

Product data sheet

Specifications



Analog I/O expansion block, Modicon TM7, IP67, 4 AO, 0 20 mA, M12 connector

TM7BAO4CLA

Main

Range of product	Modicon TM7
Product or component type	Analog I/O expansion block
Range compatibility	Modicon LMC058 Modicon M258
Enclosure material	Plastic
Bus type	TM7 bus
[Ue] rated operational voltage	24 V DC
Input/output number	4
input/output number of block	4 O

Complementary

Analogue output number	4
Analogue output type	Current
Analogue output range	0...20 mA
Sensor power supply	24 V, 500 mA for all channels with overload, short-circuit and reverse polarity protection
Analogue output resolution	12 bits
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 4 female connectors M12 - A coding - 5 ways for actuator
Local signalling	2 LEDs for bus diagnostic 2 LEDs for sensor/actuator power supply status
Operating position	Any position
fixing mode	By 2 screws
Product weight	0.2 kg

Environment

Standards	IEC 61131-2
Product certifications	C-Tick GOST-R cURus ATEX II 3g EEx nA II T5
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
Resistance to electrostatic discharge	6 kV in contact conforming to IEC 61000-4-2 8 kV in air conforming to IEC 61000-4-2
Resistance to electromagnetic fields	10 V/m 0.08...2 Hz conforming to IEC 61000-4-3 1 V/m 2...2.7 Hz conforming to IEC 61000-4-3
Resistance to fast transients	2 kV (power supply) conforming to IEC 61000-4-4 1 kV (input/output) conforming to IEC 61000-4-4 1 kV (shielded cable) conforming to IEC 61000-4-4
surge withstand for DC 24 V circuit	1 kV power supply (common mode) conforming to IEC 61000-4-5 0.5 kV power supply (differential mode) conforming to IEC 61000-4-5 1 kV unshielded links (common mode) conforming to IEC 61000-4-5 0.5 kV unshielded links (differential mode) conforming to IEC 61000-4-5 1 kV shielded links (common mode) conforming to IEC 61000-4-5 0.5 kV shielded links (differential mode) conforming to 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 Height	5.000 cm
Package 1 Width	6.000 cm
Package 1 Length	10.500 cm
Package 1 Weight	232.000 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	5.867 kg

Contractual warranty

Warranty	18 months
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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](#)

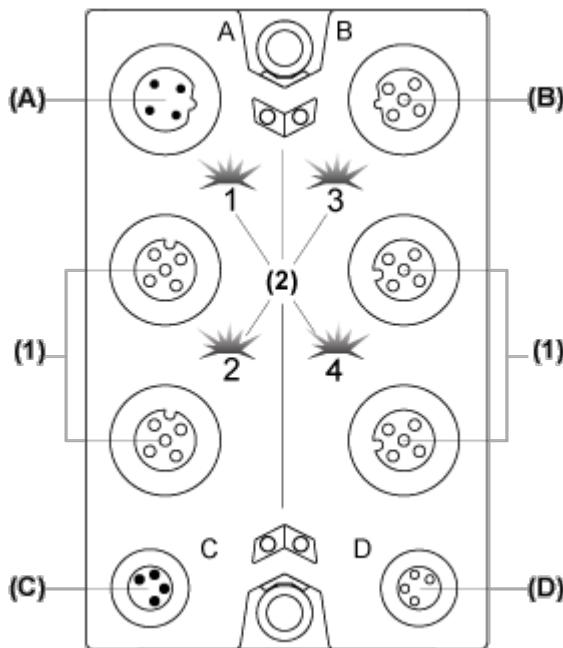
Take-back No

WEEE Label The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins

Presentation

Analog Output 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) Output connectors
- (2) Status LEDs

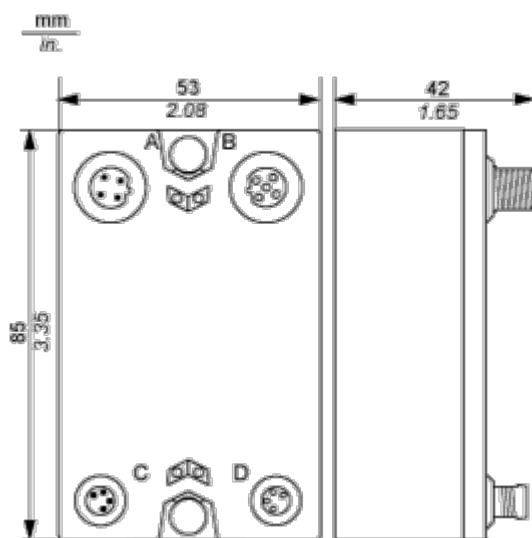
Connector and Channel Assignments

Output connectors	Channel type	Channels
1	Output	Q0
2	Output	Q1
3	Output	Q2
4	Output	Q3

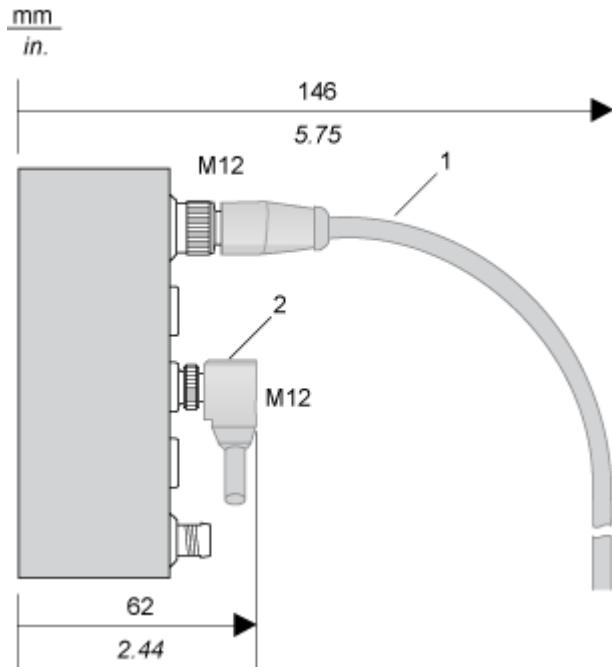
Dimensions Drawings

TM7 Block, Size 1

Dimensions

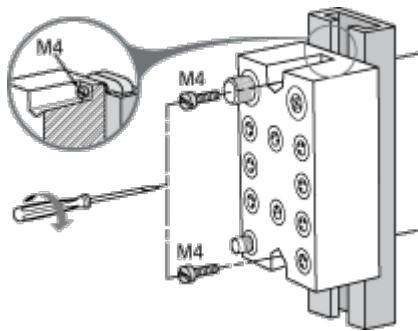


Mounting and Clearance

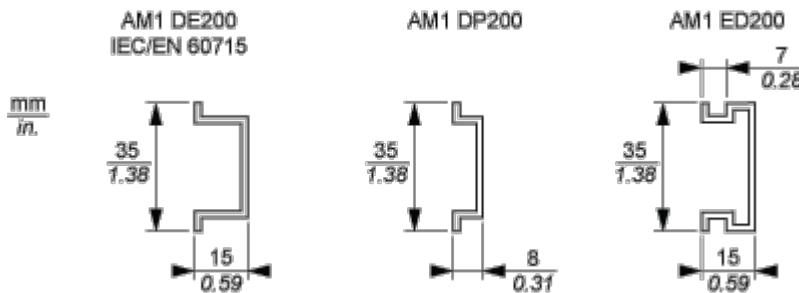
Spacing Requirements

1 Straight cable

2 Elbowed cable

Installation Guidelines**TM7 Block on an Aluminium Frame**

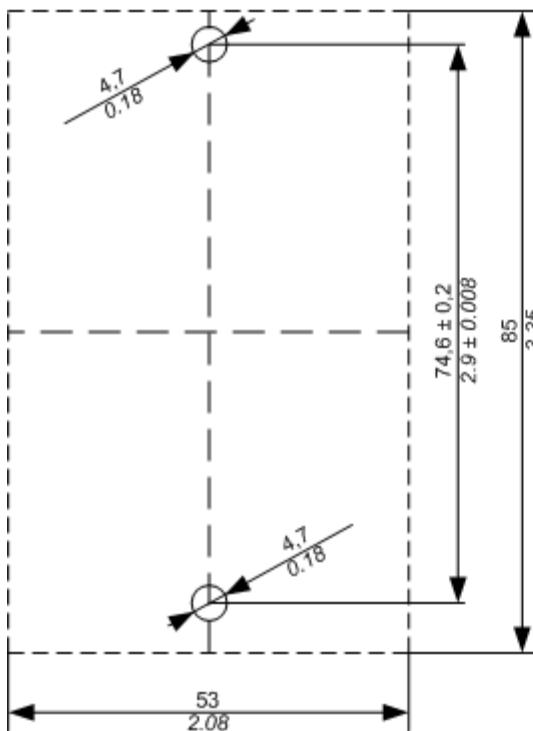
NOTE: Maximum torque to fasten the required M4 screws is 0.6 N.m (5.3 lbf-in).

TM7 Block on a DIN Rail

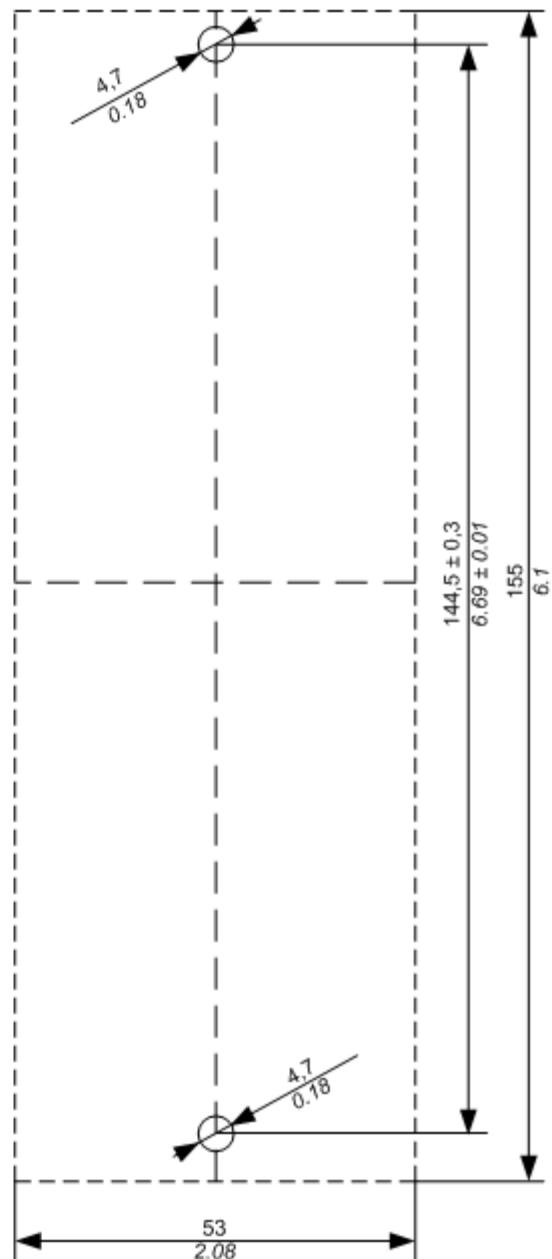
NOTE: Only size 1 (smallest) blocks can be installed on DIN rail with the TM7ACMP mounting plate.

TM7 Block Directly on the Machine

Drilling template of the block:

mm
in.

(1)

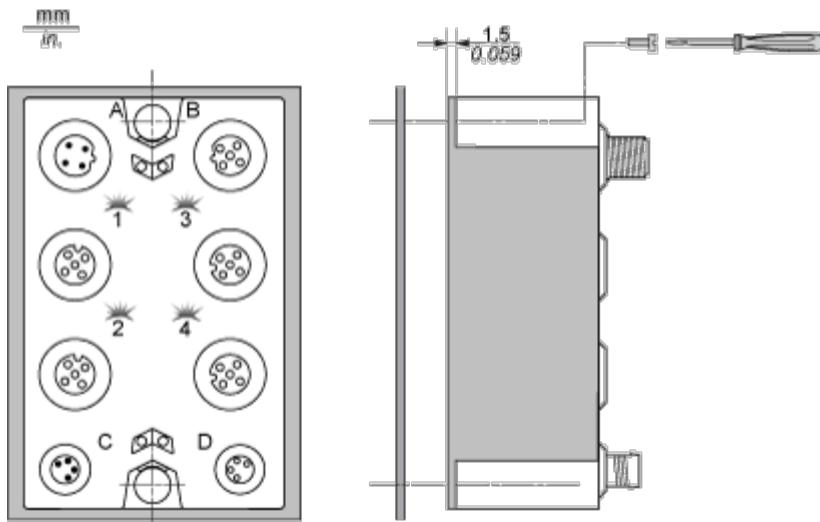


(2)

(1) Size 1

(2) Size 2

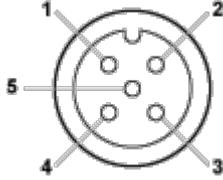
The thickness of the base plate should be taken into consideration when defining the screw length.



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

Connections and Schema

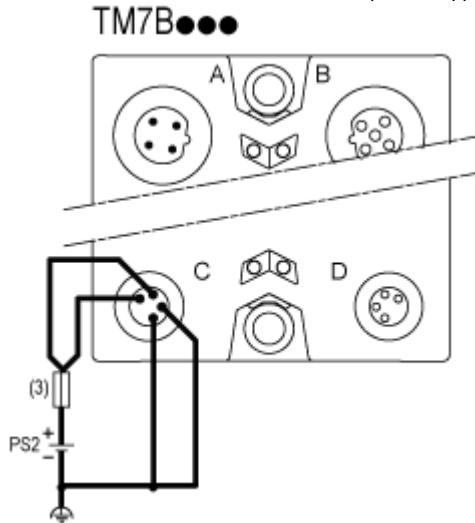
Wiring Diagram**Pin Assignments for Output Connectors**

Connection	Pin	M12 Output
	1	Analog output +
	2	24 Vdc actuator supply
	3	Analog output - (0 Vdc)
	4	0 Vdc
	5	Shield

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