

# Product datasheet

Specifications



## CANopen interface block - IP67 - 16 I/O - M12

TM7NCOM16A

EAN Code: 3595864092805

### Main

|                                |                                |
|--------------------------------|--------------------------------|
| Range of product               | Modicon TM7                    |
| Product or component type      | CANopen interface I/O block    |
| Range compatibility            | Modicon LMC058<br>Modicon M258 |
| Enclosure material             | Plastic                        |
| Bus type                       | CANopen                        |
| [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 output(s) configurable by software                                                                                                                                                                                                                                                                                                                      |
| Discrete output voltage      | 24 V                                                                                                                                                                                                                                                                                                                                                           |
| Discrete output voltage type | DC                                                                                                                                                                                                                                                                                                                                                             |
| Discrete output current      | <= 0.5 A                                                                                                                                                                                                                                                                                                                                                       |
| Discrete output type         | Transistor                                                                                                                                                                                                                                                                                                                                                     |
| Sensor power supply          | 24 V, 500 mA for all channels with overload, short-circuit and reverse polarity protection                                                                                                                                                                                                                                                                     |
| Electrical connection        | 1 male connector M12 - A coding - 5 ways for CANopen bus IN<br>1 female connector M12 - B coding - 4 ways for TM7 bus OUT<br>1 male connector M8 - 4 ways for power IN<br>1 female connector M8 - 4 ways for power OUT<br>1 female connector M12 - A coding - 5 ways for CANopen bus OUT<br>8 female connectors M12 - A coding - 5 ways for sensor or actuator |
| Local signalling             | 2 LEDs for bus diagnostic<br>1 LED for actuator power supply diagnostics<br>1 LED for sensor power supply diagnostics                                                                                                                                                                                                                                          |
| Operating position           | Any position                                                                                                                                                                                                                                                                                                                                                   |
| fixing mode                  | By 2 screws                                                                                                                                                                                                                                                                                                                                                    |
| Net weight                   | 0.32 kg                                                                                                                                                                                                                                                                                                                                                        |

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

# Environment

|                                       |                                                                                                                                                                                                                                                                                                                                                                                                                            |
|---------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Standards                             | IEC 61131-2                                                                                                                                                                                                                                                                                                                                                                                                                |
| Product certifications                | ATEX II 3g EEx nA II T5<br>C-Tick<br>cURus<br>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<br>2 gn constant acceleration (f= 8...200 Hz) conforming to IEC 60721-3-5 Class 5M3<br>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<br>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<br>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<br>1 kV (input/output) conforming to IEC 61000-4-4<br>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<br>0.5 kV power supply (differential mode) conforming to IEC 61000-4-5<br>1 kV unshielded links (common mode) conforming to IEC 61000-4-5<br>0.5 kV unshielded links (differential mode) conforming to IEC 61000-4-5<br>1 kV shielded links (common mode) conforming to IEC 61000-4-5<br>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             | 4.500 cm  |
| Package 1 Width              | 5.500 cm  |
| Package 1 Length             | 17.700 cm |
| Package 1 Weight             | 398.000 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             | 9.877 kg  |

# Logistical informations

|                   |    |
|-------------------|----|
| Country of origin | AT |
|-------------------|----|

# Contractual warranty

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

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 | <a href="#">Product Environmental Profile</a> |

Use Better

| Materials and Substances               |                                                            |
|----------------------------------------|------------------------------------------------------------|
| Packaging made with recycled cardboard | No                                                         |
| Packaging without single use plastic   | Yes                                                        |
| <a href="#">EU RoHS Directive</a>      | Pro-active compliance (Product out of EU RoHS legal scope) |
| REACH Regulation                       | <a href="#">REACH Declaration</a>                          |
| PVC free                               | Yes                                                        |

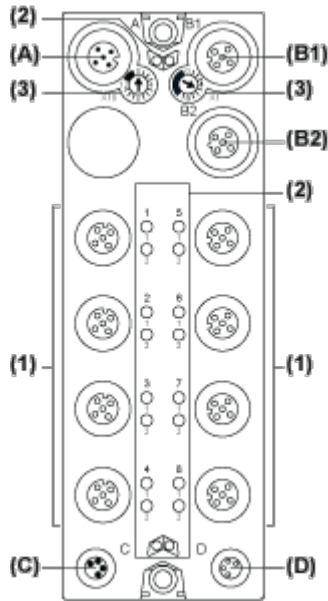
Use Again

| Repack and remanufacture        |                                                                                                                                                                                                                 |
|---------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| End of life manual availability | <a href="#">End of Life Information</a>                                                                                                                                                                         |
| 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

TM7 CANopen Interface I/O Block

Description



- (A) CANopen bus IN connector
- (B1) CANopen bus OUT connector
- (B2) TM7 bus OUT connector
- (C) 24 Vdc power IN connector
- (D) 24 Vdc power OUT connector
- (1) Input / Output connectors
- (2) Status and channel LEDs
- (3) CANopen Address settings rotary switches

Connector and Channel Assignments

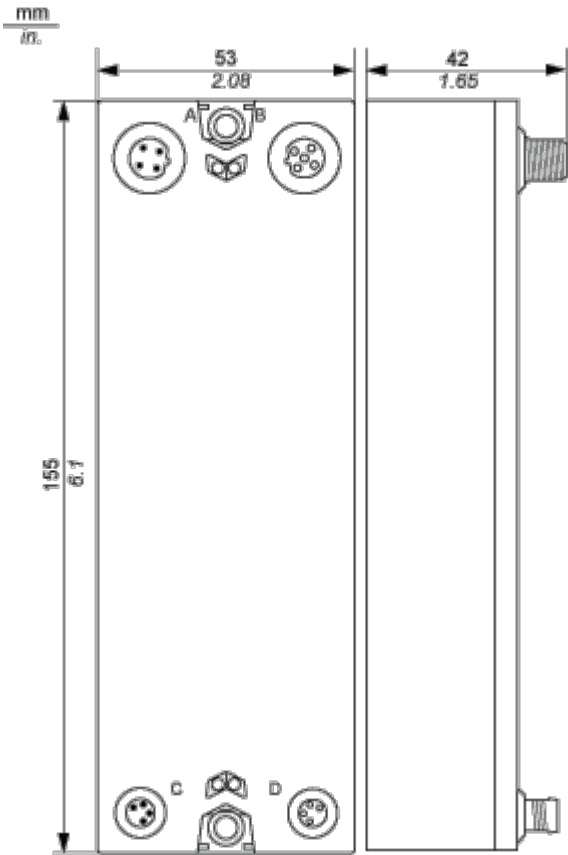
| I/O connectors | Channel types | Channels |
|----------------|---------------|----------|
| 1              | Input/Output  | I0/Q0    |
| 2              | Input/Output  | I1/Q1    |
| 3              | Input/Output  | I2/Q2    |
| 4              | Input/Output  | I3/Q3    |
| 5              | Input/Output  | I4/Q4    |
| 6              | Input/Output  | I5/Q5    |
| 7              | Input/Output  | I6/Q6    |
| 8              | Input/Output  | I7/Q7    |
| 9              | Input/Output  | I8/Q8    |

| I/O connectors | Channel types | Channels |
|----------------|---------------|----------|
| 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

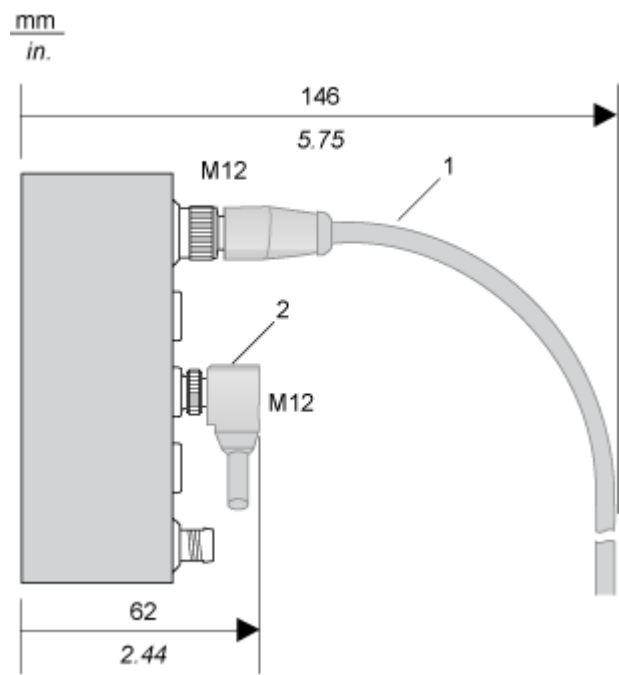
TM7 Block, Size 2

Dimensions



Mounting and Clearance

Spacing Requirements

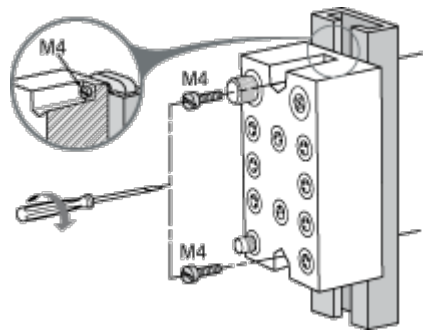


- 1 Straight cable
- 2 Elbowed cable



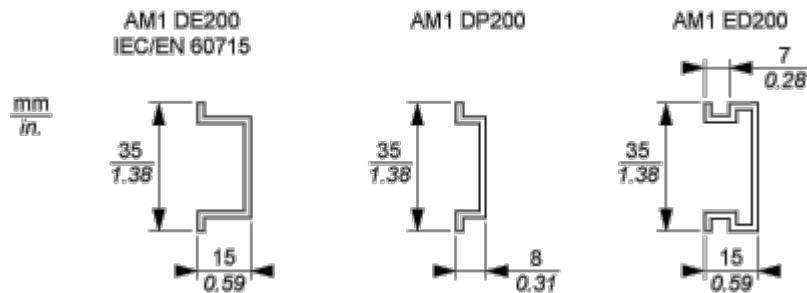
Installation Guidelines

TM7 Block on an Aluminium Frame



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

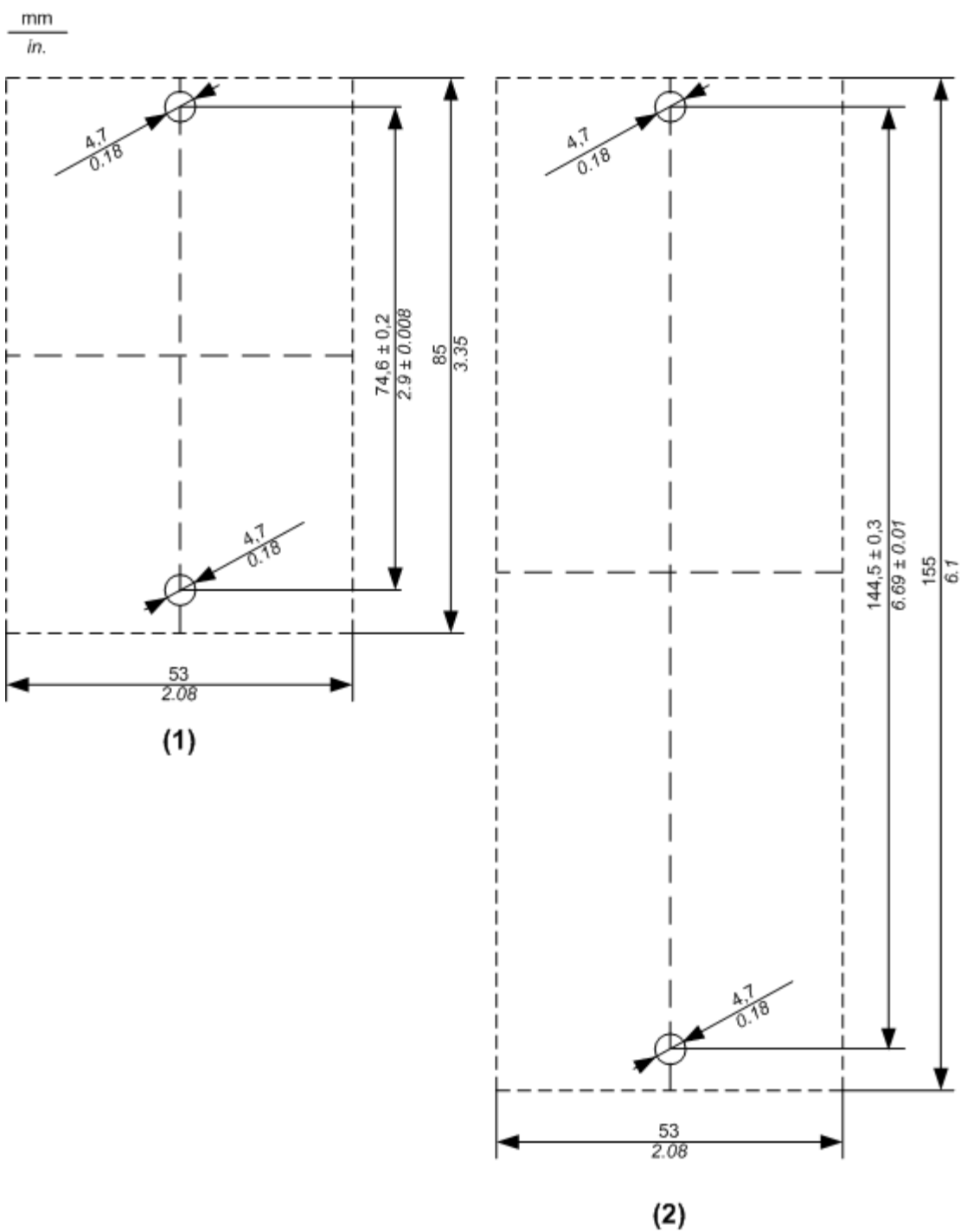
TM7 Block on a DIN Rail



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

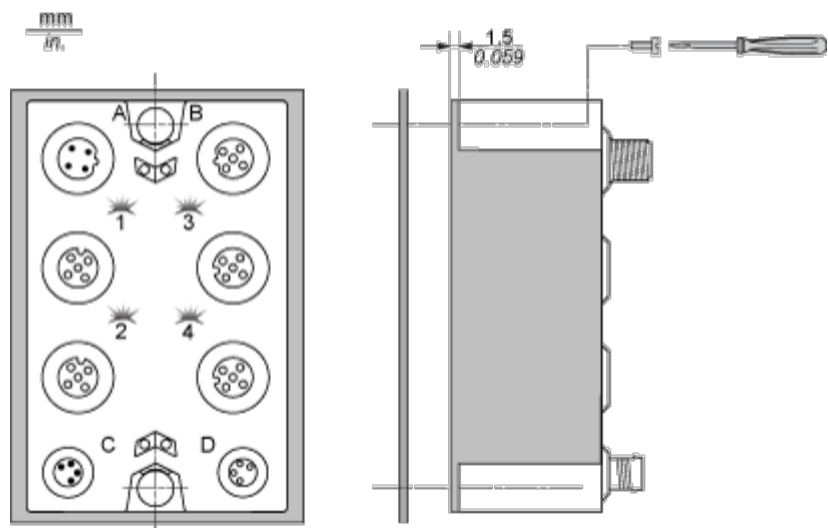
TM7 Block Directly on the Machine

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.



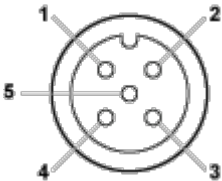
NOTE: Maximum torque to fasten the required M4 screws is 0.6 N.m (5.3 lbf-in).

Connections and Schema

Wiring Diagram

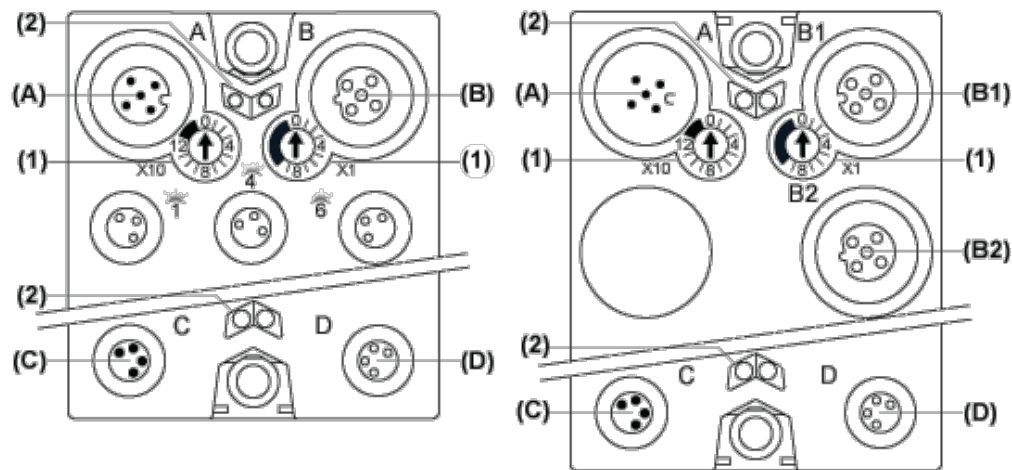
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Pin Assignments for I/O Connectors

| Connection                                                                        | Pin | Designation                |
|-----------------------------------------------------------------------------------|-----|----------------------------|
|  | 1   | 24 Vdc sensor supply       |
|                                                                                   | 2   | DI: input signal channel 1 |
|                                                                                   | 3   | 0 Vdc                      |
|                                                                                   | 4   | DI: input signal channel 2 |
|                                                                                   | 5   | N.C.                       |

CANopen Pins and Connectors

Connector Assignments

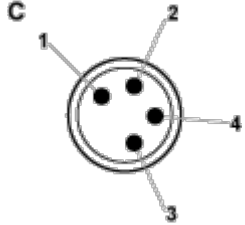
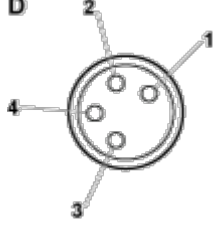


- (A) Field bus IN connector
- (B) and (B2) TM7 bus OUT connector M12
- (B1) CANopen bus OUT connector M12
- (C) 24 Vdc power IN connector
- (D) 24 Vdc power OUT connector
- (1) Address settings rotary switches
- (2) Status LEDs

Pin Assignments

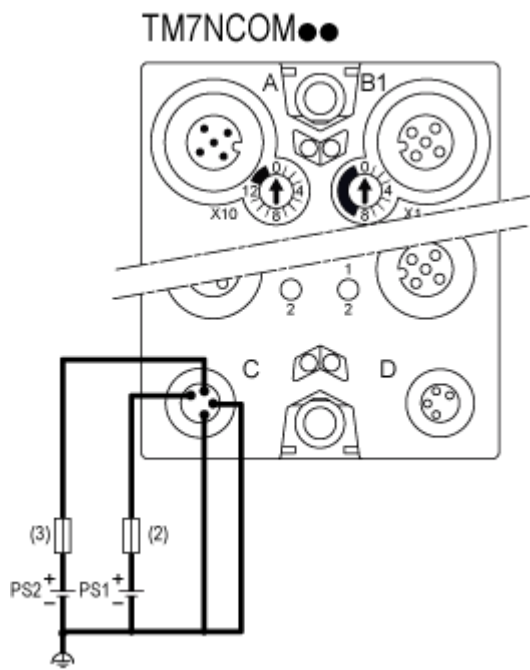
| Connectors | Pin | Designation  |
|------------|-----|--------------|
|            | 1   | CAN_SHLD     |
|            | 2   | ((CAN_V+))   |
|            | 3   | CAN_GND      |
|            | 4   | CAN_H        |
|            | 5   | CAN_L        |
|            | 1   | TM7 V+       |
|            | 2   | TM7 Bus Data |
|            | 3   | TM7 0V       |
|            | 4   | TM7 Bus Data |
|            | 5   | N.C.         |
|            | 1   | CAN_SHLD     |

| Connectors                                                                        | Pin | Designation |
|-----------------------------------------------------------------------------------|-----|-------------|
|  | 2   | (CAN_V+)    |
|                                                                                   | 3   | CAN_GND     |
|                                                                                   | 4   | CAN_H       |
|                                                                                   | 5   | CAN_L       |

| Connectors                                                                         | Pin | Designation              |
|------------------------------------------------------------------------------------|-----|--------------------------|
|   | 1   | 24 Vdc main power        |
|                                                                                    | 2   | 24 Vdc I/O power segment |
|                                                                                    | 3   | 0 Vdc                    |
|                                                                                    | 4   | 0 Vdc                    |
|  | 1   | 24 Vdc I/O power segment |
|                                                                                    | 2   | 24 Vdc I/O power segment |
|                                                                                    | 3   | 0 Vdc                    |
|                                                                                    | 4   | 0 Vdc                    |

Wiring the Power Supply

| Connections                                              | 2 Power Supplies |
|----------------------------------------------------------|------------------|
| 24 Vdc main power that generates power for TM7 power bus | PS1              |
| 24 Vdc I/O power segment                                 | PS2              |

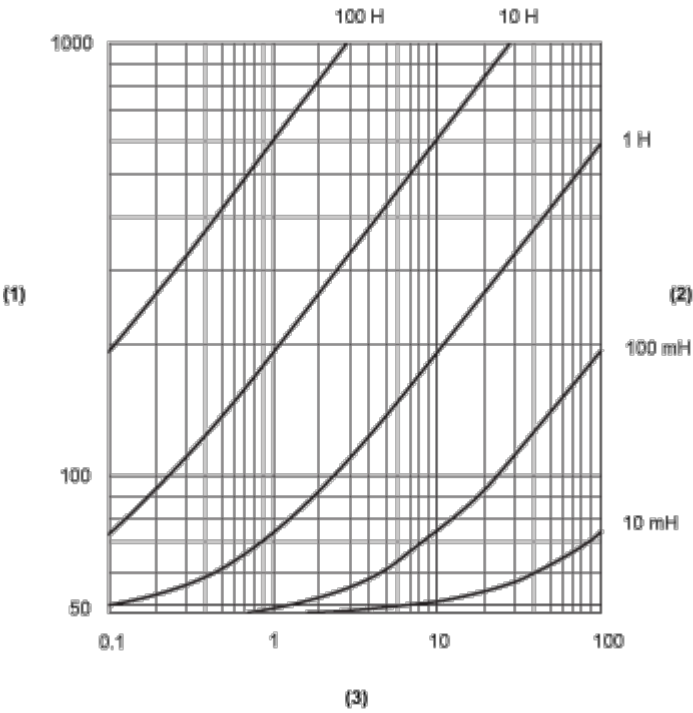


- (2) External fuse, Type T slow-blow, 1 A, 250 V <sup>1</sup>
- (3) External fuse, Type T slow-blow, 4 A max., 250 V
- PS1 External isolated main power supply, 24 Vdc
- PS2 External isolated I/O power supply, 24 Vdc

<sup>1</sup> Fuse limited to 1 A per PDB, maximum fuse limited to 5 A with maximum 4 PDB interconnected. If less then 4 PDBs size the fuse in accordance with the number of PDBs.

Performance Curves

Switching Inductive Load Characteristics



- (1) Load resistance in  $\Omega$
- (2) Load inductance in H
- (3) Max. operating cycles / second