (1)	TSX CTY●A TSX CAY●1	15-way SUB-D	Screw	ABE-7CPA01 (2)	0.300
Parallel output absolute encoder connection	Modicon TSX Premium	TSX CTY●A TSX CAY●1	15-way SUB-D	Screw	ABE-7CPA11	0.330
Distribution of 16 thermocouples	Modicon TSX Premium	TSX AEY1614	25-way SUB-D	Screw	ABE-7CPA12	0.300
Passive distribution of 8 channels on screw terminal block with shielding continuity	TSX 47/107 Modicon TSX Premium (1)	TSX AEM8●1 TSX AEM16●● TSX ASY810 TSX AEY1600 TSX A●Y800	25-way SUB-D	Screw	ABE-7CPA02	0.290
Distribution of 4 analogue output channels	Modicon TSX Premium (1)	TSX ASY410 TSX AEY420	25-way SUB-D	Screw	ABE-7CPA21	0.210
Distribution and supply of 8 analogue channels with limitation of each current loop	TSX 47/107 Modicon TSX Premium (1)	TSX AEM8●1 TSX AEM16●● TSX AEY800 TSX AEY1600	25-way SUB-D	Screw	ABE-7CPA03	0.330
Distribution and supply of 8 analogue input channels isolated from each other with 25 mA/channel limiter	Modicon TSX Premium (1)	TSX AEY810	25-way SUB-D	Screw	ABE-7CPA31	0.410
				Spring	ABE-7CPA31E	0.410
Safety	Modicon TSX Premium (1)	TSX PAY2●2	25-way SUB-D	Screw	ABE-7CPA13	0.290

(1) For other PLCs, see compatibility tables on pages 4/19 to 4/23.

(2) See installation procedure in TSX 37E manual

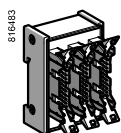
Presentation, compatibility:
pages 4/8 to 4/23

Characteristics:
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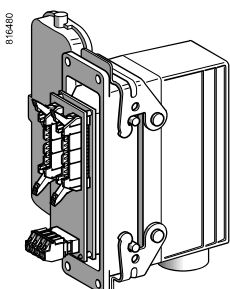
Dimensions, schemes:
pages 4/52 to 4/63

Connection interfaces

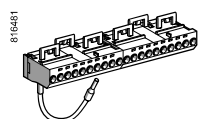
Telefast® 2 pre-wired system
Accessories for connection sub-bases



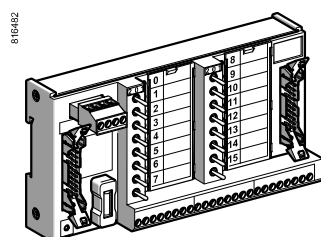
ABE-7ACC02



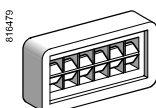
ABE-7ACC80 + ABE-7ACC81



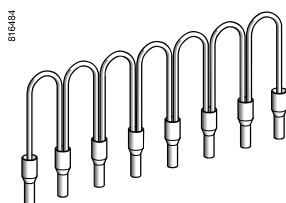
ABE-7BV20



ABE-7TES160



AR1-SB3



ABF-C08Rxxx

Software

Description	Operating system	Reference	Weight kg
Software for client label marking	Under Windows version 3.1 or 95	ABE-7LOGV10	0.350
Pack of 25 pre-cut label sheets (160 labels)	–	ABE-7LOGF25	0.200

Accessories

Description	No. of channels	Characteristics	Order in multiples of	Unit reference	Weight kg
Kit for fixing on solid plate	–	–	10	ABE-7ACC01	0.008
Splitter sub-base	–	16 as 2 x 8 channels	1	ABE-7ACC02	0.075
Redundant output sub-base	–	16 as 2 x 16 channels	1	ABE-7ACC10	0.075
Redundant input sub-base	–	16 as 2 x 16 channels	1	ABE-7ACC11	0.075
Removable continuity blocks	–	10 mm wide	4	ABE-7ACC20	0.007
	–	12 mm wide	4	ABE-7ACC21	0.010
Locating device for removable terminal block	–	–	100	ABE-7ACC30	0.100
Enclosure feedthrough with industrial connector	32	40-way	1	ABE-7ACC80	0.300
Plug-in 40-way male connector	32	For mounting on ABE-7ACC80	1	ABE-7ACC81	0.370
Enclosure feedthrough with CNOMO M23 connector (1 x 20-way HE 10 connector, PLC end)	16	19-way	1	ABE-7ACC82	0.150
	8 and 12	19-way	1	ABE-7ACC83	0.150
Impedance adaptor for Type 2 compatibility	–	Used with ABE-7ACC82 and ABE-7ACC83	1	ABE-7ACC85	0.012
IP 65 cable gland	–	For 3 cables	1	ABE-7ACC84	0.300
Additional snap-on terminal blocks (shunted terminals)	8	10 screw terminals	5	ABE-7BV10	0.030
		10 spring terminals	5	ABE-7BV10E	0.030
	16	20 screw terminals	5	ABE-7BV20	0.060
		20 spring terminals	5	ABE-7BV20E	0.060
I/O simulator sub-base	16	Display, forcing inhibition, continuity	1	ABE-7TES160	0.350
Adhesive label holder	–	For 6 characters	50	AR1-SB3	0.001
Fast blow fuses	–	0.125 A	10	ABE-7FU012	0.010
5 x 20, 250 V, UL		0.5 A	10	ABE-7FU050	0.010
		1 A	10	ABE-7FU100	0.010
		2 A	10	ABE-7FU200	0.010
		4 A	10	ABE-7FU400	0.010
		6.3 A	10	ABE-7FU630	0.010

"Flexible commoning links" accessories

Description	For common	Colour	Distance between cable ends cm	Reference	Weight kg	
Flexible commoning links	Coil	White	12	ABF-C08R12W	0.020	
			2	ABF-C08R02W	0.010	
	~	Red	12	ABF-C08R12R	0.020	
			2	ABF-C08R02R	0.010	
	Modularity 8 x 1 mm ²	---	Blue	12	ABF-C08R12B	0.020
				2	ABF-C08R02B	0.010

Presentation, compatibility:
pages 4/8 to 4/25

Characteristics:
pages 4/26 to 4/33

Dimensions, schemes:
pages 4/52 to 4/63

Connection interfaces

Telefast® 2 pre-wired system
 Connection sub-bases for counter and analogue channels
 Connection cables for Modicon TSX Micro and Premium PLCs

Connection cables for Modicon TSX Micro and Premium PLCs (1)

Functions	Compatible TSX modules	Type of connection		Gauge	Cross-section	Length	Reference	Weight		
		PLC end	Telefast 2 end							
				AWG	mm ²	m				
Discrete I/O	DMZ●●DTK DEZ●●D2K DSZ●●T2K DEY●●D2K DSY●●T2K DEY●●16FK	20-way HE 10	20-way HE 10	28	0.080	1	ABF-H20H100 (2)	0.080		
				2	ABF-H20H200 (2)	0.140				
				3	ABF-H20H300 (2)	0.210				
				22	0.324	0.5	TSX CDP 053	0.085		
						1	TSX CDP 103	0.150		
						2	TSX CDP 203	0.280		
						3	TSX CDP 303	0.410		
						5	TSX CDP 503	0.670		
			Universal	Bare wires	20-way HE 10	22	0.324	3	TSX CDP 301	0.400
								5	TSX CDP 501	0.660
Analogue	AEY●●	25-way SUB-D	25-way SUB-D	24	0.205	3	TSX CAP 030	0.670		
	Universal	Bare wires	25-way SUB-D	24	0.205	2	ABF-F25S200 (4)	0.300		
	ASY410	TSX BLY01	25-way SUB-D	24	0.205	2	ABF-Y25S200	0.375		
Analogue and counter Counter	3722●● CTY●A	15-way SUB-D	15-way SUB-D	24	0.205	2.5	TSX CCP S15	0.220		
Counter	CTZ●A	15-way SUB-D (3)	15-way SUB-D	24	0.205	2.5	TSX CCP H15	0.220		
Axis control	CAY●1	9-way SUB-D	9-way SUB-D	24	0.205	2	TSX CXP 213	0.270		
						6	TSX CXP 613	0.580		

Accessories

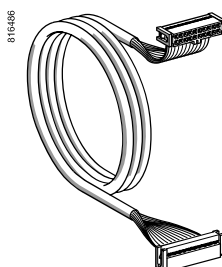
Description	Gauge	Cross-section	Length	Sold in lots of	Unit reference	Weight
						kg
Rolled ribbon cable	28	0.08	20	1	ABF-C20R200	1.310
20-way HE 10 connector	-	-	-	2	ABC-6HE20F	0.008

(1) Standard cables, see page 4/42.

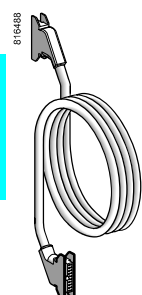
(2) Specific lengths available: 4, 5, 8, 10, 15, 20, 25 and 30 m (please consult your Regional Sales Office).

(3) High density.

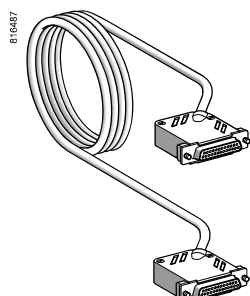
(4) See colour coded marking on page 4/62.



ABF-H20H200



TSX-CDP●●3



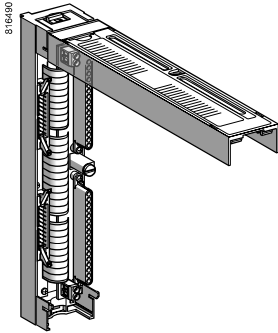
TSX-CCPS15



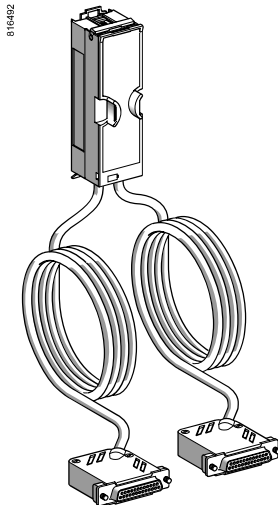
ABC-6HE20F

Connection interfaces

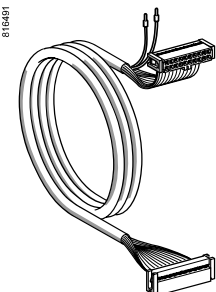
Telefast® 2 pre-wired system
Terminal blocks, cabled connectors and connection cables
for TSX 47 to 107 PLCs



TSX BLK 01



ABF-B50S 001



ABF-H20H 001

Connection terminal blocks (with LED display of I/O)

Number of channels	Type of discrete interface	Type of connection	Reference	Weight kg
32	TSX DET 32●2 inputs	2 x 20-way male HE 10 connectors	TSX BLK 71	0.200
	TSX DST 32●2 outputs	2 x 20-way male HE 10 connectors	TSX BLK 91	0.200
24	TSX DST 24●2 outputs	1 x 34-way male HE 10 connector	TSX BLK 81 (1)	0.200

Cabled connectors for TSX AEM●● and TSX DST16●● modules

Type of signal	Type of connection PLC end	Telefast end	Gauge AWG	Cross-section mm ²	Length m	Modularity	Reference	Weight kg
Analogue	Terminal block	2 x 25-way SUB-D	24	0.22	2	16	ABF-B50S201	0.510
		BLK 4	24	0.22	3	16	ABF-B50S301	0.760
	included	1 x 25-way SUB-D	24	0.22	2	8	ABF-B25S201	0.500
		BLK 4	24	0.22	3	8	ABF-B25S301	0.670

Connection cables

Type of signal	Type of connection PLC end	Telefast end	Gauge AWG	Cross-section mm ²	Length m	Modularity	Reference	Weight kg
Discrete I/O	1 x 34-way HE 10 on BLK 81	1 x 34-way HE 10	28	0.08	1	24	ABF-H34H100 (1)	0.055
		HE 10	28	0.08	2	24	ABF-H34H200 (1)	0.100
		HE 10	28	0.08	3	24	ABF-H34H300 (1)	0.145
	1 x 20-way HE 10 with power on BLK 71/91	1 x 20-way HE 10	28	0.08	1.5	16	ABF-H20H151	0.110
		HE 10	28	0.08	2	16	ABF-H20H201	0.140
		HE 10	28	0.08	3	16	ABF-H20H301	0.210
					5	16	ABF-H20H501	0.350
Analogue	1 x 25-way SUB-D on TSX AEM 1613	1 x 25-way SUB-D	24	0.22	3	16	ABF-S25S301	0.620

Splitter sub-base for TSX DST 24●2

Splitter sub-base, 24 channels, 3 x 8 channels	ABE-7ACC03	0.115
(1) Splitter sub-base ABE-7ACC03 must be used.		

Correspondence tables

ABF-S25S30●

ABF-B25S01

ABF-B50S01

Male SUB-D pins	No. of cable pairs	Female SUB-D pins
1-2	1	1-2
3-14	2	3-14
15-16	3	15-16
4-5	4	4-5
6-17	5	6-17
18-19	6	18-19
7-8	7	7-8
9-20	8	9-20
21-22	9	21-22
10-11	10	10-11
12-23	11	12-23
24-25	12	24-25
13	13	13

25-way SUB-D		TSX BLK4		25-way SUB-D	
Term. no.	Channels	Term. blk.		Channels	Term. no.
1-2	V0+	8	1	V4+	7-8
14	V0-	7	2	V4-	20
	±	6	3	±	
15-16	V1+	5	4	V5+	21-22
3	V1-	4	5	V5-	9
	±	3	6	±	
4-5	V2+	2	7	V6+	10-11
17	V2-	1	8	V6-	23
	±				
	±				
18-19	V3+	8	1	V7+	24-25
6	V3-	7	2	V7-	12-13
	±	6	3		
		5	4		
		4	5		
		3	6		
		2	7		
		1	8		

25-way SUB-D ①		TSX BLK4		25-way SUB-D ②	
Term. no.		Term. blk.		Term. no.	
1-2		8	1	1-2	
14		7	2	14	
15-16		6	3	15-16	
3		5	4	3	
4-5		4	5	4-5	
17		3	6	17	
18-19		2	7	18-19	
6		1	8	6	
7-8		8	1	7-8	
20		7	2	20	
21-22		6	3	21-22	
9		5	4	9	
10-11		4	5	10-11	
23		3	6	23	
24-25		2	7	24-25	
12-13		1	8	12-13	

Connection interfaces

Telefast® 2 pre-wired system
Cables and sub-bases for NUM numerical control

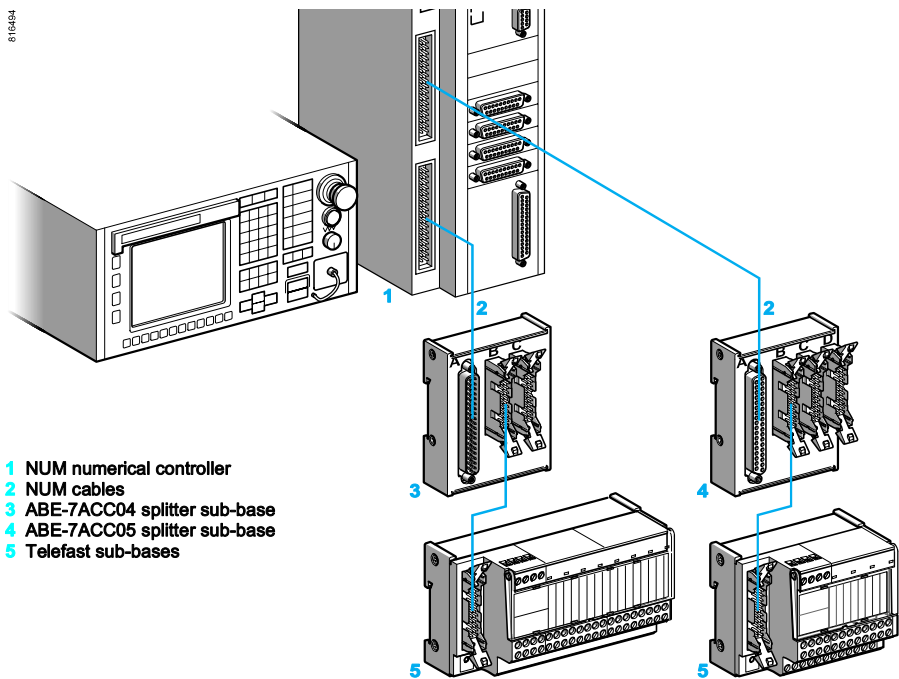


ABE-7ACC04

Splitter sub-bases for NUM numerical control

Description	For NUM processor unit	Type of signal	Type of connection		Reference	Weight kg
			Processor unit end	Telefast end		
Splitter sub-bases	1020	32 channels (input)	37-way male SUB-D	2 x 20-way HE 10	ABE-7ACC04	0.100
	1050			3 x 20-way HE 10		
	1060	24 channels (output)	37-way female SUB-D	3 x 20-way HE 10	ABE-7ACC05	0.105

Example of connection



- 1 NUM numerical controller
- 2 NUM cables
- 3 ABE-7ACC04 splitter sub-base
- 4 ABE-7ACC05 splitter sub-base
- 5 Telefast sub-bases

ABE-7ACC04

20-way HE 10 B		SUB-D A		20-way HE 10 C	
Terminal no.	Channels	Terminal blk.	Channels	Terminal no.	Channels
1	0	1	29	16	1
2	1	20	11	17	2
3	2	2	30	18	3
4	3	21	12	19	4
5	4	3	31	20	5
6	5	22	13	21	6
7	6	4	32	22	7
8	7	23	14	23	8
9	8	24	15	24	9
10	9	6	34	25	10
11	10	25	16	26	11
12	11	7	35	27	12
13	12	26	17	28	13
14	13	8	36	29	14
15	14	27	18	30	15
16	15	9	37	31	16
17	24 V	10	10	24 V	17
18	0 V	5	28	0 V	18
19	NC	19	33	NC	19
20	0 V			0 V	20

ABE-7ACC05

20-way HE 10 B		SUB-D A		20-way HE 10 C	
Terminal no.	Channels	Terminal blk.	Channels	Terminal no.	Channels
1	0	4	13	8	1
2	1	25	31	9	2
3	2	24	12	10	3
4	3	20	30	11	4
5	4	21	28	12	5
6	5	22	8	13	6
7	6	23	5	14	7
8	7	1	7	15	8
13 to 17-19	24 V	2-10-15-19	24 V	13 to 17-19	24 V
18 to 20	0 V	3-9-14-34	0 V	18-20	0 V
9 to 12	NC		NC	9 to 12	NC
20-way HE 10 D		Terminal blk.			
Terminal no.	Channels	Terminal blk.	Channels	Terminal no.	Channels
1	16	37	18	1	16
2	17	18	17	2	17
3	18	36	16	3	18
4	19	17	35	4	19
5	20	16	32	5	20
6	21	33	31	6	21
7	22	32	30	7	22
8	23	2-10-15-19	24 V	8	23
13 to 17-19	24 V	3-9-14-34	0 V	13 to 17-19	24 V
18 to 20	0 V			18 to 20	0 V
9 to 12	NC			9 to 12	NC

Connection interfaces

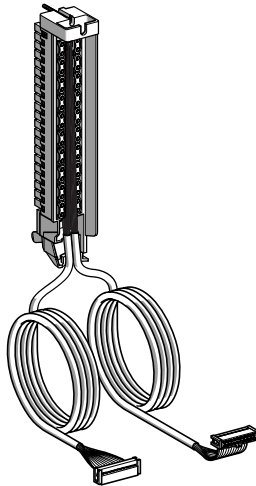
Telefast® 2 pre-wired system
Cabled connectors and connection cables for APRIL Series 1000 PLCs

Cabled connectors for APRIL Series 1000 PLCs

Type of signal	Type of connection PLC end	Telefast end	Gauge AWG	Cross-section mm ²	Length m	Modularity	Reference	Weight kg
Inputs and relay outputs	PIN 0100 term. block HE 10 included	2 x 20-way	26	0.13	2	2 x 16	ABF-A32H200	0.450
					3	2 x 16	ABF-A32H300	0.620
0.5 A output	PIN 0100 term. block HE 10 with external power supply	2 x 20-way	22	0.324	1.5	2 x 16	ABF-A32H151	0.650
					3	2 x 16	ABF-A32H301	1.150

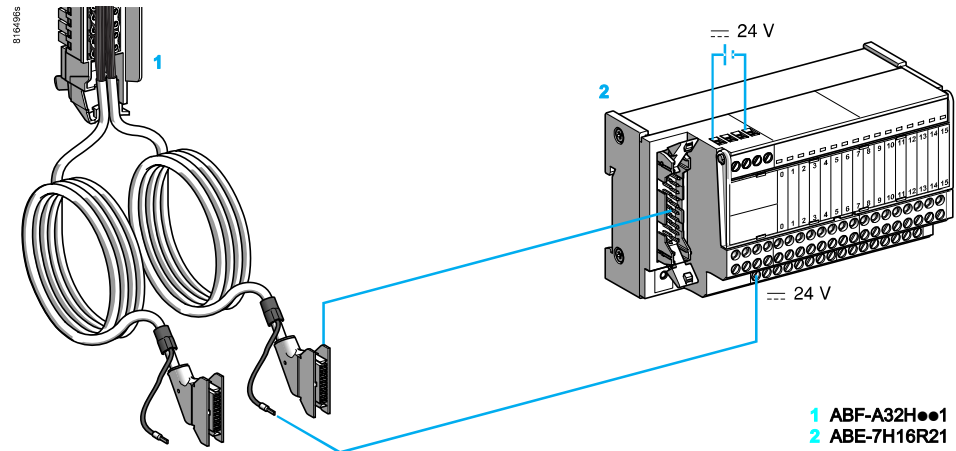
Connection cable for APRIL IXA/IRA 1600 module

Type of signal	Type of connection PLC end	Telefast end	Gauge AWG	Cross-section mm ²	Length m	Modularity	Reference	Weight kg
Analogue	1 x 25-way SUB-D	1 x 25-way SUB-D	24	0.22	3	16	ABF-S25S302	0.620



ABF-A32H00

Example of connection



1 ABF-A32H00
2 ABE-7H16R21

Correspondence tables between the PLC terminal block and HE 10 connectors

ABF-A32H00

20-way HE 10 ①		PIN 0100		20-way HE 10 ②	
Terminal no.	Name	Terminal blk.	Name	Terminal no.	
1	Q0	2	Q16	1	
2	Q1	22	Q17	2	
3	Q2	3	Q18	3	
4	Q3	23	Q19	4	
5	Q4	4	Q20	5	
6	Q5	24	Q21	6	
7	Q6	5	Q22	7	
8	Q7	25	Q23	8	
9	Q8	7	Q24	9	
10	Q9	27	Q25	10	
11	Q10	8	Q26	11	
12	Q11	28	Q27	12	
13	Q12	9	Q28	13	
14	Q13	29	Q29	14	
15	Q14	10	Q30	15	
16	Q15	30	Q31	16	
17	--- 24 V	1	--- 24 V	17	
18	--- 0 V	21	--- 0 V	18	
19	--- 24 V	6	--- 24 V	19	
20	--- 0 V	26	--- 0 V	20	

ABF-A32H01

20-way HE 10 ①		PIN 0100		20-way HE 10 ②	
Terminal no.	Name	Terminal blk.	Name	Terminal no.	
1	Q0	2	Q16	1	
2	Q1	22	Q17	2	
3	Q2	3	Q18	3	
4	Q3	23	Q19	4	
5	Q4	4	Q20	5	
6	Q5	24	Q21	6	
7	Q6	5	Q22	7	
8	Q7	25	Q23	8	
9	Q8	7	Q24	9	
10	Q9	27	Q25	10	
11	Q10	8	Q26	11	
12	Q11	28	Q27	12	
13	Q12	9	Q28	13	
14	Q13	29	Q29	14	
15	Q14	10	Q30	15	
16	Q15	30	Q31	16	
17	NC	NC	NC	17	
18	--- 0 V	21/26	31/36	--- 0 V	
19	NC	NC	NC	19	
20	NC	NC	NC	20	
Power supply cable	--- 24 V	1/6	11/16	--- 24 V	Power supply cable

Connection interfaces

Telefast® 2 pre-wired system
Cabled connectors for Modicon 984-A120-Compact PLCs

Cabled connectors for Modicon 984-A120-Compact PLCs

Type of signal	Type of connection	Gauge	Cross-section	Length	Modularity	Reference	Weight
		AWG	mm ²				
Input and relay output	1 x 20-way HE 10	22	0.324	1.5	16	ABF-M16H150	0.300
				3	16	ABF-M16H300	0.550
0.5 A output	2 x 20-way HE 10	22	0.324	1.5	2 x 8	ABF-M16H151	0.500
				3	2 x 8	ABF-M16H301	1.000

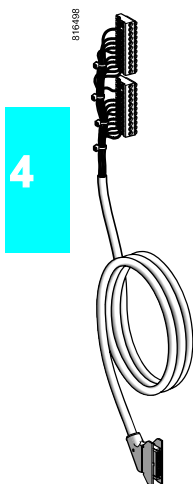
Correspondence tables

Cabled connectors for Modicon 984-A120-Compact PLCs
ABF-M16H●●0

20-way HE 10		984-A120 Compact
Terminal no.	Channels	Term. blk.
1	1	3
2	2	4
3	3	5
4	4	6
5	5	7
6	6	8
7	7	9
8	8	10
9	9	14
10	10	15
11	11	16
12	12	17
13	13	18
14	14	19
15	15	20
16	16	21
17	--- 24 V	1
18	--- 0 V	11
19	--- 24 V	12
20	--- 0 V	22

ABF-M16H●●1

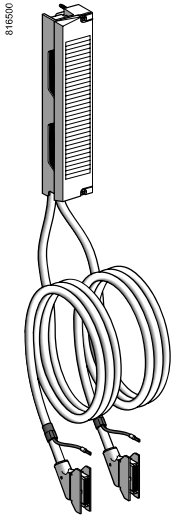
20-way HE 10 ①		984-A120 Compact		20-way HE 10 ②	
Terminal no.	Channels	Term. blk.		Channels	Terminal no.
1	1	3	14	9	1
2	2	4	15	10	2
3	3	5	16	11	3
4	4	6	17	12	4
5	5	7	18	13	5
6	6	8	19	14	6
7	7	9	20	15	7
8	8	10	21	16	8
9-10-11-12	NC			NC	9-10-11-12
13-15-17	--- 24 V	1	12	--- 24 V	13-15-17
14-16-19	--- 24 V	2	13	--- 24 V	14-16-19
18-20	--- 0 V	11	22	--- 0 V	18-20



ABF-M16H●●0

Connection interfaces

Telefast® 2 pre-wired system
Cabled connectors for Modicon Quantum PLCs



ABF-M32H001

Cabled connectors for Modicon Quantum PLCs

Type of signal	I/O module	Type of connection	Gauge	Cross-section	Length	Modularity	Reference	Weight
			AWG	mm ²				
Input and relay output	-	2 x 20-way HE 10	22	0,324	1,5	2 x 16	ABF-M32H150	0,650
					3	2 x 16	ABF-M32H300	1,150
0,5 A output	-	2 x HE 10 20-way+ ext. supply	22	0,324	1,5	2 x 16	ABF-M32H151	0,650
					3	2 x 16	ABF-M32H301	1,150
Analogue input	140 AVI/ACI 03000	1 x 25-way SUB-D	24	0,22	2	8	ABF-M08S201	0,600
	140 ACI 04000	2 x 25-way SUB-D	24	0,22	2	16	ABF-M16S201	0,620
Analogue output	140 AVO 02000	1 x 25-way SUB-D	24	0,22	2	4	ABF-M04S200	0,450
	140 ACO 02000	1 x 25-way SUB-D	24	0,22	2	4	ABF-M04S201	0,450
	140 ACO 13000	1 x 25-way SUB-D	24	0,22	2	8	ABF-M08S202	0,450

Correspondence tables

Cabled connectors for Modicon Quantum PLCs
ABF-M32H000

20-way HE 10 ①		Quantum		20-way HE 10 ②	
Terminal no.	Channels	Term. blk	Channels	Terminal no.	Terminal no.
1	1	1	21	17	1
2	2	2	22	18	2
3	3	3	23	19	3
4	4	4	24	20	4
5	5	5	25	21	5
6	6	6	26	22	6
7	7	7	27	23	7
8	8	8	28	24	8
9	9	11	31	25	9
10	10	12	32	26	10
11	11	13	33	27	11
12	12	14	34	28	12
13	13	15	35	29	13
14	14	16	36	30	14
15	15	17	37	31	15
16	16	18	38	32	16
17	24 V	10	30	32	17
18	0 V	9	29	31	18
19	24 V	20	40	38	19
20	0 V	19	39	37	20

ABF-M32H001

20-way HE 10 ①		Quantum		20-way HE 10 ②	
Terminal no.	Channel	Term. blk	Channels	Terminal no.	Terminal no.
1	1	1	21	17	1
2	2	2	22	18	2
3	3	3	23	19	3
4	4	4	24	20	4
5	5	5	25	21	5
6	6	6	26	22	6
7	7	7	27	23	7
8	8	8	28	24	8
9	9	11	31	25	9
10	10	12	32	26	10
11	11	13	33	27	11
12	12	14	34	28	12
13	13	15	35	29	13
14	14	16	36	30	14
15	15	17	37	31	15
16	16	18	38	32	16
17	NC	NC	NC	NC	17
18	0 V	9/19 shunt	29/39 shunt	0 V	18
19	NC	NC	NC	NC	19
20	NC	NC	NC	NC	20
Power cable	24 V	10/20 shunt	30/40 shunt	24 V	Power supply cable

ABF-M08S202

Pair	SUB D	Modicon Term. blk	SUB D	Pair
1	2	4		1
2	16	8		2
3	5	14		3
4	19	18		4
5	8	24		5
6	22	28		6
7	11	34	36	7
8	25	38	13	8

ABF-M16S201

Pair	SUB D	Modicon Term. blk	SUB D	Pair
1	14	2	1	2
2	3	4	3	16
3	17	6	5	5
4	6	8	7	19
5	20	12	11	8
6	9	14	13	22
7	23	16	15	11
8	12	18	17	25
1	14	22	21	2
2	3	24	23	16
3	17	26	25	5
4	6	28	27	19
5	20	32	31	8
6	9	34	33	22
7	23	36	35	11
8	12	38	37	25

ABF-M08S201

Pair	SUB D	Quantum Term. blk	SUB D	Pair
1	1	1	3	2
2	3	6	2	14
3	15	5	7	16
4	4	11	13	5
5	17	12	16	6
6	18	15	17	19
7	7	21	23	8
8	20	22	26	9
9	21	25	27	22
10	10	31	33	11
11	23	32	36	12-13
12	24	35	37	25

ABF-M04S200

Pair	SUB D	Quantum Term. blk	SUB D	Pair
1	14	2	1	1
5	2	8		5
2	3	12	11	15
6	16	18		6
3	17	22	21	4
7	5	28		7
4	6	32	31	18
8	19	38		8

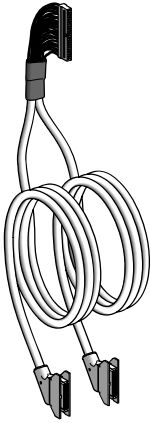
ABF-M04S201

Pair	SUB D	Quantum Term. blk	SUB D	Pair
5	14	2	1	2
1	14	10	9	1
6	3	12	11	16
2	3	20	19	15
7	17	22	21	5
3	17	30	29	4
8	6	32	31	19
4	6	40	39	18

Connection interfaces

Telefast® 2 pre-wired system
Connection cables for Allen Bradley PLCs

816502



ABF-H40H00

4

Connection cables for Allen Bradley SLC 500 PLCs

Type of signal	Type of connection		Gauge AWG	Cross-section mm ²	Length m	Modularity	Reference	Weight kg
	PLC end	Telefast end						
32-channel Input	40-way HE 10	2 x 20-way HE 10	22	0.324	1.5	16	ABF-H40H150	0.350
		3				ABF-H40H300	0.800	
100 mA 32-channel output	40-way HE 10	2 x 20-way HE 10	22	0.324	1.5	16	ABF-H40H151	0.350
		3				ABF-H40H301	0.800	
16-channel Input	Terminal block	1 x 20-way HE 10	22	0.324	2	16	ABF-R16H201	0.800
16-channel output	Terminal block	1 x 20-way HE 10	22	0.324	2	16	ABF-R16H200	0.800

Correspondence tables

Cables for Allen Bradley PLCs
ABF-H40H00

20-way HE 10 ①		SLC 500 1 x 40-way HE 10		20-way HE 10 ②	
Terminal no.	Channels	HE 10	HE 10	Channels	Terminal no.
1	0	5	6	16	1
2	1	7	8	17	2
3	2	9	10	18	3
4	3	11	12	19	4
5	4	13	14	20	5
6	5	15	16	21	6
7	6	17	18	22	7
8	7	19	20	23	8
9	8	21	22	24	9
10	9	23	24	25	10
11	10	25	26	26	11
12	11	27	28	27	12
13	12	29	30	28	13
14	13	31	32	29	14
15	14	33	34	30	15
16	15	35	36	31	16
17	NC			NC	17
18	0 V	1	2	0 V	18
19	NC			NC	19
20	0 V	39	40	0 V	20

ABF-H40H01

20-way HE 10 ①		SLC 500 1 x 40-way HE 10		20-way HE 10 ②	
Terminal no.	Channels	HE 10	HE 10	Channels	Terminal no.
1	0	5	6	16	1
2	1	7	8	17	2
3	2	9	10	18	3
4	3	11	12	19	4
5	4	13	14	20	5
6	5	15	16	21	6
7	6	17	18	22	7
8	7	19	20	23	8
9	8	21	22	24	9
10	9	23	24	25	10
11	10	25	26	26	11
12	11	27	28	27	12
13	12	29	30	28	13
14	13	31	32	29	14
15	14	33	34	30	15
16	15	35	36	31	16
17	24 V	1	2	24 V	17
18	0 V	37	38	0 V	18
19	24 V	3	4	24 V	19
20	0 V	39	40	0 V	20

ABF-R16H200

20-way HE 10	SLC 500 Terminal block		20-way HE 10
17-19	0 V	OUT 0	1
2	OUT 1	OUT 2	3
4	OUT 3	OUT 4	5
6	OUT 5	OUT 6	7
8	OUT 7	OUT 8	9
10	OUT 9	OUT 10	11
12	OUT 11	OUT 12	13
14	OUT 13	OUT 14	15
16	OUT 15	0 V	18-20

ABF-R16H201

20-way HE 10	SLC 500 Terminal block		20-way HE 10
-	-	IN 0	1
2	IN 1	IN 2	3
4	IN 3	IN 4	5
6	IN 5	IN 6	7
8	IN 7	IN 8	9
10	IN 9	IN 10	11
12	IN 11	IN 12	13
14	IN 13	IN 14	15
16	IN 15	0 V	18-20

Connection interfaces

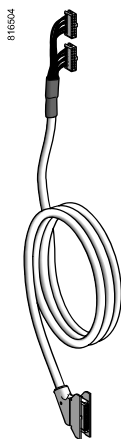
Telefast® 2 pre-wired system
Connection cables for Siemens PLCs

Connection cables for Siemens S5 PLCs

Type of signal	Type of connection PLC end	Type of connection Telefast end	Gauge AWG	Cross-section mm ²	Length m	Modularity	Reference	Weight kg
24 V Input and relay output	2 x 14-way HE 10	1 x 20-way HE 10	26	0.13	1.5	16	ABF-H28H150	0.150
						3 16	ABF-H28H300	0.250
8-channel I/O	Extension plate	2 x 20-way HE 10	22	0.32	2	2 x 8	ABF-S16H200	0.600
0.5 A output	1 x 14-way HE 10	1 x 20-way HE 10	26	0.13	1.5	8	ABF-H14H150	0.150
						3 8	ABF-H14H300	0.350

Connection cables for Siemens S7 PLCs

24 V Input and relay output	2 x 16-way HE 10	1 x 20-way HE 10	26	0.13	1.5	16	ABF-H32H150	0.160
						3 16	ABF-H32H300	0.260
8-channel Input	Terminal block	1 x 20-way HE 10	22	0.32	2	8	ABF-S08H202	0.350
0.5 A output	1 x HE 10	1 x HE 10	26	0.13	1.5	8	ABF-H16H150	0.160
						3 8	ABF-H16H300	0.260
8-channel output Analogue	Terminal block Bare wires	1 x 20-way HE 10 25-way SUB-D	22	0.32	2	8	ABF-S08H203	0.350
14-channel Input 10-chan.output	Terminal block	2 x 20-way HE 10	22	0.32	2	24	ABF-F25S200	0.600
						24	ABF-S24H200	0.920



ABF-H32Hee0

Correspondence tables

Cables for Siemens PLCs
ABF-H14Hee0

20-way HE 10 Term. no.	Channels	Siemens S5 14-way HE 10
1	0	1
2	1	2
3	2	3
4	3	4
5	4	5
6	5	6
7	6	7
8	7	8
9	NC	
10	NC	
11	NC	
12	NC	
13	NC	
14	NC	
15	NC	
16	--- 24 V	9
17	--- 24 V	11
18	--- 0 V	12
19	--- +24 V	13
20	--- 0 V	14

ABF-H28Hee0

20-way HE 10 Term. no.	Channels	Siemens S5 2 x 14-way HE 10
1	0	1
2	1	2
3	2	3
4	3	4
5	4	5
6	5	6
7	6	7
8	7	8
9	8	
10	9	
11	10	
12	11	
13	12	
14	13	
15	14	
16	15	
17	--- 24 V	13
18	--- 0 V	14
19	--- 24 V	13
20	--- 0 V	14

ABF-H16Hee0

20-way HE 10 Term. no.	Channels	Siemens S7 16-way HE 10
1	0	16
2	1	14
3	2	12
4	3	10
5	4	8
6	5	6
7	6	4
8	7	2
9	NC	
10	NC	
11	NC	
12	NC	
13	NC	
14	NC	
15	--- 24 V	9
16	--- 24 V	11
17	--- 24 V	13
18	--- 0 V	1
19	--- 24 V	15
20	--- 0 V	3

ABF-H32Hee0

20-way HE 10 Term. no.	Channels	Siemens S7 2 x 16-way HE 10
1	0	16
2	1	14
3	2	12
4	3	10
5	4	8
6	5	6
7	6	4
8	7	2
9	8	
10	9	
11	10	
12	11	
13	12	
14	13	
15	14	
16	15	
17	--- 24 V	13
18	--- 0 V	1
19	--- 24 V	13
20	--- 0 V	1

ABF-S16H200

20-way HE 10 Term. no.	Chans.	Siemens S5 Extension plate	Chans.
13-14-15-17-19	--- 24 V	1	--- 24 V
18-20	--- 0 V	2	--- 0 V
2	E1	3	E1
1	E0	4	E0
4	E3	5	E3
3	E2	6	E2
6	E5	7	E5
5	E4	8	E4
8	E7	9	E7
7	E6	10	E6

ABF-S24H200

20-way HE 10 Term. no.	Chans.	Siemens S7 Terminal block	20-way HE 10 Chans.
18	0 V	1 M	0 V
1	0	0.0	1 L+ +24 V
2	1	0.1	0.0
3	2	0.2	0.1
4	3	0.3	0.2
5	4	0.4	0.3
6	5	0.5	0.4
7	6	0.6	2 M 0 V
8	7	0.7	2 L+ +24 V
20	0 V	2 M	0.5
9	8	1.0	0.6
10	9	1.1	0.7
11	10	1.2	1.0
12	11	1.3	1.1
13	12	1.4	—
14	13	1.5	—

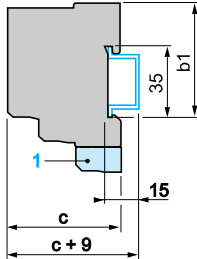
ABF-S08H203

20-way HE 10 Term. no.	Chans.	Siemens S7 Term. block
18	--- 0 V	1 M
13-14-15	--- 24 V	1 L+
1	E1	0,0
2	E2	0,1
3	E3	0,2
4	E4	0,3
20	--- 0 V	2 M
16-17-19	--- 24 V	2 L+
1	E1	0,4
2	E2	0,5
3	E3	0,6
4	E4	0,7

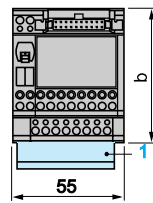
ABF-S08H202

20-way HE 10 Term. no.	Chans.	Siemens S7 Term. block
13-14-15	--- 24 V	1 M
1	E1	0,0
2	E2	0,1
3	E3	0,2
4	E4	0,3
16-17-19	--- 24 V	2 M
5	E5	0,4
6	E6	0,5
7	E7	0,6
8	E8	0,7

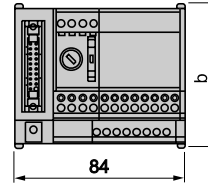
Common side view



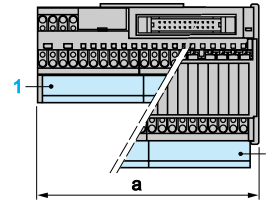
ABE-7H20E●●●
ABE-7H32E●●●



ABE-7H16R50, ABE-7H12R50,
ABE-7H08R1●, ABE-7H08R21,
ABE-7R08S111/S111E,
ABE-7H08S21, ABE-7CPA21



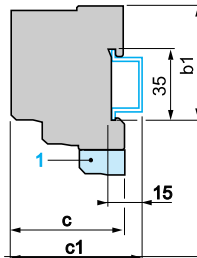
ABE-7H16C●●/ABE-7H16CM●●,
ABE-7●16M111/ABE-7●16T111



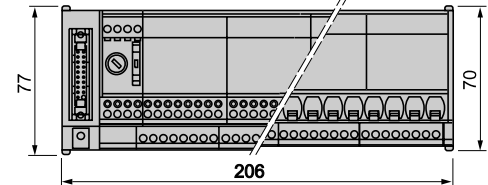
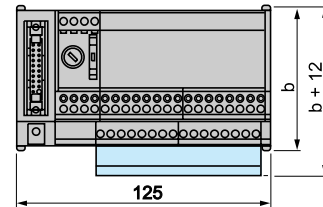
ABE-	7H20E/7H32E●●●	7H●●●●/CPA21	7R08S111●
b	67	70	77
b1	56	58	58
c	59	58	58

1 Additional shunt terminal block ABE-7BV10/7BV20

Common side view



ABE-7H16R2●, ABE-7H12R2●, ABE-7H16R3●,
ABE-7H16R1●, ABE-7H12R1●, ABE-7H12S21,
ABE-7H16S2●, ABE-7R16S11●, ABE-7R08S210,
ABE-7S08S2B0, ABE-7CPA02, ABE-7CPA03
ABE7S16S1B2, ABE-7R08S216

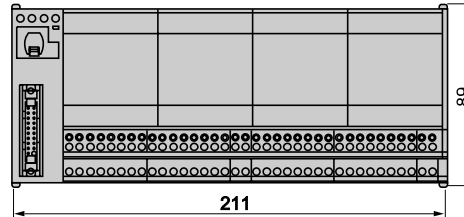
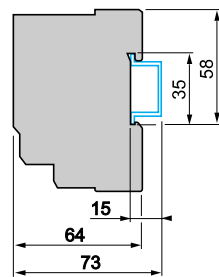


ABE-	7●●●●●	7●R08S210●, 7S16S1B2●, 7R08S216
b	70	77
b1	58	58
c	58	58

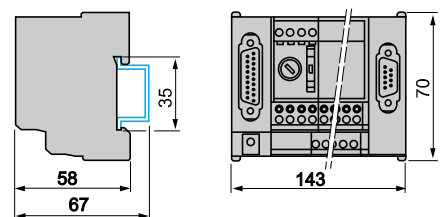
1 Additional shunt terminal block ABE-7BV10/7BV20

ABE-7R16T2●●, ABE-7P16T2●●

All sub-bases	
b1	58
c	58

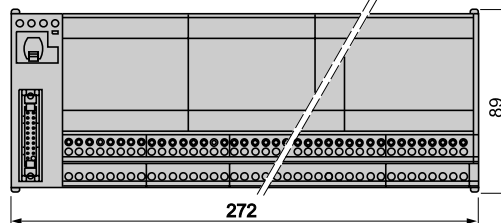
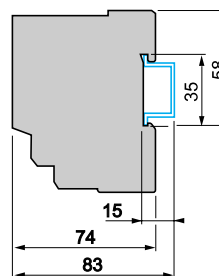


ABE-7CPA01, ABE-7CPA11/CPA12/CPA13

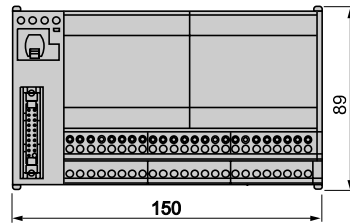


Note:
details of the front view are the same as for the ABE-7CPA01.

ABE-7R16T3●●, ABE-7P16T3●●, ABE-7P16F31●



ABE-7P08T330



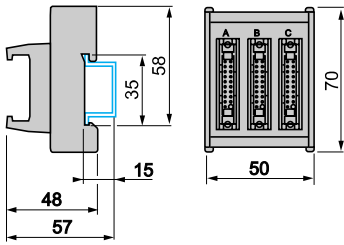
Presentation, compatibility:
pages 4/8 to 4/25

Characteristics:
pages 4/26 to 4/33

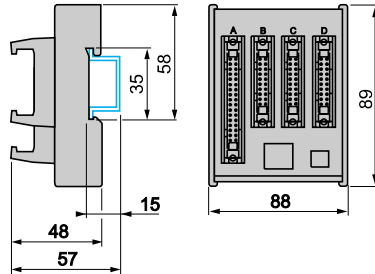
References:
pages 4/36 to 4/51

Schemes:
pages 4/52 to 4/63

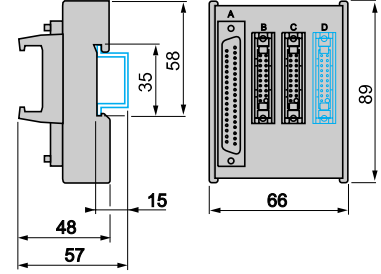
ABE-7ACC02



ABE-7ACC03

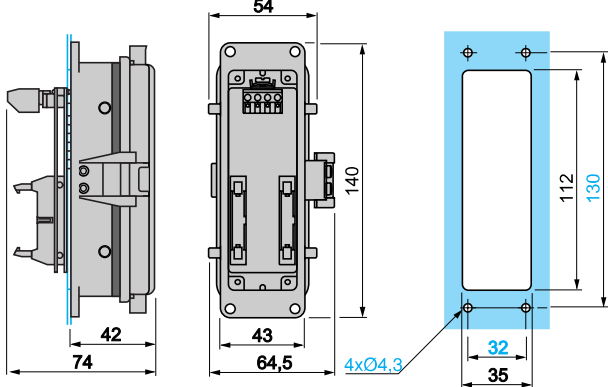


ABE-7ACC04, ABE-7ACC05
ABE-7ACC10, ABE-7ACC11

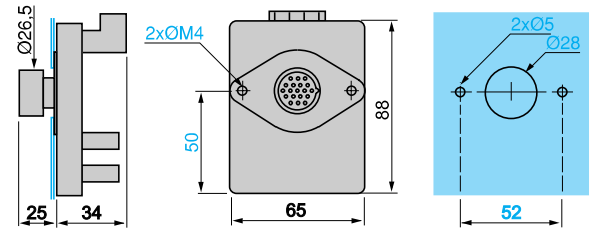


Note: Drawing representing ABE-7ACC04 and ABE-7ACC05

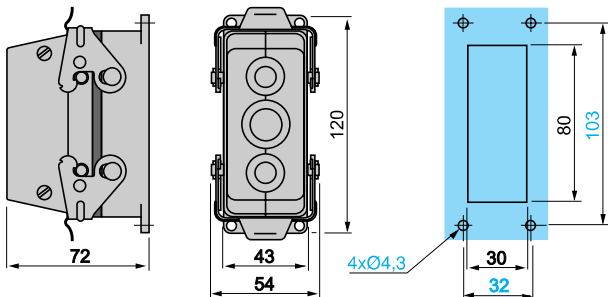
ABE-7ACC80



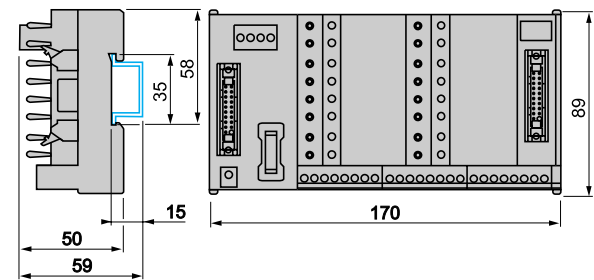
ABE-7ACC82, ABE-7ACC83



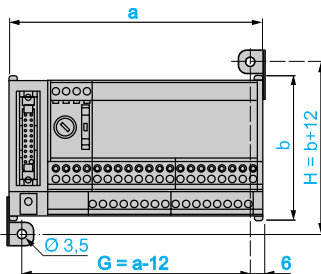
ABE-7ACC84



ABE-7TES160



Fixing centres for sub-bases using mounting kit ABE-7ACC01



ABE-7	G	H
ACC02	38	82
ACC03	53	101
ACC04	53	101
ACC05	53	101
ACC10/11	53	101
H08R●●	72	82
H08S21	72	82
H12R50	72	82
H16R50	72	82
R08S111	72	82
CPA01	131	82
CPA02	113	82
CPA1●	131	82
CPA03	113	82

ABE-7	G	H
H12R1●	113	82
H12R2●	113	82
H16R1●	113	82
H16R2●	113	82
H16R3●	113	82
H12S21	113	82
H16S21	113	82
R08S210	113	82
R16S111	113	82
R16S21●	194	82
S08S2B0	113	82
S08S2B1	194	82

ABE-7	G	H
H16F43	194	82
H16S43	194	82
S16E2●●	194	82
S16S1B2	113	82
S16S2●●	194	82
R16T2●●	199	101
P16T2●●	199	101
R16T3●●	260	101
P08T330	150	101
P16T3●●	260	101
P16F3●●	260	101

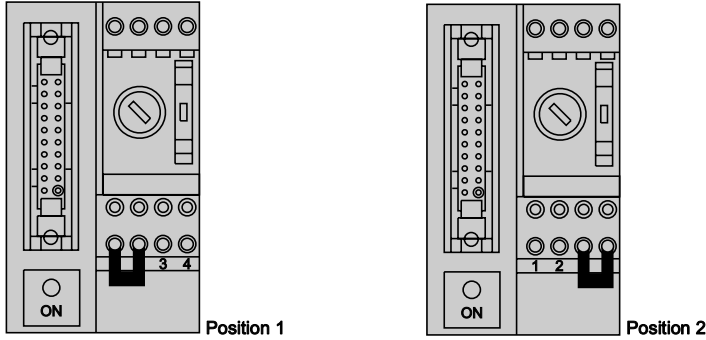
Presentation, compatibility:
pages 4/8 to 4/25

Characteristics:
pages 4/26 to 4/33

References:
pages 4/36 to 4/51

Schemes:
pages 4/52 to 4/63

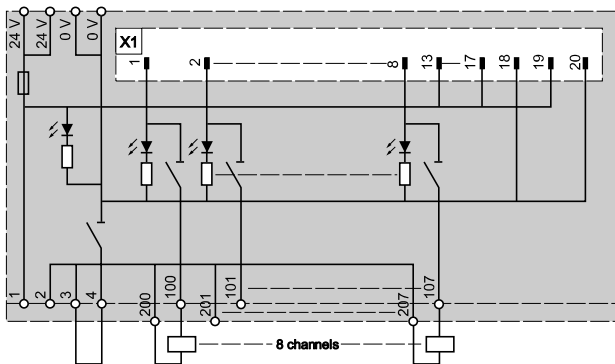
Connection of terminal block common (on sub-bases ABE-7H●●S21 and ABE-7H16R3● only)



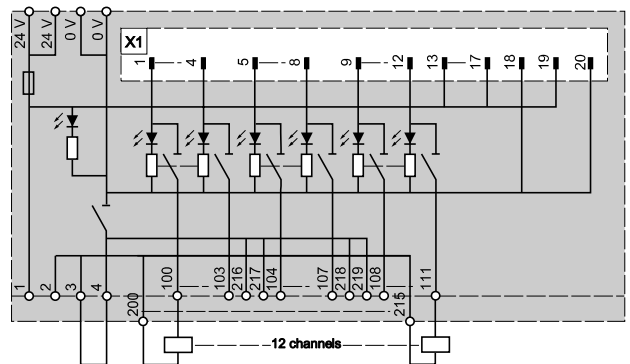
Connection is made using a shunt.
 The shunt is supplied with the sub-base and is mounted in the neutral position between terminals 2-3.
 It may be connected:
 -either to + for positive logic inputs across terminals 1-2 (position 1),
 -or to - for positive logic outputs across terminals 3-4 (position 2).
 For sub-bases ABE-7H16R3●, the shunt is in position 1.
 A second wire shunt must be connected -between the 3rd row common (C) and first row terminal 4 (OV).

4

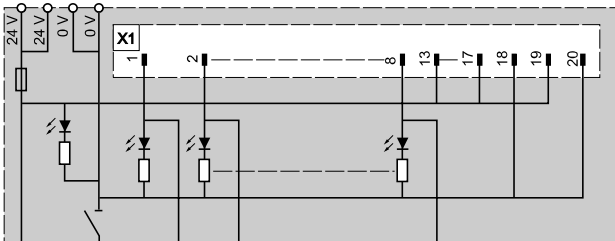
ABE-7H08S21



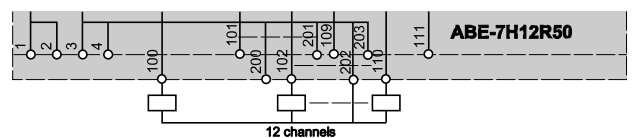
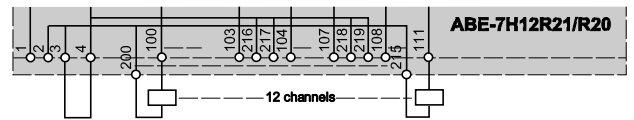
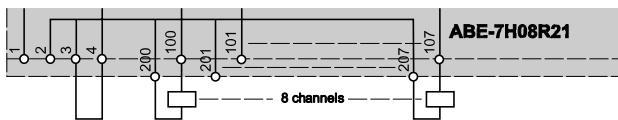
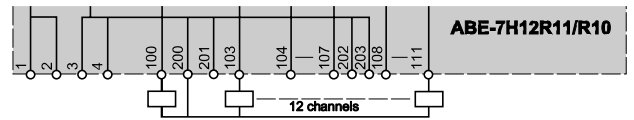
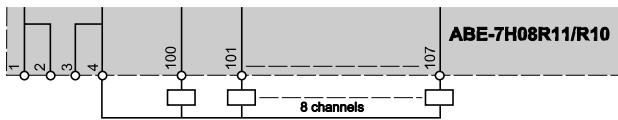
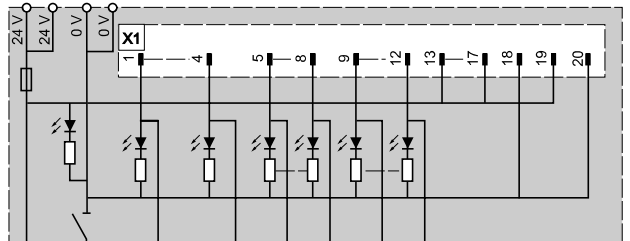
ABE-7H12S21



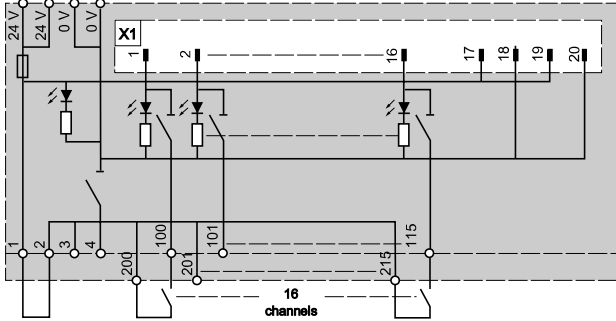
ABE-7H08R●● (R10 with no LED)



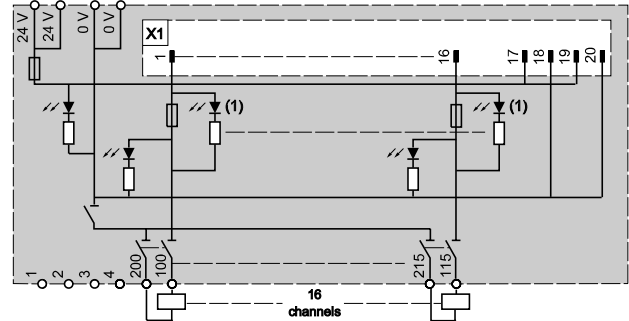
ABE-7H12R●● (R20, R10 and R50 with no LED)



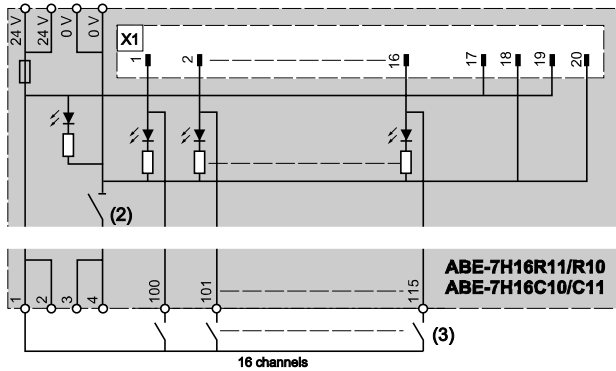
ABE-7H16S21



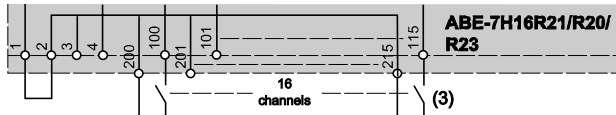
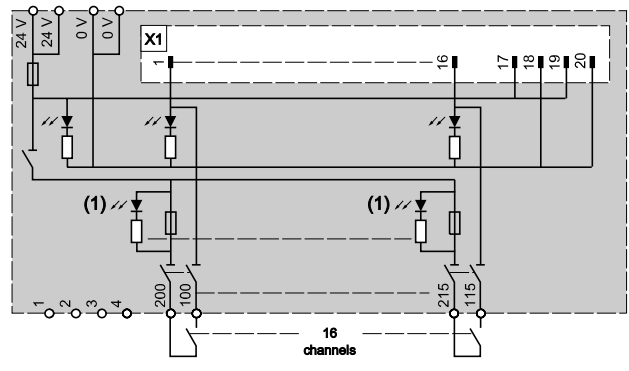
ABE-7H16F43



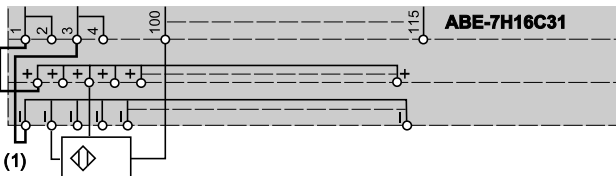
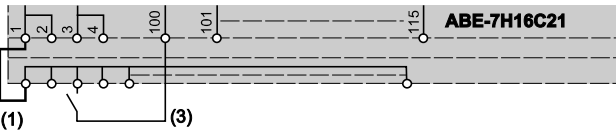
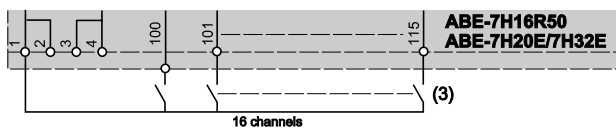
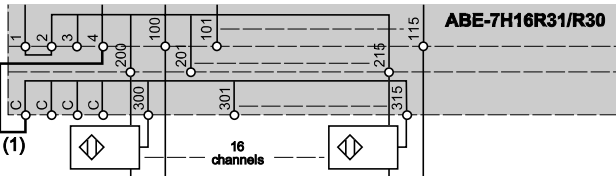
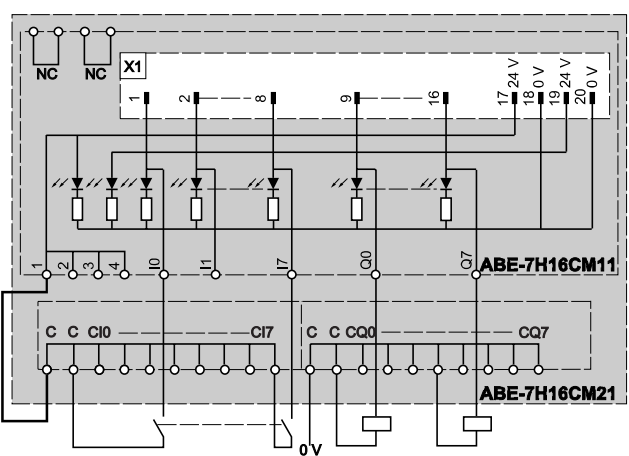
ABE-7H●●●●● (C10, R20, R10, R30 and R 50 without LED)



(1) LED fuse blown.
ABE-7H16S43



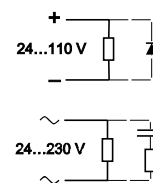
(1) LED fuse blown.
ABE-7H16C●1



Warning

The wiring diagrams above are recommended for inductive loads and are valid for all sub-bases equipped with electromechanical relays.

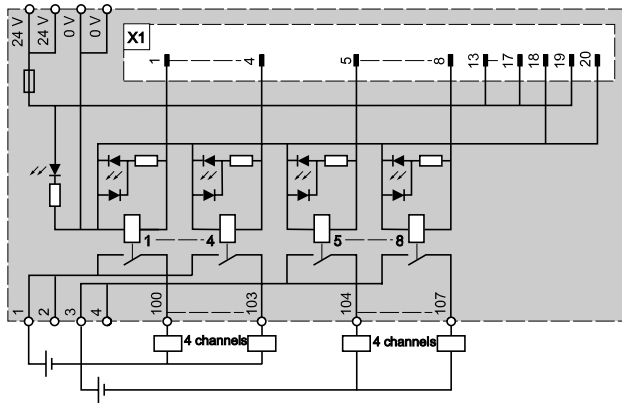
Self-protected relays ABS-7SC3BA (≡ 24 V/2 A) do not require any special protection.



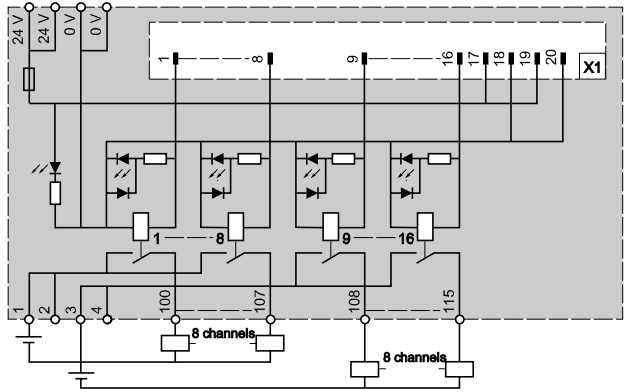
- (1) The user must connect 1 and 2, 4 and C
- (2) No isolator on refs. ABE-7H●●E●●/7H16C●●

(3) Example of input wiring

ABE-7R08S111

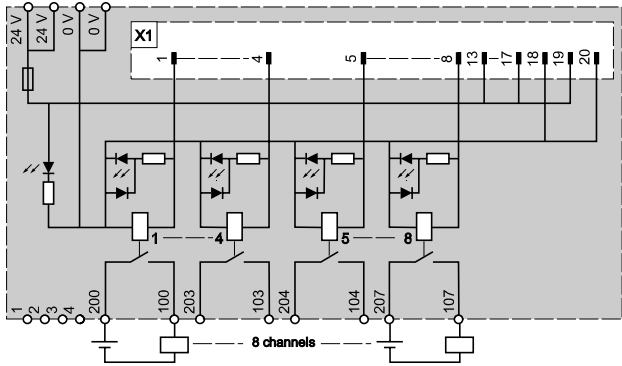


ABE-7R16S111

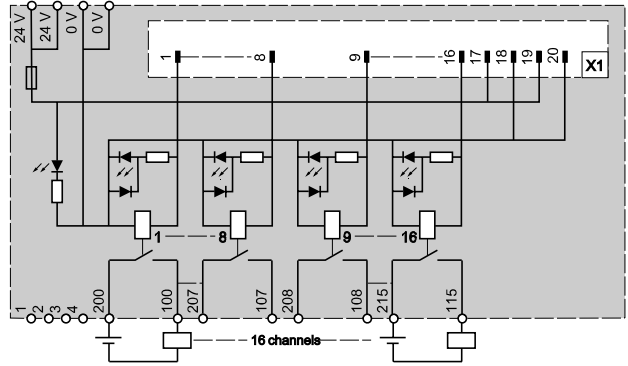


4

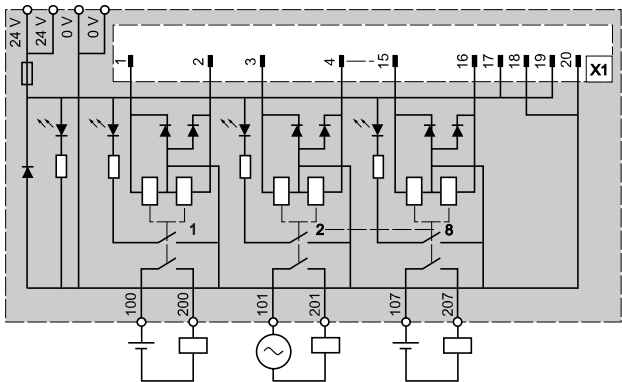
ABE-7R08S210



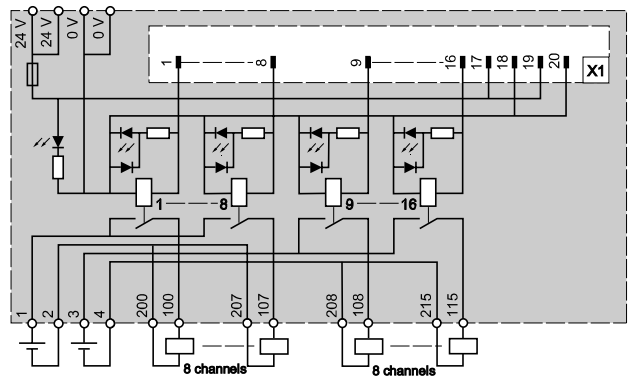
ABE-7R16S210



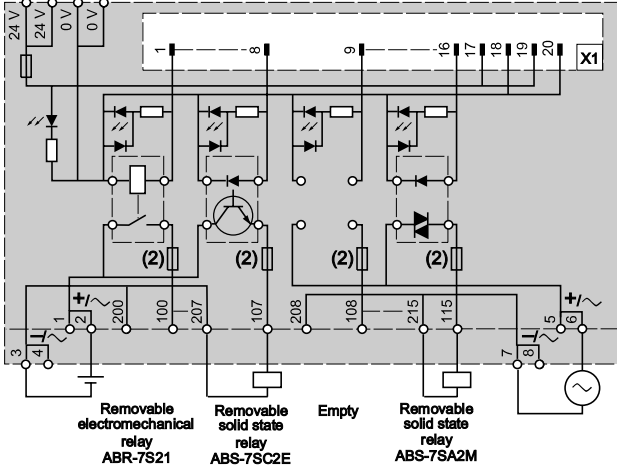
ABE-7R08S216



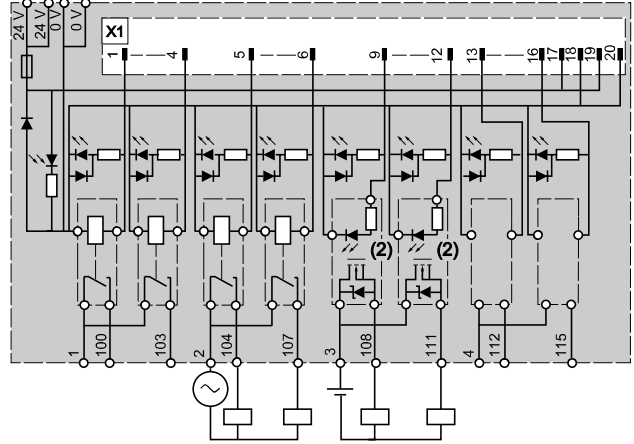
ABE-7R16S212



ABE-7P16T212 (1), ABE-7R16T212, ABE-7P16T215 (1)



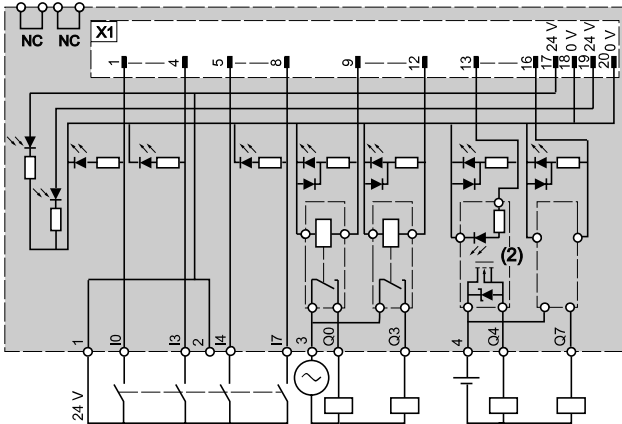
ABE-7P16T111 (1), ABE-7R16T111



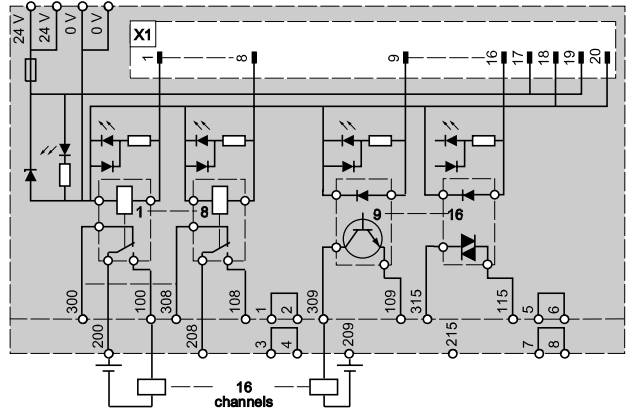
- (1) Sub-bases not equipped with relay.
- (2) ABS-7SC1B solid state relays can be installed.

- (1) ABR-7S11 sub-bases not equipped with relay.
- (2) ABS-7SC1B solid state relays can be installed.

ABE-7P16M111 (1), ABE-7R16M111



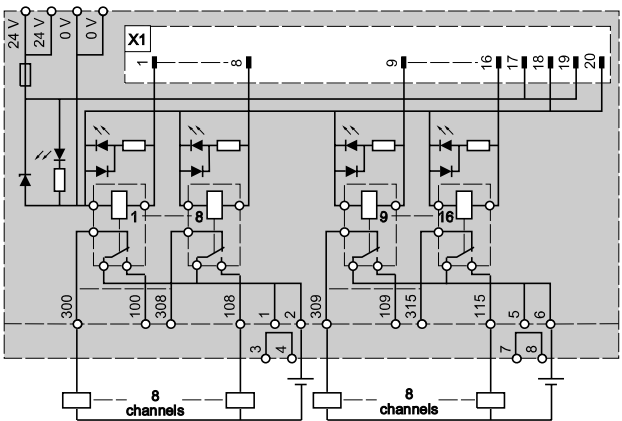
ABE-7P16T230 (1)



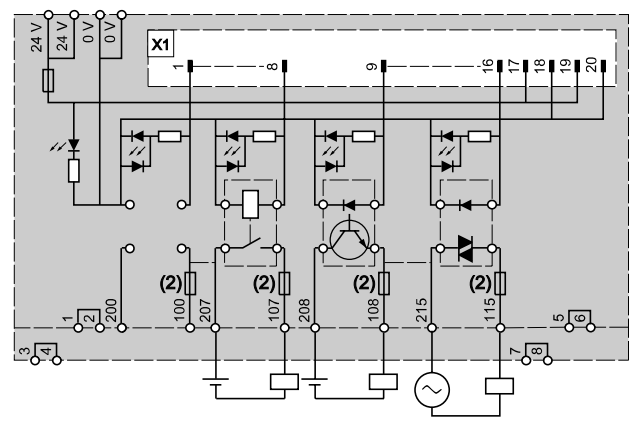
- (1) ABR-7S11 sub-bases not equipped with relay.
- (2) ABS-7SC1B solid state relays can be installed.

- (1) ABS-7S21 solid state relays can be installed on the sub-base.

ABE-7R16T231



ABE-7P16T210, ABE-7R16T210 (1), ABE-7P16T214 (1)



- (1) Sub-base not equipped with relays.
- (2) Fuses only on ABE-7P16T214.

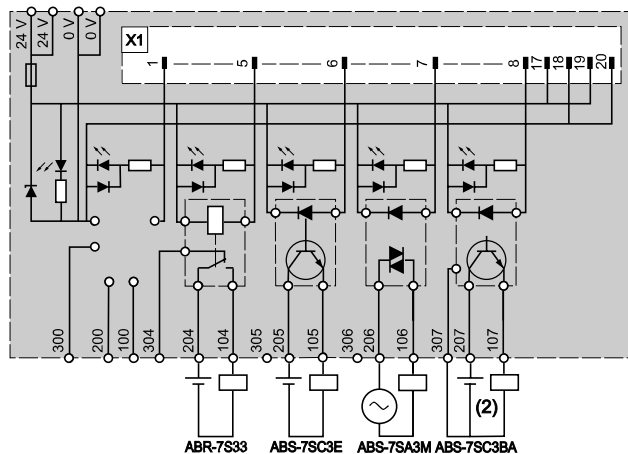
Presentation, compatibility:
pages 4/8 to 4/25

Characteristics:
pages 4/26 to 4/33

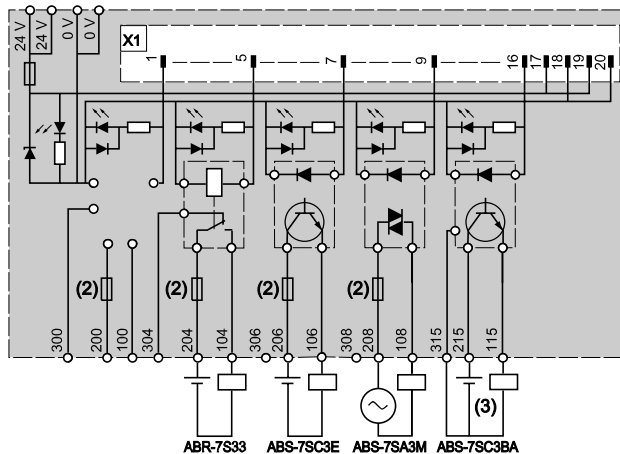
References:
pages 4/36 to 4/51

Dimensions:
pages 4/52 to 4/53

ABE7P08T330 (1)



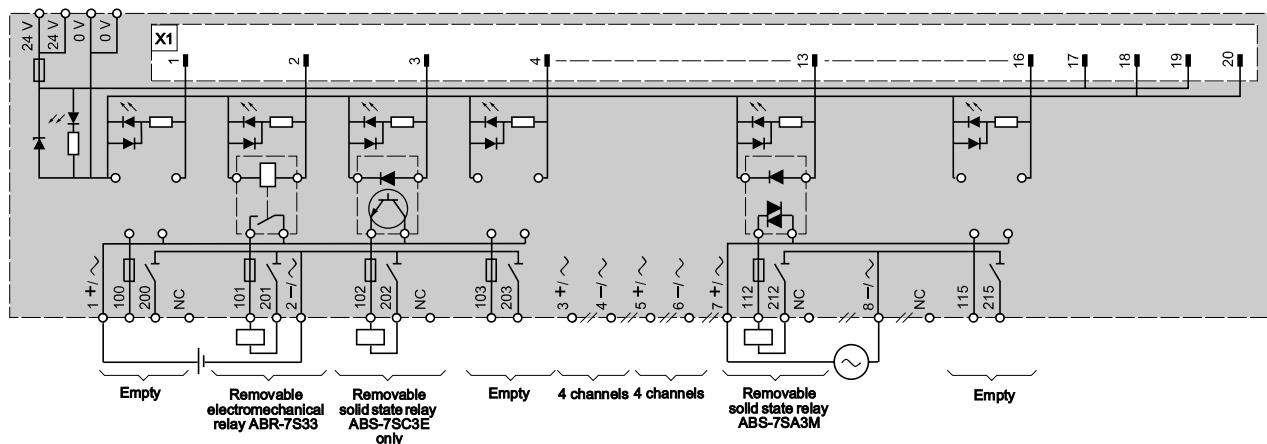
ABE-7R16T330, ABE-7P16T330 (1), ABE-7P16T334 (1)



- (1) Sub-base not equipped with relay.
 (2) Connection of ABS-7SC3BA solid state relay.

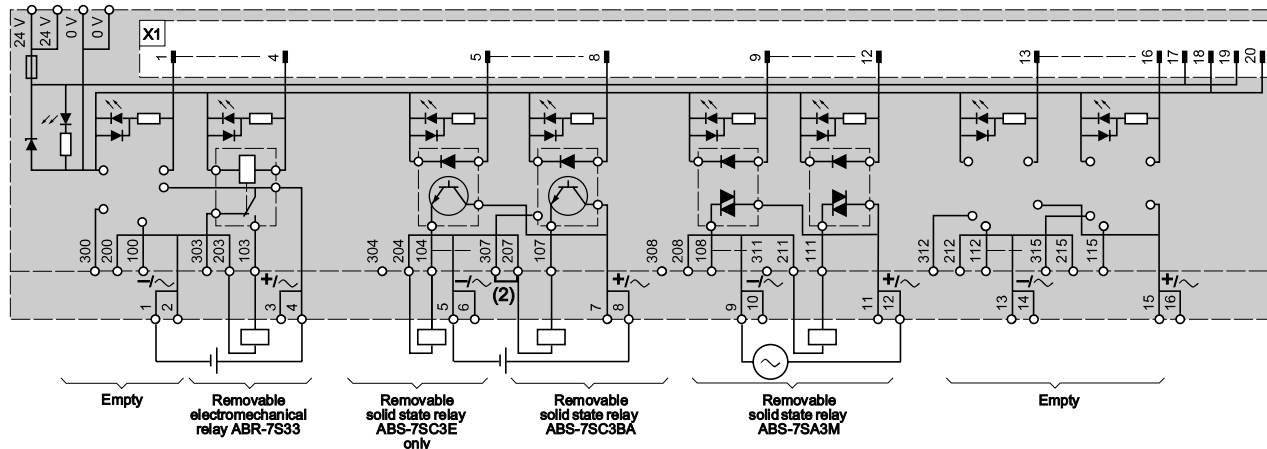
- (1) Sub-base not equipped with relay.
 (2) Fuses only on ABE-7P16T334.
 (3) Connection of ABS-7SC3BA solid state relay.

ABE-7P16T318 (1)



- (1) Sub-base not equipped with relay.

ABE-7R16T332 (1), ABE-7P16T332



- (1) Sub-base not equipped with relay.
 (2) Required jumper supplied with relay ABS-7SC3BA.

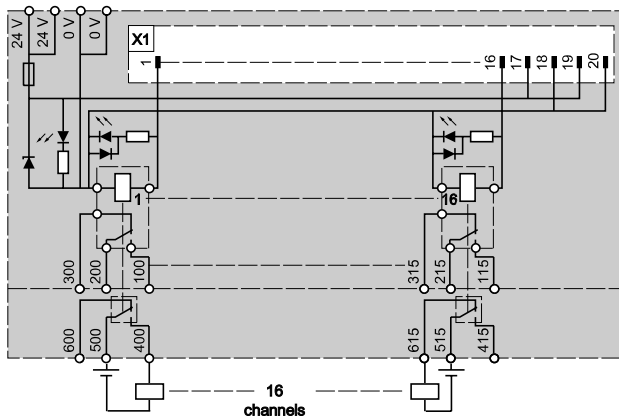
Presentation, compatibility:
 pages 4/8 to 4/25

Characteristics:
 pages 4/26 to 4/33

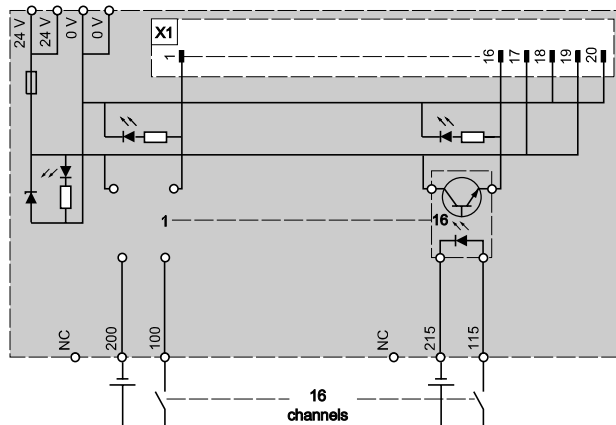
References:
 pages 4/36 to 4/51

Dimensions:
 pages 4/52 to 4/53

ABE-7R16T370

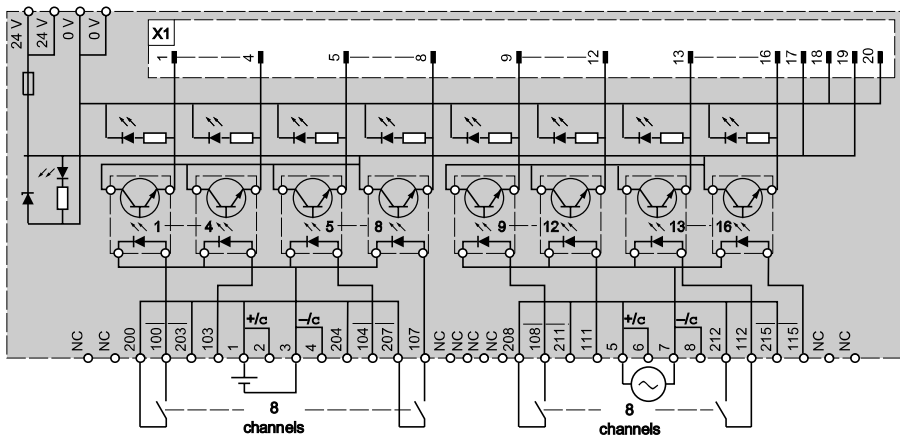


ABE-7P16F310 (1)



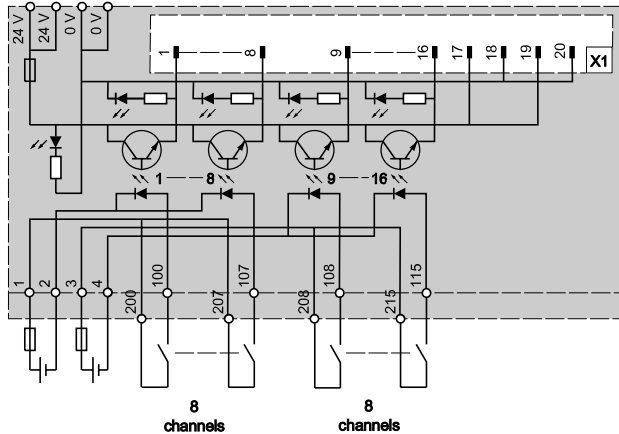
(1) Sub-base not equipped with relay.

ABE-7P16F312 (1)

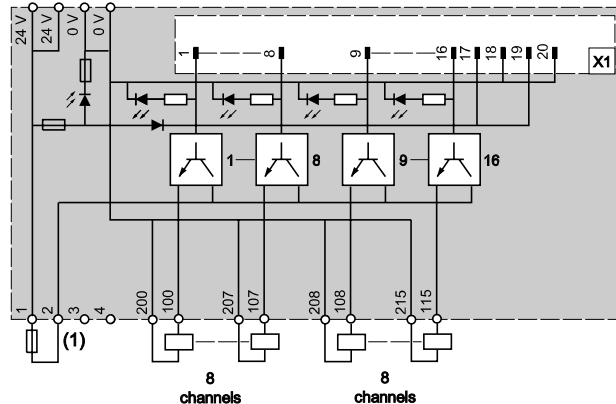


(1) Sub-base not equipped with relay.

ABE-7S16E2●●



ABE-7S16S1B2/ABE-7S16S2B0



(1) The user must connect the protection fuse across terminals 1 and 2.

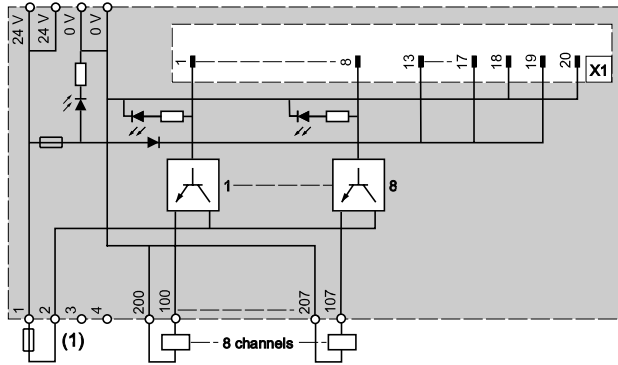
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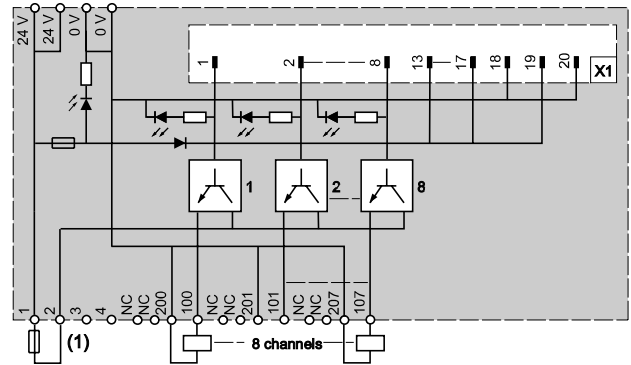
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ABE-7S08S2B0



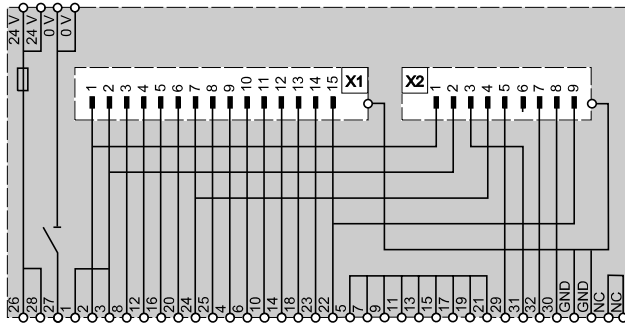
ABE-7S08S2B1



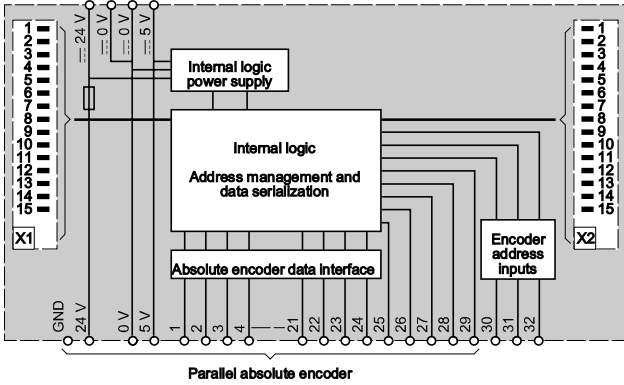
(1) The user must connect the protection fuse across terminals 1 and 2.
ABE-7CPA01

(1) The user must connect the protection fuse across terminals 1 and 2.
ABE-7CPA02

4



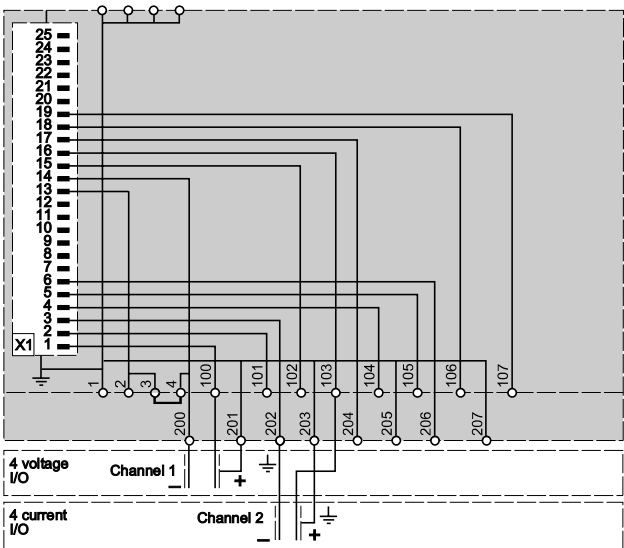
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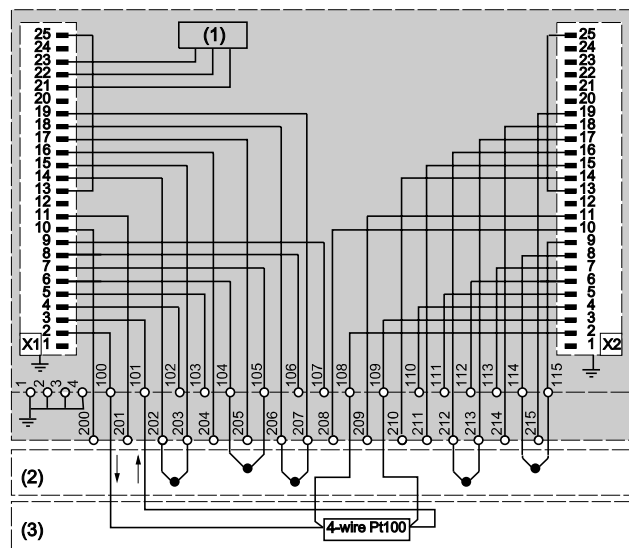
X1 To Premium module

X2 To Telefast

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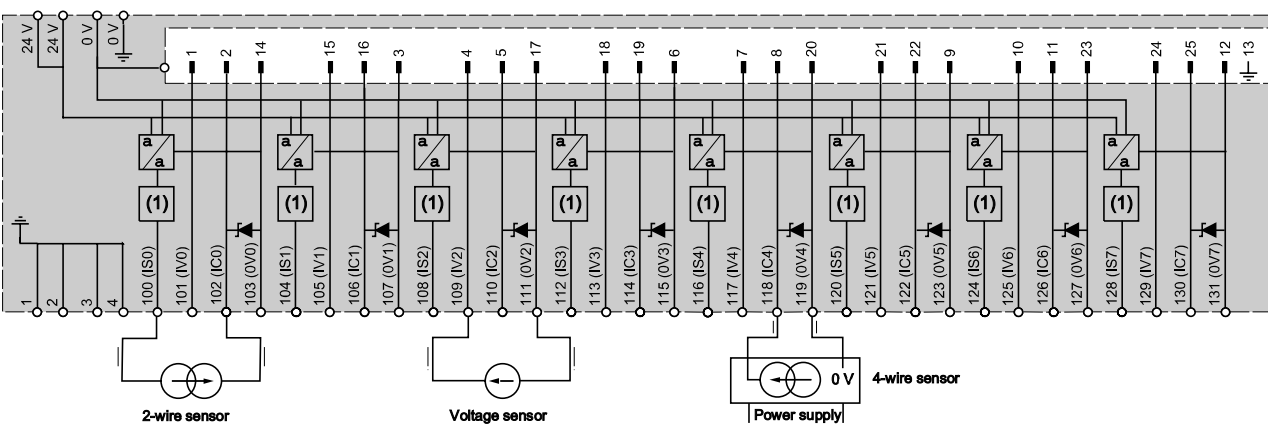


ABE-7CPA12



- (1) Temperature probe
- (2) Used in cold junction compensation mode in the Telefast sub-base
- (3) Used in cold junction compensation mode by external 4-wire Pt100

ABE-7CPA31



(1) 25 mA protection

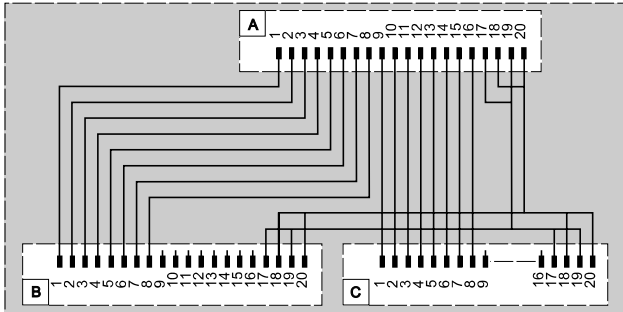
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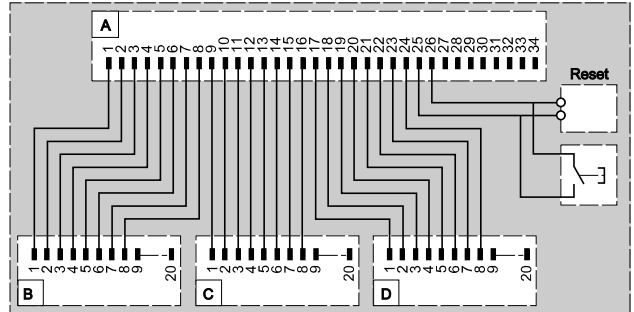
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ABE-7ACC02



ABE-7ACC03



4

Enclosure feedthrough
With 40-way industrial connector
ABE-7ACC80

20-way HE 10		Industrial connector		20-way HE 10	
Term no.	Channel	Pin no.	Channel	Term no.	
1	0	C16	B16	16	1
2	1	C15	B15	17	2
3	2	C14	B14	18	3
4	3	C13	B13	19	4
5	4	C12	B12	20	5
6	5	C11	B11	21	6
7	6	C10	B10	22	7
8	7	C9	B9	23	8
9	8	C8	B8	24	9
10	9	C7	B7	25	10
11	10	C6	B6	26	11
12	11	C5	B5	27	12
13	12	D5	A5	28	13
14	13	D6	A6	29	14
15	14	D7	A7	30	15
16	15	D8	A8	31	16
17	--- 24 V	A3	A3	--- 24 V	17
18	--- 0 V	C3	C3	--- 0 V	18
19	--- 24 V	B3	B3	--- 24 V	19
20	--- 0 V	D3	D3	--- 0 V	20

With CNOMO M23 connector
ABE-7ACC82

20-way HE 10		M23 connector	Removable power supp.
Term no.	Channel	Pin no.	Term. block
1	0	15	
2	1	5	
3	2	16	
4	3	3	
5	4	17	
6	5	2	
7	6	11	
8	7	1	
9	8	7	
10	9	4	
11	10	8	
12	11	14	
13	12	9	
14	13	13	
15	14	10	
16	15	18	
17/19	--- 24 V	19	B/C
NC	±	12	A
18/20	--- 0 V	6	D/E

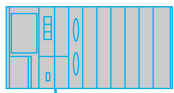
ABE-7ACC83

20-way HE 10		M23 connector	Removable power supp.
Term no.	Channel	Pin no.	Term. block
1	0	15	
2	1	5	
3	2	16	
4	3	3	
5	4	17	
6	5	2	
7	6	11	
8	7	1	
9	8	7	
10	9	4	
11	10	8	
12	11	14	
NC		9	
NC		13	
NC		10	
NC		18	
NC	±	12	A
13/14/15/16/17/19	--- 24 V	19	B/C
18/20	--- 0 V	6	D/E

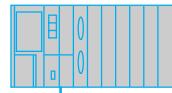
ABF-F25S200

Channel	25-way SUB-D	Colour
1	- 14	Black
	+ 1	Yellow
2	- 3	Black
	+ 15	Blue
3	- 17	Black
	+ 4	Green
4	- 6	Black
	+ 18	White
5	- 20	Green
	+ 7	Red
6	- 9	Red
	+ 21	White
7	- 23	Black
	+ 10	Orange
8	- 12	Black
	+ 24	Red

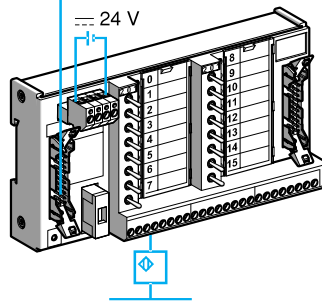
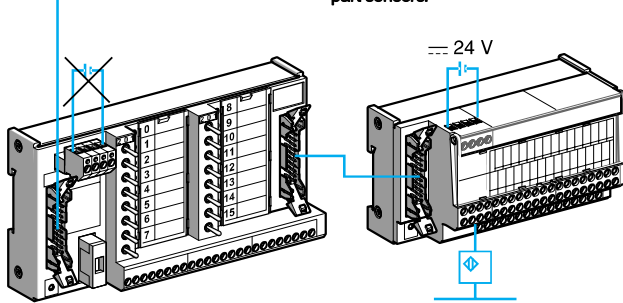
Simulation sub-base ABE-7TES160 Input connections



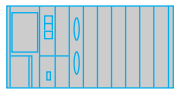
Inserted between the PLC and the operative part, the simulation sub-base is used to set the PLC inputs to 1 or 0 irrespective of the state of the operative part sensors.



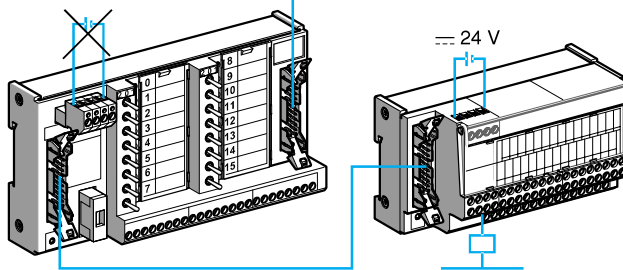
Connected to a PLC input module, the simulation sub-base enables signals to be forced to 1 or 0 and sensors to be connected to its screw terminals.



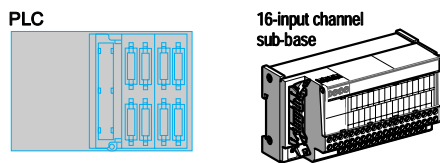
Output connections



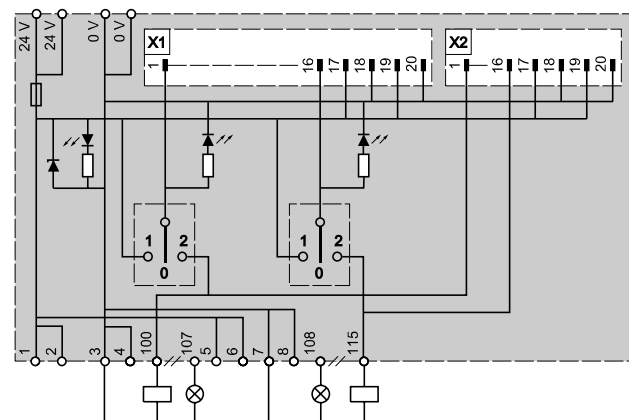
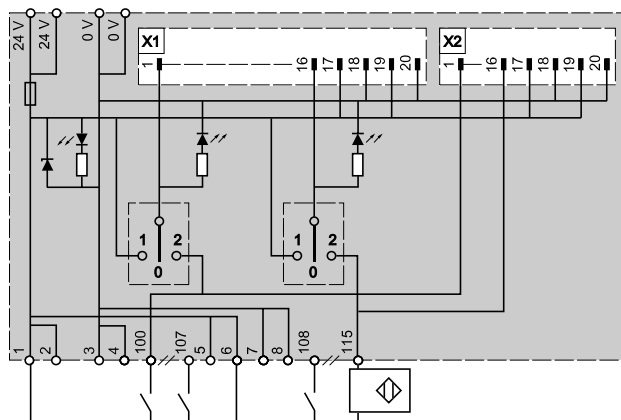
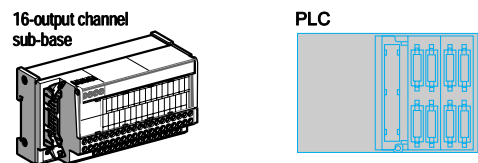
Inserted between the PLC and the operative part, the simulation sub-base is used to set the operative part actuators to 1 or 0 irrespective of the state of the PLC outputs.



Input connection scheme



Output connection scheme



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ABF H14H300	4/51	ABL 7UPS24200	1/17	AZ5 DE007●	7/6 to 7/8	DZ5 CEB005●	7/6	FTX DP32●●	5/27
ABF H16H150	4/51	ABL 7UPS24400	1/17	AZ5 DE010●	7/6 to 7/8	and 7/8	and 7/8	and 5/46	and 5/46
ABF H16H300	4/51	ABR 1E101M	3/8	AZ5 DE015●	7/6 to 7/8	DZ5 CEB007●	7/6	FTX DP12L12	5/27
ABF H20H100	4/44	ABR 1E111●	3/8	AZ5 DE025●	7/6 to 7/8	and 7/8	and 7/8	and 5/47	and 5/47
ABF H20H151	4/45	ABR 1E112F	3/8			DZ5 CEB010●	7/6	FTX ES00	5/28
ABF H20H20●	4/44	ABR 1E118●	3/8			and 7/8	and 7/8	and 5/47	and 5/47
	and 4/45	ABR 1E301M	3/8	D		DZ5 CEB015●	7/6	FTX IB12●●	5/27
ABF H20H300	4/44	ABR 1E311●	3/8	DB6 CD02	6/40	and 7/8	and 7/8	FTX MLA10	5/28
	and 4/45	ABR 1E312F	3/8	DB6 CD1●●	6/40	DZ5 CEB025●	7/6	and 5/47	and 5/47
ABF H20H501	4/45	ABR 1E312F	3/8	DB6 DD10●	6/41				
ABF H28H150	4/51	ABR 1E318●	3/8	DB6 ED0●	6/41				
ABF H28H300	4/51	ABR 1E411●	3/8	DB6 FD0●	6/41				
ABF H32H150	4/51	ABR 1E412F	3/8	DZ5 CA00●●	7/7				
ABF H32H300	4/51	ABR 1E418●	3/8	and 7/9	and 7/9	F			
ABF H34H100	4/45	ABR 1S102B	3/8	DZ5 CA01●●	7/7	FTB 1CN08E08SP0	5/26	RSB 1A120●●	2/5
ABF H34H200	4/45	ABR 1S111F	3/8	and 7/9	and 7/9	FTB 1CN12E04SP0	5/26	RSB 1A160●●	2/5
ABF H34H300	4/45	ABR 1S118●	3/8	DZ5 CA025●	7/7	FTB 1CN16●P0	5/26	RSB 2A080●●	2/5
ABF H40H15●	4/50	ABR 1S302B	3/8	and 7/9	and 7/9	FTB 1DN08E08CM0	5/26	RSZ E1S35M	2/5
ABF H40H30●	4/50	ABR 1S311F	3/8	DZ5 CA042●	7/7	FTB 1DN08E08SP0	5/26	RSZ E1S48M	2/5
ABF M04S20●	4/49	ABR 1S318●	3/8	and 7/9	and 7/9	FTB 1DN12E04SP0	5/26	RSZ L300	2/5
ABF M08S20●	4/49	ABR 1S402B	3/8	DZ5 CA043	7/7	FTB 1DN16C●0	5/26	RSZ R215	2/5
ABF M16H15●	4/48	ABR 1S411F	3/8	DZ5 CA062●	7/7	FTB 1DN16E●0	5/26	RZM 021●●	2/5
ABF M16H30●	4/48	ABR 1S418●	3/8	and 7/9	and 7/9	FTB 1DP08E08CM0	5/26	RZM 031BN	2/5
ABF M16S201	4/49	ABR 1S602B	3/8	DZ5 CA063	7/7	FTB 1DP08E08SP0	5/26	RZM 031FPD	2/5
ABF M32H15●	4/49	ABR 1S611F	3/8	DZ5 CA102●	7/7	FTB 1DP12E04SP0	5/26	RZM 040W	2/5
ABF M32H30●	4/49	ABR 1S618●	3/8	and 7/9	and 7/9	FTB 1DP16C●0	5/26	RZM 041BN7	2/5
ABF R16H20●	4/50	ABR 2E111M	3/14	DZ5 CA103●	7/7	FTB 1DP16E●0	5/26	RZM 041FU7	2/5
ABF S08H20●	4/51	ABR 2E112●	3/14	and 7/9	and 7/9	FTB 1IB08E08SP1	5/26		
ABF S16H200	4/51	ABR 2E115F	3/14	DZ5 CA162●	7/7	FTB 1IB12E04SP1	5/26		
ABF S24H200	4/51	ABR 2E116F	3/14	and 7/9	and 7/9	FTB 1IB16●P1	5/26	T	
ABF S25S30●	4/45	ABR 2EB312B	3/14	DZ5 CA163●	7/7	FTM 1AE04C12●	5/46	TLX L FBC M	5/28
	and 4/47	ABR 2S1●2B	3/14	and 7/9	and 7/9	FTM 1AS04C12●	5/46	and 5/47	and 5/47
ABF Y25S200	4/44	ABR 7S11	4/41	DZ5 CA253●	7/7	FTM 1CN10	5/46	TSX BLK ●1	4/45
ABL 6AM0●	1/27	ABR 7S2●	4/41	and 7/9	and 7/9	FTM 1DD08C08●	5/46	TSX CAP 030	4/44
	and 1/34	ABR 7S33●	4/41	DZ5 CA352●	7/7	FTM 1DD08C12●	5/46	TSX CCP ●15	4/44
ABL 6RF2401●●	1/27	ABR 7S37	4/41	and 7/9	and 7/9	FTM 1DD16C12●	5/46	TSX CDP 103	4/44
ABL 6RF2402●●	1/27	ABS 2EA01E●	3/20	DZ5 CA353●	7/7	FTM 1DE08C08●	5/46	TSX CDP 203	4/44
ABL 6RF2405●●	1/27	ABS 2EA02E●	3/20	and 7/9	and 7/9	FTM 1DE08C12●	5/46	TSX CDP 30●	4/44
ABL 6RF24●●	1/27	ABS 2EC01E●	3/20	DZ5 CA502●	7/7	FTM 1DE16C12●	5/46	TSX CDP 50●	4/44
ABL 6TD02●	1/34	ABS 2SA0●MB	3/20	and 7/9	and 7/9	FTM 1D●10	5/46	TSX CXP 213	4/44
ABL 6TD04●	1/34	ABS 2SC0●EB	3/20	DZ5 CA503●	7/7	FTX BLA10	5/28	TSX CXP 613	4/44
ABL 6TD06●	1/34	ABS 7EA3●5	4/41	and 7/9	and 7/9	FTX C78●●	5/28	TSX PBSCA100	5/27
ABL 6TD100●	1/34	ABS 7EC3AL	4/41	DZ5 CE002●●	7/6	and 5/47	and 5/47	TSX PBSCA400	5/27
ABL 6TD10●	1/34	ABS 7EC3●2	4/41	DZ5 CE003●●	7/6	FTX CA31●●	5/47		
ABL 6TD160●	1/34	ABS 7SA2M	4/41	DZ5 CE005●	7/6	FTX CA32●●	5/47		
ABL 6TD16●	1/34	ABS 7SA3MA	4/41	and 7/8	and 7/8	FTX CB32●●	5/47		
ABL 6TD250●	1/34	ABS 7SC1B	4/41	DZ5 CE005L12●	7/6	FTX CBTL12	5/47		
ABL 6TD25●	1/34	ABS 7SC2E	4/41	and 7/8	and 7/8	FTX CM08B	5/7, 5/28		
ABL 6TD40●	1/34	ABS 7SC3BA	4/41	DZ5 CE005L6●	7/6	and 5/47	and 5/47		
ABL 6TD63●	1/34	ABS 7SC3E	4/41	and 7/8	and 7/8	FTX CM12B	5/6, 5/7,		
ABL 6TS02●	1/34	AM1 PA●	6/52	DZ5 CE007●	7/6	and 5/28	and 5/28		
ABL 6TS04●	1/34	AR1 MA01	7/9	and 7/8	and 7/8	FTX CN12F5	5/27		
ABL 6TS06●	1/34	AR1 MB01	7/9	DZ5 CE007L6●	7/6	and 5/46	and 5/46		
ABL 6TS100●	1/34	AR1 MC01●	7/9	and 7/8	and 7/8	FTX CN12M5	5/27		
ABL 6TS10●	1/34	AR1 SB3	1/27, 1/34	DZ5 CE010●	7/6	and 5/46	and 5/46		
ABL 6TS160●	1/34	and 4/43	and 4/43	and 7/8	and 7/8	FTX CN32●●	5/27		
ABL 6TS16●	1/34	AR1 SC0●	7/9	DZ5 CE010L12●	7/6	and 5/46	and 5/46		
ABL 6TS250●	1/34	AR2 XA335983	6/41	and 7/8	and 7/8	FTX CNCT1	5/27		
ABL 6TS25●	1/34	AT1 HB2	7/11	DZ5 CE010L6●	7/6	and 5/47	and 5/47		
ABL 6TS40●	1/34	AT1 PA●	7/10	and 7/8	and 7/8	FTX CNTL12	5/27		
ABL 6TS63●	1/34	and 7/11	and 7/11	DZ5 CE015	7/6	and 5/46	and 5/46		
ABL 7CEM240●●	1/17	AT1 PS1	7/11	DZ5 CE0153●	7/6	FTX CPE10	5/27		
ABL 7RE240●	1/17	AT2 PA●	7/10	and 7/8	and 7/8	FTX CY1208	5/7, 5/28		
ABL 7RE2410	1/17	AT2 PB1	7/11	DZ5 CE015D	7/8	and 5/47	and 5/47		
ABL 7REQ24050	1/17	AT2 PE1	7/10	DZ5 CE015L6●	7/6	FTX CY1212	5/6, 5/7,		
ABL 7REQ24100	1/17	AT2 PT●	7/11	and 7/8	and 7/8	and 5/28	and 5/28		
		AT2 TRIF01	7/10	DZ5 CE02●	7/6	and 5/47	and 5/47		

Technical information

Protective treatment according to climatic environment

Depending on the climatic and environmental conditions in which the equipment is placed, Schneider Electric can offer specially adapted products to meet your requirements.

In order to make the correct choice of protective finish, two points should be remembered :

- The prevailing climate of the country is never the only criterion.
- Only the atmosphere in the immediate vicinity of the equipment need be considered.

All climates treatment "TC"

This is the standard treatment for the Telemecanique brand equipment and is suitable for the vast majority of applications.

It is the equivalent of treatments described as "Klimafest", "Climateproof", "Total tropicalisation" or "Super tropicalisation" and meets the same requirements, in particular :

- Publication UTE C 63-100 (method I), successive cycles of humid heat at :
+ 40 °C and 95 % relative humidity.
- DIN 50016 - Variations of ambient conditions within a climatic chamber :
+ 23 °C and 83 % relative humidity,
+ 40 °C and 92 % relative humidity.

It also meets the requirements of the following marine classification authorities : BV-LROS-GL-DNV-RINA.

Characteristics

- Steel components are usually treated with zinc chromate and, when they have a mechanical function, they may also be painted.
- Insulating materials are selected for their high electrical, dielectric and mechanical characteristics.
- Metal enclosures have a stoved paint finish, applied over a primary phosphate protective coat, or are galvanised (e.g. some prefabricated busbar trunking components).

Limits for use of "TC" (All climates) treatment

- "TC" treatment is suitable for the following temperatures and humidity :

Temperature	(°C)	20	40	50
Relative humidity	(%)	95	80	50

- It may also be used where the above limits are only exceeded accidentally or for very short periods, or where temperature variations are not sufficient or fast enough to cause heavy condensation or dripping water on the equipment.
"TC" treatment is therefore suitable for all latitudes, including tropical and equatorial regions, where the equipment is mounted in normal, ventilated industrial locations. Being sheltered from external climatic conditions, temperature variations are small, the risk of condensation is minimised and the risk of dripping water is virtually non-existent.

Extension of use of "TC" (All climates) treatment

In cases where the humidity around the equipment exceeds the conditions described above, where the equipment, in tropical regions, is mounted outdoors, or where it is placed in a very humid location (laundries, sugar refineries, steam rooms, etc.), "TC" treatment can still be used if the following precautions are taken :

- The enclosure in which the equipment is mounted must be protected with a "TH" finish (see next page) and must be well ventilated to avoid condensation and dripping water (e.g. enclosure base plate mounted on spacers).
- Components mounted inside the enclosure must have a "TC" finish.
- If the equipment is to be switched off for long periods, a heater must be provided (0.2 to 0.5 kW per square decimetre of enclosure), switched on automatically when the equipment is turned off. This heater keeps the inside of the enclosure at a temperature slightly higher than the outside surrounding temperature, thereby avoiding any risk of condensation and dripping water (the heat produced by the equipment itself in normal running is sufficient to provide this temperature difference).
- For pilot devices, the use of "TC" treatment can be extended to outdoor use provided the enclosure is made of light alloys, zinc alloys or plastic material. In this case, it is essential to ensure that the degree of protection against penetration of liquids and solid objects is suitable for the applications involved.

Technical information

Protective treatment according to climatic environment

“TH” treatment for hot and humid environments

This treatment is for hot and humid atmospheres where installations are subject to condensation, dripping water and the risk of fungi.

Plastic insulating components are also resistant to attacks from insects such as termites and cockroaches. These properties have led to this treatment being described as “Tropical Finish”, but this does not mean that all equipment installed in tropical and equatorial regions must systematically have undergone “TH” treatment. On the other hand, certain operating conditions in temperate climates may well require the use of “TH” treated equipment (see limitations for use of “TC” treatment).

Special characteristics of “TH” treatment

- All insulating components are made of materials which are either resistant to fungi or treated with a fungicide, and which have increased resistance to creepage (Standards IEC 112, NF C 26-220, DIN 5348).
- Metal enclosures receive a top-coat of stoved, fungicidal paint, applied over a rust inhibiting undercoat. Components with “TH” treatment may be subject to a surcharge (1). Please consult your Regional Sales Office.

(1) A large number of the Telemecanique brand products are “TH” treated as standard and are, therefore, not subject to a surcharge.

Protective treatment selection guide

Location	Environmental conditions	Duty cycle	Internal heating of enclosure when not in use	Type of climate	Protective treatment of components of enclosure	
Indoors	No dripping water or condensation	Unimportant	Unnecessary	Unimportant	“TC”	“TC”
	Presence of dripping water or condensation	Frequent switching off for periods of more than 1 day	No	Temperate	“TC”	“TH”
			Yes	Equatorial	“TH”	“TH”
		Continuous	Unnecessary	Unimportant	“TC”	“TH”
Outdoors (sheltered)	No dripping water or dew	Unimportant	Unnecessary	Temperate	“TC”	“TC”
	Exposed outdoors or near the sea	Frequent and regular presence of dripping water or dew	No	Equatorial	“TH”	“TH”
Yes			Unimportant	“TC”	“TH”	
Continuous		Unnecessary	Unimportant	“TC”	“TH”	

These treatments cover, in particular, the applications defined by methods I and II of guide UTE C 63-100.

Special precautions for electronic equipment

Electronic products always meet the requirements of “TC” treatment. A number of them are “TH” treated as standard.

Some electronic products (for example : programmable controllers, flush mountable controllers CCX and flush mountable operator terminals XBT) necessitate the use of an enclosure providing a degree of protection to at least IP 54, as defined by the standards IEC 664 and NF C 20 040, for use in industrial applications or in environmental conditions requiring a “TH” treatment.

These electronic products, including flush mountable products, must have a degree of protection to at least IP 20 (either provided by the enclosure itself or following installation) for restricted access locations where the degree of pollution does not exceed 2 (a test booth not containing machinery or other dust producing activities, for example).

Special treatments

For highly corrosive industrial environments, Schneider Electric is able to offer special protective treatments. Please consult your Regional Sales Office.

Technical information

Product standards and approvals

Standardisation

Conformity to standards

The Telemecanique brand products satisfy, in the majority of cases, national (for example: BS in Great Britain, NF in France, DIN in Germany), European (for example: CENELEC) or international (IEC) standards. These product standards precisely define the performance of the designated products (such as IEC 60947 for low voltage equipment). When used correctly, as designated by the manufacturer and in accordance with regulations and correct practices, these products will allow assembled equipment, machine systems or installations to conform to their appropriate standards (for example: IEC 60204, relating to electrical equipment used on industrial machines).

Schneider Electric is able to provide proof of conformity of its production to the standards it has chosen to comply with, through its quality assurance system.

On request, and depending on the situation, Schneider Electric can provide the following:

- a declaration of conformity,
- a certificate of conformity (ASEFA/LOVAG),
- an approval certificate or agreement, in the countries where this procedure is required or for particular specifications, such as those existing in the merchant navy.

Code	Standards body Name	Abbreviation	Country
ANSI	American National Standards Institute	ANSI	USA
BS	British Standards Institution	BSI	Great Britain
CEI	Comitato Elettrotecnico Italiano	CEI	Italy
DIN/VDE	Verband Deutscher Elektrotechniker	VDE	Germany
EN	Comité Européen de Normalisation Electrotechnique	CENELEC	Europe
GOST	Gosudarstvennoe Komitet Standartov	GOST	Russia
IEC	International Electrotechnical Commission	IEC	Worldwide
JIS	Japanese Industrial Standard	JISC	Japan
NBN	Institut Belge de Normalisation	IBN	Belgium
NEN	Nederlands Normalisatie Instituut	NNI	Netherlands
NF	Union Technique de l'Electricité	UTE	France
SAA	Standards Association of Australia	SAA	Australia
UNE	Asociacion Española de Normalizacion y Certificacion	AENOR	Spain

European EN standards

These are technical specifications established in conjunction with, and with approval of, the relative bodies within the various CENELEC member countries (European Union, European Free Trade Association and many central and eastern European countries having «member» or «affiliated» status). Arrived at through the principle of consensus, the European standards are the result of a weighted majority vote. Such adopted standards are then integrated into the national collection of standards, and contradictory national standards are withdrawn.

The European standards are now incorporated within the French standards and carry the prefix NF EN. Under the "Technical Union of Electricity" (UTE), the French version of the corresponding European standard carries a double notation: European reference (NF EN ...) and classification (C ...).

Therefore, the standard NF EN 60947-4-1 relating to motor contactors and starters, effectively constitutes the French version of the European standard EN 60947-4-1 and carries the UTE classification C 63-110.

This standard is identical to the British standard BS EN 60947-4-1 or the German standard DIN EN 60947-4-1.

Whenever reasonably practical, European standards reflect the international standards (IEC).

With regard to automation system components and distribution equipment, in addition to complying with the requirements of French NF standards, Telemecanique brand components conform to the standards of all other major industrial countries.

Regulations

European Directives

Opening up of European markets assumes harmonisation of the regulations pertaining to each member country of the European Union.

The purpose of the European Directive is to eliminate obstacles hindering the free circulation of goods within the European Union, and it applies to each member country. Member countries are obliged to transcribe each Directive into their national legislation and to simultaneously withdraw any contradictory regulations. The Directives, in particular those of a technical nature which concern us, only establish the objectives to be achieved and are referred to as "essential requirements".

The manufacturer must take all the necessary measures to ensure that his products conform to the requirements of each Directive applicable to his production.

As a general rule, the manufacturer certifies conformity to the essential requirements of the Directive(s) for his product by affixing a CE mark.

The CE mark is affixed to Telemecanique brand products, as defined by French and European regulations.

Significance of the CE mark

- The CE mark affixed to a product signifies that the manufacturer certifies that the product conforms to the relevant European Directive(s) which concern him ; this condition must be met to allow free distribution and circulation within the countries of the European Union of any product subject to one or more of the E.U. Directives.
- The CE mark is intended solely for national market control authorities.
- The CE mark must not be confused with a conformity marking.

Technical information

Product standards and approvals

European Directives (continued)

For electrical equipment, only conformity to standards signifies that the product is suitable for its designated function, and only the guarantee of an established manufacturer can provide a high level of quality assurance.

For Telemecanique brand products, one or several Directives are likely to be applicable, depending on the product, in particular:

- the Low Voltage Directive 73/23/EEC amended by Directive 93/68/EEC: the CE mark relating to this Directive has been compulsory since 1st January 1997.

- the Electromagnetic Compatibility Directive 89/336/EEC, amended by Directives 92/31/EEC and 93/68/EEC: the CE mark on products covered by this Directive has been compulsory since 1st January 1996.

ASEFA-LOVAG certification

The function of ASEFA (Association des Stations d'Essais Française d'Appareils électriques - *Association of French Testing Stations for Low Voltage Industrial Electrical Equipment*) is to carry out tests of conformity to standards and to issue certificates of conformity and test reports. ASEFA laboratories are authorised by the French authorisation committee (COFRAC).

ASEFA is now a member of the European accord group LOVAG (Low Voltage Agreement Group). This means that any certificates issued by LOVAG/ASEFA are recognised by all the authorities forming the membership of the group and carry the same validity as those issued by any of the member authorities.

Quality labels

When components can be used in domestic and similar applications, it is sometimes recommended that a "Quality label" be obtained, which is a form of certification of conformity.

Code	Quality label	Country
CEBEC	Comité Electrotechnique Belge	Belgium
KEMA-KEUR	Keuring van Electrotechnische Materialen	Netherlands
NF	Union Technique de l'Electricité	France
ÖVE	Österreichischer Verband für Electrotechnik	Austria
SEMKO	Svenska Electriska Materiel Kontrollnataalten	Sweden

Approvals

In some countries, the approval of certain electrical equipment is required by law or by the market. In this case, an approval certificate is issued by the official test authority.

Each approved component must bear the relevant quality label when this is mandatory:

Code	Approval authority	Country
CSA	Canadian Standards Association	Canada
UL	Underwriters Laboratories	USA

Note on approvals issued by the Underwriters Laboratories (UL). There are two levels of approval:

"Recognized" (R) The component is fully approved for inclusion in equipment built in a workshop, where the operating limits are known by the equipment manufacturer and where its use within such limits is acceptable by the Underwriters Laboratories.

The component is not approved as a "Product for general use" because its manufacturing characteristics are incomplete or its application possibilities are limited.

A "Recognized" component does not necessarily carry the approval symbol.

"Listed" (UL)

The component conforms to all the requirements of the classification applicable to it and may therefore be used both as a "Product for general use" and as a component in assembled equipment.

A "Listed" component must carry the approval symbol.

Marine classification authorities

Prior approval by certain marine classification authorities is generally required for electrical equipment which is intended for use on board merchant vessels.

Code	Classification authority	Country
BV	Bureau Veritas	France
DNV	Det Norske Veritas	Norway
GL	Germanischer Lloyd	Germany
LROS	Lloyd's Register of Shipping	Great Britain
NKK	Nippon Kaiji Kyokai	Japan
RINA	Registro Italiano Navale	Italy
RRS	Register of Shipping	Russia

Note

For further details on a specific product, please refer to the "Characteristics" pages in this catalogue or consult your Regional Sales Office.

Technical information

Degrees of protection provided by enclosures

Degrees of protection against the penetration of solid bodies, water and personnel access to live parts

The European standard EN 60529 dated October 1991, IEC publication 529 (2nd edition - November 1989), defines a coding system (IP code) for indicating the degree of protection provided by electrical equipment enclosures against accidental direct contact with live parts and against the ingress of solid foreign objects or water. This standard does not apply to protection against the risk of explosion or conditions such as humidity, corrosive gasses, fungi or vermin.

Certain equipment is designed to be mounted on an enclosure which will contribute towards achieving the required degree of protection (example : control devices mounted on an enclosure).

Different parts of an equipment can have different degrees of protection (example : enclosure with an opening in the base).

Standard NF C 15-100 (May 1991 edition), section 512, table 51 A, provides a cross-reference between the various degrees of protection and the environmental conditions classification, relating to the selection of equipment according to external factors.

Practical guide UTE C 15-103 shows, in the form of tables, the characteristics required for electrical equipment (including minimum degrees of protection), according to the locations in which they are installed.















IP ●●● code

The IP code comprises 2 characteristic numerals (e.g. IP 55) and may include an additional letter when the actual protection of personnel against direct contact with live parts is better than that indicated by the first numeral (e.g. IP 20C).

Any characteristic numeral which is unspecified is replaced by an X (e.g. IP XXB).

1st characteristic numeral : corresponds to protection of the equipment against penetration of solid objects and protection of personnel against direct contact with live parts.

2nd characteristic numeral : corresponds to protection of the equipment against penetration of water with harmful effects.

	Protection of the equipment	Protection of personnel		Protection of the equipment	Protection of personnel
0	Non-protected	Non-protected	0	Non-protected	
1	 $\varnothing 50 \text{ mm}$ Protected against the penetration of solid objects having a diameter greater than or equal to 50 mm.	Protected against direct contact with the back of the hand (accidental contacts).	1	 Protected against vertical dripping water, (condensation).	
2	 $\varnothing 12,5 \text{ mm}$ Protected against the penetration of solid objects having a diameter greater than or equal to 12.5 mm.	Protected against direct finger contact.	2	 15° Protected against dripping water at an angle of up to 15°.	
3	 $\varnothing 2,5 \text{ mm}$ Protected against the penetration of solid objects having a diameter greater than or equal to 2.5 mm.	Protected against direct contact with a $\varnothing 2.5 \text{ mm}$ tool.	3	 60° Protected against rain at an angle of up to 60°.	
4	 $\varnothing 1 \text{ mm}$ Protected against the penetration of solid objects having a diameter > 1 mm.	Protected against direct contact with a $\varnothing 1 \text{ mm}$ wire.	4	 Protected against splashing water in all directions.	
5	 Dust protected (no harmful deposits).	Protected against direct contact with a $\varnothing 1 \text{ mm}$ wire.	5	 Protected against water jets in all directions.	
6	 Dust tight.	Protected against direct contact with a $\varnothing 1 \text{ mm}$ wire.	6	 Protected against powerful jets of water and waves.	
			7	 15 cm min. Protected against the effects of temporary immersion.	
			8	 1 m Protected against the effects of prolonged immersion under specified conditions.	

Degrees of protection against mechanical impact

The European standard EN 50102 dated March 1995 defines a coding system (IK code) for indicating the degree of protection provided by electrical equipment enclosures against external mechanical impact. Standard NF C 15-100 (May 1991 edition), section 512, table 51 A, provides a cross-reference between the various degrees of protection and the environmental conditions classification, relating to the selection of equipment according to external factors. Practical guide UTE C 15-103 shows, in the form of tables, the characteristics required for electrical equipment (including minimum degrees of protection), according to the locations in which they are installed.

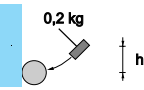
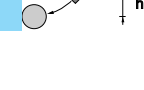
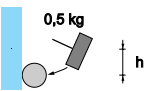
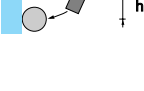
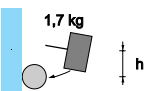
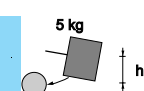
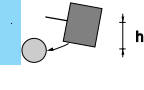
Additional letter : corresponds to protection of personnel against direct contact with live parts.

IK ●● code

The IK code comprises 2 characteristic numerals (e.g. IK 05).

2 characteristic numerals : corresponding to a value of impact energy.

A	With the back of the hand.
B	With the finger.
C	With a Ø 2.5 mm tool.
D	With a Ø 1 mm wire.

		h (cm)	Energy (J)
00	Non-protected		
01		7.5	0.15
02		10	0.2
03		17.5	0.35
04		25	0.5
05		35	0.7
06		20	1
07		40	2
08		30	5
09		20	10
10		40	20



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