**Product data sheet**

**TM3AI2H**

Modicon TM3 - 2 analog inputs high resolution (screw) 24Vdc

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### Main

<table>
<thead>
<tr>
<th>Range of product</th>
<th>Modicon TM3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product or component type</td>
<td>Analog input module</td>
</tr>
<tr>
<td>Range compatibility</td>
<td>Modicon M221, M241, M251, M262</td>
</tr>
<tr>
<td>Analogue input number</td>
<td>2</td>
</tr>
<tr>
<td>Analogue input type</td>
<td>current 4...20 mA, current 0...20 mA, voltage 0...10 V, voltage -10...10 V</td>
</tr>
</tbody>
</table>

### Complementary

<table>
<thead>
<tr>
<th>Analogue input resolution</th>
<th>16 bits, 15 bits + sign</th>
</tr>
</thead>
<tbody>
<tr>
<td>Permissible continuous overload</td>
<td>13 V, analogue input type: voltage, 40 mA, analogue input type: current</td>
</tr>
<tr>
<td>Input impedance</td>
<td>&lt;= 50 Ohm current, &gt;= 1 MOhm voltage</td>
</tr>
<tr>
<td>LSB value</td>
<td>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</td>
</tr>
<tr>
<td>Conversion time</td>
<td>1 ms + 1 ms per channel + 1 controller cycle time</td>
</tr>
<tr>
<td>Sampling duration</td>
<td>1 ms</td>
</tr>
<tr>
<td>Absolute accuracy error</td>
<td>+/- 0.1 % of full scale at 25 °C, +/- 1 % of full scale</td>
</tr>
<tr>
<td>Temperature drift</td>
<td>+/- 0.006 %FS/°C</td>
</tr>
<tr>
<td>Repeat accuracy</td>
<td>+/- 0.5 %FS</td>
</tr>
<tr>
<td>Non-linearity</td>
<td>+/- 0.01 %FS</td>
</tr>
</tbody>
</table>

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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.
**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 input circuit

**Current consumption**
- 30 mA at 5 V DC via bus connector no load
- 40 mA at 5 V DC via bus connector full load
- 25 mA at 24 V DC via external supply

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

**Electrical connection** 11 x 2.5 mm² removable screw terminal block with pitch 5.08 mm adjustment for inputs and supply

**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** 0.115 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, 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** 0.216 kg

**Package 1 Height** 7.500 cm

**Package 1 width** 10.500 cm
<table>
<thead>
<tr>
<th>Package 1 Length</th>
<th>12.500 cm</th>
</tr>
</thead>
</table>

**Offer Sustainability**

<table>
<thead>
<tr>
<th>Sustainable offer status</th>
<th>Green Premium product</th>
</tr>
</thead>
<tbody>
<tr>
<td>EU RoHS Directive</td>
<td>Pro-active compliance (Product out of EU RoHS legal scope)</td>
</tr>
<tr>
<td>EU RoHS Declaration</td>
<td></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>
</tr>
</tbody>
</table>
Dimensions

(*) 8.5 mm/0.33 in when the clamp is pulled out.
TM3AI2H

Spacing Requirements
Product data sheet
Mounting and Clearance

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