



Main

Range of product	Modicon TM5
Product or component type	Mixed I/O module
Range compatibility	Modicon LMC058 Modicon M258
Product compatibility	Motion controller Logic controller

Complementary

Discrete input number	4
Discrete input voltage	24 V
Discrete input voltage type	DC
Input voltage limits	20.4...28.8 V
Discrete input logic	Sink
Discrete input current	3.3 mA
Voltage state 0 guaranteed	≤ 5 V
Voltage state 1 guaranteed	≥ 15 V
Input filtering	≤ 2 μ s hardware 1 ms by default ≤ 25 ms configurable by software
Analogue input number	1
Analogue input type	Voltage, input range: ± 10 V Current, input range: 0...20 mA/4...20 mA
Analogue input resolution	12 bits + sign for voltage 12 bits for current
Common mode rejection	70 dB DC for analog input 70 dB 50 Hz for analog input
Discrete output number	2
Discrete output type	Transistor
Output voltage	24 V DC
Output voltage limits	20.4...28.8 V
Discrete output logic	Source
Discrete output current	≤ 0.5 A per output ≤ 1 A
Peak output current	14 A
Maximum leakage current	5 μ A (when switched off) for digital output
Switching frequency	100 Hz, resistive for digital output
Analogue output number	1
Analogue output type	Voltage: ± 10 V Current: 0...20 mA
Conversion time	300 μ s for analog output
Analogue output resolution	12 bits + sign, ± 10 V 12 bits, 0...20 mA
Measurement resolution	2.441 mV, ± 10 V, ± 10 V 4.883 μ A, 0...20 mA/4...20 mA, 0...20 mA
Colour	White

Response time	≤ 250 µs from state 0 to state 1 for digital output ≤ 250 µs from state 1 to state 0 for digital output 1 ms for analog output
Input impedance	7.18 kOhm digital ≥ 1 MOhm analog, +/- 10 V
Minimum output impedance	1 KOhm +/- 10 V 0...55 °C 10 kOhm +/- 10 V 55...60 °C
Load impedance ohmic	≤ 400 Ohm (output: 0...20 mA) at 0...55 °C ≤ 300 Ohm (output: 0...20 mA) at 55...60 °C ≤ 300 Ohm (input: 0...20 mA/4...20 mA)
Sampling duration	300 µs for analog input
Measurement error	< 0.08 % of full scale (input: +/- 10 V) at 25 °C < 0.08 % of full scale (input: 0...20 mA/4...20 mA) at 25 °C < 0.15 % of full scale (output: +/- 10 V) at 25 °C < 0.15 % of full scale (output: 0...20 mA) at 25 °C
Temperature coefficient	+/- 0.009 %FS/°C (input: 0...20 mA/4...20 mA) +/- 0.006 %FS/°C (input: +/- 10 V) +/- 0.02 %FS/°C (output: 0...20 mA) +/- 0.02 %FS/°C (output: +/- 10 V)
Non-linearity	+/- 0.02 %FS (input: 0...20 mA/4...20 mA) +/- 0.02 %FS (input: +/- 10 V) +/- 0.1 %FS (output: 0...20 mA) +/- 0.1 %FS (output: +/- 10 V)
Type of cable	Shielded cable
Isolation	No insulation between channels 500 Vrms AC insulation between channel and bus
Supply	Internal
[Us] rated supply voltage	24 V DC -15...20 %
Local signalling	1 LED (green) for power supply (ON) 1 LED (red) for power supply (OFF) 4 LEDs (green) for digital input status 2 LEDs (orange) for digital output status 1 LED (orange) 1 LED (green)
Wiring mode	1 wire for digital input/output
Current consumption	2 mA at 5 V DC bus 73 mA at 24 V DC inputs/outputs
Maximum power dissipation in W	1.75 W
Protection type	Against reverse polarity for digital output Against short-circuits for digital output Thermal overload protection for digital output Against short-circuits for analog output
Marking	CE
Net weight	0.025 kg

Environment

Standards	IEC 61131-2 CSA C22.2 No 142 UL 508 CSA C22.2 No 213
Product certifications	C-Tick CSA CULus GOST-R
Ambient air temperature for operation	0...55 °C without derating (horizontal installation) 55...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

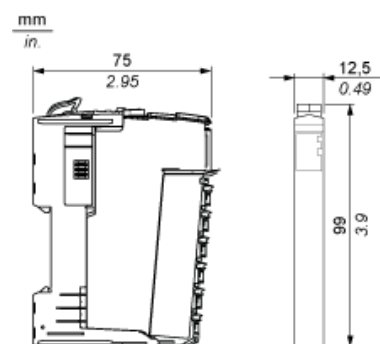
Unit Type of Package 1	PCE
Number of Units in Package 1	1
Package 1 Weight	43 g
Package 1 Height	2 cm
Package 1 width	6 cm
Package 1 Length	10.5 cm

Contractual warranty

Warranty	18 months
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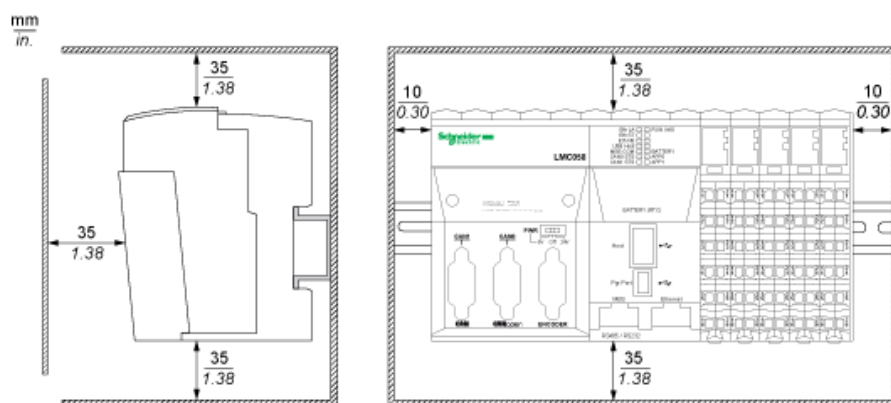
TM5 Slice

Dimensions

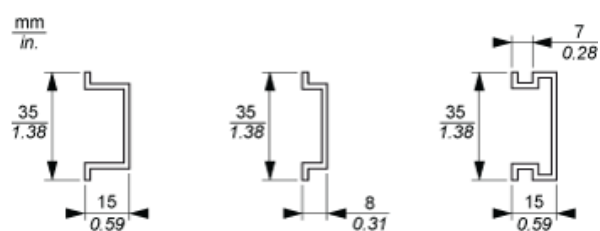


TM5 System

Spacing Requirements



Mounting on a DIN Rail

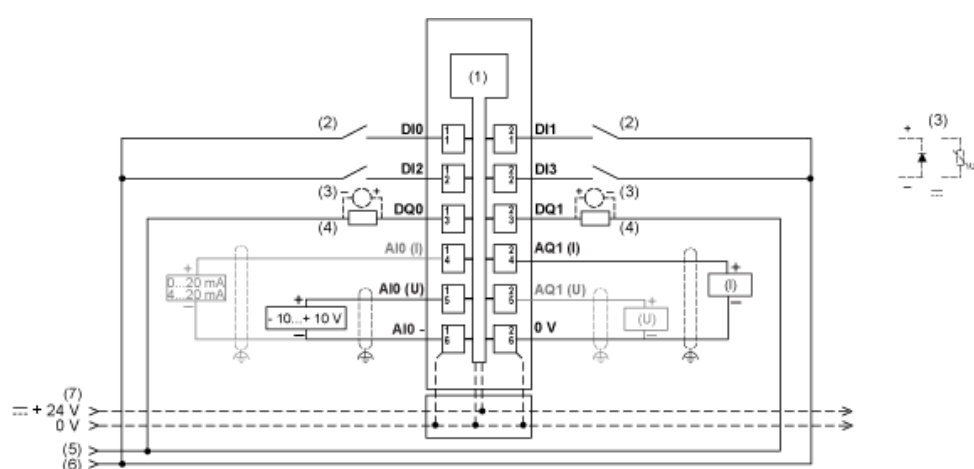


TM5 System Wiring Recommendations

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

Wiring Diagram



- 1 internal electronics
- 2 2-wire sensor
- 3 inductive load protection
- 4 2-wire load
- 5 0 Vdc I/O power segment by external connection
- 6 24 Vdc I/O power segment by external connection
- 7 24 Vdc I/O power segment integrated into the bus bases
- I current
- U voltage