Product data sheet

Specifications

Discrete I/O expansion block, Modicon TM7, IP67, 16 DI/DO, 24 V DC, 0.5 A, M8 connector

TM7BDM16B

Main

Range of product	Modicon TM7
Product or component type	Discrete I/O expansion block
Range compatibility	Modicon M258 Modicon LMC058
Enclosure material	Plastic
Bus type	TM7 bus
[Ue] rated operational voltage	24 V DC
Input/output number	16
input/output number of block	16 I/O

Complementary

Discrete input number	0…16 configurable by software
Discrete input voltage	24 V
Discrete input voltage type	DC
Discrete input current	4.4 mA
Discrete input logic	Positive
Discrete output number	0…16 at <= 0.5 A with transistor protection (configurable by software)
Discrete output voltage	24 V
Discrete output voltage type	DC
Sensor power supply	24 V, 500 mA for all channels with overload, short-circuit and 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 16 female connectors M8 - 3 ways for sensor or actuator
Local signalling	2 LEDs for bus diagnostic 2 LEDs for sensor power supply diagnostics
Operating position	Any position
fixing mode	By 2 screws
Net weight	0.32 kg

Environment

Standards	IEC 61131-2

Product certifications	C-Tick ATEX II 3g EEx nA II T5 cURus GOST-R
Marking	CE
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
Pollution degree	2 conforming to IEC 60664
IP degree of protection	IP67 conforming to IEC 61131-2
Operating altitude	0...2000 m
Storage altitude	0…3000 m
Vibration resistance	7.5 mm constant amplitude (f= 2…8 Hz) conforming to IEC 60721-3-5 Class 5M3 2 gn constant acceleration (f= 8…200 Hz) conforming to IEC 60721-3-5 Class 5M3 4 gn constant acceleration (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
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

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	17.600 cm
Package 1 Weight	338.000 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	8.493 kg

Contractual warranty

Warranty	18 months

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

Environmental Disclosure	Product Environmental Profile

Use Better

Materials and Substances

Packaging made with recycled cardboard	No
Packaging without single use plastic	Yes
EU RoHS Directive	Pro-active compliance (Product out of EU RoHS legal scope)
REACh Regulation	REACh Declaration
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
PVC free	Yes

Use Again

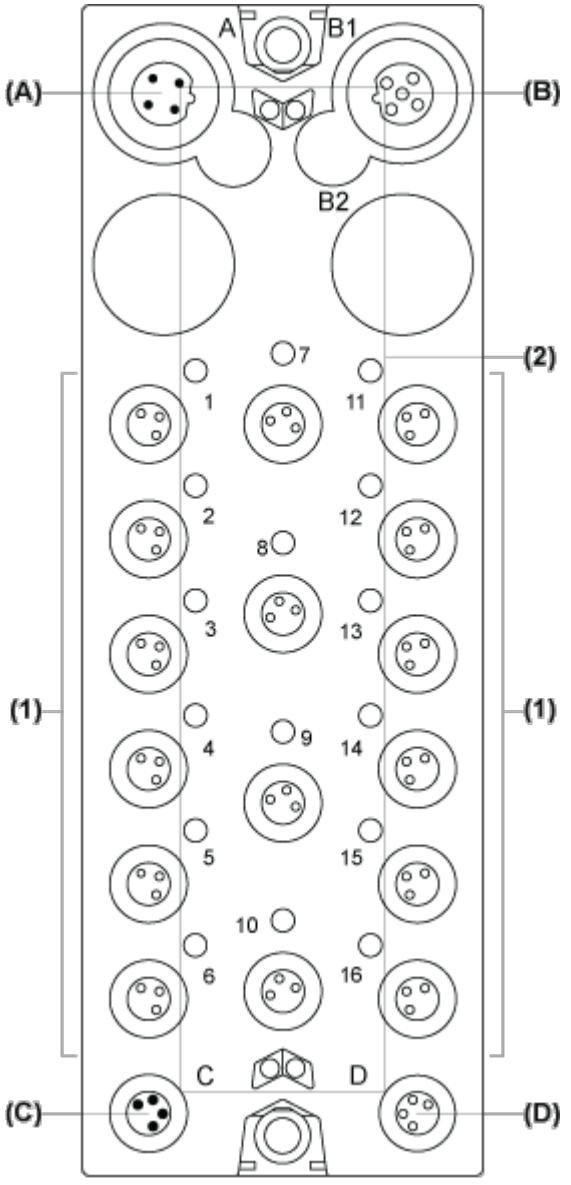
Repack and remanufacture

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 Mixed 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 / Output connectors

(2) Status LEDs

Connector and Channel Assignments

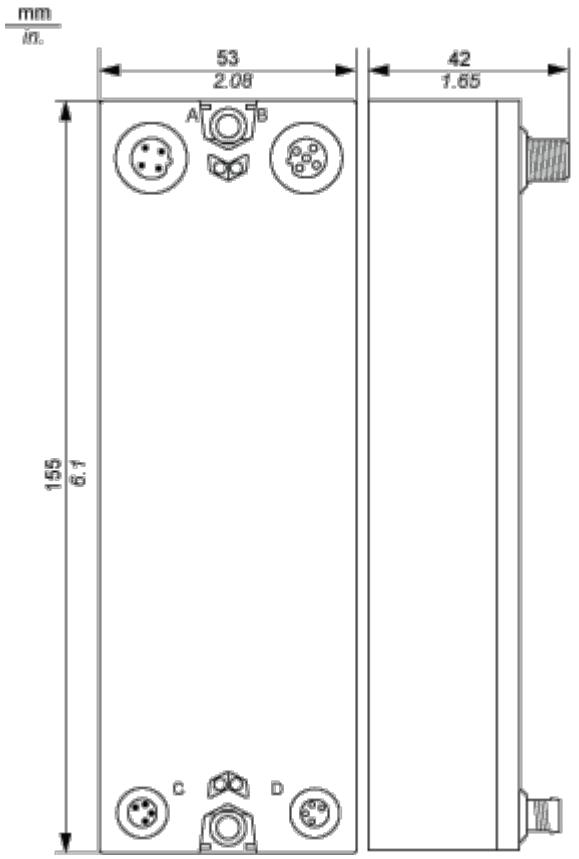
I/O connectors	Channel types	Channels
1	Input / Output	I0 / Q0
2	Input / Output	I1 / Q1

I/O connectors	Channel types	Channels
3	Input / Output	I2 / Q2
4	Input / Output	I3 / Q3
5	Input / Output	I4 / Q4
6	Input / Output	I5 / Q5
7	Input / Output	I6 / Q6
8	Input / Output	I7 / Q7
9	Input / Output	I8 / Q8
10	Input / Output	I9 / Q9
11	Input / Output	I10 / Q10
12	Input / Output	I11 / Q11
13	Input / Output	I12 / Q12
14	Input / Output	I13 / Q13
15	Input / Output	I14 / Q14
16	Input / Output	I15 / Q15

Dimensions Drawings

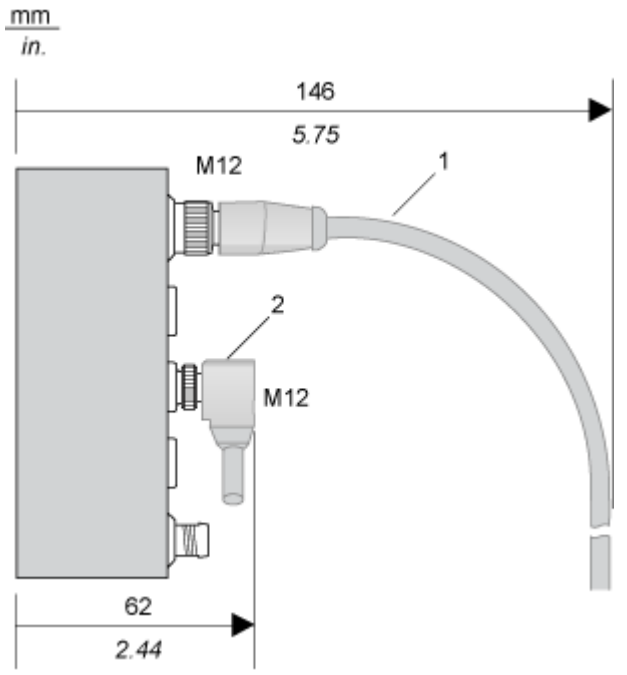
TM7 Block, Size 2

Dimensions



Mounting and Clearance

Spacing Requirements

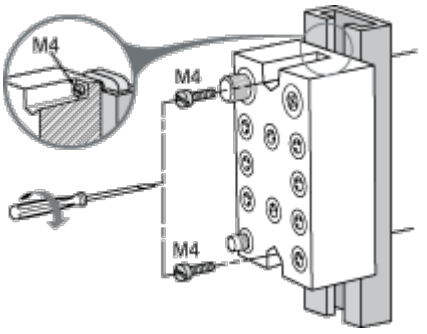


1 Straight cable

2 Elbowed cable

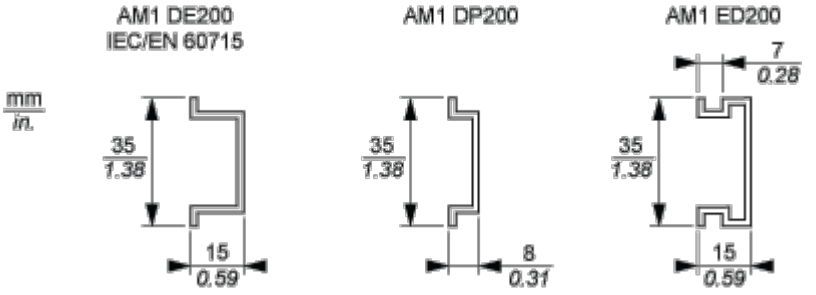
Installation Guidelines

TM7 Block on an Aluminium Frame



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

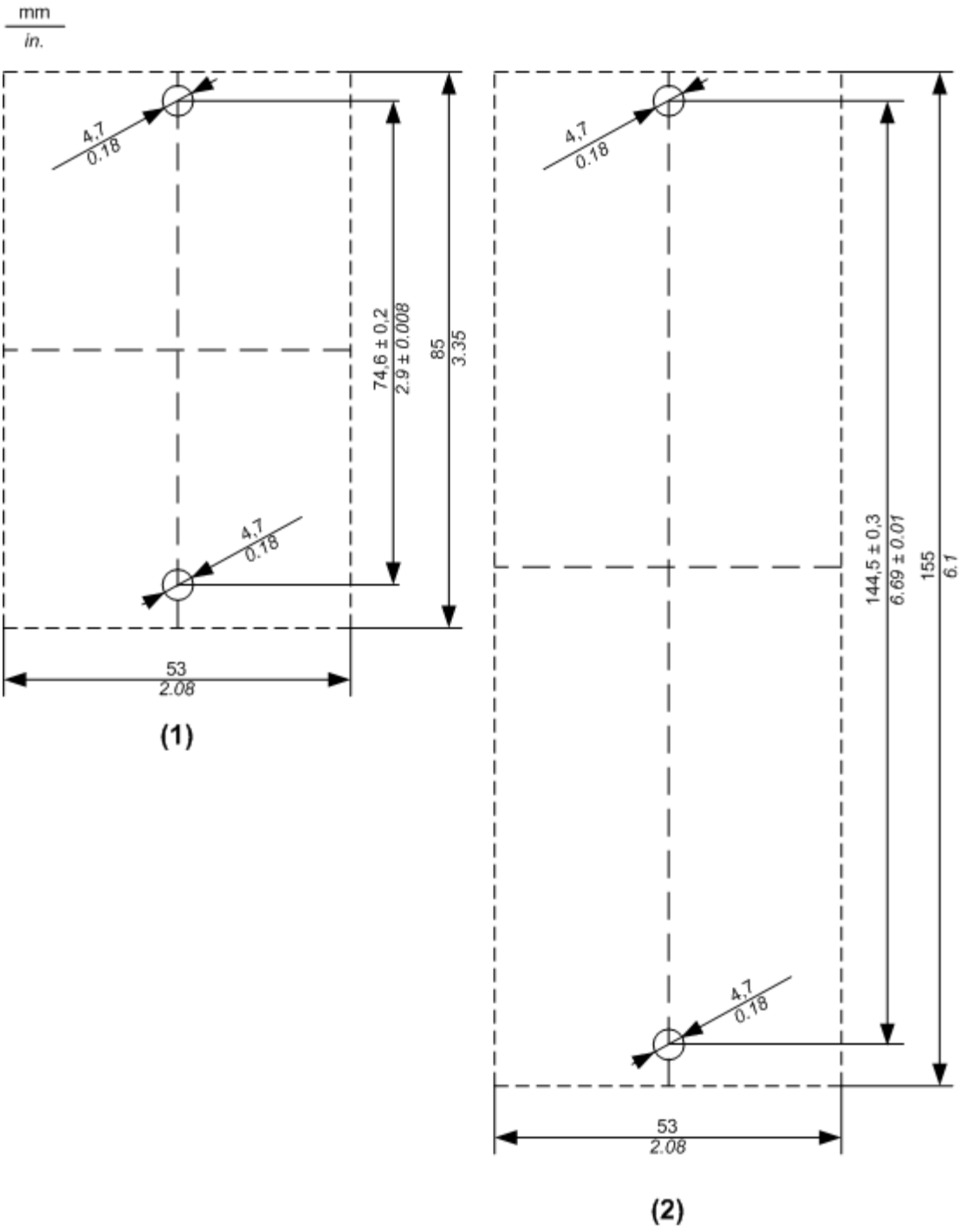
TM7 Block on a DIN Rail



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

TM7 Block Directly on the Machine

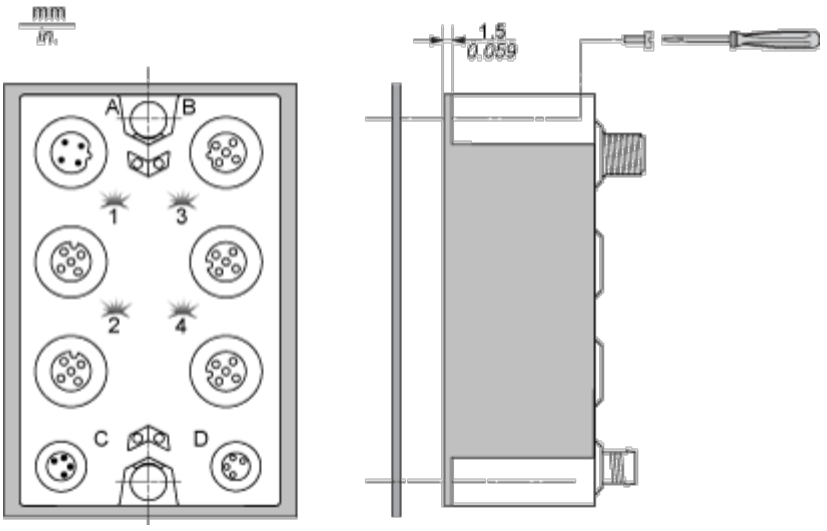
Drilling template of the block:



(1) Size 1

(2) Size 2

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

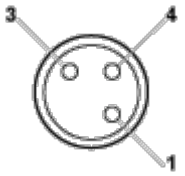


NOTE: Maximum torque to fasten the required M4 screws is 0.6 N.m (5.3 lbf-in).

Connections and Schema

Wiring Diagram

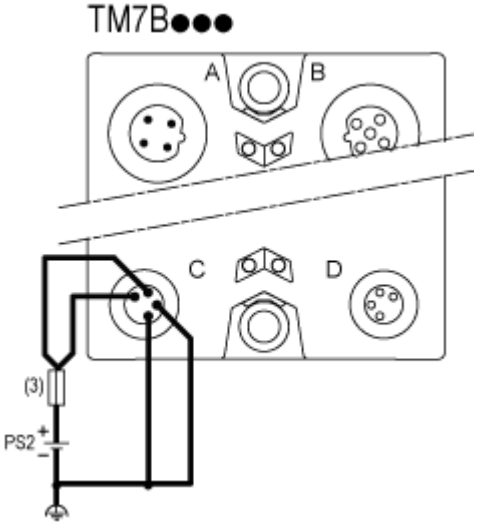
Pin Assignments for I/O Connectors

Connection	Pin	M8 input / output
	1	24 Vdc sensor / actuator supply
	3	0 Vdc
	4	DI/DO: input/output signal

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:

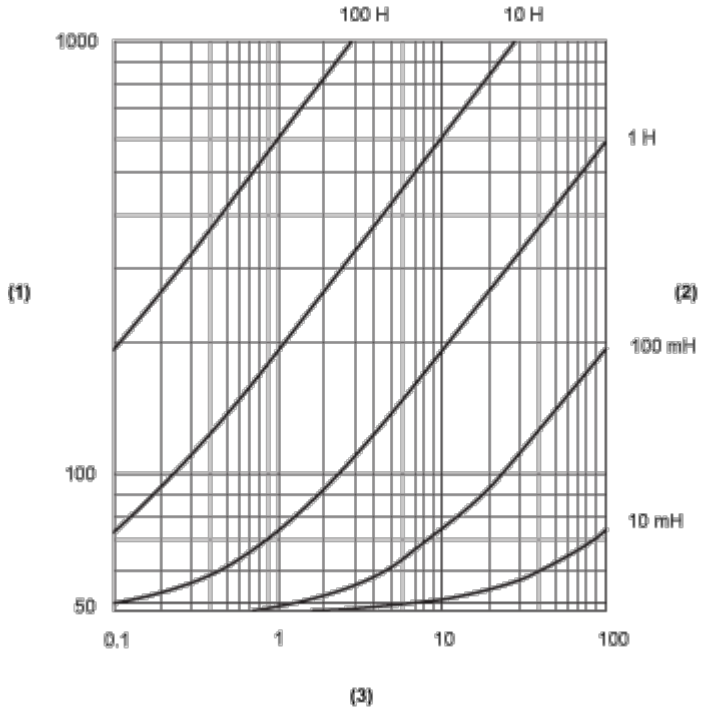


(3) External fuse, Type T slow-blow, 8 A max., 250 V

PS2 External isolated I/O power supply, 24 Vdc

Performance Curves

Switching Inductive Load Characteristics



(1) Load resistance in Ω

(2) Load inductance in H

(3) Max. operating cycles / second