

TM172OBM18R

Controller, Modicon M171/M172/M173,
optimized blind 18 IO, Modbus



Main

Range of product	Modicon M171/M172
Product or component type	Programmable controllers
Product specific application	HVAC
Variant	Programmable
Total inputs/outputs	18
Discrete input number	2
Discrete output number	1 for relay outputs SPDT with independent common 2 for relay outputs SPST with same common 3 for relay outputs SPST with independent common
Discrete output current	3 A for relay SPST 3 A for relay SPDT
Analogue input number	8 configurable by pair
Analogue output number	2 voltage/current, range: 4...20 mA or 0...10 V or PWM (2 kHz)

Complementary

Number of port	1 CAN port - screw terminal block 1 USB type mini B - USB device port Mini-B 2 RS485 - screw terminal block (Modbus serial link or BACnet MS/TP)
Input/output number	2 analog output(s) 6 digital output(s) 8 analog input(s) 2 digital input(s)
Discrete input logic	Sink or source (positive/negative) up to 2 kHz
Discrete input voltage	24 V AC/DC
Discrete input current	5 mA AC/DC
Input impedance	10 kOhm
Analogue input type	NTC NK103 Beta 3977 temperature probe - 40...137 °C - resolution: 0.1 °C at 10 kOhm (at 25 °C) NTC 103AT-2 Beta 3435 temperature probe - 50...110 °C - resolution: 0.1 °C at 10 kOhm (at 25 °C) Voltage 0...10 V - resolution: 1 digit at > 10 kOhm Voltage 0...5 V - resolution: 1 digit at > 20 kOhm (absolute or ratiometric) Impedance 0...1500 hOhm - resolution: 1 hOhm at 10 kOhm Impedance 0...300 daOhm - resolution: 1 daOhm at 1500 Ohm PTC temperature probe - 55...150 °C - resolution: 0.1 °C at 1500 Ohm Pt 1000 temperature probe - 200...850 °C - resolution: 0.1 °C at 1500 Ohm Current 0...20 mA/4...20 mA - resolution: 1 digit at < 150 Ohm Direct input at 10 kOhm (Dry contact)

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Measurement accuracy	0...20 mA 0...4 mA +/- 2 % of full scale +/- 1 digit 0...20 mA 4...20 mA +/- 1 % of full scale +/- 1 digit 4...20 mA +/- 1 % of full scale +/- 1 digit 0...10 V +/- 1 % of full scale +/- 1 digit 0...5 V +/- 1 % of full scale +/- 1 digit daOhm 0...300 daOhm +/- 2.5 daOhm NTC NK103 Beta 3977 - 40...+110 °C +/- 1 °C NTC NK103 Beta 3977 110...137 °C +/- 1.9 °C NTC 103AT-2 Beta 3435 - 50...110 °C +/- 1 °C PTC - 55...155 °C +/- 1.1 °C Pt 1000 - 200...-100 °C +/- 10 °C Pt 1000 - 100...-50 °C +/- 2.5 °C Pt 1000 - 50...100 °C +/- 1.5 °C Pt 1000 100...400 °C +/- 2.4 °C Pt 1000 400...850 °C +/- 10 °C hOhm 0...750 hOhm +/- 8.5 hOhm hOhm 750 hOhm...1500 hOhm +/- 24 hOhm
Sensor power supply	5 V DC at 40 mA supplied by the controller 24 V DC at 100 mA supplied by the controller
[Us] rated supply voltage	24 V +/- 10 % AC 20...38 V DC
Power consumption in W	10 W at 24 V AC/DC
Realtime clock	Built-in clock, clock drift <= 30 s/month at -20...60 °C
Display type	Without display
Overvoltage category	II
Local signalling	1 LED (red) for programmable 1 LED (yellow) for programmable 1 LED (green) for programmable 1 LED (green) for power
Mounting support	DIN rail Panel mounting with accessory
Width	72 mm
Height	110 mm
Depth	60.5 mm
Net weight	0.17 kg

Environment

Directives	2014/30/EU - electromagnetic compatibility 2014/35/EU - low voltage directive
Standards	EN 60068-2-6 Fc UL 60730-1 IEC 61000-4-3 IEC 61000-4-6 IEC 61000-4-5 IEC 61000-4-4 IEC 61000-4-11 CSA E60730-2-9 CAN/CSA-E60730-1 UL 60730-2-9 EN 60730-1 EN 60068-2-27 EN 60730-2-9 IEC 61000-4-2 UL94 (material V0)
Product certifications	RCM[RETURN]EAC[RETURN]cURus[RETURN]CE[RETURN]CSA
Ambient air temperature for operation	-20...60 °C
Ambient air temperature for storage	-30...70 °C
Relative humidity	5...95 % non-condensing
IP degree of protection	IP20
Pollution degree	2
Operating altitude	0...2000 m

Packing Units

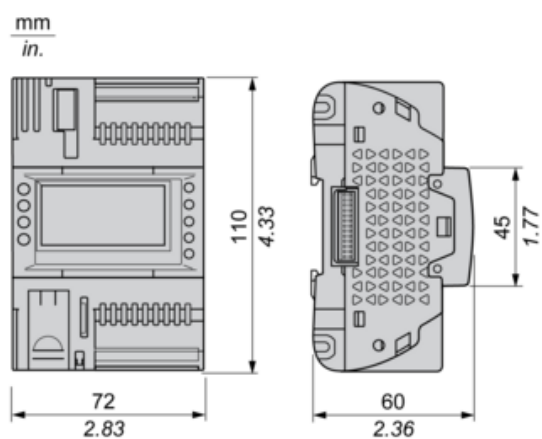
Unit Type of Package 1	PCE
Number of Units in Package 1	1
Package 1 Height	7.500 cm
Package 1 Width	9.500 cm
Package 1 Length	13.500 cm
Package 1 Weight	239.000 g
Unit Type of Package 2	S02
Number of Units in Package 2	15
Package 2 Height	15.000 cm
Package 2 Width	30.000 cm
Package 2 Length	40.000 cm
Package 2 Weight	3.930 kg

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)
Mercury free	Yes
China RoHS Regulation	 China RoHS Declaration
RoHS exemption information	 Yes
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
Upgradeability	Upgradeable through digital modules and upgraded components

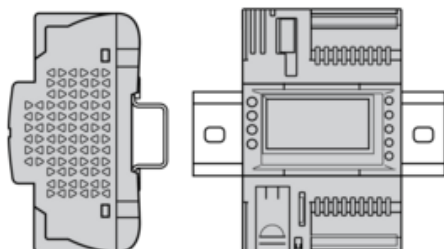
Dimensions Drawings

Dimensions

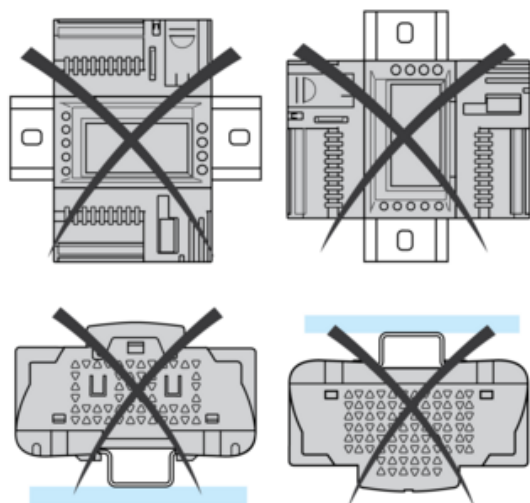


Mounting Positions

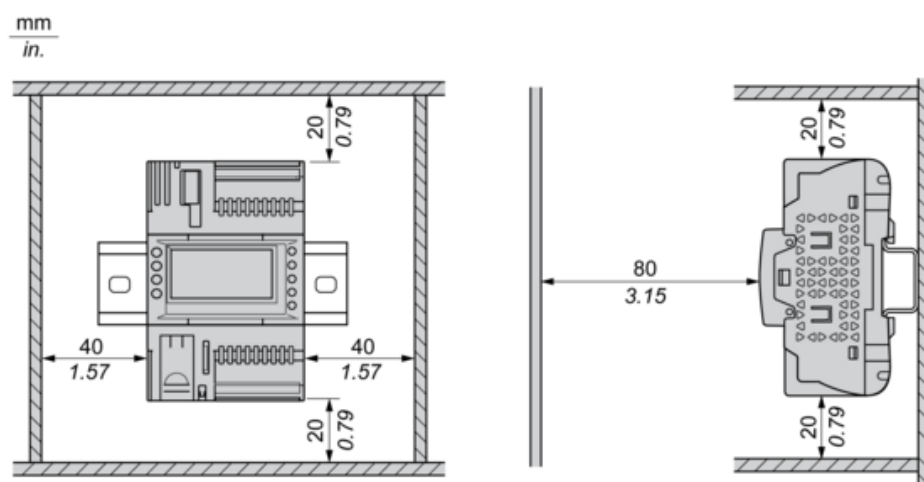
Correct Mounting Position



Incorrect Mounting Position



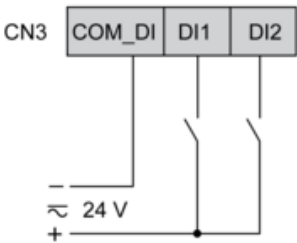
Clearance



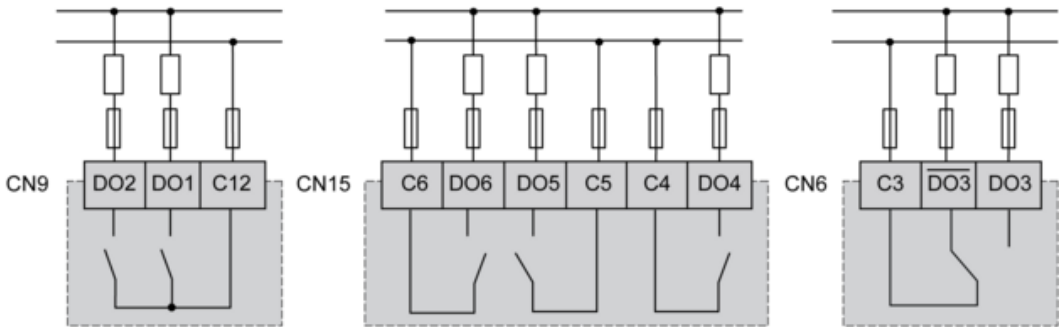
Power Supply

24 Vac	24 Vdc
	
(1) Type T fuse 2 A	

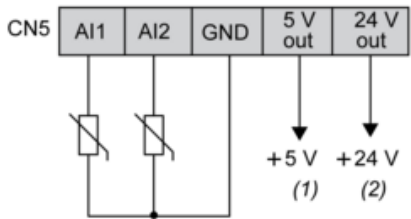
CN3 Fast Digital Inputs



CN9, CN15, CN6 High Voltage Relay SPST Digital Output

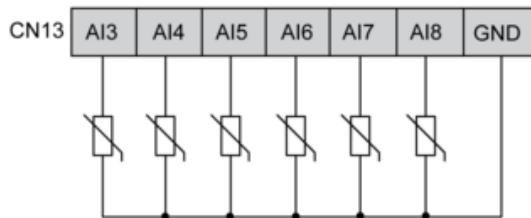


CN5, CN13 Analog Inputs

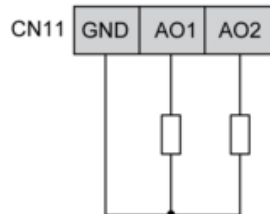


(1) Max. current : 40 mA.

(2) Max. current : 100 mA.

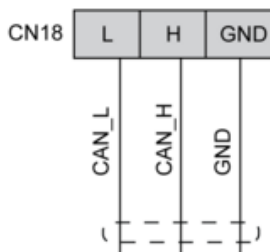


CN11 Analog Outputs

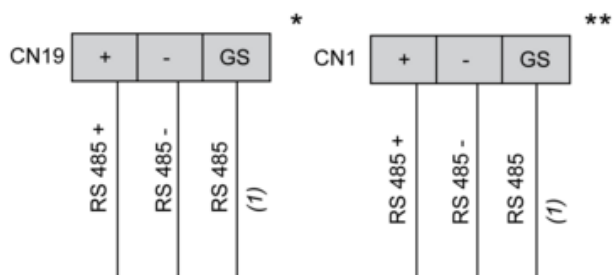


AO1, AO2 can be used also as PWM generator, up to 2kHz.

CN18 CAN Expansion Bus Port



CN19, CN1 RS485 Bus Port



(1) Signal reference

* RS485-1 Modbus SL

** RS485-2 Modbus SL or BACnet MS/TP