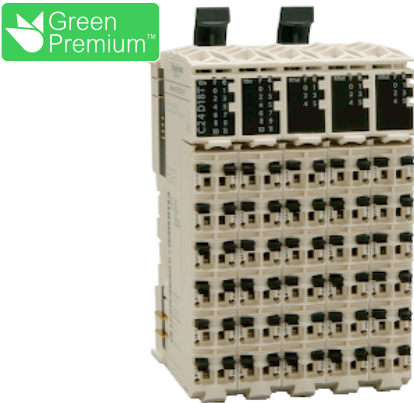


Product data sheet

Specifications



Compact I/O expansion block, Modicon TM5, 20 12 DI, 8 DO transistor

TM5C12D8T

Main

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

Complementary

Enclosure material	Plastic
Colour	White
Input/Output number	20
For enclosure nominal dimensions	12 I + 8 O
Number of modules	Digital input: 3 module(s) x 4 Digital output: 2 module(s) x 4
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	0
Discrete output number	8
Discrete output type	Transistor
Wiring mode	3-wire for discrete input 3-wire for discrete output
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
Peak output current	4 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 for output <= 300 µs from state 1 to state 0 for output
Maximum leakage current	5 µA (when switched off) for output
Isolation	500 Vrms AC insulation between channel and bus No insulation between channels
Maximum voltage drop	<0.3 V at 500 mA for output
Current consumption	68 mA at 5 V DC bus 80 mA at 24 V DC input/output
Max current	1000 mA sensor supply 1500 mA actuator supply 4000 mA loads on I/O power segment
Maximum power dissipation in W	2.36 W
Local signalling	5 LEDs (green) for power supply 5 LEDs (red) for power supply 12 LEDs (green) for input status 8 LEDs (yellow) for output status
Sensor power supply	24 V, 500 mA for all channels with overload, short-circuit and reverse polarity protection
Electrical connection	Removable spring terminal block
Marking	CE
Surge withstand	0.5 kV differential mode 24 V DC conforming to EN/IEC 61000-4-5 1 kV common mode 24 V DC conforming to EN/IEC 61000-4-5
Electromagnetic compatibility	EN/IEC 61000-4-6
Disturbance radiated/ conducted	CISPR 11

Environment

Standards	IEC 61131-2 UL 508 CSA C22.2 No 213 CSA C22.2 No 142
Product certifications	C-Tick GOST-R CSA cULus
Ambient air temperature for operation	-10...50 °C (vertical installation) -10...60 °C (horizontal installation)
Ambient air temperature for storage	-40...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
Mounting support	DIN rail

Net weight	0.24 kg
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Packing Units

Unit Type of Package 1	PCE
Number of Units in Package 1	1
Package 1 Weight	273.0 g
Package 1 Height	7 cm
Package 1 width	9.1 cm
Package 1 Length	11 cm
Unit Type of Package 2	S03
Number of Units in Package 2	36
Package 2 Weight	10.171 kg
Package 2 Height	30 cm
Package 2 width	30 cm
Package 2 Length	40 cm

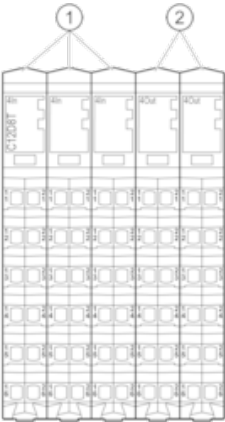
Offer Sustainability

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
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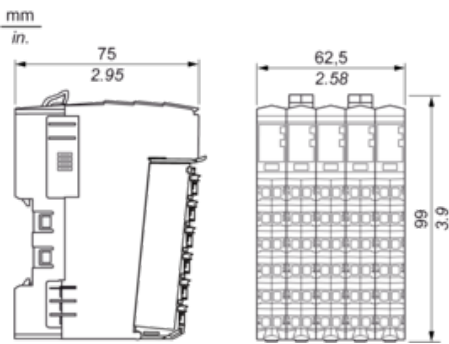
TM5 Compact I/O Module



N°	Designation
1	Input electronic module / 4 digital inputs
2	Output electronic module / 4 digital outputs

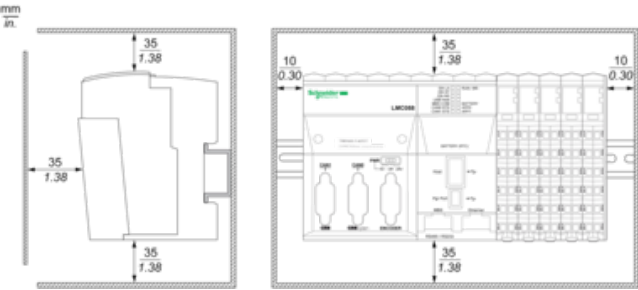
Compact I/O Module

Dimensions

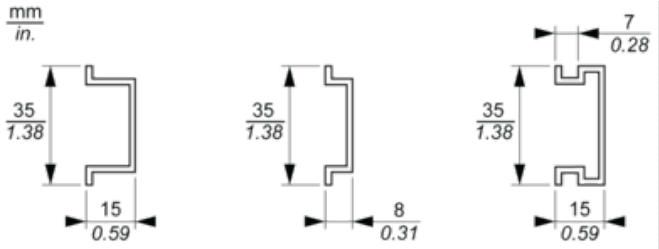


TM5 System

Spacing Requirements



Mounting on a DIN Rail



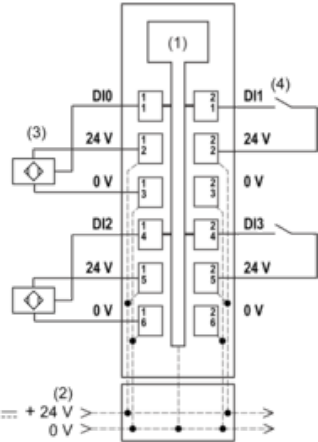
TM5 System Wiring Recommendations

Wire Sizes to Use with the Removable Spring Terminal Blocks

mm in. 				
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

Digital Input 4In

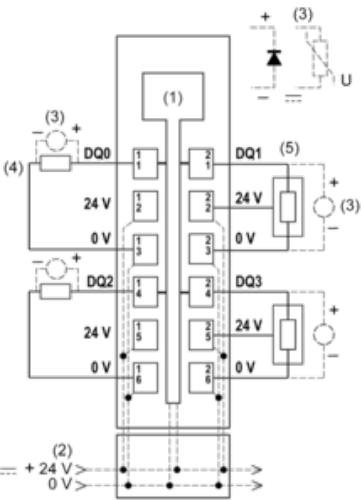
Wiring Diagram



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

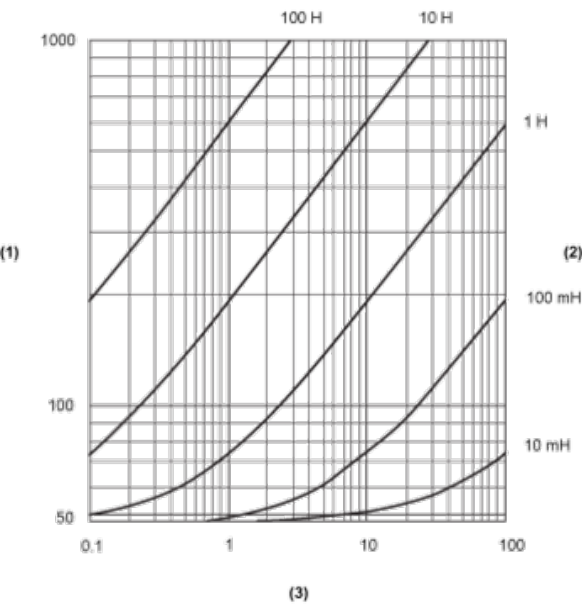
Digital Output 4Out

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
- 5 3-wire load

Switching Inductive Load Characteristics



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