# Product data sheet
## Characteristics

# TM5SAI2H
## analog input module - 2I - +/-10 V/0..20 mA - 16 bits

### Main

| | |
|---|---|
| Range of product | Modicon TM5 |
| Product or component type | Analog input module |
| Analogue input number | 2 |
| Analogue input type | Voltage +/- 10 V, differential<br>Current 0...20 mA, differential |
| Analogue input resolution | 15 bits 0...20 mA<br>15 bits + sign +/- 10 V |

### Complementary

| | |
|---|---|
| Range compatibility | Modicon LMC058<br>Modicon M258 |
| Product compatibility | Motion controller<br>Logic controller |
| Measurement resolution | 610 nA, 0...20 mA<br>305 µV, +/- 10 V |
| Colour | White |
| Input impedance | >= 20 mOhm voltage |
| Load impedance ohmic | <= 400 Ohm current) |
| Sampling duration | 50 µs |
| Measurement error | < 0.08 % of full scale, 0...20 mA, 0...20 mA at 25 °C<br>< 0.08 % of full scale, +/- 10 V, +/- 10 V at 25 °C |
| Temperature coefficient | 0.01 %FS/°C |
| Non-linearity | < 0.015 %FS, analogue input type: current<br>< 0.01 %FS, analogue input type: voltage |
| Type of cable | Shielded cable |
| Isolation | No insulation between channels<br>500 Vrms AC insulation between channel and bus |
| Supply | Internal |
| [Us] rated supply voltage | 24 V DC -15...20 % |
| Common mode rejection | >= 70 dB |
| Local signalling | 2 LEDs green for input status<br>1 LED red for power supply<br>1 LED green for power supply |
| Current consumption | 50 mA 24 V DC input/output<br>2 mA 5 V DC bus |
| Power dissipation in W | <= 1.21 W |
| Marking | CE |
| Product weight | 0.025 kg |

The information provided in this documentation contains general descriptions and/or technical characteristics of the performance 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.
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## Environment

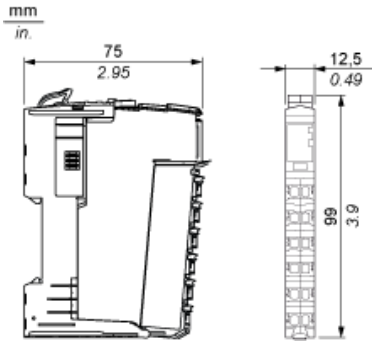
| | |
|---|---|
| Standards | CSA 22-2 No 142<br>IEC 61131-2<br>UL 508<br>CSA 22-2 No 213 |
| Product certifications | CSA<br>C-Tick<br>CULus<br>GOST-R |
| Ambient air temperature for operation | 0...60 °C with derating factor (horizontal installation)<br>0...55 °C without derating factor (horizontal installation)<br>0...50 °C (vertical installation) |
| Ambient air temperature for storage | -25...70 °C |
| Relative humidity | 5...95 % without condensation |
| IP degree of protection | IP20 conforming to IEC 61131-2 |
| Pollution degree | 2 conforming to IEC 60664 |
| Operating altitude | 0...2000 m |
| Storage altitude | 0...3000 m |
| Vibration resistance | 3.5 mm (f= 5...8.4 Hz) DIN rail<br>1 gn (f= 8.4...150 Hz) DIN rail |
| Shock resistance | 15 gn for 11 ms |
| Resistance to electrostatic discharge | 8 kV in air conforming to EN/IEC 61000-4-2<br>4 kV on contact conforming to EN/IEC 61000-4-2 |
| Resistance to electromagnetic fields | 10 V/m 80...2000 MHz conforming to EN/IEC 61000-4-3<br>1 V/m 2...2.7 GHz conforming to EN/IEC 61000-4-3 |
| Resistance to fast transients | 2 kV power lines conforming to EN/IEC 61000-4-4<br>1 kV shielded cable conforming to EN/IEC 61000-4-4<br>1 kV I/O conforming to EN/IEC 61000-4-4 |
| Surge withstand | 1 kV common mode conforming to EN/IEC 61000-4-5<br>0.5 kV differential mode conforming to EN/IEC 61000-4-5 |
| Electromagnetic compatibility | EN/IEC 61000-4-6 |
| Disturbance radiated/conducted | CISPR11 |

## Offer Sustainability

| | |
|---|---|
| Sustainable offer status | Not Green Premium product |
| RoHS | Compliant - since 1039 - Schneider Electric declaration of conformity download declaration of conformity |
| Product environmental profile | Available Download Product Environmental |

## TM5 Slice

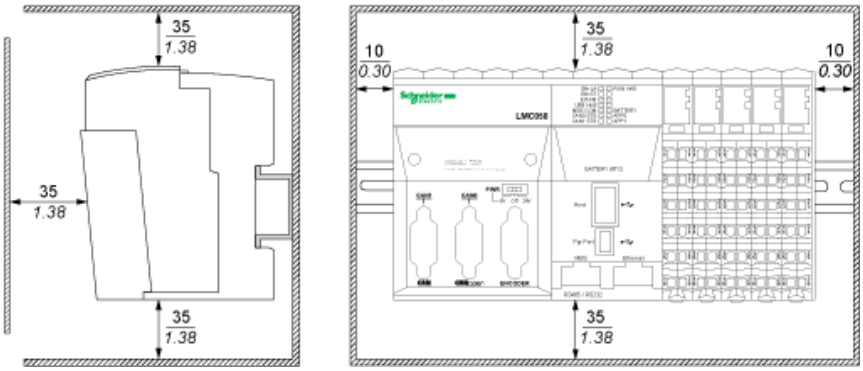
Dimensions



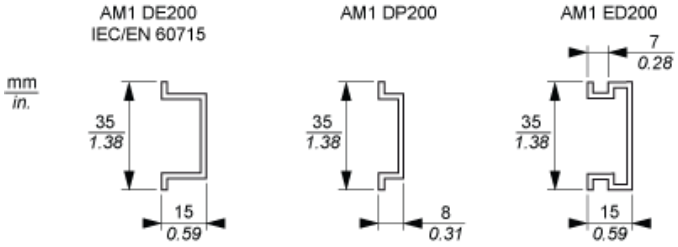
## TM5 System

### Spacing Requirements

mm
in.




### Mounting on a DIN Rail



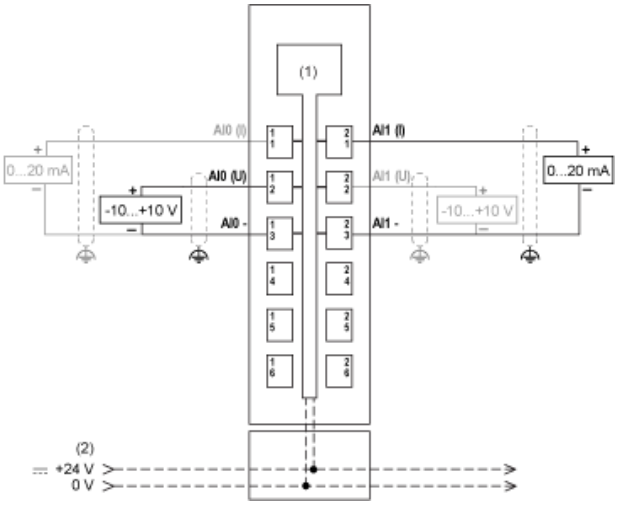
## TM5 System Wiring Recommendations

### Wire Sizes to Use with the Removable Spring Terminal Blocks

| mm / in. | | | | |
|---|---|---|---|---|
| mm² | 0,08...2,5 | 0,25...2,5 | 0,25...1,5 | 2 x 0,25...2 x 0,75 |
| AWG | 28...14 | 24...14 | 24...16 | 2 x 24...2 x 18 |

## Electronic Module 2AI ±10V/0-20mA 16 Bits

### Wiring Diagram




(1) Internal electronics
(2) 24 Vdc I/O power segment integrated into the bus bases
(I) Current
(U) Voltage

### Condition of Installation

Do not place 16-bit analog input modules side-by-side because their electromagnetic characteristics may lead to mutual interference and possible unintended equipment operation. Further, other types of equipments can generate similar electromagnetic interference affecting the conversion accuracy of the modules. In the physical configuration, a single slice of non-interfering equipment is sufficent to avoid this type of disturbance. Separate the 16-bit analog modules from each other and from the following equipment:

- TM5SBER2 Bus receiver
- TM5SPS2 and TM5SPS2F Power Distribution Modules
- TM258••• and LMC058••• Controllers