## TM3AI8
Modicon TM3 - 8 analog inputs (screw) 24Vdc

### Main
- **Range of product**: Modicon TM3
- **Product or component type**: Analog input module
- **Range compatibility**: Modicon M221, Modicon M241, Modicon M251, Modicon M262
- **Analogue input number**: 8
- **Analogue input type**: current 4...20 mA, current 0...20 mA, voltage 0...10 V, voltage -10...10 V

### Complementary
- **Analogue input resolution**: 12 bits, 11 bits + sign
- **Permissible continuous overload**: 13 V, analogue input type: voltage, 40 mA, analogue input type: current
- **Input impedance**: <= 50 Ohm current, >= 1 MOhm voltage
- **LSB value**: 2.44 mV 0...10 V voltage, 4.88 mV -10...10 V voltage, 4.88 µA 0...20 mA current, 3.91 µA 4...20 mA current
- **Conversion time**: 1 ms + 1 ms per channel + 1 controller cycle time
- **Sampling duration**: 1 ms
- **Absolute accuracy error**: +/- 1 % of full scale, +/- 0.2 % of full scale at 25 °C
- **Temperature drift**: +/- 0.01 %FS/°C
- **Repeat accuracy**: +/- 0.5 %FS
- **Non-linearity**: +/- 0.2 %FS
- **Cross talk**: <= 1 LSB

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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.
**[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 input 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 bus connector no load  
40 mA at 24 V DC via external supply full load

**Local signalling**  
1 LED (green) for PWR

**Electrical connection**  
10 x 1.5 mm² removable screw terminal block with pitch 3.81 mm adjustment for inputs and supply  
10 x 1.5 mm² removable screw terminal block with pitch 3.81 mm adjustment for inputs

**Insulation**  
Between input and supply at 1500 V AC  
Between input 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 input 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**  
0.11 kg

### Environment

**Standards**  
EN/IEC 61131-2  
EN/IEC 61010-2-201

**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

**Package 1 Weight**  
205.000 g

**Package 1 Height**  
75.000 mm
<table>
<thead>
<tr>
<th>Package 1 width</th>
<th>105.000 mm</th>
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</thead>
<tbody>
<tr>
<td>Package 1 Length</td>
<td>125.000 mm</td>
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</tbody>
</table>

**Offer Sustainability**

<table>
<thead>
<tr>
<th>Sustainable offer status</th>
<th>Green Premium product</th>
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</thead>
<tbody>
<tr>
<td>REACh Regulation</td>
<td>REACh Declaration</td>
</tr>
<tr>
<td>EU RoHS Directive</td>
<td>Pro-active compliance (Product out of EU RoHS legal scope) EU RoHS Declaration</td>
</tr>
<tr>
<td>Toxic heavy metal free</td>
<td>Yes</td>
</tr>
<tr>
<td>Mercury free</td>
<td>Yes</td>
</tr>
<tr>
<td>RoHS exemption information</td>
<td>Yes</td>
</tr>
<tr>
<td>China RoHS Regulation</td>
<td>China RoHS declaration</td>
</tr>
<tr>
<td>Environmental Disclosure</td>
<td>Product Environmental Profile</td>
</tr>
<tr>
<td>Circularity Profile</td>
<td>End of Life Information</td>
</tr>
<tr>
<td>WEEE</td>
<td>The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins</td>
</tr>
<tr>
<td>PVC free</td>
<td>Yes</td>
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</tbody>
</table>
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 Input Module

Wiring Diagram (Current / Voltage)

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