

TM2ALM3LT

analog input/output module M238 - 2 inputs
thermocouple/temp low level- 1 output

Main

| | |
|---------------------------|--|
| Commercial Status | Commercialised |
| 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 non differential Thermocouple 0...1300 °C thermocouple K non differential Thermocouple 0...1200 °C thermocouple J non differential Temperature probe - 100...500 °C 3-wire Pt probe non 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 |

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| | |
|---|---|
| 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 |

RoHS compliance

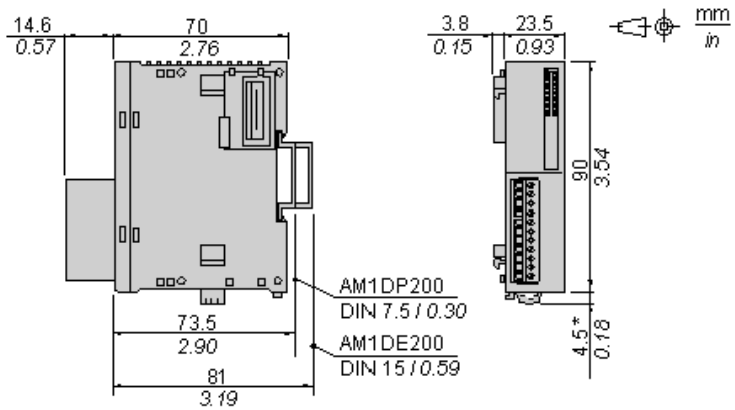
| | |
|--------------------------------|-----------|
| RoHS EUR status | Compliant |
| RoHS EUR conformity date(YYWW) | 0830 |

Contractual warranty

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|--------|-----------|
| Period | 18 months |
|--------|-----------|

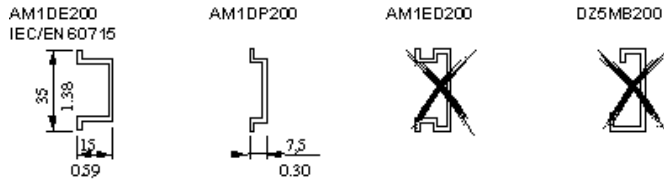
Analog Mixed I/O Module (3-channel, Thermocouple/Temperature Probe/Voltage/Current)

Dimensions



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

DIN Rail Mounting

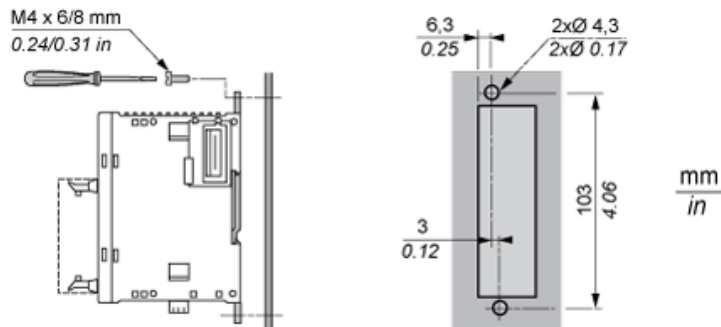


| Rail depth | Catalogue part number |
|-------------------|-----------------------|
| 15 mm (0.59 in.) | AM1DE200 |
| 7,5 mm (0.30 in.) | AM1DP200 |

NOTE: Do not use AM1ED200 and DZ5MB200

Module Mounting on a Panel Surface

Mounting Hole Layout



Wiring Requirements

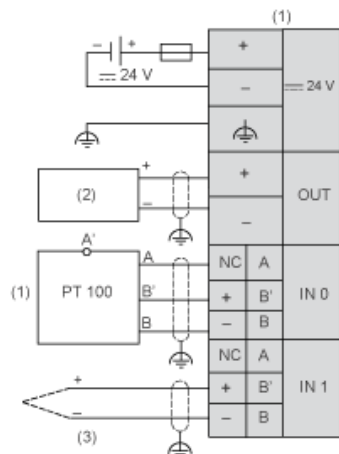
Cable Types and Wire Sizes for Removable Screw Terminal Block

| | | | | | | | |
|-----------------|------------|------------|------------|------------|-------------|-------------|-----|
| | | | | | | | |
| 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