



## Main

|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Range of product          | Modicon ABE7                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Product or component type | Sub-base for plug-in relay                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Sub-base type             | Output sub-base                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| [Us] rated supply voltage | 19...30 V conforming to IEC 61131-2                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Number of channels        | 16                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Connections - terminals   | Screw type terminals, 1 x 0.09...1 x 1.5 mm <sup>2</sup> (AWG 28...AWG 16) flexible with cable end<br>Screw type terminals, 1 x 0.14...1 x 2.5 mm <sup>2</sup> (AWG 26...AWG 12) solid<br>Screw type terminals, 1 x 0.14...1 x 2.5 mm <sup>2</sup> (AWG 26...AWG 14) flexible without cable end<br>Screw type terminals, 2 x 0.09...2 x 0.75 mm <sup>2</sup> (AWG 28...AWG 20) flexible with cable end<br>Screw type terminals, 2 x 0.2...2 x 2.5 mm <sup>2</sup> (AWG 24...AWG 14) solid |

## Complementary

|                                        |                                                                                                                  |
|----------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Supply voltage type                    | DC                                                                                                               |
| Product compatibility                  | ABS7A3M<br>ABE7ACC21<br>ABS7SC3E<br>ABR7S33                                                                      |
| Status LED                             | 1 LED per channel (green)channel status<br>1 LED (green)power ON                                                 |
| Polarity distribution                  | Volt-free                                                                                                        |
| Short-circuit protection               | 1 A internal fuse, 5 x 20 mm, fast blow (PLC end)<br>2 A fuse per channel, 5 x 20 mm, fast blow (output circuit) |
| Fixing mode                            | By clips (35 mm symmetrical DIN rail)<br>By screws (solid plate with fixing kit)                                 |
| Maximum supply current                 | 1 A                                                                                                              |
| Voltage drop on power supply fuse      | 0.3 V                                                                                                            |
| Maximum current per output common      | 16 A                                                                                                             |
| [Ui] rated insulation voltage          | 300 V coil circuit/contact circuits conforming to IEC 60947-1<br>2000 V terminals/mounting rails                 |
| [Uimp] rated impulse withstand voltage | 2.5 kV                                                                                                           |
| Installation category                  | II conforming to IEC 60664-1                                                                                     |
| Tightening torque                      | 0.6 N.m with flat Ø 3.5 mm screwdriver                                                                           |
| Net weight                             | 0.9 kg                                                                                                           |

## Environment

|                                 |                                                                           |
|---------------------------------|---------------------------------------------------------------------------|
| Product certifications          | BV<br>CSA<br>LROS (Lloyds register of shipping)<br>DNV<br>UL<br>GL<br>EAC |
| IP degree of protection         | IP2x conforming to IEC 60529                                              |
| Resistance to incandescent wire | 750 °C, extinction time <30 s conforming to IEC 60695-2-11                |
| Shock resistance                | 15 gn for 11 ms conforming to IEC 60068-2-27                              |
| Vibration resistance            | 2 gn (f= 10...150 Hz) conforming to IEC 60068-2-6                         |

|                                       |                                                                                                      |
|---------------------------------------|------------------------------------------------------------------------------------------------------|
| Resistance to electrostatic discharge | 4 KV (contact) level 3 conforming to IEC 61000-4-2<br>8 kV (air) level 3 conforming to IEC 61000-4-2 |
| Resistance to radiated fields         | 10 V/m (26000000...1000000000 Hz) conforming to IEC 61000-4-3 level 3                                |
| Resistance to fast transients         | 2 kV level 3 conforming to IEC 61000-4-4                                                             |
| Ambient air temperature for operation | -5...60 °C conforming to IEC 61131-2                                                                 |
| Ambient air temperature for storage   | -40...80 °C conforming to IEC 61131-2                                                                |
| Pollution degree                      | 2 conforming to IEC 60664-1                                                                          |

## Packing Units

|                              |         |
|------------------------------|---------|
| Unit Type of Package 1       | PCE     |
| Number of Units in Package 1 | 1       |
| Package 1 Weight             | 863 g   |
| Package 1 Height             | 8.5 cm  |
| Package 1 width              | 10 cm   |
| Package 1 Length             | 29.3 cm |
| Unit Type of Package 2       | S03     |
| Number of Units in Package 2 | 6       |
| Package 2 Weight             | 5.62 kg |
| Package 2 Height             | 30 cm   |
| Package 2 width              | 30 cm   |
| Package 2 Length             | 40 cm   |

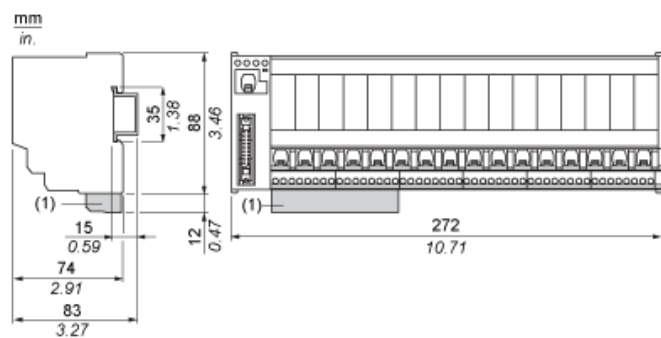
## Offer Sustainability

|                            |                                                                                                                                                                                      |
|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Sustainable offer status   | Green Premium product                                                                                                                                                                |
| REACH Regulation           | <a href="#"> REACH Declaration</a>                                                                 |
| REACH free of SVHC         | Yes                                                                                                                                                                                  |
| EU RoHS Directive          | Pro-active compliance (Product out of EU RoHS legal scope) <a href="#"> EU RoHS Declaration</a> |
| Mercury free               | Yes                                                                                                                                                                                  |
| RoHS exemption information | <a href="#"> Yes</a>                                                                              |
| China RoHS Regulation      | <a href="#"> China RoHS Declaration</a>                                                           |
| Environmental Disclosure   | <a href="#"> Product Environmental Profile</a>                                                    |
| Circularity Profile        | <a href="#"> End Of Life Information</a>                                                          |
| WEEE                       | The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins                                                          |

## Contractual warranty

|          |           |
|----------|-----------|
| Warranty | 18 months |
|----------|-----------|

## Dimensions



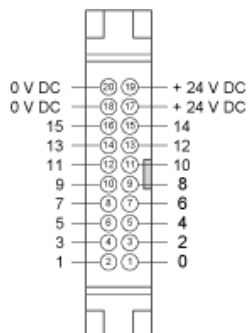
---

Mounting

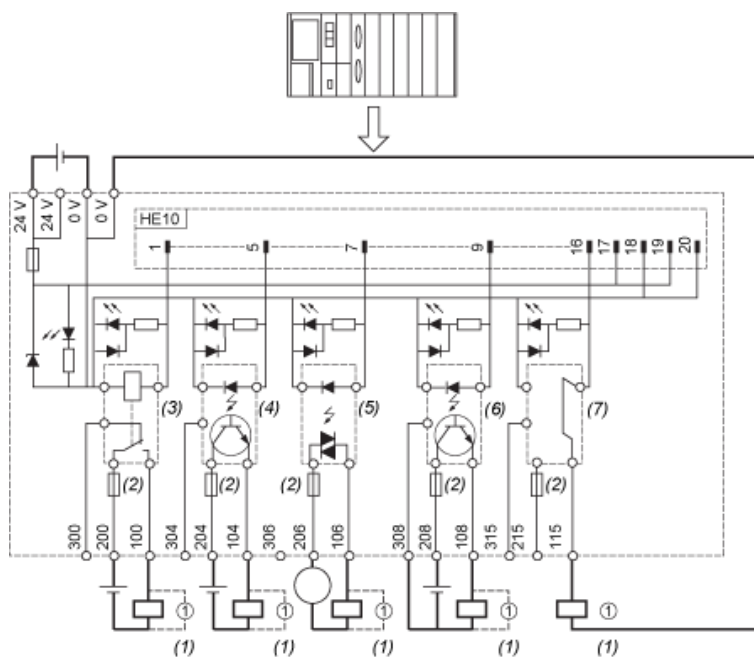
---



## HE10 16 Channels



## Wiring Diagram



- (1) Inductive load
- (2) Fuse only for ABE7P16T334
- (3) ABR7S33 (1 "OF" "DPDT") Ith = 10 A (supplied)
- (4) ABS7SC3E (5...48 VDC) I<sub>max.</sub> = 1.5 A (not supplied)
- (5) ABS7SA3M (24...240 VAC) I<sub>max.</sub> = 1.5 A (not supplied)
- (6) ABS7SC3BA (24 VDC) I<sub>max.</sub> = 2 A (not supplied)
- (7) ABE7ACC21 (24 VDC) I<sub>max.</sub> = 0.5 A (not supplied)

## Curves for Determining Cable Type and Length According to the Current

### 16-channel Sub-base



L Cable length

$I_T$  Total current per sub base (A)

$I_A$  Average current per channel (mA)

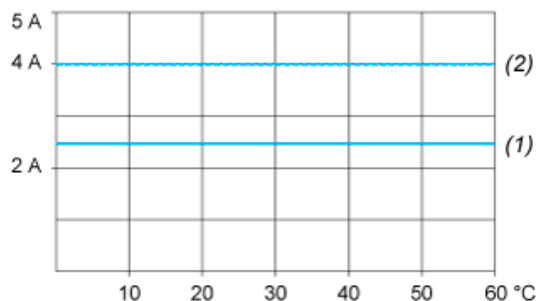
(1) TSXCDP••2 and ABFH20H••0 cables with c.s.a.  $0.08 \text{ mm}^2$  (AWG 28).

(2) TSXCDP••3 cables with c.s.a.  $0.34 \text{ mm}^2$  (AWG 22).

(3) Cables with c.s.a.  $0.13 \text{ mm}^2$  (AWG 26).

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.

## Temperature Derating Curves



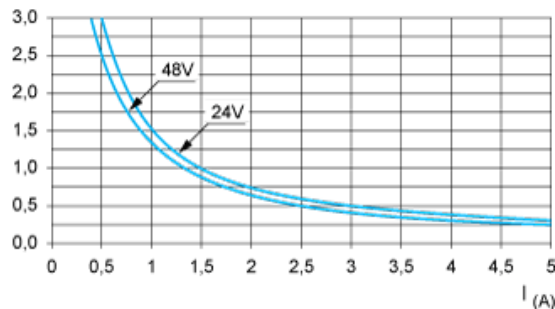
(1) 100 % of channels used

(2) 50 % of channels used

## Electrical Durability (in Millions of Operating Cycles) Conforming to IEC 60947-5-1

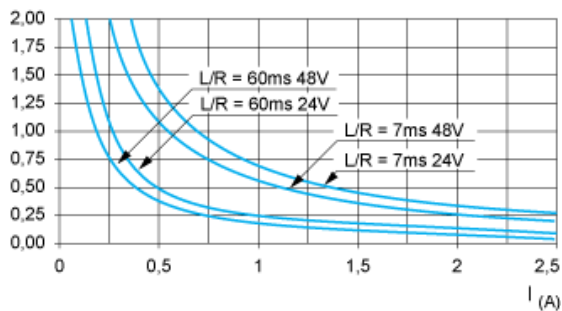
### DC Loads

DC12 curves



DC12control of resistive loads and of solid state loads isolated by optocoupler,  $I/R \leq 1 \text{ ms}$ .

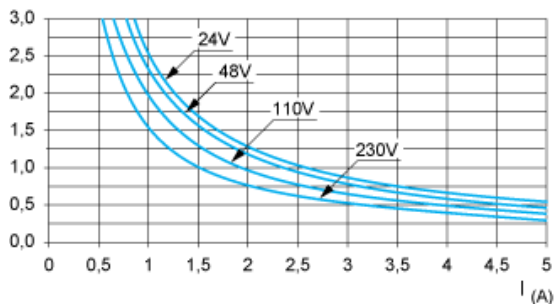
DC13 curves



DC13 Switching 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)

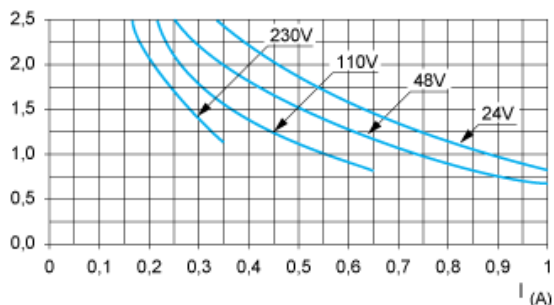
## AC Loads

AC12 curves



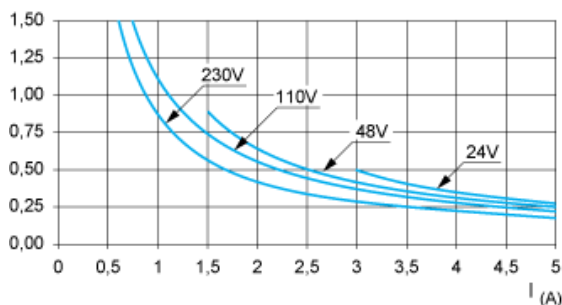
AC12control of resistive loads and of solid state loads isolated by optocoupler,  $\cos \phi \geq 0.9$ .

AC14 curves



AC14control of small electromagnetic loads  $\leq 72$  VA, make:  $\cos \phi = 0.3$ , break:  $\cos \phi = 0.3$ .

AC15 curves



AC15control of electromagnetic loads  $> 72$  VA, make:  $\cos \phi = 0.7$ , break:  $\cos \phi = 0.4$ .