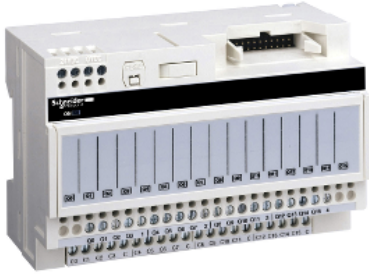


Product datasheet

Specifications



connection sub-base ABE7 - for Twido modular base - 12 inputs 8 outputs

ABE7B20MRM20

! Discontinued on: 24 November 2020

! End-of-service on: 24 June 2021

! Discontinued

ABE7B20MRM20 has not been replaced. Please contact your customer care centre for more information.

Main

Range of product	Modicon ABE7
Product or component type	Discrete I/O sub-base
[Us] rated supply voltage	24 V DC for controller side 24 V DC for sensor/controller side
Number of channels	20
Number of terminal per channel	2
Connections - terminals	Screw type terminals, 1 x 0.09...1 x 1.5 mm ² (AWG 28...AWG 16) flexible with cable end Screw type terminals, 1 x 0.14...1 x 2.5 mm ² (AWG 26...AWG 12) solid Screw type terminals, 1 x 0.14...1 x 2.5 mm ² (AWG 26...AWG 14) flexible without cable end Screw type terminals, 2 x 0.09...2 x 0.75 mm ² (AWG 28...AWG 20) flexible with cable end Screw type terminals, 2 x 0.2...2 x 2.5 mm ² (AWG 28...AWG 16) solid
Connector destination	Twido programmable controller

Complementary

Supply voltage limits	19...30 V DC conforming to IEC 61131-2 (controller side) 19...30 V DC conforming to IEC 61131-2 (sensor/controller side)
Discrete input number	12
Discrete input logic	Sink
Discrete output number	2 solid state output(s), 2000 mA at source 6 relay output(s), 3000 mA
Discrete output voltage	110...250 V AC relay output(s) 24 V DC solid state output(s) 5...30 V DC relay output(s)
Discrete output function	1 NO
Product compatibility	TWDLMDA40DTK TWDLMDA20DTK
Status LED	1 LED for power ON
Polarity distribution	1 common/12 channels for input 1 common/2 channels for solid state output 1 common/6 channels for relay output
Short-circuit protection	2 A internal fuse, 5 x 20 mm, fast blow (controller side)
Connector type	HE-10
Pin number	26
Fixing mode	By clips, mounting on 35 mm symmetrical DIN rail conforming to IEC 60715

By screws

Maximum supply current	2 A
Current per channel	0.0045 A solid state output(s) 0.009 A relay output(s)
Switched current	15 mA for input 2000 mA for solid state output 3000 mA for relay output
Maximum current per output common	10 A for relay output 4 A for solid state output
Voltage drop on power supply fuse	0.3 V
Current state 0 guaranteed	0.4 mA solid state output(s) (sensor/controller side)
Voltage state 0 guaranteed	10 V solid state output(s) (sensor/controller side) 2 V relay output(s) (sensor/controller side)
Current state 1 guaranteed	5.5 mA solid state output(s) (sensor/controller side)
Voltage state 1 guaranteed	16 V solid state output(s) (sensor/controller side) 16.8 V relay output(s) (sensor/controller side)
Electrical durability	500000 cycles, maximum switching current: 2000 mA AC-12 relay output(s) (preactuator side) 500000 cycles, maximum switching current: 2000 mA DC-12 solid state output(s) (preactuator side) 500000 cycles, maximum switching current: 2000 mA DC-13 solid state output(s) (preactuator side) 500000 cycles, maximum switching current: 3000 mA DC-12 relay output(s) (preactuator side) 500000 cycles, maximum switching current: 400 mA AC-15 relay output(s) (preactuator side) 500000 cycles, maximum switching current: 500 mA DC-13 relay output(s) (preactuator side)
Minimum switching current	1 mA solid state output(s) 100 mA relay output(s)
Response time	<= 0.01 ms from state 0 to 1 solid state output(s) <= 0.4 ms from state 1 to 0 solid state output(s) <= 2.5 ms from state 1 to 0 relay output(s) <= 5 ms from state 0 to 1 relay output(s)
[Uimp] rated impulse withstand voltage	6 kV relay output(s) 2.5 kV solid state output(s)
Switching frequency	20 Hz relay 300 Hz solid state
Mechanical durability	20000000 cycles at 20 °C
[Ui] rated insulation voltage	2000 V between terminals/mounting rails 300 V between coil circuit/contact circuits conforming to IEC 60947-1
Overvoltage category	II conforming to IEC 60664-1
Tightening torque	0.6 N.m with flat Ø 3.5 mm screwdriver
Net weight	0.43 kg

Environment

Standards	IEC 61131-2 Type 1
Product certifications	UL CSA
IP degree of protection	IP2x conforming to IEC 60529
Resistance to incandescent wire	750 °C 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 8 kV (air) level 3 conforming to IEC 61000-4-2
Resistance to radiated fields	10 V/m (80000000...2000000000 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	361 g
Package 1 Height	7.8 cm
Package 1 width	9 cm
Package 1 Length	14 cm
Unit Type of Package 2	S03
Number of Units in Package 2	24
Package 2 Weight	9.098 kg
Package 2 Height	30 cm
Package 2 width	30 cm
Package 2 Length	40 cm

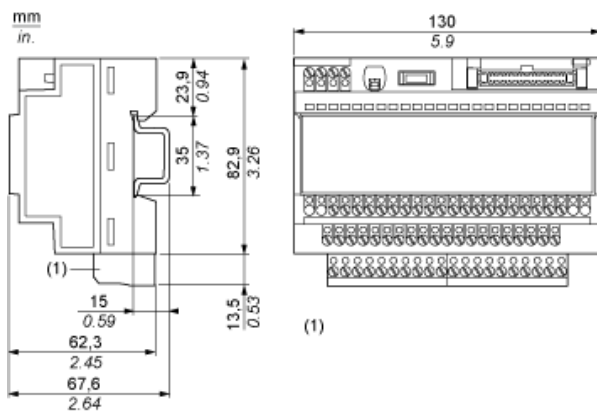
Offer Sustainability

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

Contractual warranty

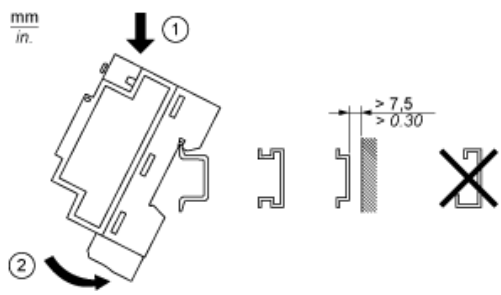
Warranty	18 months
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Dimensions

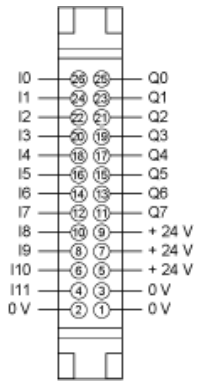


(1) ABE7BV10 / BV20 / BV20TB

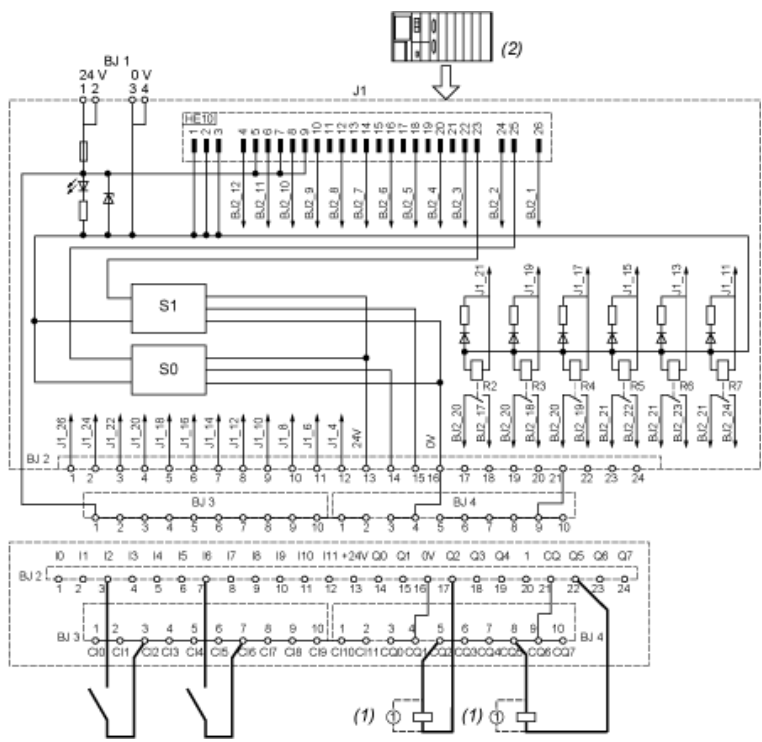
Mounting



HE10 20 Channels

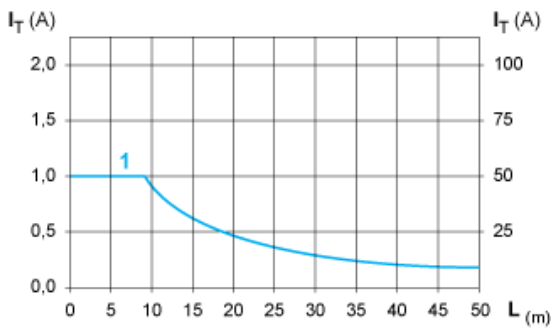


Wiring Diagram



- (1) Inductive load
- (2) Input sink

Curves for Determining Cable Type and Length According to the Current

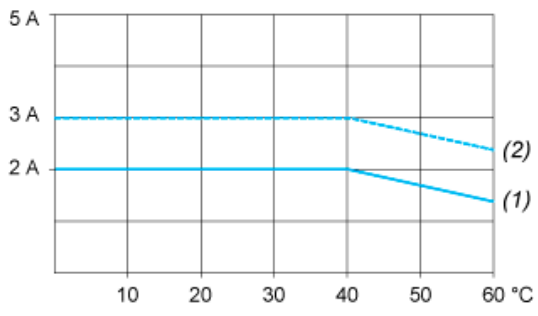


- L Cable length
- I_T Total current per sub base (A)
- I_A Average current per channel (mA)
- (1) Cables ABFT2..... c.s.a. 0.08 mm² (AWG 28)

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

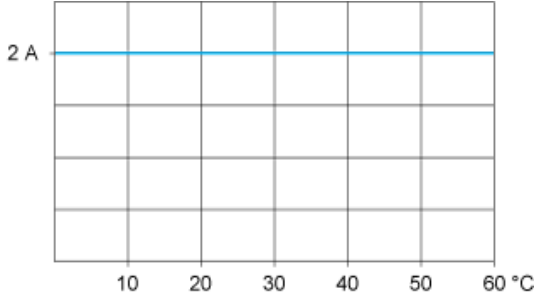
Electromechanical Relay Outputs



- (1) 100 % of channels used
- (2) 50 % of channels used

Temperature Derating Curves

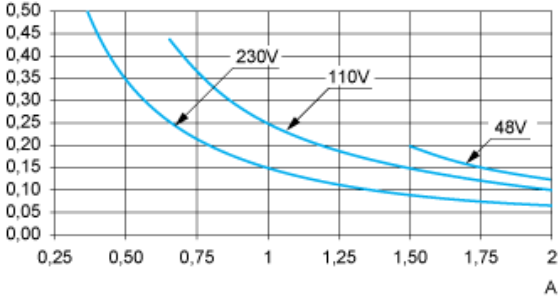
Solid State Outputs



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

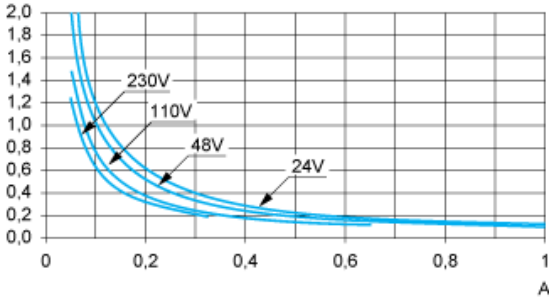
DC Loads

DC12 curves



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

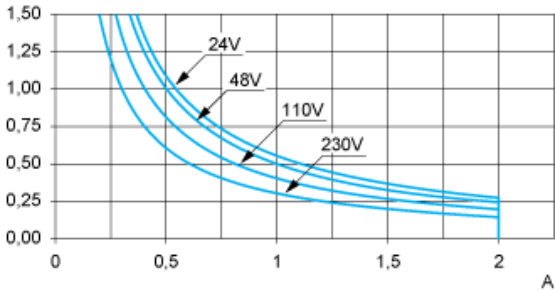
DC13 curves



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).

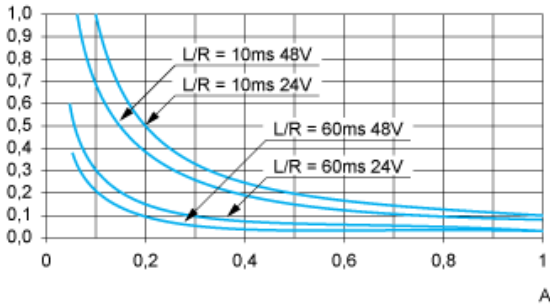
AC Loads

AC12 curves



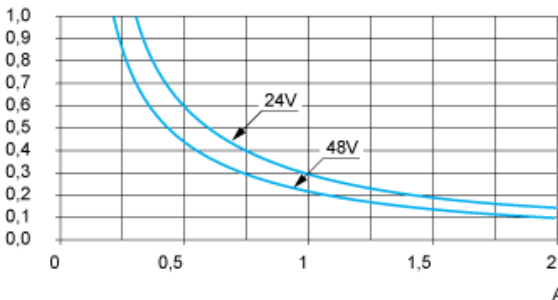
AC12 control of resistive loads and of solid state loads isolated by optocoupler, $\cos \phi \geq 0.9$.

AC14 curves



AC14 control of small electromagnetic loads ≤ 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: $\cos \phi = 0.4$.