



Main

Range of product	Modicon M238 logic controller
Product or component type	Input/Output analog module
Analogue input number	2
Input level	Low level
Analogue input type	Thermocouple 0...400 °C thermocouple T differential Thermocouple 0...1300 °C thermocouple K differential Thermocouple 0...1200 °C thermocouple J differential Temperature probe - 100...500 °C 3-wire Pt probe differential
Analogue output number	1
Analogue output type	Voltage 0...10 V Current 4...20 mA
Cross talk	<= 2 LSB

Complementary

Range compatibility	Advantys OTB Twido
Analogue input resolution	12 bits
Analogue output resolution	12 bits
LSB value	0.15 °C temperature probe 0.1 °C thermocouple 4.8 µA current current 2.5 mV voltage voltage
Input impedance	>= 1 MOhm
Load type	Resistive
Load impedance ohmic	>= 2000 Ohm voltage <= 300 Ohm current
Stabilisation time	20 ms
Conversion time	20 ms + 1 controller cycle time
Sampling duration	<= 60 ms thermocouple <= 20 ms temperature probe
Acquisition period	80 ms per channel + 1 controller cycle time 60 ms per channel + 1 controller cycle time thermocouple
Measurement error	0.2 % of full scale +/- 4 °C 0...400 °C thermocouple T 25 °C 0.2 % of full scale +/- 4 °C 0...1300 °C thermocouple K 25 °C 0.2 % of full scale +/- 4 °C 0...1200 °C thermocouple J 25 °C +/- 0.2 % of full scale 4...20 mA 4...20 mA 25 °C +/- 0.2 % of full scale 0...10 V 0...10 V 25 °C +/- 0.2 % of full scale - 100...500 °C 3-wire Pt probe 25 °C
Temperature coefficient	+/-0.015 %FS/°C 4...20 mA 4...20 mA +/-0.015 %FS/°C 0...10 V 0...10 V +/-0.006 %FS/°C 0...400 °C thermocouple T +/-0.006 %FS/°C 0...1300 °C thermocouple K +/-0.006 %FS/°C 0...1200 °C thermocouple J +/-0.006 %FS/°C - 100...500 °C 3-wire Pt probe
Repeat accuracy	+/-0.5 %FS input/output
Non-linearity	+/- 0.2 %FS voltage voltage +/- 0.2 %FS thermocouple +/- 0.2 %FS temperature probe +/- 0.2 %FS current current
Output error	+/- 1 %FS
Output ripple	<= 1 LSB

Total error	+/-1 %FS voltage voltage +/-1 %FS thermocouple +/-1 %FS temperature probe +/-1 %FS current current
Type of cable	Shielded cable
Insulation between channel and internal logic	Photocoupler
Supply	External supply
[Us] rated supply voltage	24 V DC
Supply voltage limits	19.2...30 V
Electrical connection	1 removable screw terminal block
Current consumption	50 mA 5 V DC internal 50 mA 24 V DC external
Product weight	0.085 kg

Environment

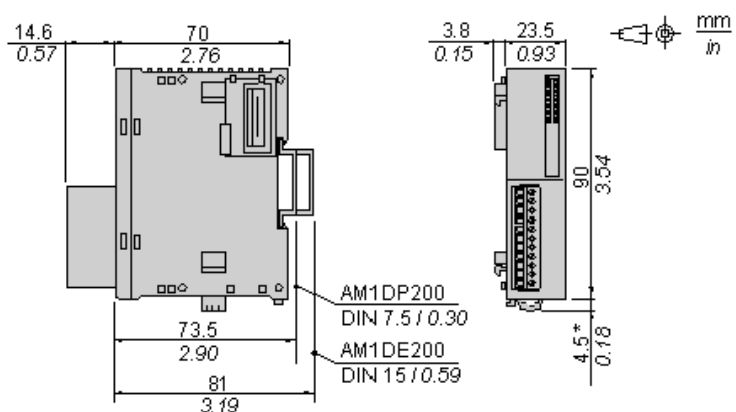
Dielectric strength	500 V between the I/O and the external supply circuit 500 V between the I/O and internal logic 500 V between I/O channel
Width	23.5 mm
Depth	70 mm
Height	90 mm

Offer Sustainability

Sustainable offer status	Not Green Premium product
Product environmental profile	Available  Download Product Environmental

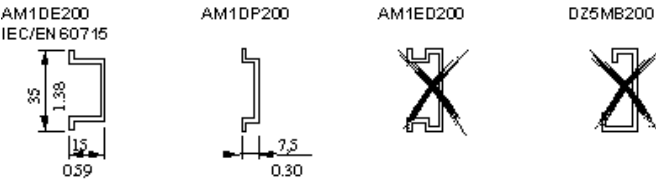
Analog Mixed I/O Module (3-channel, Thermocouple/Temperature Probe/Voltage/Current)

Dimensions



NOTE: * 8.5 mm (0.33 in) when the clip-on lock is pulled out.

DIN Rail Mounting

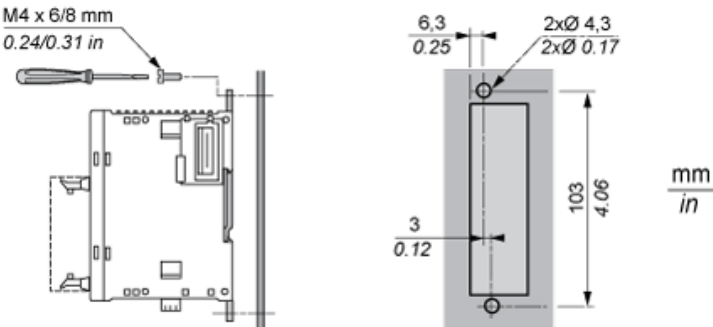


Rail depth	Catalogue part number
15 mm (0.59 in.)	AM1DE200
7,5 mm (0.30 in.)	AM1DP200

NOTE: Do not use AM1ED200 and DZ5MB200

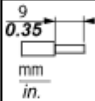
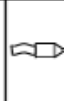
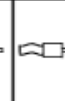
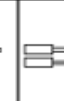
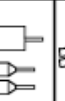
Module Mounting on a Panel Surface

Mounting Hole Layout



Wiring Requirements

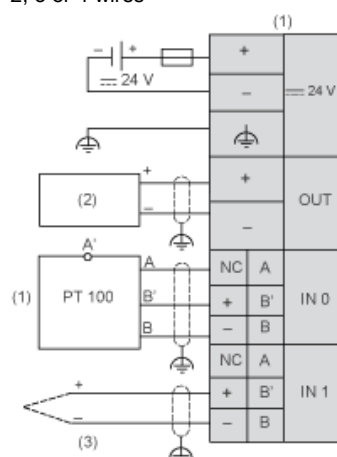
Cable Types and Wire Sizes for Removable Screw Terminal Block

							
mm ²	0,14...1,5	0,25...0,5	0,25...1,5	0,14...0,5	0,14...0,75	0,25...0,34	0,5
AWG	26...16	24...20	24...16	26...20	26...18	24...22	20

Analog Mixed I/O Module (3-channel, Thermocouple/Temperature Probe/Voltage/Current)

Wiring Diagram Example

2, 3 or 4 wires



- (1) 4 wires
- (2) Voltage/current preactuator
- (3) Thermocouple