# Product data sheet
## Characteristics

# TM3AM6G
## module TM3 - 4 analog inputs and 2 analog outputs spring



## Main

| | |
|---|---|
| Range of product | Modicon TM3 |
| Product or component type | Input/Output analog module |
| Range compatibility | Modicon M221<br>Modicon M241<br>Modicon M251 |
| Analogue input number | 4 |
| Analogue input type | Voltage, analogue input range: - 10...10 V<br>Voltage, analogue input range: 0...10 V<br>Current, analogue input range: 0...20 mA<br>Current, analogue input range: 4...20 mA |
| Analogue output number | 2 |
| Analogue output type | - 10...10 V voltage<br>0...10 V voltage<br>0...20 mA current<br>4...20 mA current |

## Complementary

| | |
|---|---|
| Analogue input resolution | 11 bits + sign<br>12 bits |
| Permissible continuous overload | 40 mA current<br>13 V voltage |
| Input impedance | >= 1 MOhm voltage<br><= 50 Ohm current |
| Analogue output resolution | 11 bits + sign<br>12 bits |
| LSB value | 3.91 µA, analogue input: 4...20 mA current<br>4.88 µA, analogue input: 0...20 mA current<br>4.88 mV, analogue input: - 10...10 V voltage<br>2.44 mV, analogue input: 0...10 V voltage |
| Load type | Resistive |
| Load impedance ohmic | 300 Ohm current<br>1 kOhm voltage |
| Stabilisation time | 1 ms |
| Conversion time | 1 ms + 1 ms per channel + 1 controller cycle time |
| Sampling duration | 10 ms<br>1 ms |
| Absolute accuracy error | +/- 0.2 % of full scale at 25 °C<br>+/- 1 % of full scale |
| Temperature drift | +/- 0.01 %FS/°C |
| Repeat accuracy | +/-0.5 %FS for output<br>+/-0.5 %FS for input |
| 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 | <= 30 m twisted shielded pairs cable for input/output circuit |

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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.
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| | |
|---|---|
| Current consumption | 100 mA at 24 V DC (full load) via external supply<br>55 mA at 24 V DC (no load) via external supply<br>55 mA at 5 V DC (full load) via bus connector<br>45 mA at 5 V DC (no load) via bus connector |
| Local signalling | 1 LED green for PWR |
| Electrical connection | 10 x 1.5 mm² removable spring terminal block with pitch 3.81 mm adjustment for inputs, outputs and supply<br>10 x 1.5 mm² removable spring terminal block with pitch 3.81 mm adjustment for inputs |
| Insulation | 500 V AC between output and internal logic<br>1500 V AC between output and supply<br>500 V AC between input and internal logic<br>1500 V AC between input and supply |
| Marking | CE |
| Surge withstand | 0.5 kV for I/O with differential mode protection conforming to EN/IEC 61000-4-5<br>1 kV for I/O 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 power supply with common mode protection conforming to EN/IEC 61000-4-5 |
| Mounting support | Plate or panel with fixing kit<br>Top hat type TH35-7.5 rail conforming to IEC 60715<br>Top hat type TH35-15 rail conforming to IEC 60715 |
| Height | 90 mm |
| Depth | 70 mm |
| Width | 23.6 mm |
| Product weight | 0.1 kg |

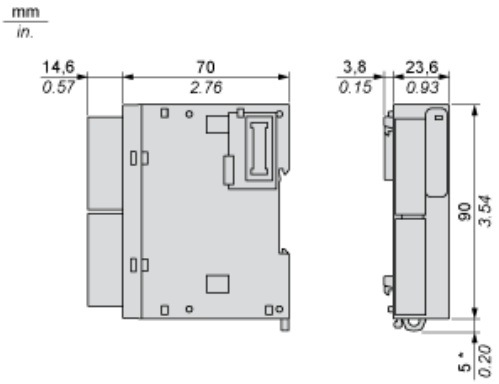
## Environment

| | |
|---|---|
| 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 | 1 V/m at 2 GHz...3 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>10 V/m at 80 MHz...1 GHz conforming to EN/IEC 61000-4-3 |
| Resistance to magnetic fields | 30 A/m at 50...60 Hz 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, induced by radio frequency fields | 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)<br>10 V at 0.15...80 MHz conforming to EN/IEC 61000-4-6 |
| Electromagnetic emission | Radiated emissions, test level: 47 dBµV/m QP class A (10 m at 230 MHz...1 GHz) conforming to EN/IEC 55011<br>Radiated emissions, test level: 40 dBµV/m QP class A (10 m at 30...230 MHz) conforming to EN/IEC 55011 |
| Immunity to microbreaks | 10 ms |
| Ambient air temperature for operation | -10...35 °C (vertical installation)<br>-10...55 °C (horizontal installation) |
| Ambient air temperature for storage | -25...70 °C |
| Relative humidity | 10...95 % without condensation in storage<br>10...95 % without condensation in operation |
| IP degree of protection | IP20 |
| Pollution degree | 2 |
| Operating altitude | 0...2000 m |
| Storage altitude | 0...3000 m |
| Vibration resistance | 3 gn at 8.4...150 Hz with DIN rail mounting support<br>3.5 mm at 5...8.4 Hz with DIN rail mounting support |
| Shock resistance | 15 gn during 11 ms |

## Offer Sustainability

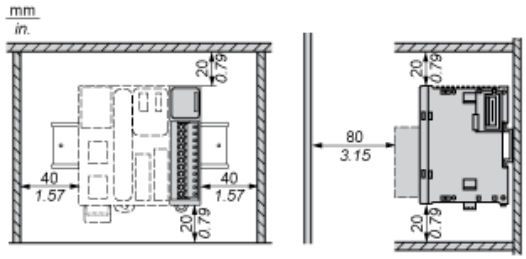
| | |
|---|---|
| Sustainable offer status | Green Premium product |
| RoHS (date code: YYWW) | Compliant - since 1415 - Schneider Electric declaration of conformity |
| REACh | Reference not containing SVHC above the threshold |
| Product environmental profile | Available Download Product Environmental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

## Dimensions

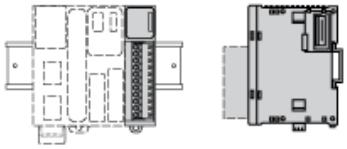



(*) 8.5 mm/0.33 in when the clamp is pulled out.

## Spacing Requirements



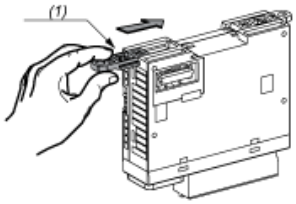

## Mounting on a Rail



Incorrect Mounting

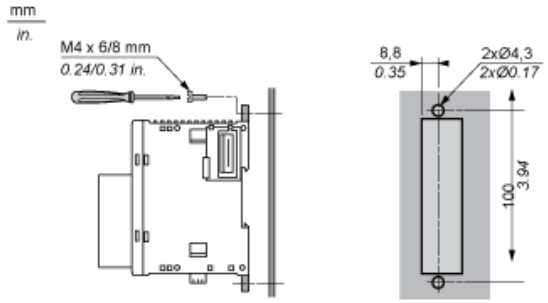


## Mounting on a Panel Surface



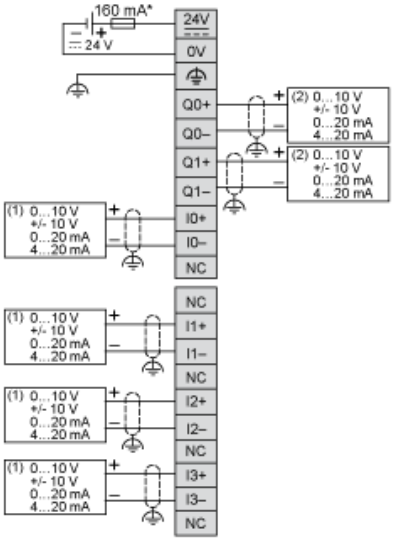

(1) Install a mounting strip

Mounting Hole Layout



## Analogue Mixed I/O Module

### Wiring Diagram (Current / Voltage)




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