

Product datasheet

Specifications



Discrete I/O expansion block, Modicon TM7, IP67, 16 DI, 24 V DC, M12 connector

TM7BDI16A

Main

Range of product	Modicon TM7
Product or component type	Discrete I/O expansion block
Range compatibility	Modicon LMC058 Modicon M258
Enclosure material	Plastic
Bus type	TM7 bus
Discrete input number	16
Discrete input voltage	24 V DC
Discrete input logic	Positive

Complementary

Discrete input number	16 at 24 V DC
Discrete input current	7 mA at 24 V DC
Input protection type	Protected against short-circuit Reverse polarity protection
Electrical connection	1 male connector M12 - B coding - 4 ways for bus IN 1 female connector M12 - B coding - 4 ways for bus OUT 1 male connector M8 - 4 ways for power IN 1 female connector M8 - 4 ways for power OUT 8 female connectors M12 - 5 ways for sensor
Operating position	Any position
fixing mode	By 2 screws
Power dissipation in W	2.3 W
Local signalling	2 LEDs for bus diagnostic 2 LEDs for sensor power supply diagnostics
Height	99 mm
Width	12.5 mm
Depth	75 mm
Net weight	0.32 kg

Environment

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

Electromagnetic compatibility	Electrostatic discharge immunity test, 4 kV on contact conforming to IEC 61000-4-2 Electrostatic discharge immunity test, 8 kV in air conforming to IEC 61000-4-2 Susceptibility to electromagnetic fields, 1 V/m 2...2.7 GHz conforming to IEC 61000-4-3 Susceptibility to electromagnetic fields, 10 V/m 80...2000 MHz conforming to IEC 61000-4-3 Electrical fast transient/burst immunity test, 2 kV power supply conforming to IEC 61000-4-4 Electrical fast transient/burst immunity test, 1 kV input/output conforming to IEC 61000-4-4 Electrical fast transient/burst immunity test, 1 kV shielded cable conforming to IEC 61000-4-4 1.2/50 µs shock waves immunity test, 0.5 kV power supply (common mode) conforming to IEC 61000-4-5 1.2/50 µs shock waves immunity test, 1 kV power supply (differential mode) conforming to IEC 61000-4-5 1.2/50 µs shock waves immunity test, 0.5 kV unshielded links (common mode) conforming to IEC 61000-4-5 1.2/50 µs shock waves immunity test, 1 kV unshielded links (differential mode) conforming to IEC 61000-4-5 1.2/50 µs shock waves immunity test, 0.5 kV shielded links (common mode) conforming to IEC 61000-4-5 1.2/50 µs shock waves immunity test, 1 kV shielded links (differential mode) conforming to IEC 61000-4-5 Conducted RF disturbances conforming to IEC 61000-4-6 Conducted and radiated emissions conforming to CISPR 11
IP degree of protection	IP67
Marking	CE
Product certifications	CURus ATEX II 3g EEx nA II T5 GOST-R C-Tick
Standards	IEC 61131-2
Ambient air temperature for operation	-10...60 °C
Ambient air temperature for storage	-25...85 °C
Relative humidity	5...95 % without condensation or dripping water
Operating altitude	0...2000 m
Pollution degree	2
Vibration resistance	7.5 mm (f = 2...8 Hz) conforming to IEC 60721-3-5 Class 5M3 2 gn (f = 8...200 Hz) conforming to IEC 60721-3-5 Class 5M3 4 gn (f = 200...500 Hz) conforming to IEC 60721-3-5 Class 5M3
Shock resistance	30 gn for 11 ms conforming to IEC 60721-3-5 Class 5M3

Packing Units

Unit Type of Package 1	PCE
Number of Units in Package 1	1
Package 1 Height	4.600 cm
Package 1 Width	5.500 cm
Package 1 Length	17.700 cm
Package 1 Weight	358.000 g
Unit Type of Package 2	S02
Number of Units in Package 2	24
Package 2 Height	15.000 cm
Package 2 Width	30.000 cm
Package 2 Length	40.000 cm

Package 2 Weight	8.911 kg
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Contractual warranty

Warranty (in months)	18
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Environmental Data

Schneider Electric aims to achieve Net Zero status by 2050 through supply chain partnerships, lower impact materials, and circularity via our ongoing “Use Better, Use Longer, Use Again” campaign to extend product lifetimes and recyclability.

[Environmental Data explained >](#)

[How we assess product sustainability >](#)



Environmental footprint

Total lifecycle Carbon footprint	48 kg CO2 eq.
Carbon footprint of the manufacturing phase [A1 to A3]	20 kg CO2 eq.
Carbon footprint of the distribution phase [A4]	0 kg CO2 eq.
Carbon footprint of the installation phase [A5]	0 kg CO2 eq.
Carbon footprint of the use phase [B2, B3, B4, B6]	28 kg CO2 eq.
Carbon footprint of the end-of-life phase [C1 to C4]	0.5 kg CO2 eq.

Use Better



Materials and Substances

Packaging made with recycled cardboard	No
Packaging without single use plastic	Yes
PVC free	Yes

Use Longer



Lifetime extension

Repair	No
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Use Again



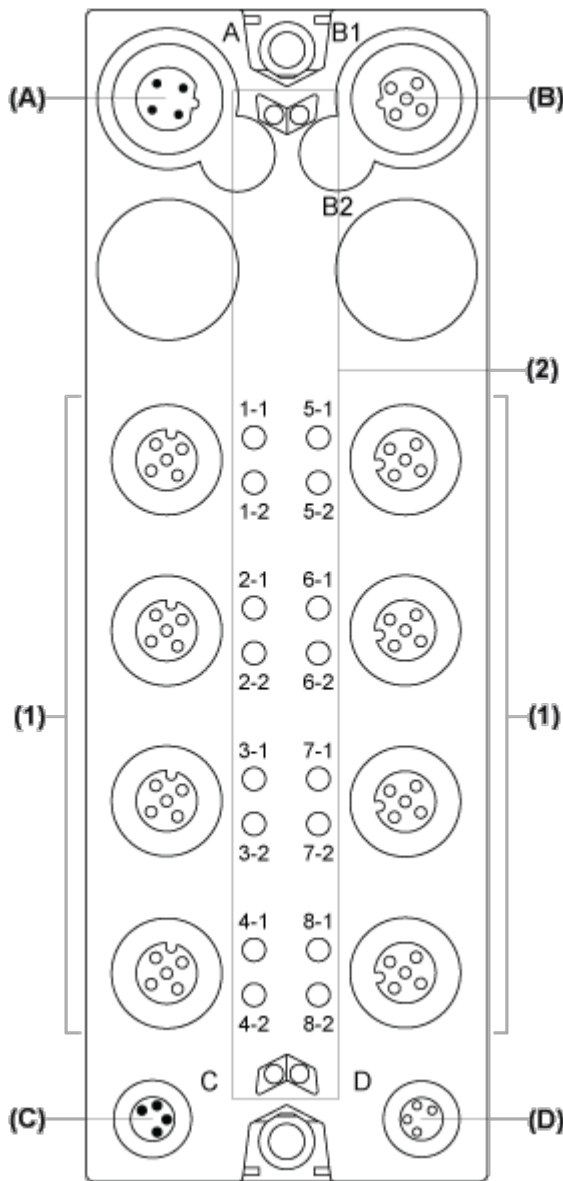
Repack and remanufacture

Recyclability potential, in %	10
End of life manual availability	End of Life Information
Take-back	No
WEEE Label	 The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins

Presentation

Digital Input Block

Description



- (A) TM7 bus IN connector
- (B) TM7 bus OUT connector
- (C) 24 Vdc power IN connector
- (D) 24 Vdc power OUT connector
- (1) Input connectors
- (2) Status LEDs

Connector and Channel Assignments

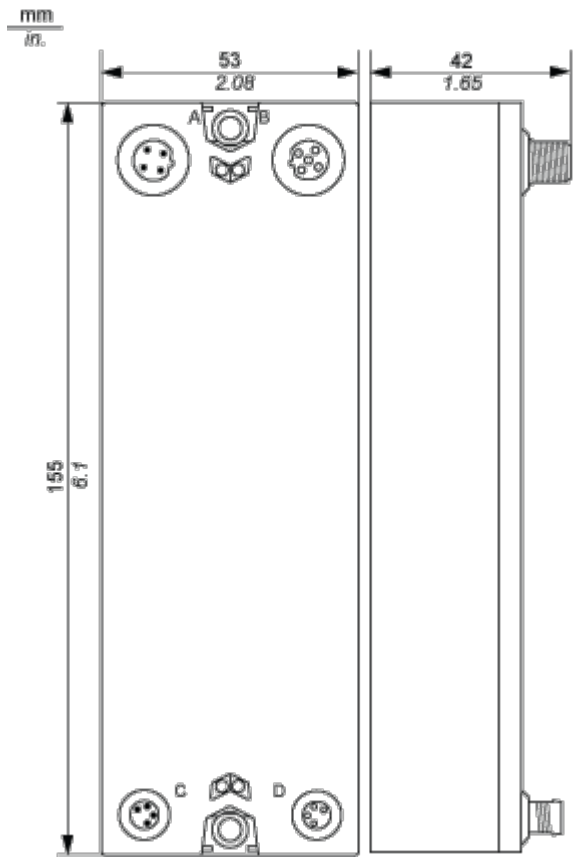
Input connectors	Channel type	Channels
1	Input	I0
	Input	I1

Input connectors	Channel type	Channels
2	Input	I2
	Input	I3
3	Input	I4
	Input	I5
4	Input	I6
	Input	I7
5	Input	I8
	Input	I9
6	Input	I10
	Input	I11
7	Input	I12
	Input	I13
8	Input	I14
	Input	I15

Dimensions Drawings

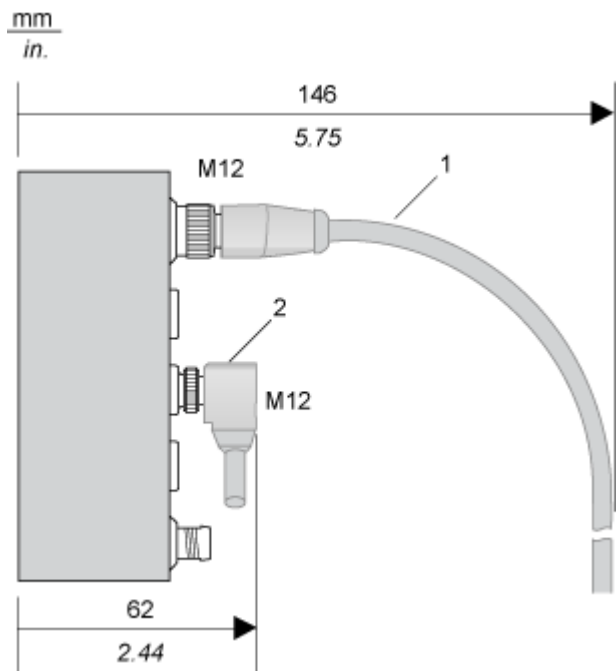
TM7 Block, Size 2

Dimensions



Mounting and Clearance

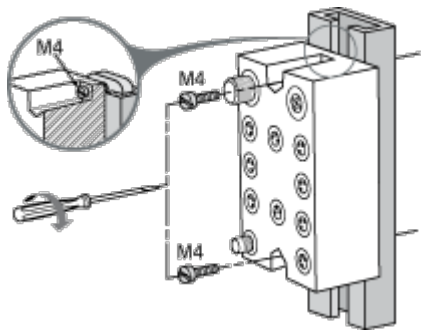
Spacing Requirements



- 1 Straight cable
- 2 Elbowed cable

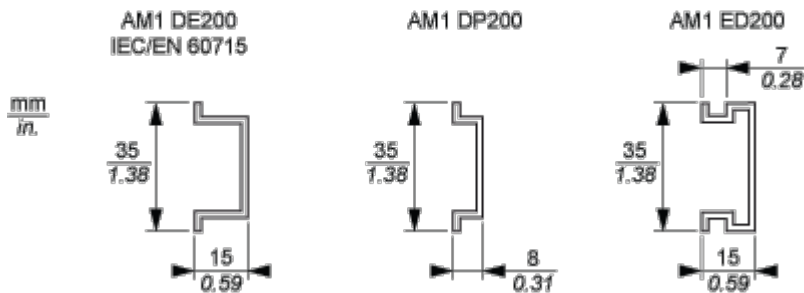
Installation Guidelines

TM7 Block on an Aluminium Frame



NOTE: Maximum torque to fasten the required M4 screws is 0.6 N.m (5.3 lbf-in).

TM7 Block on a DIN Rail

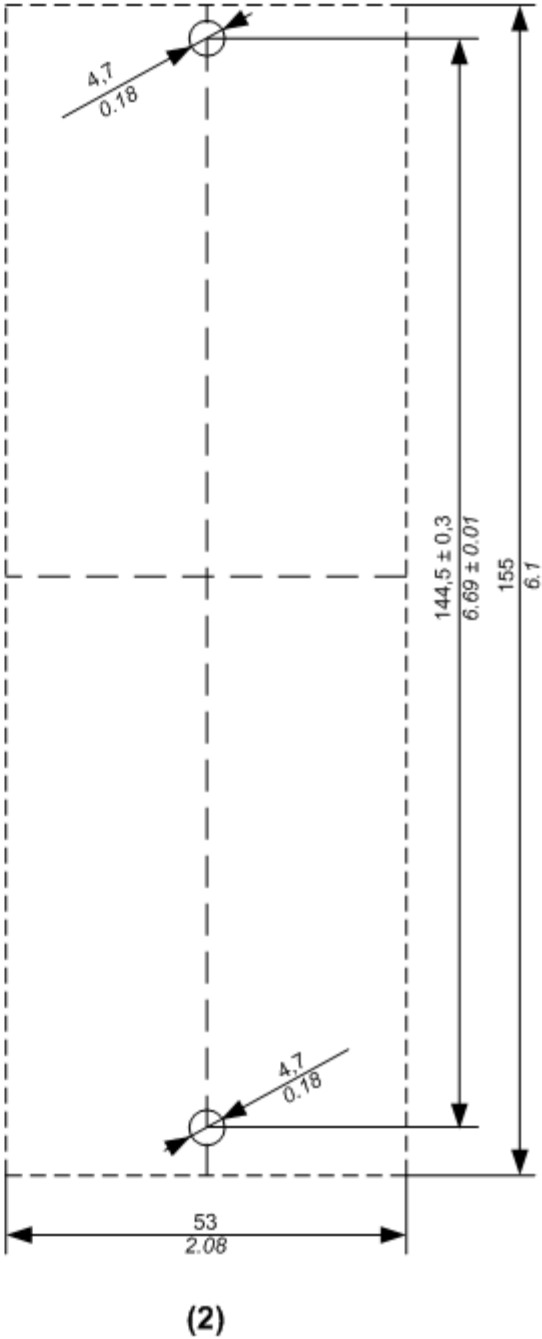
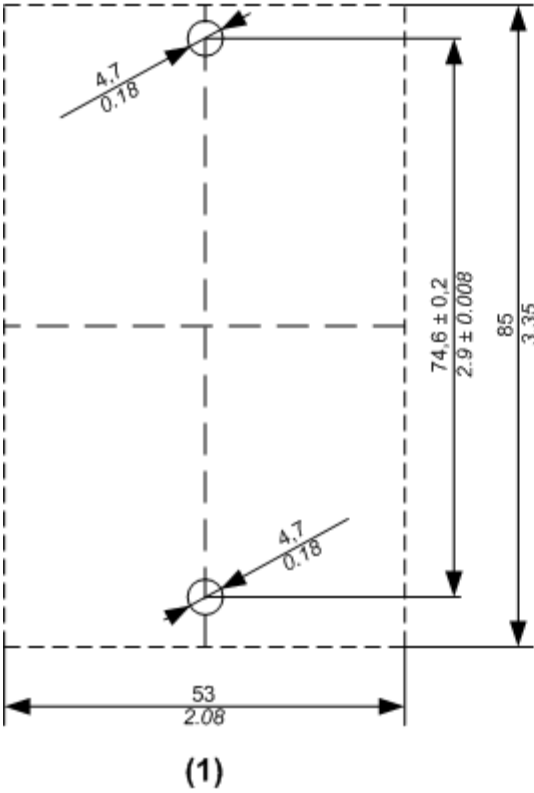


NOTE: Only size 1 (smallest) blocks can be installed on DIN rail with the TM7ACMP mounting plate.

TM7 Block Directly on the Machine

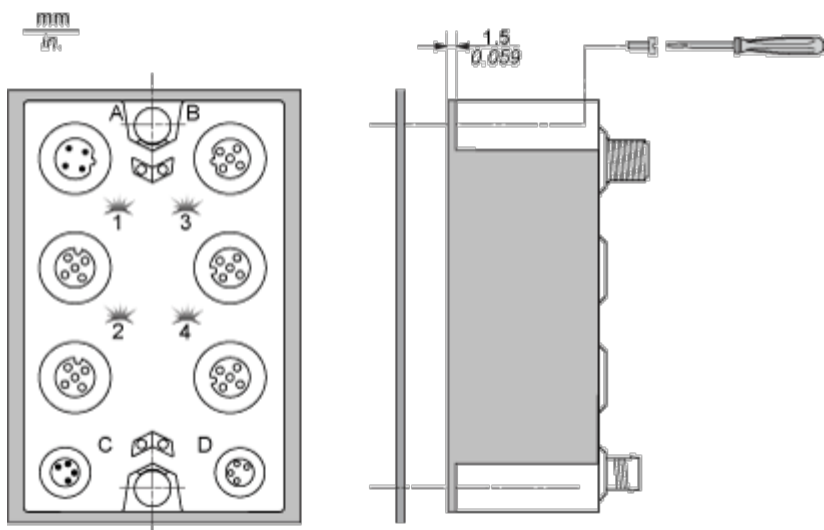
Drilling template of the block:

mm
in.



- (1) Size 1
- (2) Size 2

The thickness of the base plate should be taken into consideration when defining the screw length.

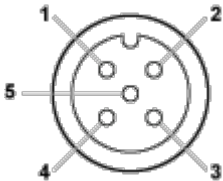


NOTE: Maximum torque to fasten the required M4 screws is 0.6 N.m (5.3 lbf-in).

Connections and Schema

Wiring Diagram

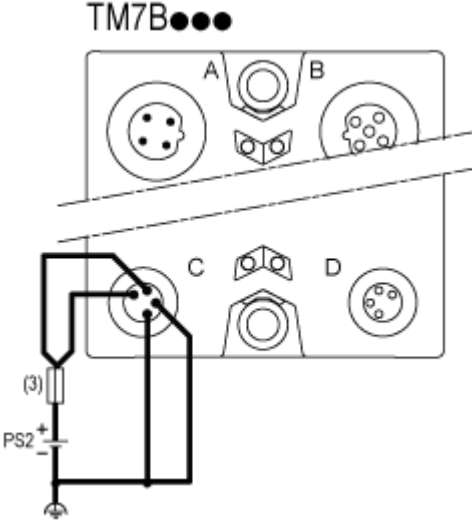
Pin Assignments for Input Connectors

Connector	Pin	M12 Input
	1	24 Vdc sensor supply
	2	DI: input signal channel 1
	3	0 Vdc
	4	DI: input signal channel 2
	5	N.C.

Wiring the Power Supply

When you provide power to a TM7 I/O block using the 24 VDC Power OUT connector of the preceding I/O block, both blocks occupy the same 24 Vdc I/O power segment. However, if you connect an external isolated power supply to the 24 Vdc Power IN connector of a TM7 I/O block, you establish a new 24 Vdc I/O power segment beginning with that I/O block.

I/O block wired with one external 24 Vdc power supply:



(3) External fuse, Type T slow-blow, 8 A max., 250 V

PS2 External isolated I/O power supply, 24 Vdc