

# TM3TI4DG

analog input module, Modicon TM3, 4  
temperature differential inputs, spring, 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 <sup>2</sup> removable spring terminal block pitch 3.81 mm for inputs and supply 10 x 1.5 mm <sup>2</sup> removable spring 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

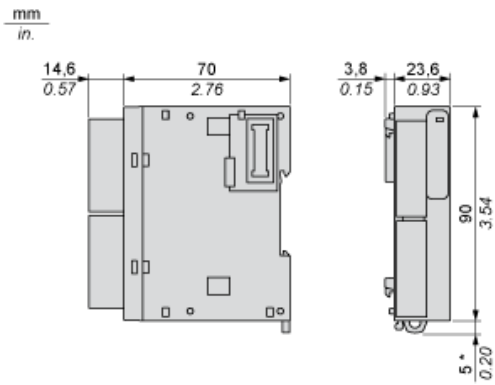
Category	22533-M2XX PLC & ACCESSORIES
Discount Schedule	MSX
GTIN	3606481298393
Returnability	No
Country of origin	JP

## Packing Units

Unit Type of Package 1	PCE
Number of Units in Package 1	1
Package 1 Height	3.10 in (7.87 cm)
Package 1 Width	4.20 in (10.67 cm)
Package 1 Length	5.00 in (12.7 cm)
Package 1 Weight	7.05 oz (200 g)
Unit Type of Package 2	S02
Number of Units in Package 2	9
Package 2 Height	5.91 in (15 cm)

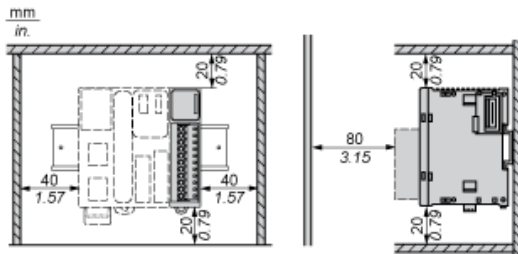
Package 2 Width	11.81 in (30 cm)
Package 2 Length	15.75 in (40 cm)
Package 2 Weight	3.97 lb(US) (1.8 kg)
Unit Type of Package 3	P12
Number of Units in Package 3	432
Package 3 Height	31.50 in (80 cm)
Package 3 Width	41.34 in (105 cm)
Package 3 Length	49.21 in (125 cm)
Package 3 Weight	240.83 lb(US) (109.24 kg)

Dimensions



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

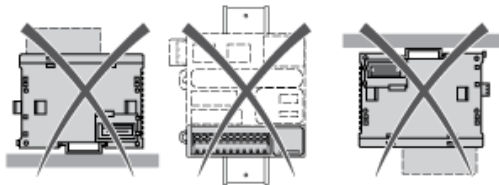
Spacing Requirements



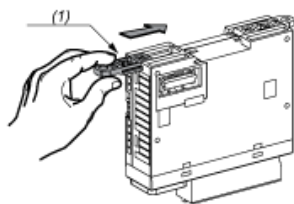
Mounting on a Rail



Incorrect Mounting

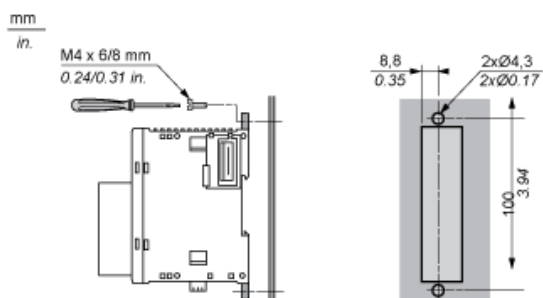


Mounting on a Panel Surface



(1) Install a mounting strip

Mounting Hole Layout

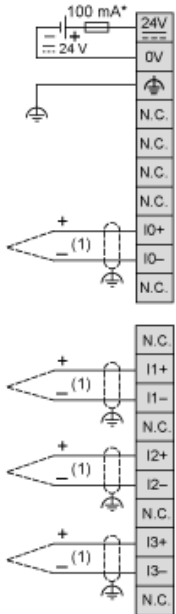


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Wiring Diagram

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Analogue Input Module



- \* Type T fuse
- (1) Electrically isolated or non isolated thermocouple