# Product data sheet

**TM3AI2H**  
module TM3 - 2 analog inputs high resolution

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## Main

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Range of product</td>
<td>Modicon TM3</td>
</tr>
<tr>
<td>Product or component type</td>
<td>Analog input module</td>
</tr>
<tr>
<td>Range compatibility</td>
<td>Modicon M221, Modicon M241, Modicon M251</td>
</tr>
<tr>
<td>Analogue input number</td>
<td>2</td>
</tr>
<tr>
<td>Analogue input type</td>
<td>Current, analogue input range: 4...20 mA</td>
</tr>
<tr>
<td></td>
<td>Voltage, analogue input range: 0...20 V</td>
</tr>
<tr>
<td></td>
<td>Voltage, analogue input range: -10...10 V</td>
</tr>
</tbody>
</table>

## Complementary

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analogue input resolution</td>
<td>15 bits + sign, 16 bits</td>
</tr>
<tr>
<td>Permissible continuous overload</td>
<td>13 V voltage, 40 mA 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, analogue input range: 0...10 V</td>
</tr>
<tr>
<td></td>
<td>4.88 mV, analogue input range: -10...10 V</td>
</tr>
<tr>
<td></td>
<td>4.88 µA, analogue input range: 0...20 mA current</td>
</tr>
<tr>
<td></td>
<td>3.91 µA, analogue input range: 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>&lt;= 1 ms</td>
</tr>
<tr>
<td>Absolute accuracy error</td>
<td>+/- 0.1 % of full scale at 25 °C</td>
</tr>
<tr>
<td></td>
<td>+/- 1 % of full scale</td>
</tr>
<tr>
<td>Temperature drift</td>
<td>+/- 0.006 %/°C</td>
</tr>
<tr>
<td>Repeat accuracy</td>
<td>+/- 0.5 %/°C</td>
</tr>
<tr>
<td>Non-linearity</td>
<td>+/- 0.01 %/FS</td>
</tr>
<tr>
<td>Cross talk</td>
<td>&lt;= 1 LSB</td>
</tr>
<tr>
<td>[Us] rated supply voltage</td>
<td>24 V DC</td>
</tr>
<tr>
<td>Supply voltage limits</td>
<td>20.4...28.8 V</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.
**Type of cable**  
Twisted shielded pairs cable 30 m for input circuit

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

**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 inputs and supply

**Insulation**  
- 500 V AC between input and internal logic  
- 1500 V AC between input and supply

**Marking**  
CE

**Surge withstand**  
- 1 kV for power supply with common mode protection conforming to EN/IEC 61000-4-5  
- 0.5 kV for power supply with differential mode protection conforming to EN/IEC 61000-4-5  
- 1 kV for input with common mode protection 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

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Height</td>
<td>90 mm</td>
</tr>
<tr>
<td>Depth</td>
<td>70 mm</td>
</tr>
<tr>
<td>Width</td>
<td>23.6 mm</td>
</tr>
<tr>
<td>Product weight</td>
<td>0.115 kg</td>
</tr>
</tbody>
</table>

**Environment**

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

**Resistance to electrostatic discharge**  
- 4 kV on contact conforming to EN/IEC 61000-4-2  
- 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  
- 3 V/m at 1.4 GHz...2 GHz conforming to EN/IEC 61000-4-3  
- 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  
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 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 with DIN rail mounting support  
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

**REAC**h  
Reference not containing SVHC above the threshold

**Product environmental profile**  
Available

**Product Environmental Profile**
<table>
<thead>
<tr>
<th>Product end of life instructions</th>
<th>Available</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>End of Life Information</td>
</tr>
</tbody>
</table>
Dimensions

(*) 8.5 mm/0.33 in when the clamp is pulled out.
Product data sheet  
Mounting and Clearance

Spacing Requirements

[Diagram showing spacing requirements]
Mounting and Clearance

Mounting on a Rail

Incorrect Mounting
Mounting on a Panel Surface

1. Install a mounting strip

Mounting Hole Layout

- M4 x 6/10 mm
- 0.25 x 0.3 mm
- 2 x 6/10 mm
Analogue Input Module

Wiring Diagram (Current / Voltage)

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