

# TM3AQ4

module TM3 - 4 analog outputs



## Main

|                           |   |
|---------------------------|---|
| Range of product          | Modicon TM3   |
| Product or component type | Analog output module  |
| Range compatibility       | Modicon M221<br>Modicon M241<br>Modicon M251                                      |
| Analogue output number    | 4   |
| Analogue output type      | 4...20 mA current<br>0...20 mA current<br>0...10 V voltage<br>- 10...10 V voltage |

## Complementary

|                            |  |
|----------------------------|--|
| Analogue input resolution  | 12 bits<br>11 bits + sign  |
| Analogue output resolution | 11 bits + sign<br>12 bits  |
| LSB value                  | 2.44 mV, analogue input: 0...10 V voltage<br>4.88 mV, analogue input: - 10...10 V voltage<br>4.88 µA, analogue input: 0...20 mA current<br>3.91 µA, analogue input: 4...20 mA current  |
| Load type                  | Resistive  |
| Load impedance ohmic       | 1 kOhm voltage<br>300 Ohm current  |
| Stabilisation time         | 1 ms   |
| Conversion time            | 1 ms + 1 ms per channel + 1 controller cycle time  |
| Absolute accuracy error    | +/- 0.2 % of full scale at 25 °C<br>+/- 1 % of full scale  |
| Temperature drift          | +/- 0.01 %FS/°C  |
| Repeat accuracy            | +/- 0.4 %FS  |
| Non-linearity              | +/- 0.2 %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 (no load) via bus connector<br>50 mA at 5 V DC (full load) via bus connector<br>50 mA at 24 V DC (no load) via external supply<br>125 mA at 24 V DC (full load) via external supply  |
| Local signalling           | 1 LED green for PWR  |
| Electrical connection      | 11 x 2.5 mm <sup>2</sup> removable screw terminal block with pitch 5.08 mm adjustment for outputs and supply   |
| Insulation                 | 500 V AC between output and internal logic<br>1500 V AC between output and supply  |
| Marking                    | CE   |
| Surge withstand            | 1 kV for power supply with common mode protection conforming to EN/IEC 61000-4-5<br>0.5 kV for power supply with differential mode protection conforming to EN/IEC 61000-4-5<br>1 kV for output with common mode protection conforming to EN/IEC 61000-4-5 |

The information provided in this documentation contains general descriptions and/or technical characteristics of the products contained herein. 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. It is the duty of any such user or integrator to perform the appropriate and complete risk analysis, evaluation and testing of the products with respect to the relevant specific application or use thereof. Neither Schneider Electric Industries SAS nor any of its affiliates or subsidiaries shall be responsible or liable for misuse of the information contained herein.

|                  |   |
|------------------|---|
| Mounting support | Top hat type TH35-15 rail conforming to IEC 60715<br>Top hat type TH35-7.5 rail conforming to IEC 60715<br>Plate or panel with fixing kit |
| Height           | 90 mm   |
| Depth            | 70 mm   |
| Width            | 23.6 mm   |
| Product weight   | 0.115 kg  |

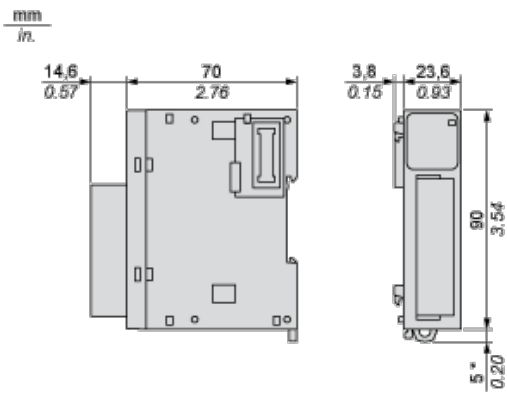
## Environment

|                                       |  |
|---------------------------------------|--|
| standards                             | EN/IEC 61131-2<br>EN/IEC 61010-2-201   |
| resistance to electrostatic discharge | 4 kV on contact conforming to EN/IEC 61000-4-2<br>8 kV in air conforming to EN/IEC 61000-4-2   |
| resistance to electromagnetic fields  | 10 V/m at 80 MHz...1 GHz conforming to EN/IEC 61000-4-3<br>3 V/m at 1.4 GHz...2 GHz conforming to EN/IEC 61000-4-3<br>1 V/m at 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 at 0.15...80 MHz conforming to EN/IEC 61000-4-6<br>3 V at 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 dB $\mu$ V/m QP class A (10 m at 30...230 MHz) conforming to EN/IEC 55011<br>Radiated emissions, test level: 47 dB $\mu$ V/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)<br>-10...35 °C (vertical installation)   |
| ambient air temperature for storage   | -25...70 °C  |
| relative humidity                     | 10...95 % without condensation in operation<br>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 with DIN rail mounting support<br>3 gn at 8.4...150 Hz with DIN rail mounting support   |
| shock resistance                      | 15 gn during 11 ms   |

## Offer Sustainability

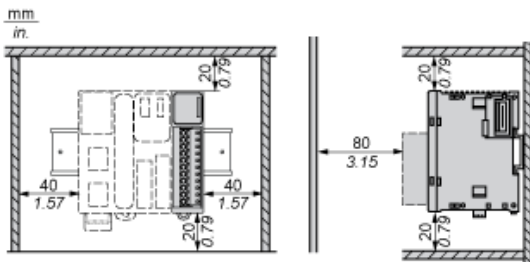
|                                  |   |
|----------------------------------|---|
| Sustainable offer status         | Green Premium product   |
| RoHS (date code: YYWW)           | Compliant - since 1415 - Schneider Electric declaration of conformity |
| REACH                            | Reference not containing SVHC above the threshold                     |
| Product environmental profile    | Available   |
| Product end of life instructions | Available   |

## Dimensions



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

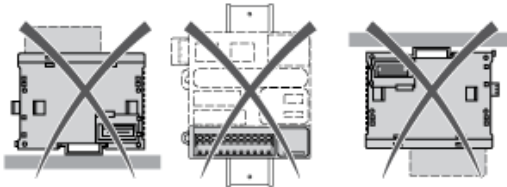
## Spacing Requirements



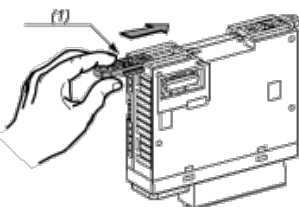
## Mounting on a Rail



## Incorrect Mounting

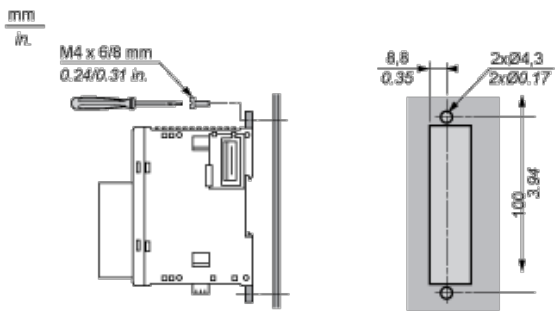


## Mounting on a Panel Surface



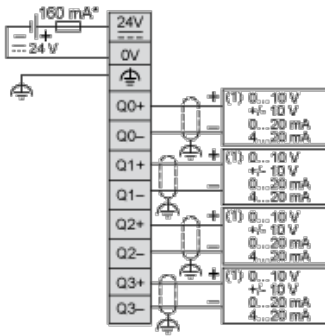
(1) Install a mounting strip

## Mounting Hole Layout



## Analogue Output Module

### Wiring Diagram (Current / Voltage)



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