



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	Temperature probe - 100...500 °C 3-wire Pt probe non differential Thermocouple 0...1200 °C thermocouple J non differential Thermocouple 0...1300 °C thermocouple K non differential Thermocouple 0...400 °C thermocouple T non differential
Analogue output number	1
Analogue output type	Current 4...20 mA Voltage 0...10 V
Cross talk	<= 2 LSB

Complementary

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

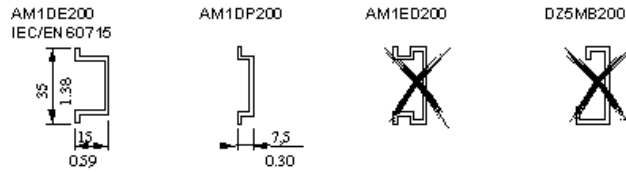
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Output ripple	<= 1 LSB
Total error	+/-1 %FS current current +/-1 %FS temperature probe +/-1 %FS thermocouple +/-1 %FS voltage voltage
Type of cable	Shielded cable
Insulation between channel and internal logic	Photocoupler
Supply	External supply
[Us]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

Environment

Dielectric strength	500 V between I/O channel 500 V between the I/O and internal logic 500 V between the I/O and the external supply circuit
RoHS EUR status	Compliant
RoHS EUR conformity date	0830

DIN Rail Mounting

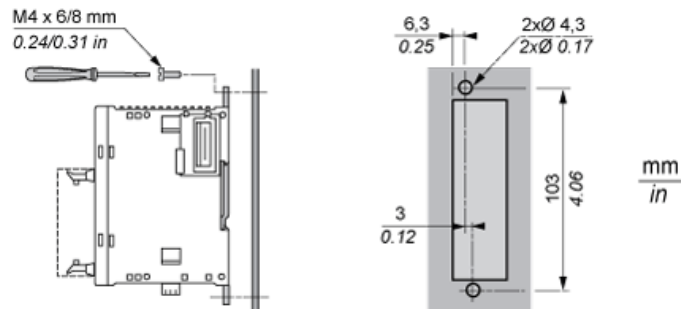


Rail depth	Catalogue part number
15 mm (0.59 in.)	AM1DE200
7,5 mm (0.30 in.)	AM1DP200

NOTE: Do not use AM1ED200 and DZ5MB200









Module Mounting on a Panel Surface

Mounting Hole Layout



Wiring Requirements

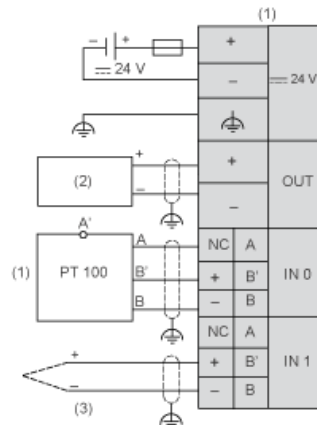
Cable Types and Wire Sizes for Removable Screw Terminal Block

							
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