Product data sheet

Specifications



Analog output module, Modicon TM3, 2 outputs (screw) 24 VDC

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 Vvoltage 4.88 mV - 10...10 Vvoltage 4.88 µA 0...20 mAcurrent 3.91 µA 4...20 mAcurrent
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 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	<= 1 LSB
[Us] rated supply voltage	24 V DC
Supply voltage limits	20.4…28.8 V
Type of cable	Twisted shielded pairs cable <30 m for output circuit
Current consumption	40 mA at 5 V DC via bus connector full load 35 mA at 5 V DC via bus connector no load 30 mA at 24 V DC via external supply 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

	70 mA at 24 V DC via external supply full load
Local signalling	1 LED (green) for PWR
Electrical connection	11 x 2.5 mm² removable screw terminal block with pitch 5.08 mm adjustment for outputs and supply
Insulation	Between output and supply at 1500 V AC Between output and internal logic at 500 V AC
Marking	CE
Surge withstand	1 kV power supply common mode conforming to EN/IEC 61000-4-5 0.5 kV power supply differential mode conforming to EN/IEC 61000-4-5 1 kV output common mode conforming to EN/IEC 61000-4-5
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
Depth	70 mm
Width	23.6 mm
Net weight	0.115 kg

Environment

Standards	EN/IEC 61010-2-201 EN/IEC 61131-2
Resistance to electrostatic discharge	8 kV in air conforming to EN/IEC 61000-4-2 4 kV on contact conforming to EN/IEC 61000-4-2
Resistance to electromagnetic fields	10 V/m 80 MHz...1 GHz conforming to EN/IEC 61000-4-3 3 V/m 1.4 GHz...2 GHz conforming to EN/IEC 61000-4-3 1 V/m 2 GHz...3 GHz conforming to EN/IEC 61000-4-3
Resistance to magnetic fields	30 A/m conforming to EN/IEC 61000-4-8
Resistance to fast transients	1 kV (I/O) conforming to EN/IEC 61000-4-4
Resistance to conducted disturbances	10 V 0.15...80 MHz conforming to 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) conforming to Marine specification (LR, ABS, DNV, GL)
Electromagnetic emission	Radiated emissions - test level: 40 dBµV/m QP class A (10 m) at 30…230 MHz conforming to EN/IEC 55011 Radiated emissions - test level: 47 dBµV/m QP class A (10 m) at 230…1000 MHz conforming to EN/IEC 55011
Immunity to microbreaks	10 ms
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 (in operation) 10…95 %, without condensation (in storage)
IP degree of protection	IP20
Pollution degree	2
Operating altitude	0...2000 m
Storage altitude	0…3000 m
Vibration resistance	3.5 mm at 5…8.4 Hz on DIN rail 3 gn at 8.4…150 Hz on DIN rail
Shock resistance	15 gn for 11 ms

Packing Units

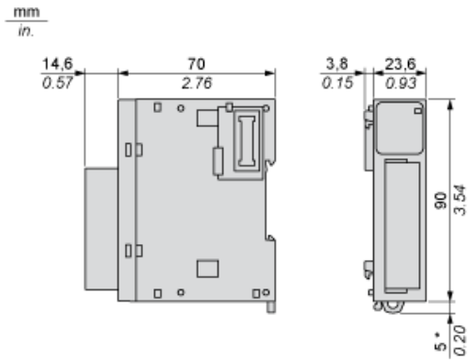
Unit Type of Package 1	PCE
Number of Units in Package 1	1
Package 1 Weight	220.0 g

Package 1 Height	7.566 cm
Package 1 width	10.629 cm
Package 1 Length	12.698 cm
Unit Type of Package 2	S04
Number of Units in Package 2	42
Package 2 Weight	10.32 kg
Package 2 Height	30 cm
Package 2 width	40 cm
Package 2 Length	60 cm

Offer Sustainability

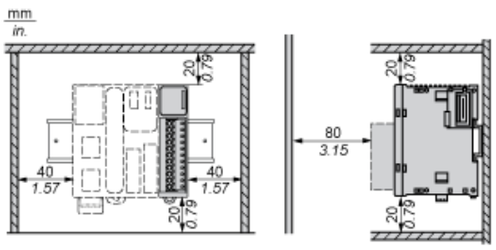
Sustainable offer status	Green Premium product
REACh Regulation	REACh Declaration
EU RoHS Directive	Pro-active compliance (Product out of EU RoHS legal scope) EU RoHS Declaration
Toxic heavy metal free	Yes
Mercury free	Yes
RoHS exemption information	Yes
China RoHS Regulation	China RoHS declaration
Environmental 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
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

Dimensions

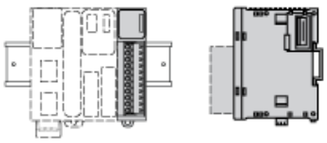


(*) 8.5 mm/0.33 in when the clamp is pulled out.

Spacing Requirements



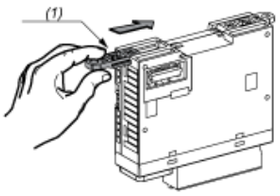
Mounting on a Rail



Incorrect Mounting

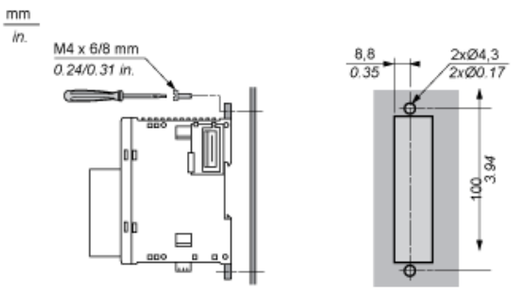


Mounting on a Panel Surface



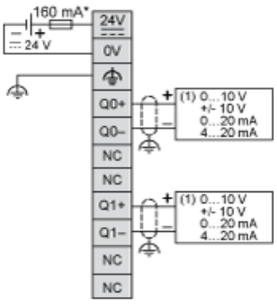
(1) Install a mounting strip

Mounting Hole Layout



Analogue Output Module

Wiring Diagram (Current / Voltage)



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