

# TM7BAO4VLA

Analog I/O expansion block, Modicon TM7,  
IP67, 4 AO, +/-10 V, M12 connector



## Main

|                                |                                |
|--------------------------------|--------------------------------|
| Range of Product               | Modicon TM7                    |
| Product or Component Type      | Analog I/O expansion block     |
| Range Compatibility            | Modicon M258<br>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   | 4 O                            |

## Complementary

|                            |  |
|----------------------------|--|
| Analogue output number     | 4  |
| 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<br>1 female connector M12 - B coding - 4 ways bus OUT<br>1 male connector M8 - 4 ways power IN<br>1 female connector M8 - 4 ways power OUT<br>4 female connectors M12 - A coding - 5 ways actuator |
| Local signalling           | For bus diagnostic 2 LEDs<br>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  |
| Product Certifications                | GOST-R<br>ATEX II 3g EEx nA II T5<br>CURus<br>C-tick   |
| Marking                               | CE   |
| Ambient air temperature for operation | 14...140 °F (-10...60 °C)  |
| Ambient Air Temperature for Storage   | -13...185 °F (-25...85 °C)   |
| Relative humidity                     | 5...95 % without condensation or dripping water  |
| Pollution degree                      | 2 IEC 60664  |
| IP degree of protection               | IP67 conforming to IEC 61131-2   |
| Operating altitude                    | 0...6561.68 ft (0...2000 m)  |
| Storage altitude                      | 0.00...9842.52 ft (0...3000 m)   |
| Vibration resistance                  | 7.5 mm constant amplitude 2...8 Hz)IEC 60721-3-5 Class 5M3<br>2 gn constant acceleration 8...200 Hz)IEC 60721-3-5 Class 5M3<br>4 gn constant acceleration 200...500 Hz)IEC 60721-3-5 Class 5M3 |
| Shock resistance                      | 30 gn 11 ms IEC 60721-3-5 Class 5M3  |
| Resistance to electrostatic discharge | 6 KV in contact EN/IEC 61000-4-2<br>8 KV in air EN/IEC 61000-4-2   |

|                                      |  |
|--------------------------------------|--|
| Resistance to electromagnetic fields | 9.14 V/m (10 V/m) 0.08...2 Hz EN/IEC 61000-4-3<br>0.91 V/m (1 V/m) 2...2.7 Hz EN/IEC 61000-4-3   |
| Resistance to fast transients        | 2 KV EN/IEC 61000-4-4 power supply)<br>1 KV EN/IEC 61000-4-4 input/output)<br>1 kV EN/IEC 61000-4-4 shielded cable)  |
| Surge withstand for DC 24 V circuit  | 1 KV power supply (common mode) EN/IEC 61000-4-5<br>0.5 KV power supply (differential mode) EN/IEC 61000-4-5<br>1 KV unshielded links (common mode) EN/IEC 61000-4-5<br>0.5 KV unshielded links (differential mode) EN/IEC 61000-4-5<br>1 KV shielded links (common mode) EN/IEC 61000-4-5<br>0.5 kV shielded links (differential mode) EN/IEC 61000-4-5 |
| Electromagnetic compatibility        | EN/IEC 61000-4-6   |
| Disturbance radiated/conducted       | CISPR 11   |







## Ordering and shipping details

|                       |                  |
|-----------------------|------------------|
| Category              | 22532 - M258 PLC |
| Discount Schedule     | PC12             |
| GTIN                  | 3595864092997    |
| Nbr. of units in pkg. | 1                |
| Package weight(Lbs)   | 8.22 oz (233 g)  |
| Returnability         | No               |
| Country of origin     | AT               |

## Packing Units

|                        |                   |
|------------------------|-------------------|
| Unit Type of Package 1 | PCE               |
| Package 1 Height       | 1.97 in (5 cm)    |
| Package 1 width        | 2.36 in (6 cm)    |
| Package 1 Length       | 4.13 in (10.5 cm) |

## Offer Sustainability

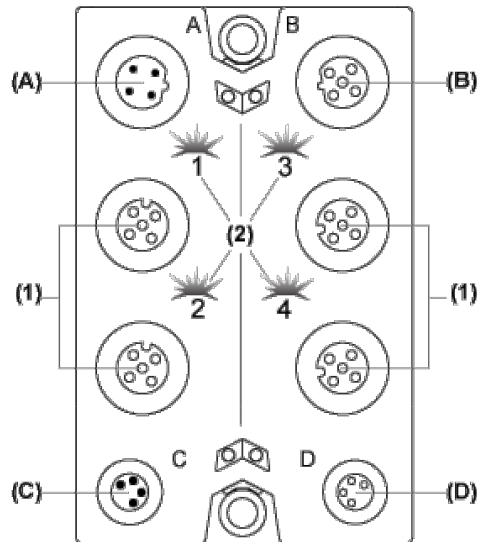
|                            |   |
|----------------------------|---|
| Sustainable offer status   | Green Premium product   |
| California proposition 65  | WARNING: This product can expose you to chemicals including: Lead and lead compounds, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to <a href="http://www.P65Warnings.ca.gov">www.P65Warnings.ca.gov</a> |
| REACH Regulation           |  <a href="#">REACH Declaration</a>   |
| REACH free of SVHC         | Yes   |
| EU RoHS Directive          | Pro-active compliance (Product out of EU RoHS legal scope)  <a href="#">EU RoHS Declaration</a>  |
| Toxic heavy metal free     | Yes   |
| Mercury free               | Yes   |
| RoHS exemption information |  <a href="#">Yes</a>   |
| China RoHS Regulation      |  <a href="#">China RoHS Declaration</a>  |
| Environmental Disclosure   |  <a href="#">Product Environmental Profile</a>   |
| Circularity Profile        |  <a href="#">End Of Life Information</a>   |
| WEEE                       | The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins.  |
| PVC free                   | Yes   |

## Contractual warranty

|          |           |
|----------|-----------|
| Warranty | 18 months |
|----------|-----------|

Analog Output Block

Description



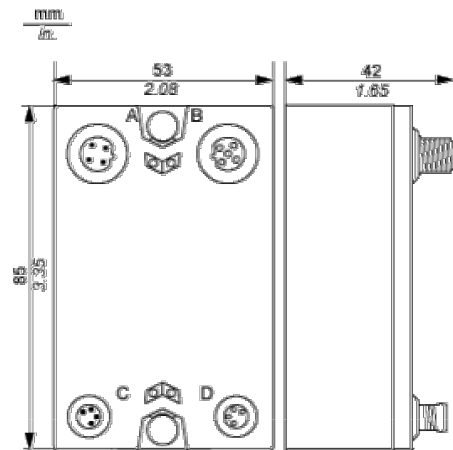
- (A) TM7 bus IN connector
- (B) TM7 bus OUT connector
- (C) 24 Vdc power IN connector
- (D) 24 Vdc power OUT connector
- (1) Output connectors
- (2) Status LEDs

Connector and Channel Assignments

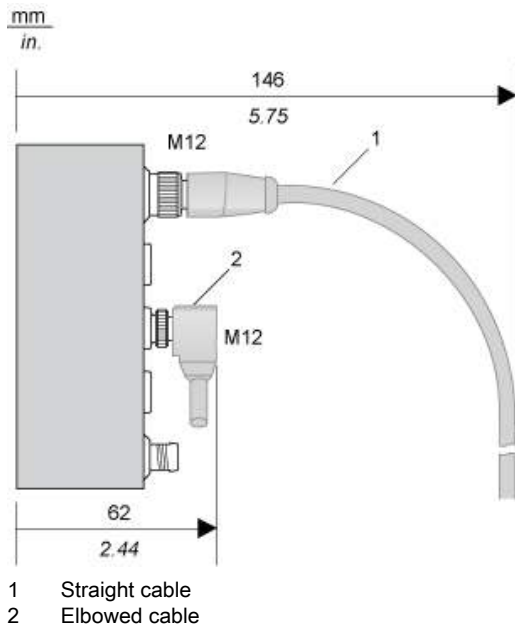
| Output connectors | Channel type | Channels |
|-------------------|--------------|----------|
| 1                 | Output       | Q0       |
| 2                 | Output       | Q1       |
| 3                 | Output       | Q2       |
| 4                 | Output       | Q3       |

TM7 Block, Size 1

Dimensions

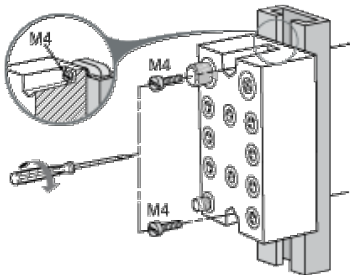


Spacing Requirements



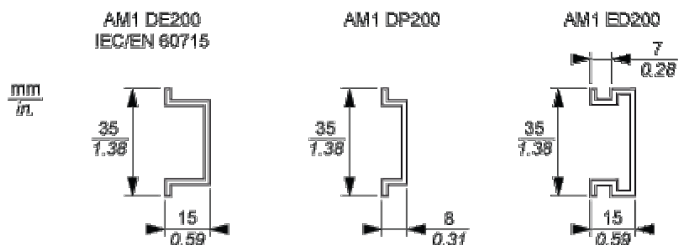
Installation Guidelines

TM7 Block on an Aluminium Frame



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

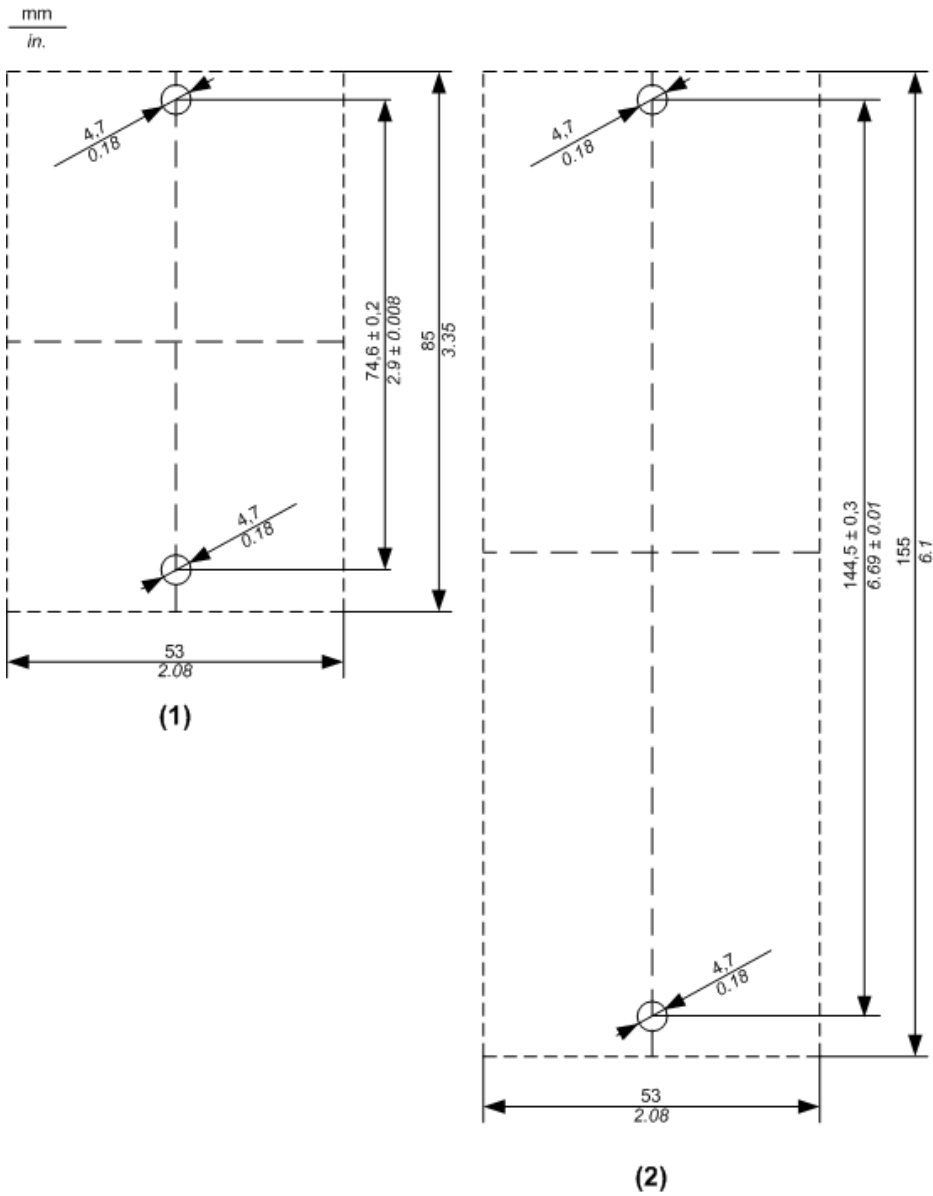
TM7 Block on a DIN Rail



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

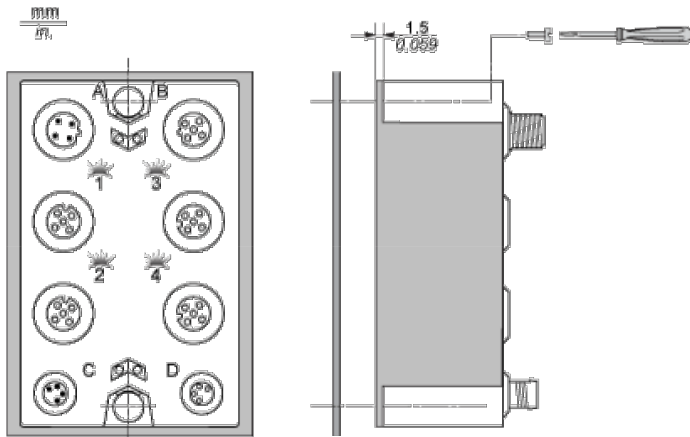
## TM7 Block Directly on the Machine

Drilling template of the block:



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

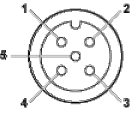
The thickness of the base plate should be taken into consideration when defining the screw length.



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

Wiring Diagram

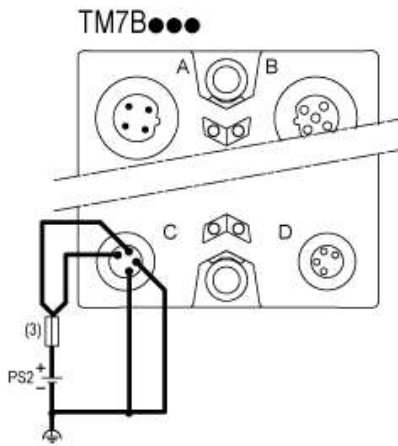
Pin Assignments for Output Connectors

| 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