

Product data sheet

Specifications



analog output module, Modicon TM3, 2 outputs, screw, 24V DC

TM3AQ2

Main

Range of Product	Modicon TM3
Product or Component Type	Analog output module
Range compatibility	Modicon M221 Modicon M241 Modicon M251 Modicon M262
Analogue output number	2
Analogue output type	Current 4...20 mA Current 0...20 mA Voltage 0...10 V Voltage - 10...10 V

Complementary

Analogue output resolution	11 bits + sign 12 bits
LSB value	2.44 mV 0...10 V voltage 4.88 mV - 10...10 V voltage 4.88 μ A 0...20 mA current 3.91 μ A 4...20 mA current
Load type	Resistive
Load impedance ohmic	1 kOhm voltage 300 Ohm current
Stabilisation time	1 ms
Conversion time	1 ms + 1 ms per channel + 1 controller cycle time
Absolute accuracy error	+/- 0.1 % of full scale at 77 °F (25 °C) +/- 1 % of full scale
Temperature Drift	+/- 0.006 %FS/°C
Repeat accuracy	+/- 0.4 %FS
Non-linearity	+/- 0.01 %FS
Output ripple	20 mV
Cross talk	\leq 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) output
Current consumption	40 mA 5 V DC via bus connector full load 35 mA 5 V DC via bus connector no load

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

30 mA 24 V DC via external supply no load
70 mA 24 V DC via external supply full load

Local signalling	for PWR 1 LED (green)
Electrical connection	11 x 2.5 mm ² removable screw terminal block pitch 5.08 mm for outputs and supply
Insulation	Between output and supply 1500 V AC Between output and internal logic 500 V AC
Marking	CE
Surge withstand	1 kV power supply common mode EN/IEC 61000-4-5 0.5 kV power supply differential mode EN/IEC 61000-4-5 1 kV output common mode EN/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	0.25 lb(US) (0.115 kg)

Environment

Standards	EN/IEC 61131-2
Product Certifications	CE UKCA RCM EAC cULus cULus HazLoc
Resistance to electrostatic discharge	8 kV in air EN/IEC 61000-4-2 4 kV on contact EN/IEC 61000-4-2
Resistance to electromagnetic fields	9.14 V/m (10 V/m) 80 MHz...1 GHz EN/IEC 61000-4-3 2.74 V/m (3 V/m) 1.4 GHz...2 GHz EN/IEC 61000-4-3 0.91 V/m (1 V/m) 2 GHz...3 GHz EN/IEC 61000-4-3
Resistance to magnetic fields	98.43 A/m (30 A/m) EN/IEC 61000-4-8
Resistance to fast transients	1 kV EN/IEC 61000-4-4 I/O)
Resistance to conducted disturbances	10 V 0.15...80 MHz EN/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 dB μ V/m QP class A 10 m)30...230 MHz EN/IEC 55011 Radiated emissions 47 dB μ V/m QP class A 10 m)230...1000 MHz EN/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
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Discount Schedule	MSX
GTIN	3606480648960
Returnability	Yes
Country of origin	JP

Packing Units

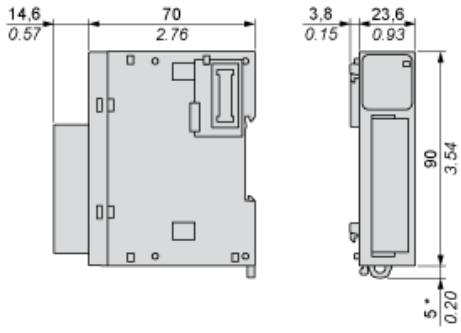
Unit Type of Package 1	PCE
Number of Units in Package 1	1
Package 1 Height	2.98 in (7.566 cm)
Package 1 Width	4.18 in (10.629 cm)
Package 1 Length	5.00 in (12.698 cm)
Package 1 Weight	7.76 oz (220.0 g)
Unit Type of Package 2	S04
Number of Units in Package 2	42
Package 2 Height	11.81 in (30 cm)
Package 2 Width	15.75 in (40 cm)
Package 2 Length	23.62 in (60 cm)
Package 2 Weight	22.75 lb(US) (10.32 kg)
Unit Type of Package 3	P12
Number of Units in Package 3	336
Package 3 Height	29.53 in (75 cm)
Package 3 Width	47.24 in (120 cm)
Package 3 Length	31.50 in (80 cm)
Package 3 Weight	207.23 lb(US) (94 kg)

Offer Sustainability

Sustainable offer status	Green Premium product
California proposition 65	WARNING: This product can expose you to chemicals including: Lead and lead compounds, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov
REACH Regulation	REACH Declaration
EU RoHS Directive	Pro-active compliance (Product out of EU RoHS legal scope) EU RoHS Declaration
Toxic heavy metal free	Yes
Mercury free	Yes
China RoHS Regulation	China RoHS declaration
RoHS exemption information	Yes
Environmental Disclosure	Product Environmental Profile
Circularity Profile	End of Life Information
WEEE	The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins.
PVC free	Yes

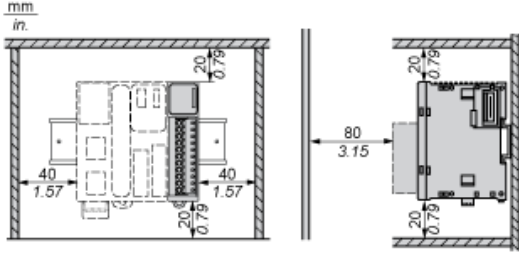
Dimensions

mm
in.

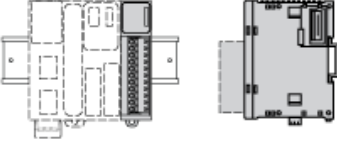


(*) 8.5 mm/0.33 in when the clamp is pulled out.

Spacing Requirements



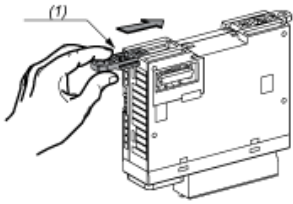
Mounting on a Rail



Incorrect Mounting

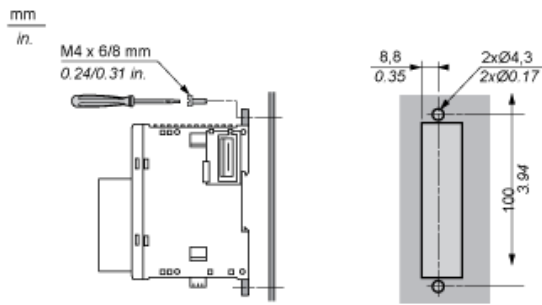


Mounting on a Panel Surface



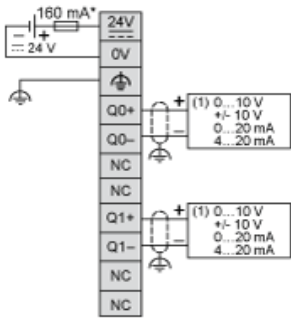
(1) Install a mounting strip

Mounting Hole Layout



Analogue Output Module

Wiring Diagram (Current / Voltage)



- (*) Type T fuse
- (1) Voltage/current pre-actuator

Recommended replacement(s)