

# Product datasheet

Specifications



## sub-base - soldered electromechanical relays ABE7 - 16 channels - relay 10 mm

TSI Code: 402703358 ABE7R16S210

### Main

Range of product	Modicon ABE7
Product or component type	Electromechanical output relay sub-base
[Us] rated supply voltage	24 V DC for PLC end
Number of channels	16
Number of terminal per channel	2

### Complementary

Terminal block type	Removable
Polarity distribution	Volt-free
Fixing mode	By clips (35 mm symmetrical DIN rail) By screws (solid plate with fixing kit)
Width	206 mm
Maximum current per output common	10 A
Current per channel	5 A for preactuator end
Minimum switching current	10 mA at $\geq 5$ V
Drop-out voltage	2.4 V at 20 °C (PLC end)
Switching frequency	$\leq 0.5$ Hz $\leq 10$ Hz
Threshold tripping voltage	19.7 V at 40 °C
Drop-out current	1 mA at 20 °C
Maximum power dissipation per channel in W	0.36 W (PLC end)
Contacts type and composition	1 NO for preactuator end
Maximum switching voltage	250 V AC 50/60 Hz conforming to IEC 60947-5-1 30 V DC conforming to IEC 60947-5-1
Electrical durability	500000 cycles, maximum switching current: 600 mA at 24 V DC-13 10 ms (preactuator end) 500000 cycles, maximum switching current: 1500 mA at 230 V AC-12 (preactuator end) 500000 cycles, maximum switching current: 1500 mA at 24 V DC-12 (preactuator end) 500000 cycles, maximum switching current: 900 mA at 230 V AC-15 (preactuator end)
Electrical reliability	1e-008
Operating time	$\leq 10$ ms coil energisation and NO closing $\leq 5$ ms coil de-energisation and NO opening
Contact bounce time	$\leq 5$ ms 1 NO

<b>Operating rate in Hz</b>	10 Hz no load 0.5 Hz at le
<b>Mechanical durability</b>	20000000 cycles
<b>[Uimp] rated impulse withstand voltage</b>	2.5 kV conforming to IEC 60947-1
<b>[Ui] rated insulation voltage</b>	2000 V
<b>Installation category</b>	II conforming to IEC 60664-1
<b>Tightening torque</b>	0.6 N.m with flat Ø 3.5 mm screwdriver
<b>Product weight</b>	0.405 kg

## Environment

<b>Max immunity to microbreaks</b>	5 ms
<b>Dielectric strength</b>	2000 V conforming to IEC 60947-1
<b>Product certifications</b>	GL CSA DNV BV LROS (Lloyds register of shipping) UL EAC
<b>IP degree of protection</b>	IP2x conforming to IEC 60529
<b>Protective treatment</b>	TC
<b>Resistance to incandescent wire</b>	750 °C, extinction time <30 s conforming to IEC 60695-2-11
<b>Shock resistance</b>	15 gn for 11 ms conforming to IEC 60068-2-27
<b>Resistance to radiated fields</b>	10 V/m (26000000...1000000000 Hz) conforming to IEC 61000-4-3 level 3
<b>Resistance to fast transients</b>	2 kV level 3 conforming to IEC 61000-4-4
<b>Ambient air temperature for operation</b>	-5...60 °C conforming to IEC 61131-2
<b>Ambient air temperature for storage</b>	-40...80 °C conforming to IEC 61131-2
<b>Pollution degree</b>	2 conforming to IEC 60664-1

## Packing Units

<b>Unit Type of Package 1</b>	PCE
<b>Number of Units in Package 1</b>	1
<b>Package 1 Weight</b>	580 g
<b>Package 1 Height</b>	7 cm
<b>Package 1 width</b>	8.2 cm
<b>Package 1 Length</b>	21.1 cm
<b>Unit Type of Package 2</b>	S03
<b>Number of Units in Package 2</b>	15
<b>Package 2 Weight</b>	9.194 kg
<b>Package 2 Height</b>	30 cm
<b>Package 2 width</b>	30 cm
<b>Package 2 Length</b>	40 cm

## Offer Sustainability

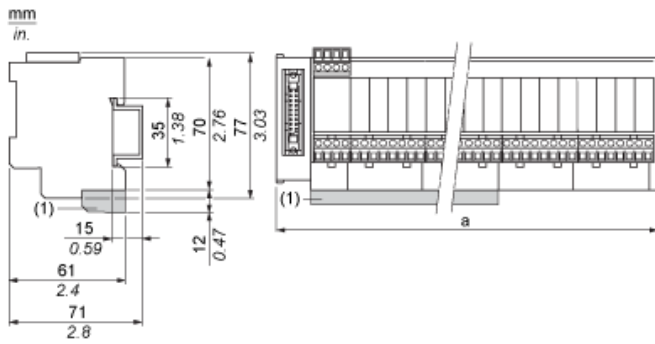
<b>Sustainable offer status</b>	Green Premium product
---------------------------------	-----------------------

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

## Contractual warranty

<b>Warranty</b>	18 months
-----------------	-----------

**Dimensions**

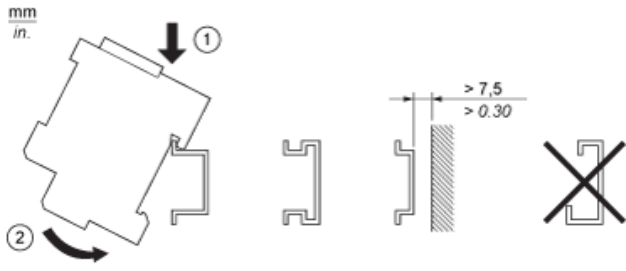


(1) ABE7BV20 / ABE7BV20E

ABE7	a in mm	a in in.
R16S111 / R16S111E	125	4.92
R16S21 / R16S21•E	206	8.11

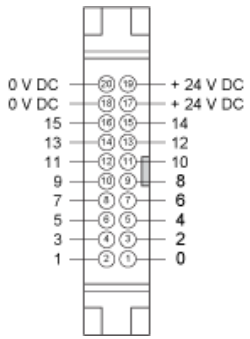
**Mounting**

---



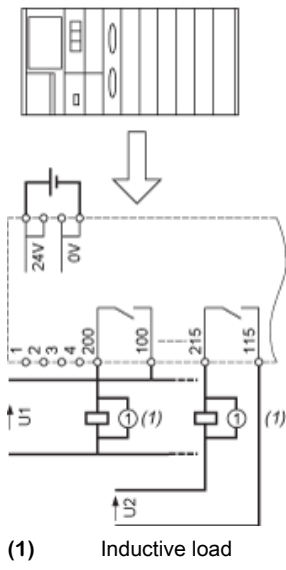
## HE10 16 Channels

---



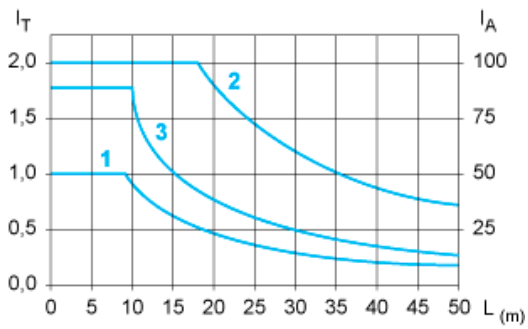
## Wiring Diagram

---



Curves for Determining Cable Type and Length According to the Current

16-channel Sub-base



- L Cable length
- I<sub>T</sub> Total current per sub base (A)
- I<sub>A</sub> Average current per channel (mA)
- (1) TSXCDP••2 and ABFH20H••0 cables with c.s.a. 0.08 mm<sup>2</sup> (AWG 28).
- (2) TSXCDP••3 cables with c.s.a. 0.34 mm<sup>2</sup> (AWG 22).
- (3) Cables with c.s.a. 0.13 mm<sup>2</sup> (AWG 26).

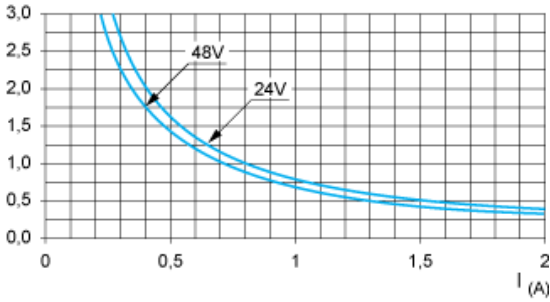
The curves are given for a voltage drop of 1 V in the cable. For n volts tolerance, multiply the length determined from the graph by n.



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

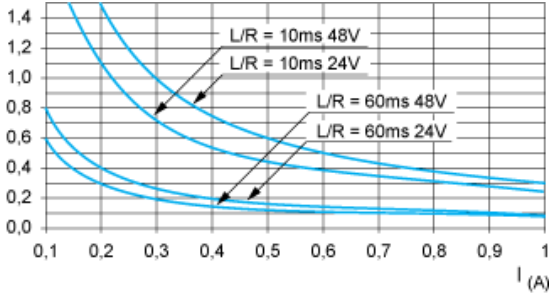
**DC Loads**

DC12 curves



**DC12** control of resistive loads and of solid state loads isolated by optocoupler,  $I/R \leq 1$  ms.

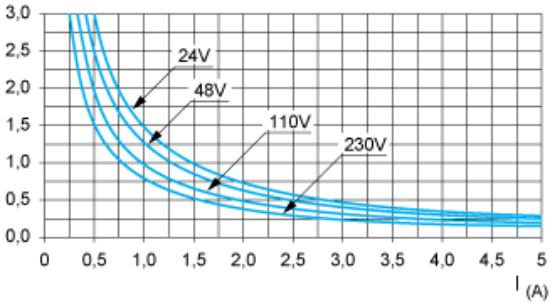
DC13 curves



**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).

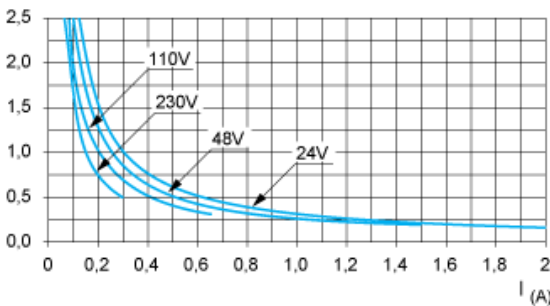
**AC Loads**

AC12 curves



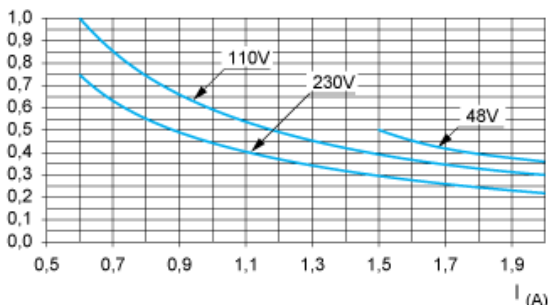
**AC12** control of resistive loads and of solid state loads isolated by optocoupler,  $\cos \phi \geq 0.9$ .

AC14 curves



**AC14** control of small electromagnetic loads  $\leq 72$  VA, make:  $\cos \phi = 0.3$ , break:  $\cos \phi = 0.3$ .

AC15 curves



**AC15** control of electromagnetic loads  $> 72$  VA, make:  $\cos \phi = 0.7$ , break:  $\cos \phi = 0.4$ .