Product data sheet

Specifications



Analog input module, Modicon TM5, 2I, +/-10 V/0 to 20mA, 16bits

TM5SAI2H

Main

Range of product	Modicon TM5
Product or component type	Analog input module
Analogue input number	2
Analogue input type	current 0...20 mA differential voltage +/- 10 V differential
Analogue input resolution	15 bits + sign +/- 10 V 15 bits 0...20 mA

Complementary

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

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

Maximum power dissipation in W	1.21 W
Marking	CE
Net weight	0.025 kg

Environment

Standards	CSA C22.2 No 142 IEC 61131-2 UL 508 CSA C22.2 No 213
Product certifications	C-Tick GOST-R cULus CSA
Ambient air temperature for operation	0…55 °C without derating (horizontal installation) 0…60 °C with derating factor (horizontal installation) 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	1 gn at 8.4…150 Hz on DIN rail 3.5 mm at 5…8.4 Hz on DIN rail
Shock resistance	15 gn for 11 ms
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	1 V/m 2...2.7 GHz conforming to EN/IEC 61000-4-3 10 V/m 80...2000 MHz conforming to EN/IEC 61000-4-3
Resistance to fast transients	1 kV (I/O) conforming to EN/IEC 61000-4-4 1 kV (shielded cable) conforming to EN/IEC 61000-4-4 2 kV (power lines) conforming to EN/IEC 61000-4-4
Surge withstand	0.5 kV differential mode conforming to EN/IEC 61000-4-5 1 kV common mode conforming to EN/IEC 61000-4-5
Electromagnetic compatibility	EN/IEC 61000-4-6
Disturbance radiated/ conducted	CISPR 11

Packing Units

Unit Type of Package 1	PCE
Number of Units in Package 1	1
Package 1 Weight	41.0 g
Package 1 Height	2 cm
Package 1 width	6 cm
Package 1 Length	10.5 cm
Unit Type of Package 2	S02
Number of Units in Package 2	97
Package 2 Weight	4.241 kg
Package 2 Height	15 cm
Package 2 width	30 cm

Package 2 Length	40 cm

Offer Sustainability

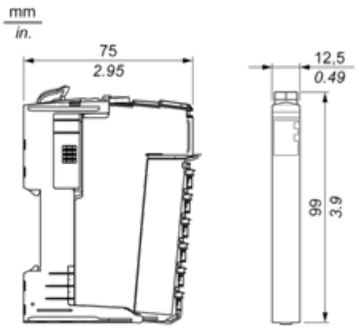
Sustainable offer status	Green Premium product
REACh Regulation	REACh Declaration
REACh free of SVHC	Yes
EU RoHS Directive	Pro-active compliance (Product out of EU RoHS legal scope) EU RoHS Declaration
Toxic heavy metal free	Yes
Mercury free	Yes
RoHS exemption information	Yes
China RoHS Regulation	China RoHS declaration
Environmental Disclosure	Product Environmental Profile
Circularity Profile	End of Life Information
WEEE	The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins
PVC free	Yes
California proposition 65	WARNING: This product can expose you to chemicals including: Lead and lead compounds, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

Contractual warranty

Warranty	18 months

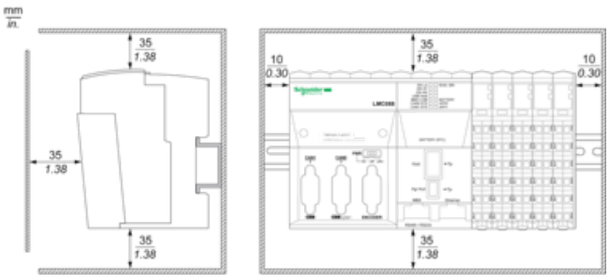
TM5 Slice

Dimensions

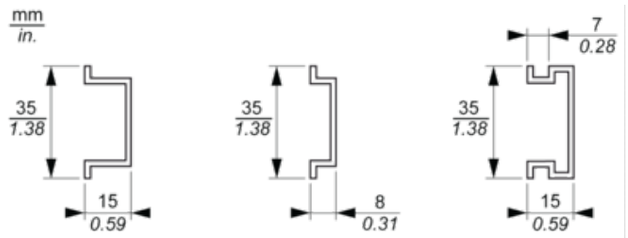


TM5 System

Spacing Requirements



Mounting on a DIN Rail



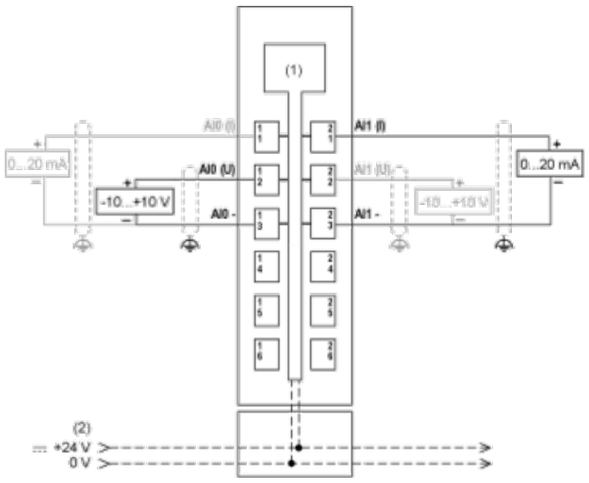
TM5 System Wiring Recommendations

Wire Sizes to Use with the Removable Spring Terminal Blocks

mm / in. 				
mm^2	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