# Product data sheet

Specifications



## Analog I/O expansion block, Modicon TM7, IP67, 4 TC inputs, M12 connector

TM7BAI4PLA

**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<br>Modicon LMC058 |
| **Analogue input number** | 4 |
| **Enclosure Material** | Plastic |
| **Bus type** | TM7 bus |

## Complementary

| | |
|---|---|
| **Analogue input type** | Thermocouple J, K, S 0...65536 µV<br>Voltage |
| **Analogue input resolution** | 16 bits 0...65536 µV |
| **Sampling duration** | 62 ms per input channels |
| **Sensor power supply** | 24 V |
| **Power dissipation in W** | 3.4 W |
| **Electrical connection** | 1 male connector M12 - B coding - 4 ways bus IN<br>1 female connector M12 - B coding - 4 ways bus OUT<br>4 female connectors M12 - A coding - 5 ways sensor<br>1 male connector M8 - 4 ways power IN<br>1 female connector M8 - 4 ways power OUT |
| **Operating position** | Any position |
| **Fixing Mode** | By 2 screws |
| **Local signalling** | 2 LEDs bus diagnostic<br>2 LEDs sensor/actuator power supply status |
| **Height** | 3.3 in (85 mm) |
| **Width** | 2.09 in (53 mm) |
| **Depth** | 1.7 in (42 mm) |
| **Product Weight** | 0.4 lb(US) (0.2 kg) |

## Environment

| | |
|---|---|
| **IP Degree of Protection** | IP67 |
| **Marking** | CE |
| **Product certifications** | CURus<br>GOST-R<br>ATEX II 3g EEx nA II T5<br>C-tick |
| **Standards** | IEC 61131-2 |

Price is “List Price” and may be subject to a trade discount – check with your local distributor or retailer for actual price.

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

| | |
|---|---|
| **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 |
| **Operating altitude** | 0...6561.68 ft (0...2000 m) |
| **Pollution degree** | 2 |
| **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 msIEC 60721-3-5 Class 5M3 |
| **Electromagnetic compatibility** | EN/IEC 61000-4-6 |

## Ordering and shipping details

| | |
|---|---|
| **Category** | US1PC1222532 |
| **Discount Schedule** | PC12 |
| **GTIN** | 3595864092966 |
| **Returnability** | No |
| **Country of origin** | AT |

## Packing Units

| | |
|---|---|
| **Unit Type of Package 1** | PCE |
| **Nbr. of units in pkg.** | 1 |
| **Package 1 Height** | 1.969 in (5.000 cm) |
| **Package 1 Width** | 2.362 in (6.000 cm) |
| **Package 1 Length** | 4.331 in (11.000 cm) |
| **Package weight(Lbs)** | 8.007 oz (227.000 g) |
| **Unit Type of Package 2** | S02 |
| **Number of Units in Package 2** | 24 |
| **Package 2 Height** | 5.906 in (15.000 cm) |
| **Package 2 Width** | 11.811 in (30.000 cm) |
| **Package 2 Length** | 15.748 in (40.000 cm) |
| **Package 2 Weight** | 12.831 lb(US) (5.820 kg) |

## Contractual warranty

| | |
|---|---|
| **Warranty (in months)** | 18 |

## 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 | **88 kg CO2 eq.** |
| Carbon footprint of the manufacturing phase [A1 to A3] | **12 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] | **76 kg CO2 eq.** |
| Carbon footprint of the end-of-life phase [C1 to C4] | **0.3 kg CO2 eq.** |

## Use Better

### Materials and Substances

| | |
|---|---|
| Packaging made with recycled cardboard | **No** |
| Packaging without single use plastic | **Yes** |
| EU RoHS Directive | **Compliant** |
| REACh Regulation | **Free of Substances of Very High Concern above the threshold** |
| 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 Longer

### Lifetime extension

| | |
|---|---|
| Repair | **No** |

## Use Again

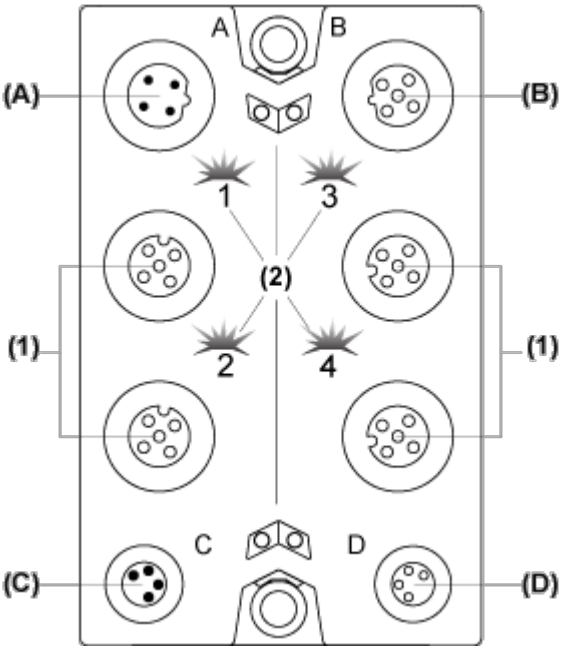
### Repack and remanufacture

| | |
|---|---|
| Recyclability potential, in % | **10** |
| Circularity Profile | **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 Temperature 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

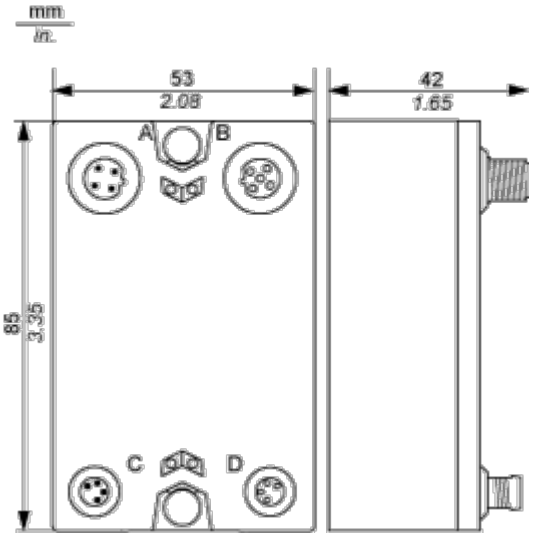
### Connector and Channel Assignments

| Input connectors | Channel type | Channels |
|---|---|---|
| 1 | Input | I0 |
| 2 | Input | I1 |
| 3 | Input | I2 |
| 4 | Input | I3 |

Dimensions Drawings

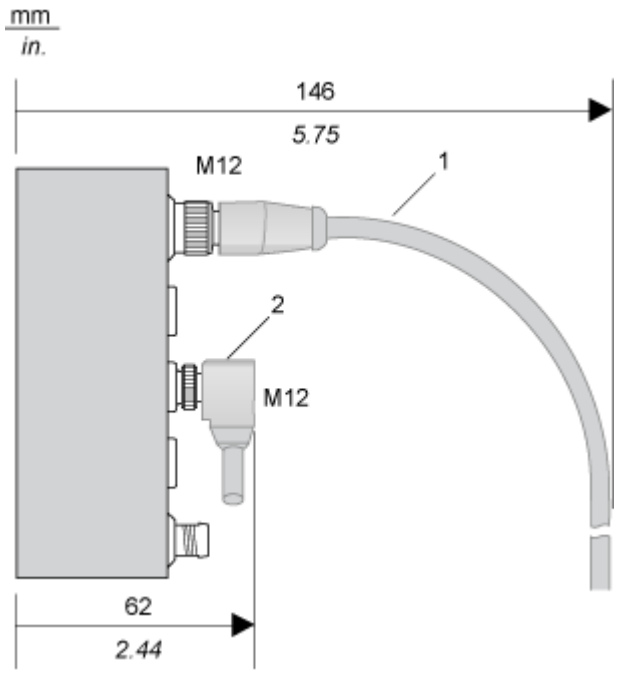
## TM7 Block, Size 1

### Dimensions



Mounting and Clearance

## Spacing Requirements

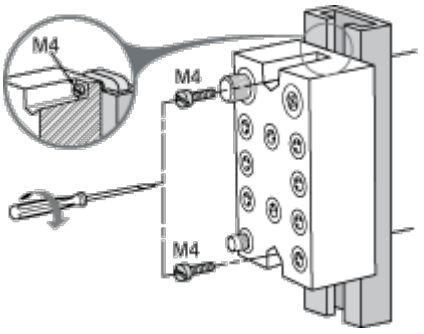



1 Straight cable

2 Elbowed cable

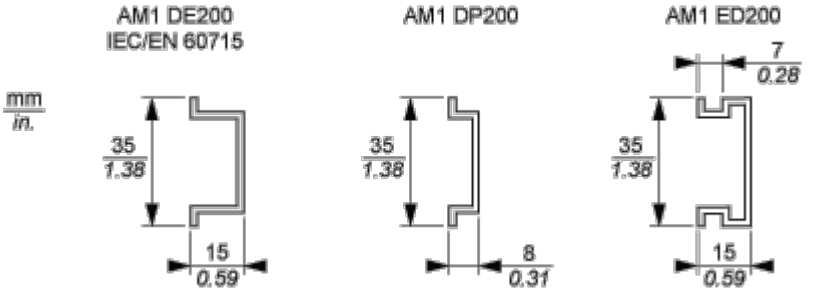
## Installation Guidelines

### TM7 Block on an Aluminium Frame




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

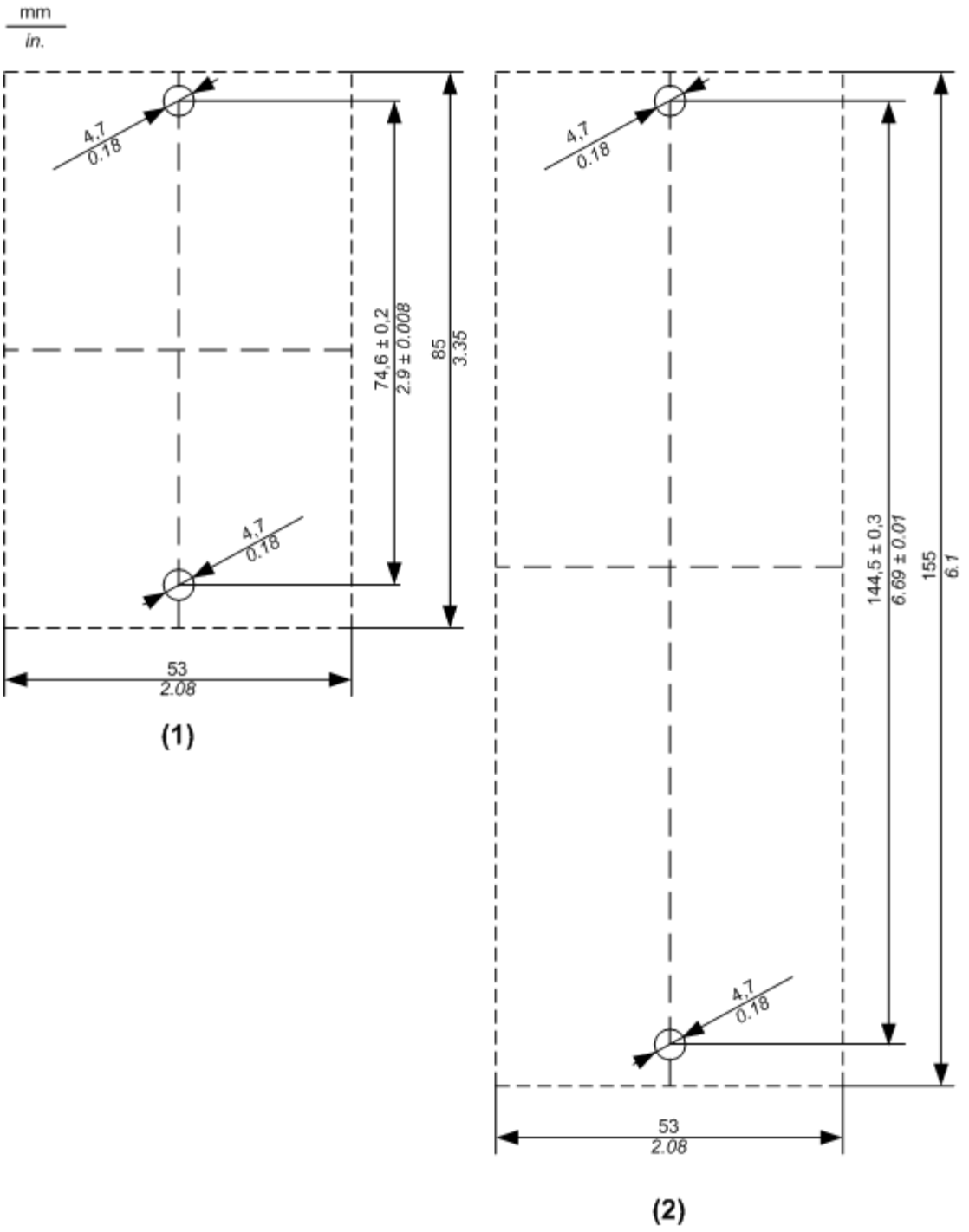
### TM7 Block on a DIN Rail




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

### TM7 Block Directly on the Machine

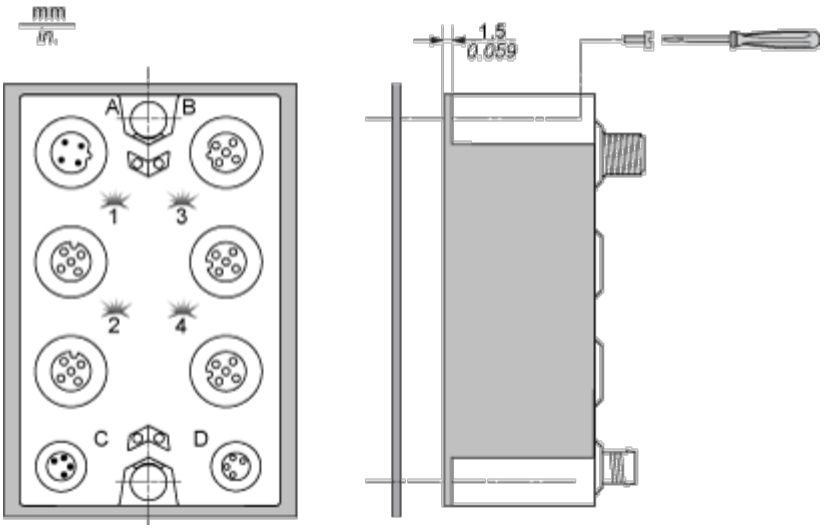
Drilling template of the block:




(1) Size 1

(2) Size 2

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

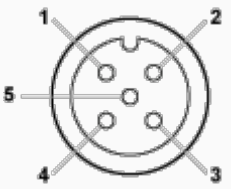
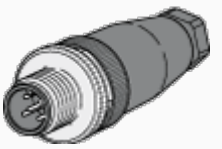



NOTE: Maximum torque to fasten the required M4 screws is 0.6 N.m (5.3 lbf-in).

## Connections and Schema

### Wiring Diagram

### Pin Assignments

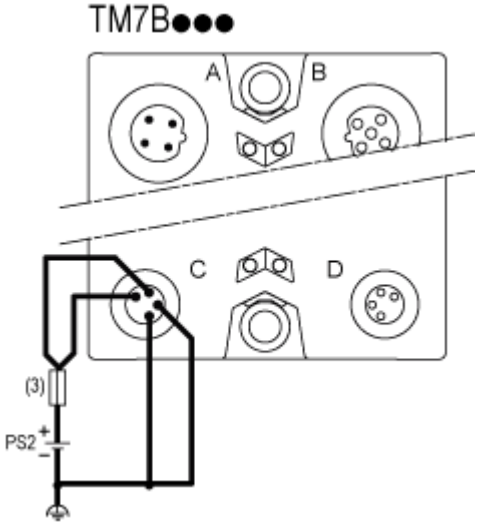
| Pin | M12 input connectors   | TM7ACTHA thermocouple plug  |
|---|---|---|
| **1** | N.C. | Temperature compensation input |
| **2** | Analog input + | Analog input + |
| **3** | 0 Vdc | 0 Vdc |
| **4** | Analog input - | Analog input - |
| **5** | Shield | Shield |

The TM7ACTHA thermocouple plug is used for compensation of the temperature at measurements points. The sensor to measure the terminal temperature is integrated in the thermocouple plug.

## 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