

TM3TI4D

analog input module, Modicon TM3, 4
temperature differential inputs, screw, 24V DC



Main

Range of Product	Modicon TM3
Product or Component Type	Analog input module
Range Compatibility	Modicon M221 Modicon M241 Modicon M251 Modicon M262
Analogue input number	4
Analogue input type	Thermocouple - 200...1000 °C thermocouple J Thermocouple - 200...1300 °C thermocouple K Thermocouple 0...1760 °C thermocouple R Thermocouple 0...1760 °C thermocouple S Thermocouple 0...1820 °C thermocouple B Thermocouple - 200...400 °C thermocouple T Thermocouple - 200...1300 °C thermocouple N Thermocouple - 200...800 °C thermocouple E Thermocouple 0...2315 °C thermocouple C

Complementary

Analogue input resolution	16 bits 15 bits + sign
Permissible continuous overload	13 V voltage 40 mA current
Input impedance	>= 1 MOhm thermocouple
LSB value	0.1 °C thermocouple
Conversion time	100 ms + 100 ms per channel + 1 controller cycle time thermocouple
Sampling duration	100 ms thermocouple
Absolute accuracy error	+/- 0.2 % of full scale at 77 °F (25 °C) for thermocouple C 0...2315 °C +/- 6 °C at 77 °F (25 °C) for thermocouple R, S 0...200 °C +/- 0.2 % of full scale at 77 °F (25 °C) for thermocouple R, S 200...1760 °C +/- 0.2 % of full scale at 77 °F (25 °C) for thermocouple B 300...1820 °C +/- 0.4 % of full scale at 77 °F (25 °C) for thermocouple K - 200...0 °C +/- 0.2 % of full scale at 77 °F (25 °C) for thermocouple K 0...1300 °C +/- 0.4 % of full scale at 77 °F (25 °C) for thermocouple J - 200...0 °C +/- 0.2 % of full scale at 77 °F (25 °C) for thermocouple J 0...1000 °C +/- 0.4 % of full scale at 77 °F (25 °C) for thermocouple E - 200...0 °C +/- 0.2 % of full scale at 77 °F (25 °C) for thermocouple E 0...800 °C +/- 0.4 % of full scale at 77 °F (25 °C) for thermocouple T - 200...0 °C +/- 0.2 % of full scale at 77 °F (25 °C) for thermocouple T 0...400 °C +/- 0.4 % of full scale at 77 °F (25 °C) for thermocouple N - 200...0 °C +/- 0.2 % of full scale at 77 °F (25 °C) for thermocouple N 0...1300 °C
Temperature Drift	+/- 0.01 %FS/°C
Repeat accuracy	+/-0.5 %FS
Non-linearity	+/- 0.2 %FS
Cross talk	<= 1 LSB
[Us] rated supply voltage	24 V DC
Supply voltage limits	20.4...28.8 V
Type of cable	Twisted shielded pairs cable <98.43 ft (30 m) input
Current consumption	45 mA 5 V DC via bus connector 50 mA 5 V DC via bus connector 35 mA 24 V DC via external supply 40 mA 24 V DC via external supply
Local signalling	For PWR 1 LED (green)
Electrical connection	10 x 1.5 mm ² removable screw terminal block pitch 3.81 mm for inputs and supply 10 x 1.5 mm ² removable screw terminal block pitch 3.81 mm for inputs

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Insulation	Between input and supply 1500 V AC Between input and internal logic 500 V AC
Marking	CE
Surge withstand	1 KV power supply common mode IEC 61000-4-5 0.5 KV power supply differential mode IEC 61000-4-5 1 kV input common mode IEC 61000-4-5
Mounting support	Top hat type TH35-15 rail IEC 60715 Top hat type TH35-7.5 rail IEC 60715 Plate or panel with fixing kit
Height	3.54 in (90 mm)
Depth	2.76 in (70 mm)
Width	0.93 in (23.6 mm)
Net Weight	0.24 lb(US) (0.11 kg)

Environment

Standards	IEC 61131-2
Product Certifications	CE[RETURN]UKCA[RETURN]RCM[RETURN]EAC[RETURN]cULus[RETURN]cULus HazLoc
Resistance to electrostatic discharge	8 KV in air IEC 61000-4-2 4 kV on contact IEC 61000-4-2
Resistance to electromagnetic fields	9.14 V/M (10 V/m) 80 MHz...1 GHz IEC 61000-4-3 2.74 V/M (3 V/m) 1.4 GHz...2 GHz IEC 61000-4-3 0.91 V/m (1 V/m) 2 GHz...3 GHz IEC 61000-4-3
Resistance to fast transients	1 kV IEC 61000-4-4 I/O)
Resistance to conducted disturbances	10 V 0.15...80 MHz IEC 61000-4-6 3 V spot frequency (2, 3, 4, 6.2, 8.2, 12.6, 16.5, 18.8, 22, 25 MHz) Marine specification (LR, ABS, DNV, GL)
Electromagnetic emission	Radiated emissions 40 dBµV/m QP class A 10 m)30...230 MHz IEC 55011 Radiated emissions 47 dBµV/m QP class A 10 m)230...1000 MHz IEC 55011
Immunity to microbreaks	10 ms
Ambient Air Temperature for Operation	14...131 °F (-10...55 °C) horizontal installation 14...95 °F (-10...35 °C) vertical installation
Ambient Air Temperature for Storage	-13...158 °F (-25...70 °C)
Relative humidity	10...95 %, without condensation in operation) 10...95 %, without condensation in storage)
IP Degree of Protection	IP20
Pollution degree	2
Operating altitude	0...6561.68 ft (0...2000 m)
Storage altitude	0.00...9842.52 ft (0...3000 m)
Vibration resistance	3.5 mm 5...8.4 Hz DIN rail 3 gn 8.4...150 Hz DIN rail
Shock resistance	15 gn 11 ms

Ordering and shipping details

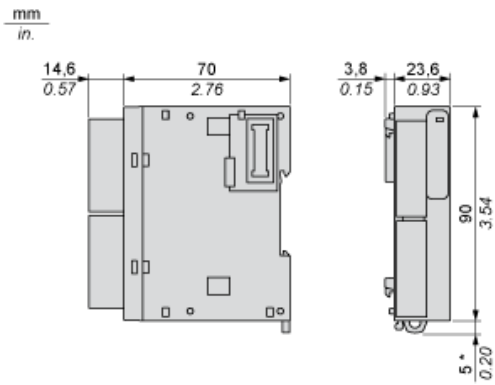
Category	22533-M2XX PLC & ACCESSORIES
Discount Schedule	MSX
GTIN	3606481298386
Returnability	No
Country of origin	JP

Packing Units

Unit Type of Package 1	PCE
Number of Units in Package 1	1
Package 1 Height	2.95 in (7.5 cm)
Package 1 Width	4.13 in (10.5 cm)
Package 1 Length	4.92 in (12.5 cm)
Package 1 Weight	7.23 oz (205.0 g)
Unit Type of Package 2	S02
Number of Units in Package 2	9
Package 2 Height	5.91 in (15 cm)

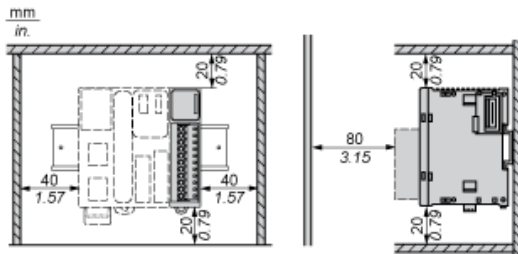
Package 2 Width	11.81 in (30 cm)
Package 2 Length	15.75 in (40 cm)
Package 2 Weight	4.27 lb(US) (1.935 kg)
Unit Type of Package 3	P12
Number of Units in Package 3	432
Package 3 Height	31.50 in (80 cm)
Package 3 Width	41.34 in (105 cm)
Package 3 Length	49.21 in (125 cm)
Package 3 Weight	250.36 lb(US) (113.56 kg)

Dimensions



(*) 8.5 mm/0.33 in when the clamp is pulled out.

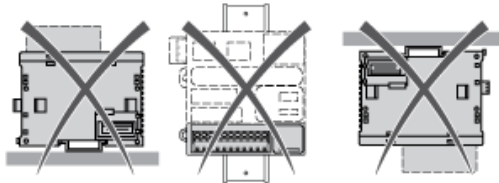
Spacing Requirements



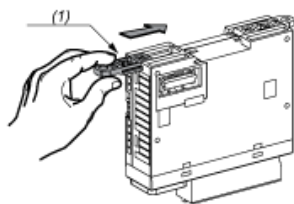
Mounting on a Rail



Incorrect Mounting

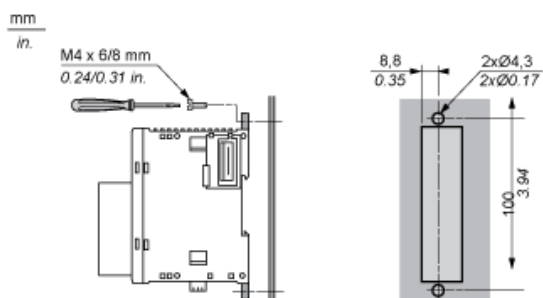


Mounting on a Panel Surface



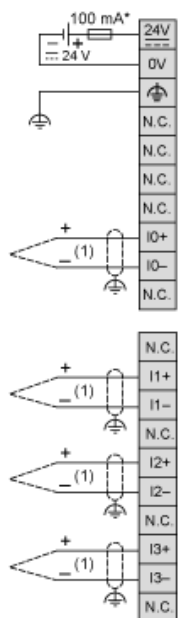
(1) Install a mounting strip

Mounting Hole Layout



Wiring Diagram

Analogue Input Module



* Type T fuse

(1) Electrically isolated or non isolated thermocouple