Product datasheet

Specifications



module TM3 - 2 temperature inputs and 1 analog output spring

TM3TM3G

Main

Range of product	Modicon TM3
Product or component type	Input/output analog module
Range compatibility	Modicon M221 Modicon M241 Modicon M251 Modicon M262
Analogue input number	2
Analogue output number	1

Complementary

Analogue input type	Current 4...20 mA Current 0...20 mA Voltage 0...10 V Voltage - 10...10 V 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 Temperature probe - 60...180 °C Ni 100/Ni 1000 Temperature probe - 200...850 °C Pt 100 Temperature probe - 200...600 °C Pt 1000
Analogue input resolution	16 bits 15 bits + sign
Permissible continuous overload	13 V, analogue input type: voltage 40 mA, analogue input type: current
Stabilisation time	1 ms
Input impedance	<= 50 Ohm >= 1 MOhm
Sampling duration	10 ms
Analogue output type	Current: 4...20 mA Current: 0...20 mA Voltage: 0...10 V Voltage: - 10...10 V
Conversion time	100 ms + 100 ms per channel + 1 controller cycle time for analogue input thermocouple

Excluding VAT, FCA Jabal Ali & are subject to change – check with your local distributor.

Disclaimer: This documentation is not intended as a substitute for and is not to be used for determining suitability or reliability of these products for specific user applications

Absolute accuracy error	+/- 6 °C at 25 °C for thermocouple R, S 0...200 °C +/- 0.4 % of full scale at 25 °C for thermocouple K - 200...0 °C +/- 0.4 % of full scale at 25 °C for thermocouple J - 200...0 °C +/- 0.4 % of full scale at 25 °C for thermocouple E - 200...0 °C +/- 0.4 % of full scale at 25 °C for thermocouple T - 200...0 °C +/- 0.4 % of full scale at 25 °C for thermocouple N - 200...0 °C +/- 0.1 % of full scale at 25 °C for analogue input voltage/current +/- 0.1 % of full scale at 25 °C for thermocouple C 0...2315 °C +/- 0.1 % of full scale at 25 °C for Pt 100/Pt 1000, Ni 100/ Ni 1000 temperature probe +/- 0.1 % of full scale at 25 °C for thermocouple R, S 200...1760 °C +/- 0.1 % of full scale at 25 °C for thermocouple B 300...1820 °C +/- 0.1 % of full scale at 25 °C for thermocouple K 0...1300 °C +/- 0.1 % of full scale at 25 °C for thermocouple J 0...1000 °C +/- 0.1 % of full scale at 25 °C for thermocouple E 0...800 °C +/- 0.1 % of full scale at 25 °C for thermocouple T 0...400 °C +/- 0.1 % of full scale at 25 °C for thermocouple N 0...1300 °C +/- 0.1 % of full scale at 25 °C for analogue output voltage/current
Repeat accuracy	+/-0.5 %FS for input
Output ripple	20 mV
Cross talk	<= 1 LSB
Type of cable	Twisted shielded pairs cable <30 m for input/output circuit
Electrical connection	11 x 2.5 mm² removable spring terminal block with pitch 5.08 mm adjustment for inputs, outputs and supply
LSB value	0.15 mV, 0...10 V 0.30 mV, - 10...10 V 0.30 µA, 0...20 mA 0.244 µA, 4...20 mA 0.1 °C 2.44 mV, 0...10 V 4.88 mV, - 10...10 V 4.88 µA, 0...20 mA 3.91 µA, 4...20 mA
Insulation	Between input and supply at 1500 V AC Between input and internal logic at 500 V AC Between output and supply at 1500 V AC Between output and internal logic at 500 V AC
Immunity to microbreaks	10 ms
Load impedance ohmic	1 kOhm voltage 300 Ohm current
load type	Resistive
Temperature drift	+/- 0.006 %FS/°C
Non-linearity	+/- 0.01 %FS, analogue output type: analog output +/- 0.1 %FS, analogue input type: analog input
Typical current consumption	55 mA at 24 V DC no load 55 mA at 5 V DC no load 60 mA at 5 V DC full load 80 mA at 24 V DC full load
Local signalling	1 LED green for PWR
Mounting support	Top hat type TH35-15 rail conforming to IEC 60715 Top hat type TH35-7.5 rail conforming to IEC 60715 plate or panel with fixing kit
Height	90 mm
Width	23.6 mm
Depth	70 mm
Net weight	0.1 kg

Environment

IP degree of protection	IP20

Marking	CE
Product certifications	CE UKCA RCM EAC CULus CULus HazLoc
Standards	IEC 61131-2
Electromagnetic emission	Radiated emissions - test level: 40 dBµV/m QP class A (10 m) at 30…230 MHz conforming to IEC 55011 Radiated emissions - test level: 47 dBµV/m QP class A (10 m) at 230…1000 MHz conforming to IEC 55011
Ambient air temperature for operation	-10…55 °C (horizontal installation) -10…35 °C (vertical installation)
Ambient air temperature for storage	-25…70 °C
Relative humidity	10…95 % without condensation
Operating altitude	0...2000 m
Pollution degree	2
Vibration resistance	3.5 mm (f = 5…8.4 Hz) on DIN rail 3 gn (f = 8.4…150 Hz) on DIN rail
Shock resistance	15 gn for 11 ms

Packing Units

Unit Type of Package 1	PCE
Number of Units in Package 1	1
Package 1 Height	7.62 cm
Package 1 Width	10.92 cm
Package 1 Length	13.46 cm
Package 1 Weight	200 g
Unit Type of Package 2	S02
Number of Units in Package 2	9
Package 2 Height	15 cm
Package 2 Width	30 cm
Package 2 Length	40 cm
Package 2 Weight	2.3 kg
Unit Type of Package 3	P06
Number of Units in Package 3	144
Package 3 Height	75 cm
Package 3 Width	40 cm
Package 3 Length	80 cm
Package 3 Weight	27.88 kg

Contractual warranty

Warranty (in months)	18

Environmental Data

Schneider Electric aims to achieve Net Zero status by 2050 through supply chain partnerships, lower impact materials, and circularity via our ongoing “Use Better, Use Longer, Use Again” campaign to extend product lifetimes and recyclability.

Environmental Data explained >

How we assess product sustainability >

Environmental footprint

Total lifecycle Carbon footprint	**98 kg CO2 eq.**
Carbon footprint of the manufacturing phase [A1 to A3]	**13 kg CO2 eq.**
Carbon footprint of the distribution phase [A4]	**0 kg CO2 eq.**
Carbon footprint of the installation phase [A5]	**0 kg CO2 eq.**
Carbon footprint of the use phase [B2, B3, B4, B6]	**84 kg CO2 eq.**
Carbon footprint of the end-of-life phase [C1 to C4]	**0.5 kg CO2 eq.**
Environmental Disclosure	Product Environmental Profile

Use Better

Materials and Substances

Packaging made with recycled cardboard	**Yes**
Packaging without single use plastic	**Yes**
EU RoHS Directive	Compliant
REACh Regulation	Reference contains Substances of Very High Concern above the threshold
PVC free	**Yes**

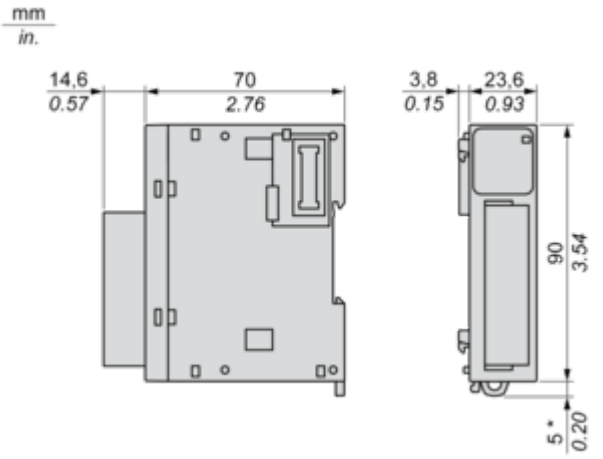
Use Again

Repack and remanufacture

Recyclability potential, in %	**3**
End of life manual availability	End of Life Information
Take-back	**No**
WEEE Label	**The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins**

Dimensions Drawings

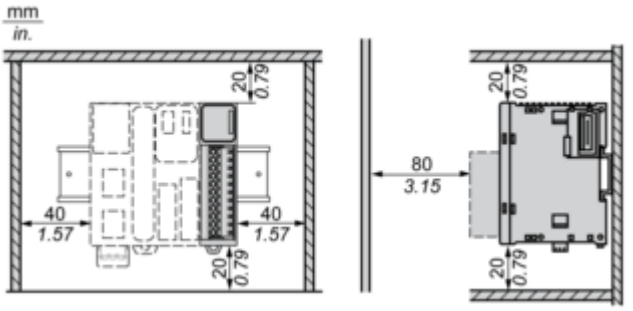
Dimensions



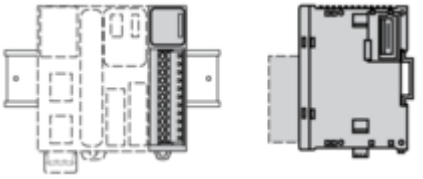
(*) 8.5 mm/0.33 in when the clamp is pulled out.

Mounting and Clearance

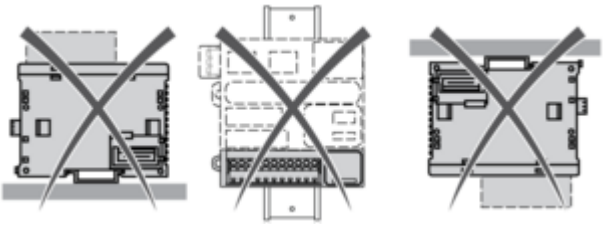
Spacing Requirements



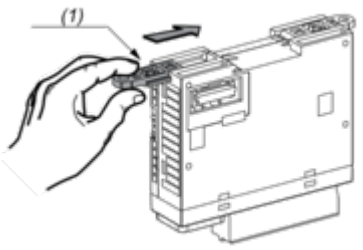
Mounting on a Rail



Incorrect Mounting

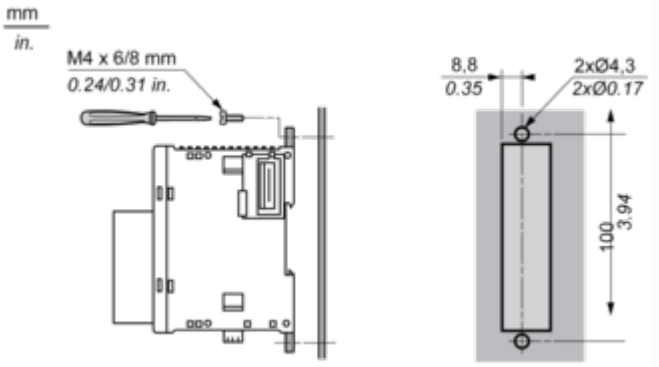


Mounting on a Panel Surface



(1) Install a mounting strip

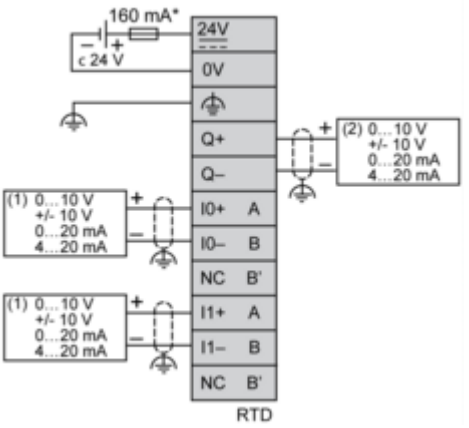
Mounting Hole Layout



Connections and Schema

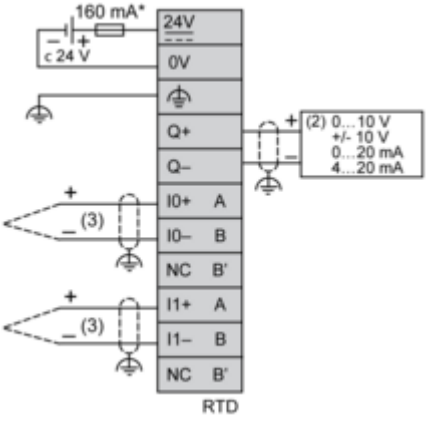
Analogue Mixed I/O Module

Wiring Diagram (Current/Voltage type)



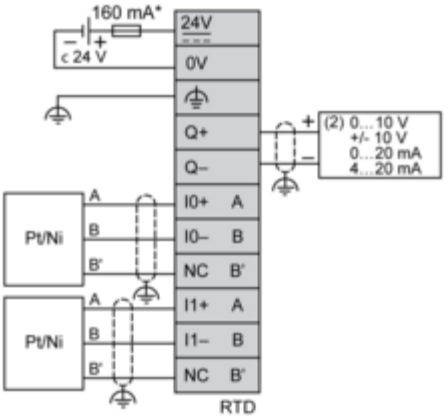
(*) Type T fuse
(1) Current/Voltage analog output device
(2) Current/Voltage analog input device

Wiring Diagram (Thermocouple input type)



(*) Type T fuse
(2) Current/Voltage analog input device
(3) Thermocouple

Wiring Diagram (Temperature probe input type)



(*) Type T fuse
(2) Current/Voltage analog input device