

# Product data sheet

Specifications



## Analog I/O expansion block, Modicon TM7, IP67, 2 AI/2AO, +/-10 V, M12 connector

TM7BAM4VLA

**Product availability: Non-Stock - Not normally stocked in  
distribution facility**

### Main

Range Of Product	Modicon TM7
Product Or Component Type	Analog 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	4
Input/Output Number Of Block	2 I + 2 O

### Complementary

Analogue Input Number	2
Analogue Input Type	Voltage
Analogue Input Range	+/- 10 V
Analogue Input Resolution	11 bits + sign
Analogue Output Number	2
Analogue Output Type	Voltage
Analogue Output Range	+/- 10 V
Sensor Power Supply	24 V, 500 mA for all channels overload, short-circuit and reverse polarity protection
Analogue Output Resolution	11 bits + sign
Electrical Connection	1 male connector M12 - B coding - 4 ways bus IN 1 female connector M12 - B coding - 4 ways bus OUT 1 male connector M8 - 4 ways power IN 1 female connector M8 - 4 ways power OUT 4 female connectors M12 - A coding - 5 ways actuator
Local Signalling	for bus diagnostic 2 LEDs for sensor/actuator power supply status 2 LEDs
Operating Position	Any position
Fixing Mode	By 2 screws
Net Weight	0.44 lb(US) (0.2 kg)

### Environment

Standards	IEC 61131-2
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<b>Product Certifications</b>	cURus GOST-R C-tick ATEX II 3g EEx nA II T5
<b>Marking</b>	CE
<b>Ambient Air Temperature For Operation</b>	14...140 °F (-10...60 °C)
<b>Ambient Air Temperature For Storage</b>	-13...185 °F (-25...85 °C)
<b>Relative Humidity</b>	5...95 % without condensation or dripping water
<b>Pollution Degree</b>	2 IEC 60664
<b>Ip Degree Of Protection</b>	IP67 conforming to IEC 61131-2
<b>Operating Altitude</b>	0...6561.68 ft (0...2000 m)
<b>Storage Altitude</b>	0.00...9842.52 ft (0...3000 m)
<b>Vibration Resistance</b>	7.5 mm constant amplitude 2...8 Hz)IEC 60721-3-5 Class 5M3 2 gn constant acceleration 8...200 Hz)IEC 60721-3-5 Class 5M3 4 gn constant acceleration 200...500 Hz)IEC 60721-3-5 Class 5M3
<b>Shock Resistance</b>	30 gn 11 ms IEC 60721-3-5 Class 5M3
<b>Resistance To Electrostatic Discharge</b>	6 kV in contact IEC 61000-4-2 8 kV in air IEC 61000-4-2
<b>Resistance To Electromagnetic Fields</b>	9.14 V/m (10 V/m) 0.08...2 Hz IEC 61000-4-3 0.91 V/m (1 V/m) 2...2.7 Hz IEC 61000-4-3
<b>Resistance To Fast Transients</b>	2 kV IEC 61000-4-4 power supply) 1 kV IEC 61000-4-4 input/output) 1 kV IEC 61000-4-4 shielded cable)
<b>Surge Withstand For Dc 24 V Circuit</b>	1 kV power supply (common mode) IEC 61000-4-5 0.5 kV power supply (differential mode) IEC 61000-4-5 1 kV unshielded links (common mode) IEC 61000-4-5 0.5 kV unshielded links (differential mode) IEC 61000-4-5 1 kV shielded links (common mode) IEC 61000-4-5 0.5 kV shielded links (differential mode) IEC 61000-4-5
<b>Electromagnetic Compatibility</b>	EN/IEC 61000-4-6
<b>Disturbance Radiated/Conducted</b>	CISPR 11

## Ordering and shipping details

<b>Category</b>	US1PC1222532
<b>Discount Schedule</b>	PC12
<b>Gtin</b>	3595864093215
<b>Returnability</b>	No
<b>Country Of Origin</b>	AT

## Packing Units

<b>Unit Type Of Package 1</b>	PCE
<b>Number Of Units In Package 1</b>	1
<b>Package 1 Height</b>	1.97 in (5.000 cm)
<b>Package 1 Width</b>	2.36 in (6.000 cm)
<b>Package 1 Length</b>	4.33 in (11.000 cm)
<b>Package 1 Weight</b>	7.80 oz (221.000 g)
<b>Unit Type Of Package 2</b>	S02
<b>Number Of Units In Package 2</b>	24

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<b>Package 2 Height</b>	5.91 in (15.000 cm)
<b>Package 2 Width</b>	11.81 in (30.000 cm)
<b>Package 2 Length</b>	15.75 in (40.000 cm)
<b>Package 2 Weight</b>	12.54 lb(US) (5.687 kg)

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## **Contractual warranty**

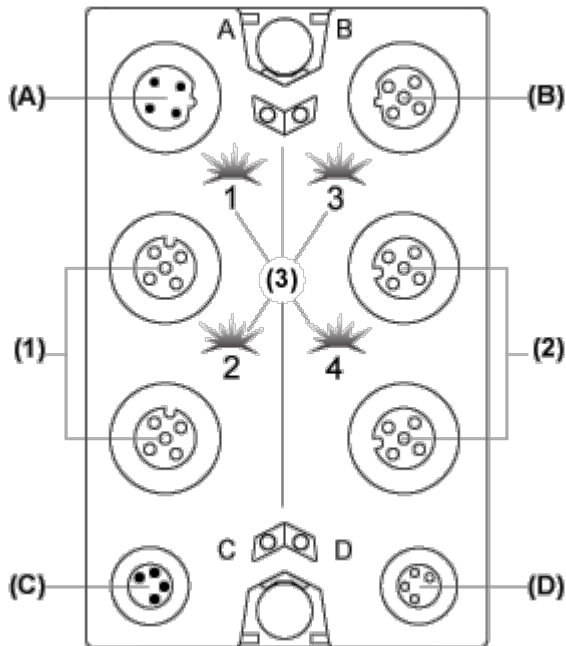
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<b>Warranty</b>	18 months
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Presentation

Analog 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 connectors
- (2) Output connectors
- (3) Status LEDs

Connector and Channel Assignments

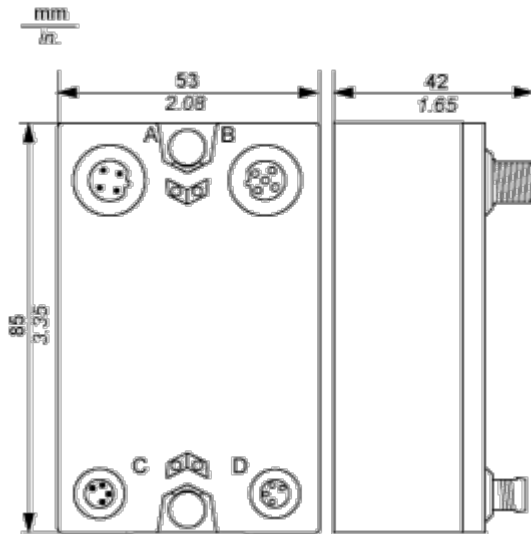
I/O connectors	Channel type	Channels
1	Input	I0
2	Input	I1
3	Output	Q0
4	Output	Q1

Dimensions Drawings

TM7 Block, Size 1

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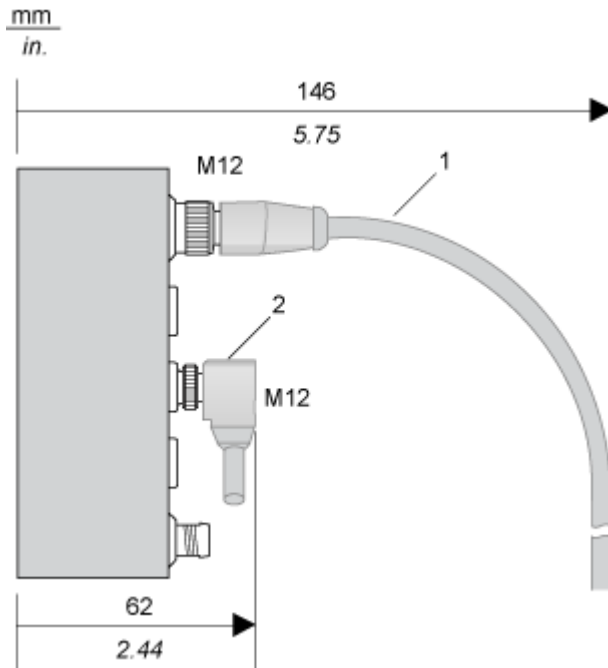
Dimensions



Mounting and Clearance

Spacing Requirements

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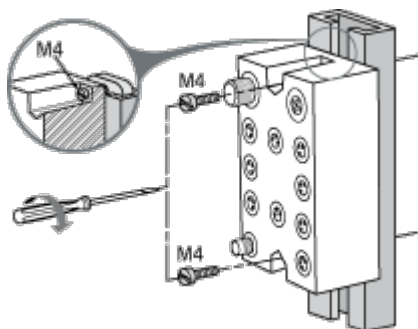


- 1 Straight cable
- 2 Elbowed cable

Installation Guidelines

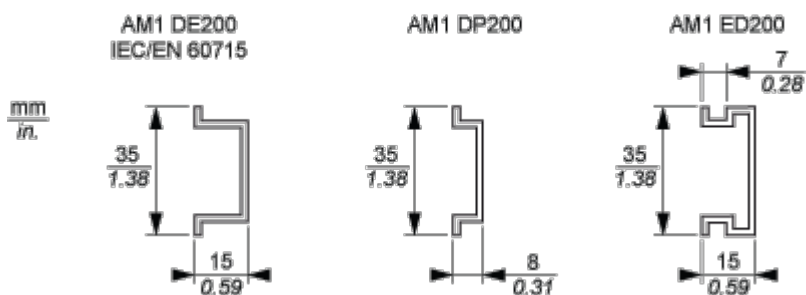
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TM7 Block on an Aluminium Frame



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

TM7 Block on a DIN Rail

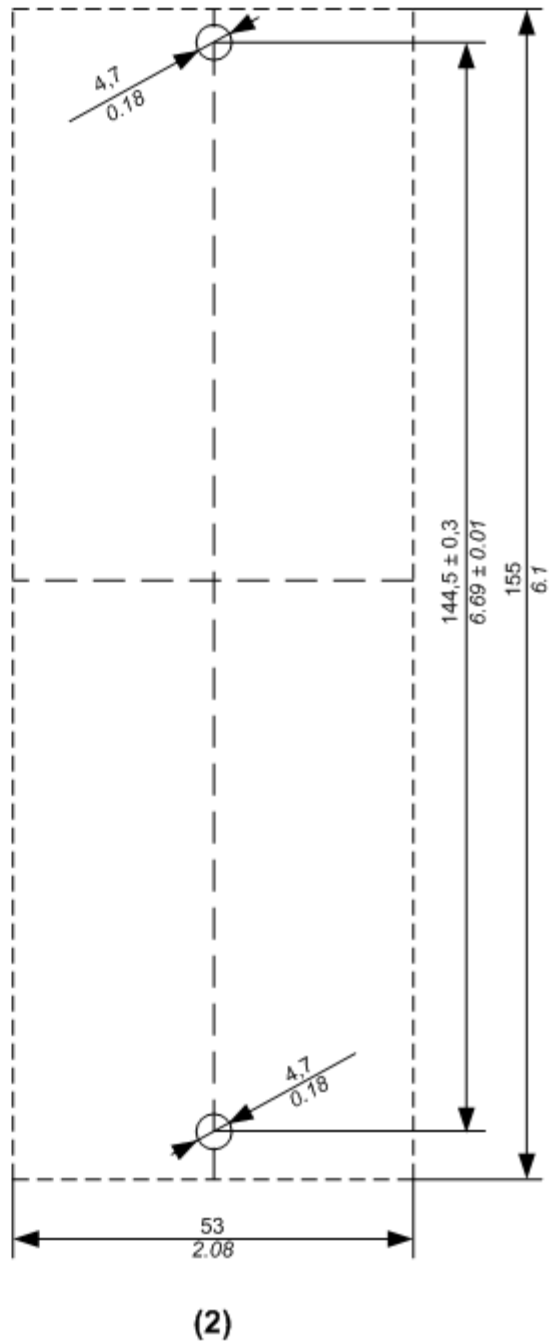
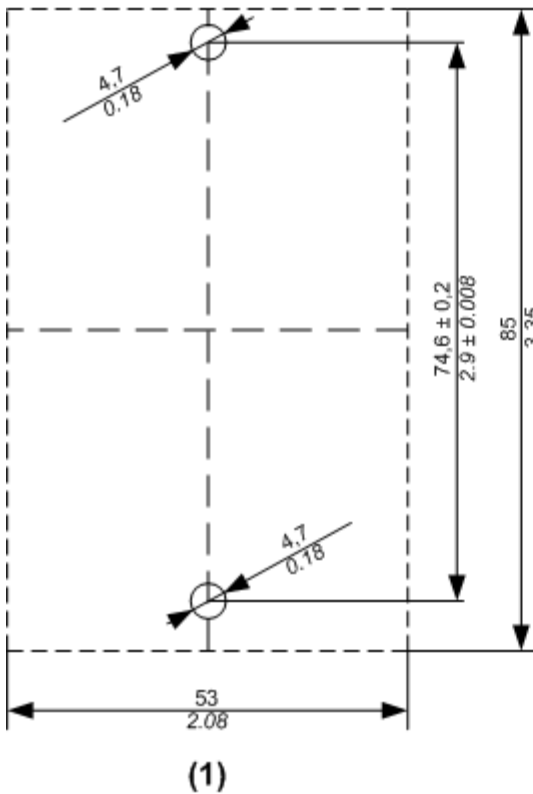


NOTE: Only size 1 (smallest) blocks can be installed on DIN rail with the TM7ACMP mounting plate.

TM7 Block Directly on the Machine

Drilling template of the block:

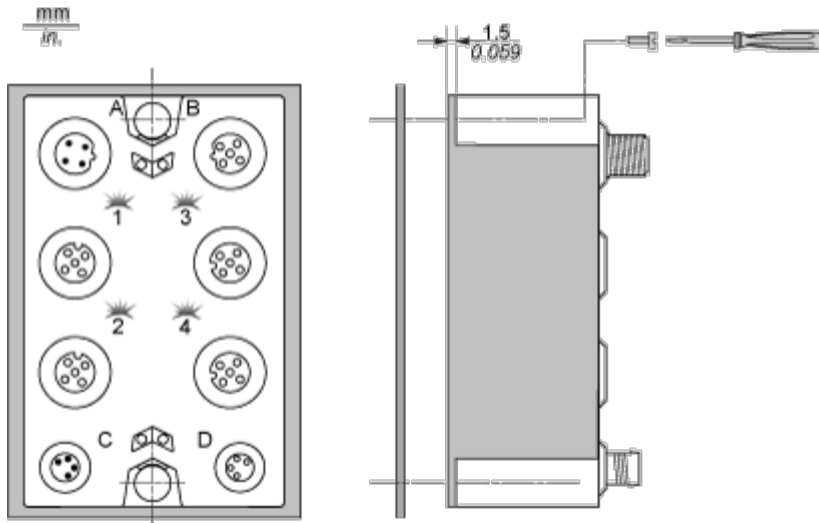
mm  
in.



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

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





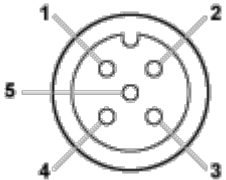
NOTE: Maximum torque to fasten the required M4 screws is 0.6 N.m (5.3 lbf-in).

Connections and Schema

Wiring Diagram

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Pin Assignments for I/O Connectors

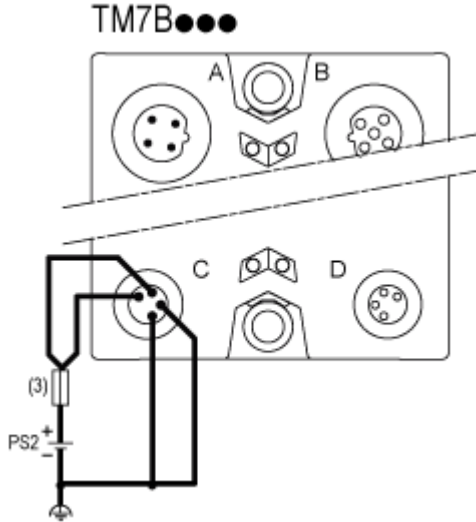
Connection	Pin	M12 Input	M12 Output
	1	24 Vdc sensor supply	Analog output +
	2	Analog input +	24 Vdc actuator supply
	3	0 Vdc	Analog output - (0 Vdc)
	4	Analog input -	0 Vdc
	5	Shield	Shield

**Wiring the Power Supply**

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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