

Product data sheet

Specifications



Controller, Modicon M171/M172/ M173, performance, blind, 42 IO, Ethernet, isolated

TM172PBG42RI

Main

Range of product	Modicon M171/M172
Product or component type	Programmable controllers
Product specific application	HVAC control
Variant	Programmable
Total inputs/outputs	42
Discrete input number	12
Discrete output number	2 for relay outputs SPDT with independent common 3 for relay outputs SPST with same common 5 for relay outputs SPST with same common 2 for relay outputs SPST with independent common
Discrete output current	3 A for relay SPDT 3 A for relay SPST
Analogue input number	12 configurable by pair
Analogue output number	4 voltage, range: 0...10 V 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 A - USB type A female 1 USB type mini B - USB device port Mini-B 2 RS485 - screw terminal block (Modbus serial link or BACnet MS/TP) 1 Ethernet - RJ45 (Modbus TCP and BACnet IP with webserver)
Input/output number	12 analog input(s) 6 analog output(s) 12 digital input(s) 12 digital output(s)
Discrete input logic	Sink or source (positive/negative)
Discrete input voltage	24 V AC/DC
Discrete input current	2.5 mA
Input impedance	10 kOhm
Analogue input type	impedance 0...1500 hOhm - resolution: 1 hOhm at 10 kOhm impedance 0...300 daOhm - resolution: 1 daOhm at 2 kOhm NTC 103AT-2 Beta 3435 temperature probe - 50...110 °C - resolution: 0.1 °C at 10 kOhm voltage 0...10 V - resolution: 1 digit at > 10 kOhm NTC NK103 Beta 3977 temperature probe - 40...137 °C - resolution: 0.1 °C at 10 kOhm (extended) current 0...20 mA/4...20 mA - resolution: 1 digit at < 150 Ohm PTC temperature probe - 55...150 °C - resolution: 0.1 °C at 2 kOhm voltage 0...5 V - resolution: 1 digit at > 20 kOhm (absolute or ratiometric) Pt 1000 temperature probe - 200...850 °C - resolution: 0.1 °C at 2 kOhm direct input at > 10 kOhm

Disclaimer: This documentation is not intended as a substitute for and is not to be used for determining suitability or reliability of these products for specific user applications

Measurement accuracy	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 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 hOhm 0...1500 hOhm +/- 8.5 hOhm daOhm 0...300 daOhm +/- 2.5 daOhm
Sensor power supply	5 V DC at 50 mA supplied by the controller 24 V DC at 150 mA supplied by the controller
[Us] rated supply voltage	24 V +/- 10 % AC 20...38 V DC
Power consumption in W	14 W at 24 V AC/DC
Realtime clock	Built-in clock, clock drift <= 30 s/month at -20...65 °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	Panel mounting with accessory DIN rail
Width	144 mm
Height	110 mm
Depth	60.5 mm
Product weight	0.385 kg

Environment

Directives	2014/30/EU - electromagnetic compatibility 2014/35/EU - low voltage directive
Standards	CAN/CSA-E60730-1 CSA E60730-2-9 EN 60068-2-27 EN 60068-2-6 Fc EN 60730-1 EN 60730-2-9 UL 60730-1 UL 60730-2-9 IEC 61000-4-2 IEC 61000-4-3 IEC 61000-4-4 IEC 61000-4-5 IEC 61000-4-6 IEC 61000-4-11 UL94 (material V0)
Product certifications	EAC CE cURus CSA RCM
Ambient air temperature for operation	-20...65 °C conforming to UL 60730-1 -20...60 °C horizontal conforming to UL 60730-1
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	13.500 cm
Package 1 Width	9.000 cm
Package 1 Length	19.000 cm
Package 1 Weight	424.000 g
Unit Type of Package 2	S02
Number of Units in Package 2	6
Package 2 Height	15.000 cm
Package 2 Width	30.000 cm
Package 2 Length	40.000 cm
Package 2 Weight	2.831 kg
Unit Type of Package 3	P06
Number of Units in Package 3	96
Package 3 Height	75.000 cm
Package 3 Width	60.000 cm
Package 3 Length	80.000 cm
Package 3 Weight	55.296 kg

Environmental Data

Schneider Electric aims to achieve Net Zero status by 2050 through supply chain partnerships, lower impact materials, and circularity via our ongoing “Use Better, Use Longer, Use Again” campaign to extend product lifetimes and recyclability.

[Environmental Data explained >](#)

[How we assess product sustainability >](#)

Environmental footprint	
Total lifecycle Carbon footprint	637
Environmental Disclosure	Product Environmental Profile

Use Better

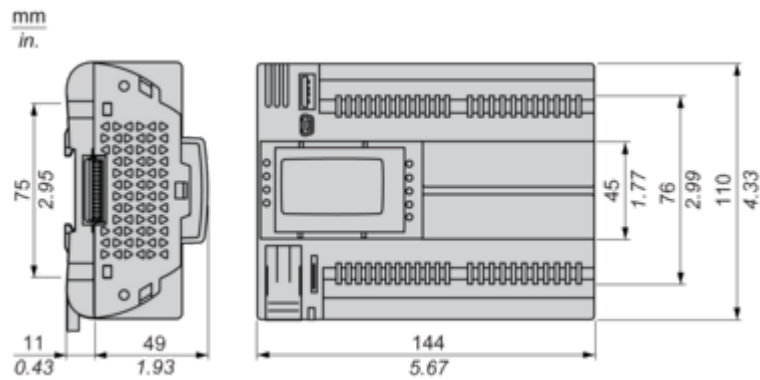
Materials and Substances	
Packaging made with recycled cardboard	Yes
Packaging without single use plastic	No
EU RoHS Directive	Pro-active compliance (Product out of EU RoHS legal scope)
SCIP Number	0194afcd-147b-4916-8d56-bc2867590e78
REACH Regulation	REACH Declaration
California proposition 65	WARNING: This product can expose you to chemicals including: Lead and lead compounds, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

Use Again

Repack and remanufacture	
End of life manual availability	End of Life Information
Take-back	No
WEEE Label	 The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins

Dimensions Drawings

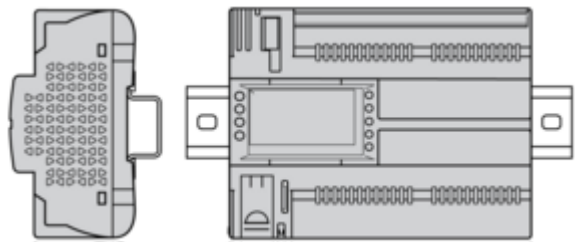
Dimensions



Mounting and Clearance

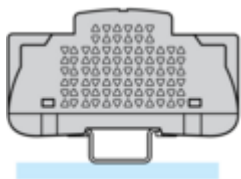
Mounting Positions

Correct Mounting Position

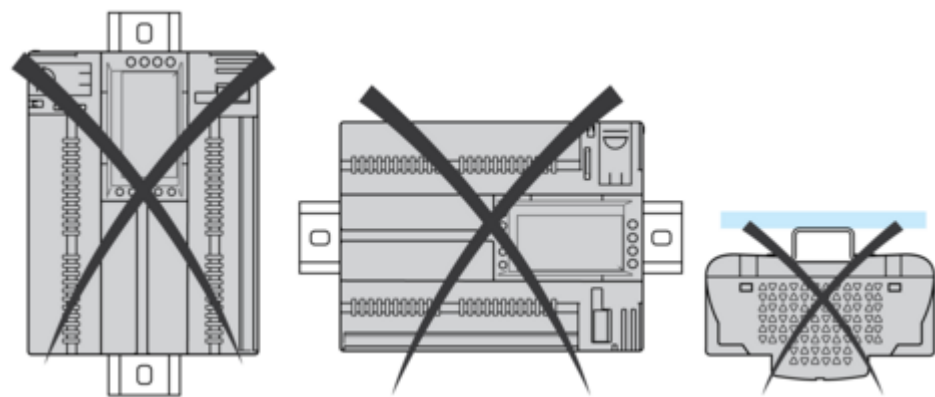


Acceptable Mounting Position

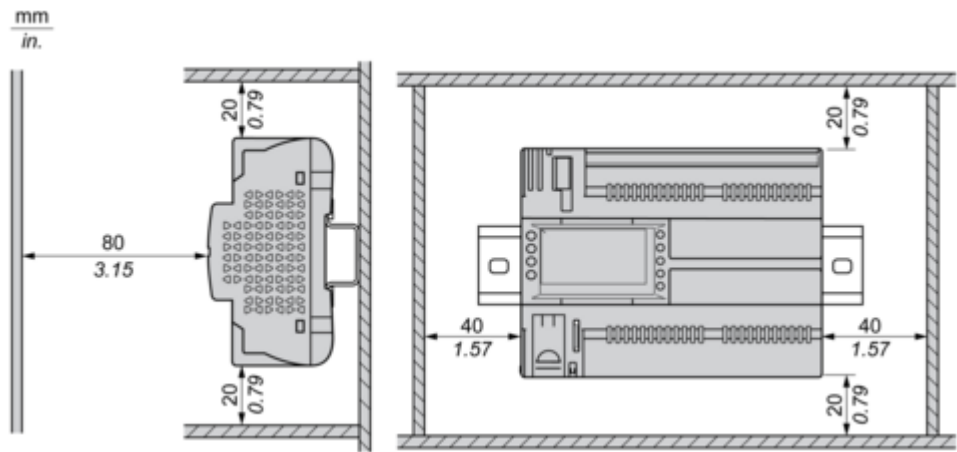
Controller can be mounted horizontally upward with a temperature derating (maximum ambient temperature: 60 °C (140 °F)).



Incorrect Mounting Position

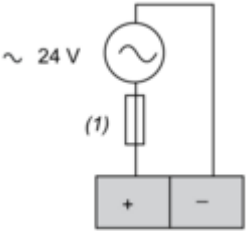
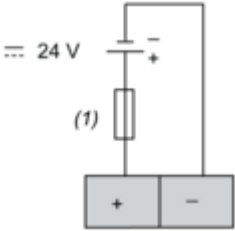


Clearance

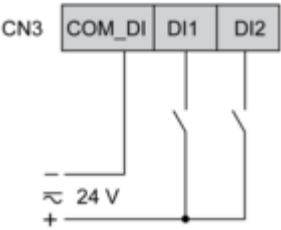


Connections and Schema

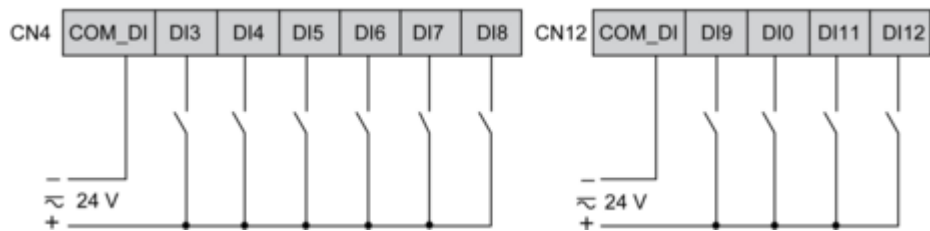
Power Supply

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

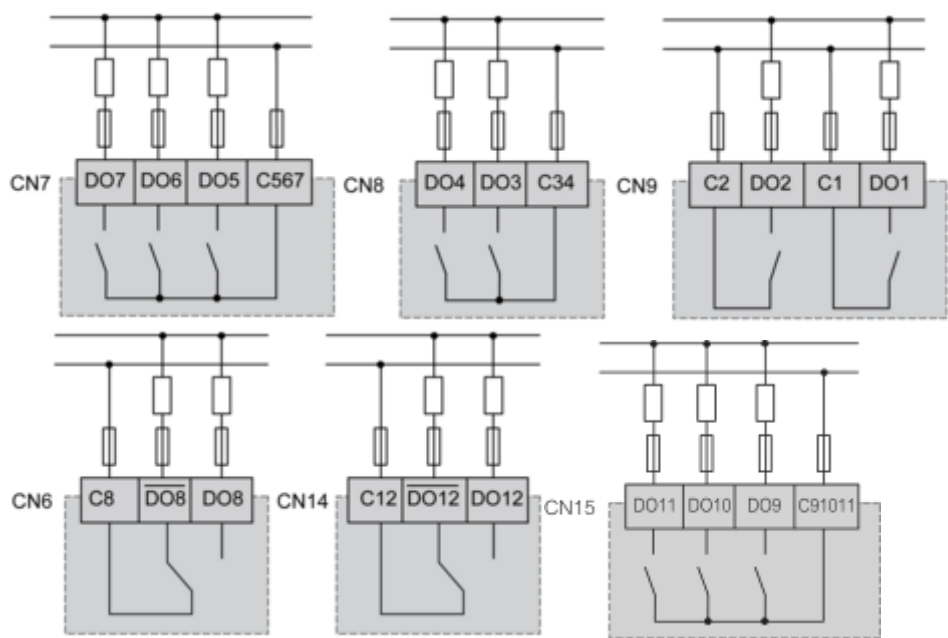
CN3 Fast Digital Inputs



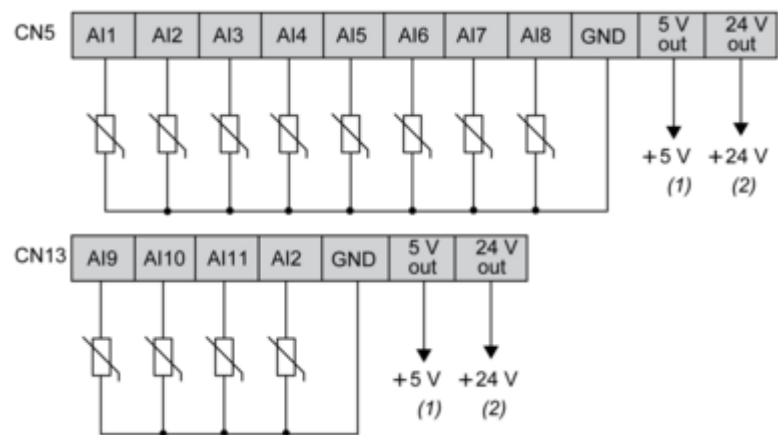
CN4, CN12 Digital Inputs



CN7, CN8, CN9, CN6, CN14, CN15 High Voltage Relay SPST Digital Output

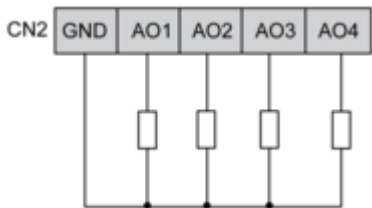


CN5, CN13 Analog Inputs

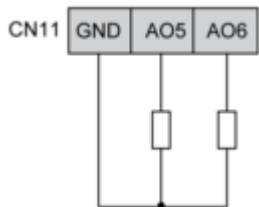


- (1) (CN5 + CN13) Max. current : 50 mA.
(2) (CN5 + CN13) Max. current : 150 mA.

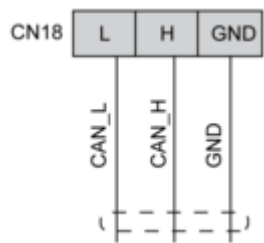
CN2, CN11 Analog Outputs



AO3, AO4 can be used also as PWM generator, up to 2kHz.



CN18 CAN Expansion Bus Port



CN19, CN1 CAN Expansion Bus Port

