

### Main

Range of product	Modicon TM5
Product or component type	Compact I/O expansion block

### Complementary

Enclosure material	Plastic
Colour	White
Input/Output number	24
For enclosure nominal dimensions	16 I + 8 O
Number of modules	Digital input 2 x 6 Digital output 1 x 6 Analog input 1 x 4 Analog output 1 x 2
Discrete input number	12
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	3.75 mA
Input impedance	6.4 kOhm
Analogue input number	4
Analogue input type	Voltage/current
Analogue input range	0...20 mA +/- 10 V 4...20 mA
Analogue input resolution	12 bits + sign voltage 12 bits current
Discrete output number	6
Discrete output type	Transistor

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

Wiring mode	2-wire discrete output 2-wire discrete input
Output voltage	24 V DC
Output voltage limits	20.4...28.8 V DC
Discrete output logic	Source
Discrete output current	0.5 A per output
Analogue output number	2
Analogue output type	Voltage/current
Analogue output range	0...20 mA +/- 10 V
Analogue output resolution	12 bits + sign voltage 12 bits current
Peak output current	3 A
Voltage state 0 guaranteed	<= 5 V
Voltage state 1 guaranteed	>= 15 V
Input filtering	<= 100 ms hardware <= 25 ms configurable by software
Response time	<= 300 µs from state 0 to state 1 output <= 300 µs from state 1 to state 0 output
Maximum leakage current	5 µA when switched off) output
Isolation	No insulation between channels 500 Vrms AC insulation between channel and bus
Maximum voltage drop	<0.3 V at 500 mA output
Current consumption	69 mA 5 V DC bus 290 mA 24 V DC
Max current	3000 mA loads on I/O power segment
Maximum power dissipation in W	7.3 W
Local signalling	Power supply 5 LEDs green) Power supply 5 LEDs red) Output status 8 LEDs yellow) Input status 16 LEDs green)
Electrical connection	Removable spring terminal block
Marking	CE
Surge withstand	0.5 kV differential mode 24 V DC EN/IEC 61000-4-5 1 kV common mode 24 V DC EN/IEC 61000-4-5
Electromagnetic compatibility	EN/IEC 61000-4-6
Disturbance radiated/conducted	CISPR 11

## Environment

Standards	CSA C22.2 No 213 IEC 61131-2 UL 508 CSA C22.2 No 142
Product certifications	C-Tick CSA GOST-R CULus
Ambient air temperature for operation	14...122 °F (-10...50 °C) vertical installation) 14...140 °F (-10...60 °C) horizontal installation)
Ambient air temperature for storage	-40...158 °F (-40...70 °C)
Relative humidity	5...95 % without condensation
IP degree of protection	IP20IEC 61131-2
Pollution degree	2 IEC 60664
Operating altitude	0...2000 m
Storage altitude	0.00...9842.52 ft (0...3000 m)
Vibration resistance	1 gn 8.4...150 Hz DIN rail 3.5 mm 5...8.4 Hz DIN rail
Shock resistance	15 gn 11 ms

Resistance to electrostatic discharge	4 kV on contact EN/IEC 61000-4-2 8 kV in air EN/IEC 61000-4-2
Resistance to electromagnetic fields	0.91 V/yd (1 V/m) 2...2.7 GHz EN/IEC 61000-4-3 9.14 V/yd (10 V/m) 80...2000 MHz EN/IEC 61000-4-3
Resistance to fast transients	1 kV EN/IEC 61000-4-4 I/O) 1 kV EN/IEC 61000-4-4 shielded cable) 2 kV EN/IEC 61000-4-4 power lines)
Mounting support	DIN rail
Net weight	0.55 lb(US) (0.25 kg)

### Packing Units

Unit Type of Package 1	PCE
Number of Units in Package 1	1
Package 1 Weight	10.09 oz (286 g)
Package 1 Height	2.76 in (7 cm)
Package 1 width	3.54 in (9 cm)
Package 1 Length	4.33 in (11 cm)
Unit Type of Package 2	S03
Number of Units in Package 2	36
Package 2 Weight	22.70 lb(US) (10.296 kg)
Package 2 Height	11.81 in (30 cm)
Package 2 width	11.81 in (30 cm)
Package 2 Length	15.75 in (40 cm)

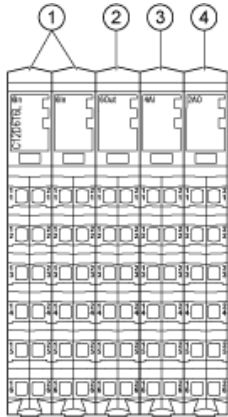
### Offer Sustainability

Sustainable offer status	Green Premium product
REACH Regulation	<a href="#">REACH Declaration</a>
REACH free of SVHC	Yes
EU RoHS Directive	Pro-active compliance (Product out of EU RoHS legal scope) <a href="#">EU RoHS Declaration</a>
Toxic heavy metal free	Yes
Mercury free	Yes
RoHS exemption information	<a href="#">Yes</a>
China RoHS Regulation	<a href="#">China RoHS declaration</a>
Environmental Disclosure	<a href="#">Product Environmental Profile</a>
Circularity Profile	<a href="#">End of Life Information</a>
WEEE	The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins
PVC free	Yes

### Contractual warranty

Warranty	18 months
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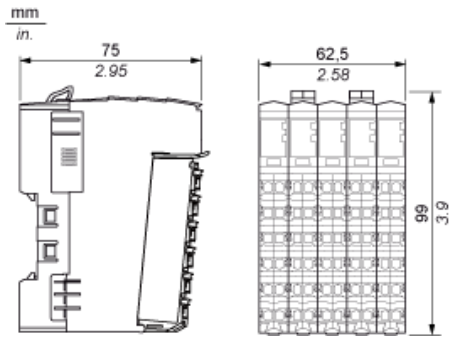
TM5 Compact I/O Module



N°	Designation
1	Input electronic module / 6 digital inputs
2	Output electronic module / 6 digital outputs
3	Analog Input electronic module / 4 analog inputs
4	Analog Output electronic module / 2 analog outputs

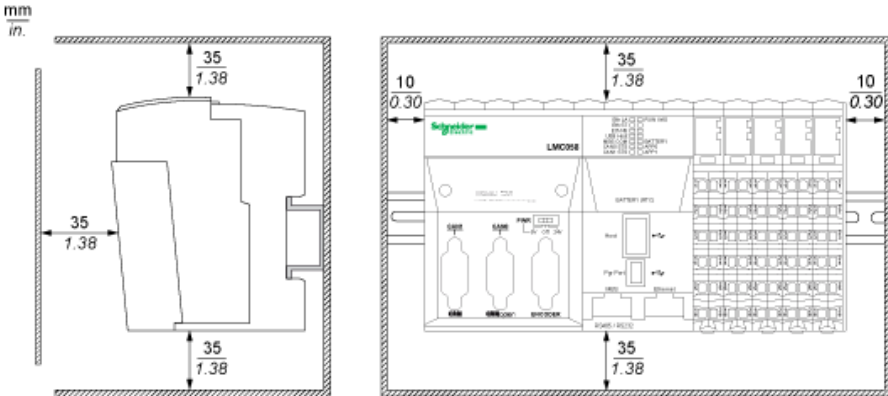
Compact I/O Module

Dimensions

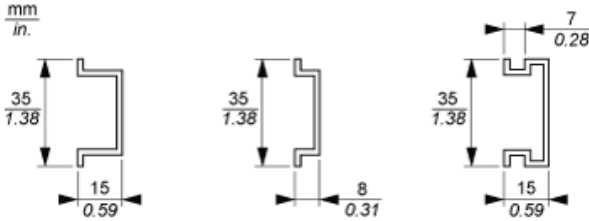


TM5 System

Spacing Requirements








Mounting on a DIN Rail



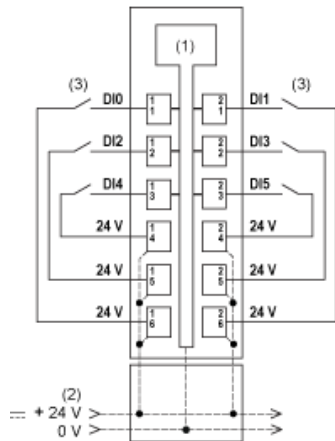
TM5 System Wiring Recommendations

Wire Sizes to Use with the Removable Spring Terminal Blocks

 mm in.				
mm <sup>2</sup>	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

Digital Input 6In

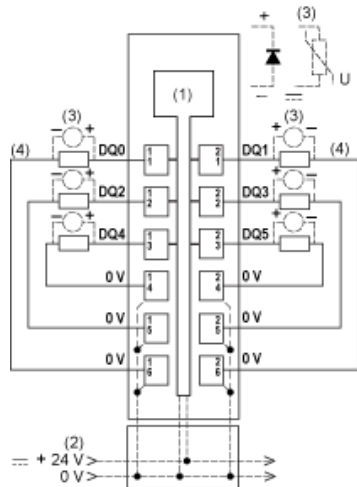
Wiring Diagram



- 1 Internal electronics
- 2 24 Vdc I/O segment integrated into the bus bases
- 3 2-wire sensor

Digital Output 6Out

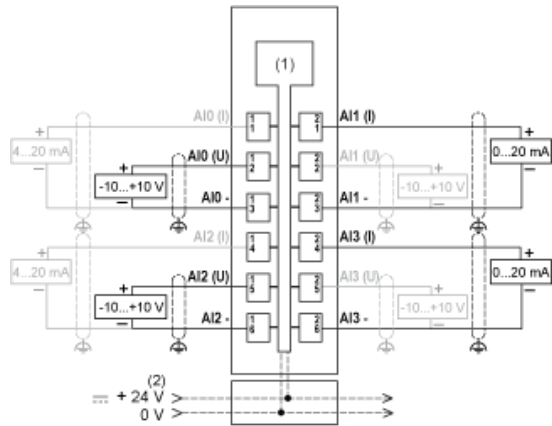
Wiring Diagram



- 1 Internal electronics
- 2 24 Vdc I/O power segment integrated into the bus bases
- 3 Inductive load protection
- 4 2-wire load

Analog Input 4AI  $\pm 10$  V / 0-20 mA / 4-20 mA

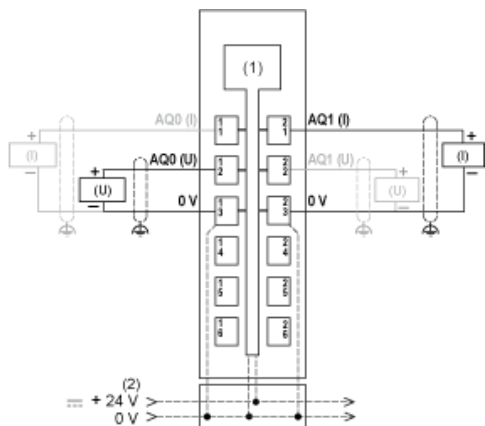
Wiring Diagram



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

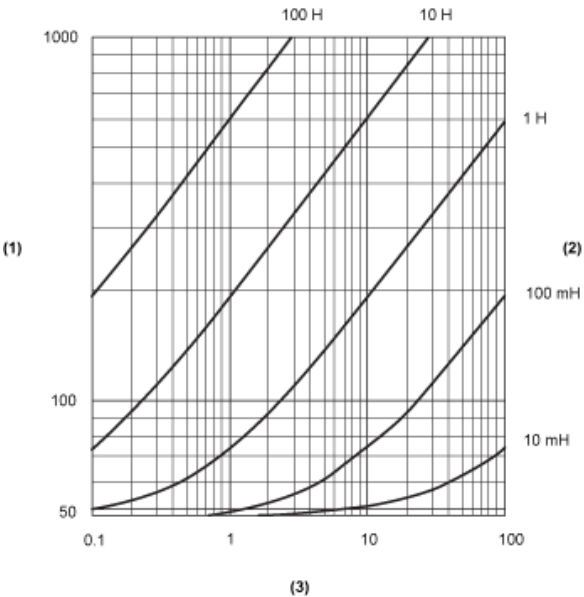
Analog Output 2AO  $\pm 10$  V / 0-20 mA

Wiring Diagram



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

Switching Inductive Load Characteristics



- (1) Load resistance in  $\Omega$
- (2) Load inductance in H
- (3) Max. operating cycles / second