

# Product data sheet

Specifications



## Controller, Modicon M171/M172/ M173, performance, display, 28 IO, Ethernet, Modbus

TM172PDG28R

### Main

|                              |                                                                                                                                                                                                |
|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Range of product             | Modicon M171/M172                                                                                                                                                                              |
| Product or component type    | Programmable controllers                                                                                                                                                                       |
| Product specific application | HVAC and pumping solution                                                                                                                                                                      |
| Variant                      | Programmable                                                                                                                                                                                   |
| Total inputs/outputs         | 28                                                                                                                                                                                             |
| Discrete input number        | 8                                                                                                                                                                                              |
| Discrete output number       | 1 for relay outputs SPDT with independent common<br>3 for relay outputs SPST with same common<br>2 for relay outputs SPST with same common<br>2 for relay outputs SPST with independent common |
| Discrete output current      | 1 A for relay SPDT<br>3 A for relay SPST                                                                                                                                                       |
| Analogue input number        | 8 configurable by pair                                                                                                                                                                         |
| Analogue output number       | 2 voltage, range: 0...10 V<br>2 voltage/current, range: 4...20 mA or 0...10 V or PWM (2 kHz)                                                                                                   |

### Complementary

|                        |                                                                                                                                                                                                                                                                                                                                                                                                                    |
|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Number of port         | 1 CAN port - screw terminal block<br>1 USB type A - USB type A female<br>1 USB type mini B - USB device port Mini-B<br>2 RS485 - screw terminal block (Modbus serial link or BACnet MS/TP)<br>1 Ethernet - RJ45 (Modbus TCP and BACnet IP with webserver)                                                                                                                                                          |
| Input/output number    | 8 digital input(s)<br>8 analog input(s)<br>4 analog output(s)<br>8 digital output(s)                                                                                                                                                                                                                                                                                                                               |
| Discrete input logic   | Sink or source (positive/negative)                                                                                                                                                                                                                                                                                                                                                                                 |
| Discrete input voltage | 24 V AC/DC                                                                                                                                                                                                                                                                                                                                                                                                         |
| Discrete input current | 2.5 mA                                                                                                                                                                                                                                                                                                                                                                                                             |
| Input impedance        | 10 kOhm                                                                                                                                                                                                                                                                                                                                                                                                            |
| Analogue input type    | impedance 0...1500 hOhm<br>impedance 0...300 daOhm<br>NTC temperature probe - 50...110 °C - resolution: 0.1 °C (extended)<br>voltage 0...10 V<br>NTC temperature probe - 40...150 °C - resolution: 0.1 °C<br>current 0...20 mA/4...20 mA<br>PTC temperature probe - 55...150 °C - resolution: 0.1 °C<br>voltage 0...5 V (absolute or ratiometric)<br>Pt 1000 temperature probe - 200...850 °C - resolution: 0.1 °C |
| Sensor power supply    | 5 V DC at 50 mA supplied by the controller<br>24 V DC at 150 mA supplied by the controller                                                                                                                                                                                                                                                                                                                         |

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

|                           |                                                                                                                              |
|---------------------------|------------------------------------------------------------------------------------------------------------------------------|
| [Us] rated supply voltage | 24 V +/- 10 % AC<br>20...38 V DC                                                                                             |
| Power consumption in W    | 15 W at 24 V AC/DC                                                                                                           |
| Realtime clock            | Built-in clock at -20...60 °C                                                                                                |
| Display type              | Backlit LCD - 128 x 64 pixels                                                                                                |
| Overvoltage category      | II                                                                                                                           |
| Local signalling          | 1 LED (red) for programmable<br>1 LED (yellow) for programmable<br>1 LED (green) for programmable<br>1 LED (green) for power |
| Mounting support          | Panel mounting with accessory<br>DIN rail                                                                                    |
| Width                     | 144 mm                                                                                                                       |
| Height                    | 110 mm                                                                                                                       |
| Depth                     | 60.5 mm                                                                                                                      |
| Product weight            | 0.3 kg                                                                                                                       |

## Environment

|                                       |                                                                                            |
|---------------------------------------|--------------------------------------------------------------------------------------------|
| Directives                            | 86/188/EEC - physical agents (noise) directive<br>2006/95/EC - low voltage directive       |
| Standards                             | EN/IEC 60730<br>UL94 (material V0)                                                         |
| Product certifications                | EAC<br>CSA<br>CE<br>cURus                                                                  |
| Ambient air temperature for operation | -20...60 °C conforming to UL 60730-1<br>-20...65 °C with derating conforming to UL 60730-1 |
| Ambient air temperature for storage   | -30...70 °C                                                                                |
| Relative humidity                     | 5...95 % non-condensing                                                                    |
| IP degree of protection               | IP20                                                                                       |
| Pollution degree                      | 2                                                                                          |
| Operating altitude                    | 0...2000 m                                                                                 |

## Packing Units

|                              |         |
|------------------------------|---------|
| Unit Type of Package 1       | PCE     |
| Number of Units in Package 1 | 1       |
| Package 1 Height             | 13.5 cm |
| Package 1 Width              | 9.0 cm  |
| Package 1 Length             | 18.6 cm |
| Package 1 Weight             | 397.0 g |
| Unit Type of Package 2       | S02     |
| Number of Units in Package 2 | 6       |
| Package 2 Height             | 15.0 cm |
| Package 2 Width              | 30.0 cm |
| Package 2 Length             | 40.0 cm |

Package 2 Weight

2.65 kg

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 | 678                                           |
| Environmental Disclosure         | <a href="#">Product Environmental Profile</a> |

Use Better

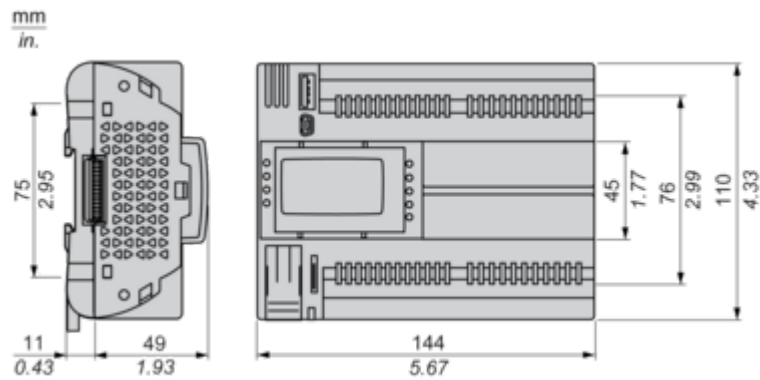
| Materials and Substances               |                                                                                                                                                                                                                                                                                             |
|----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Packaging made with recycled cardboard | Yes                                                                                                                                                                                                                                                                                         |
| Packaging without single use plastic   | No                                                                                                                                                                                                                                                                                          |
| <a href="#">EU RoHS Directive</a>      | Pro-active compliance (Product out of EU RoHS legal scope)                                                                                                                                                                                                                                  |
| SCIP Number                            | 2c365b3a-5b0a-48fd-acc7-751c89a723a2                                                                                                                                                                                                                                                        |
| REACH Regulation                       | <a href="#">REACH Declaration</a>                                                                                                                                                                                                                                                           |
| 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> |

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 |

Dimensions Drawings

Dimensions

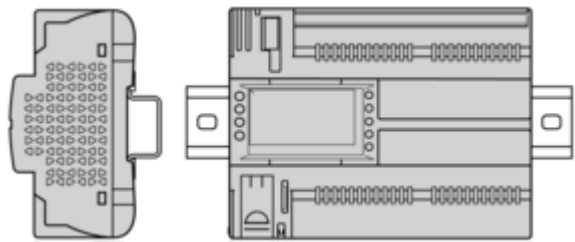


Mounting and Clearance

Mounting Positions

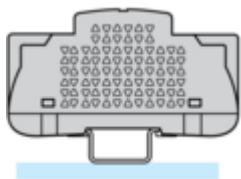
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Correct Mounting Position

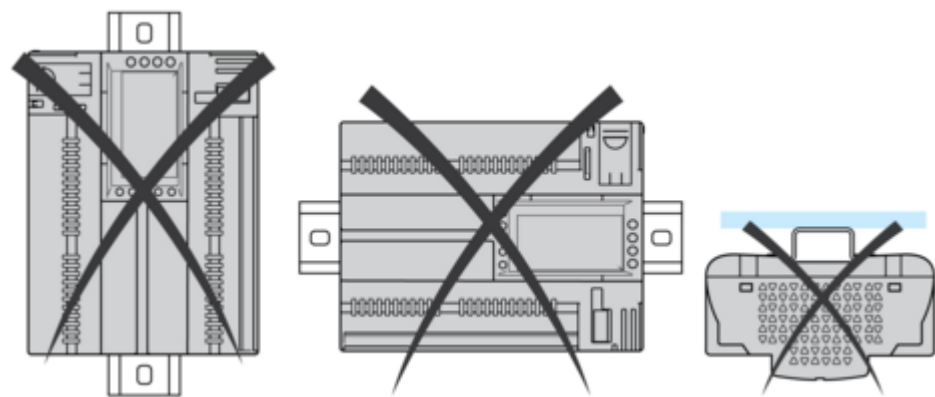


Acceptable Mounting Position

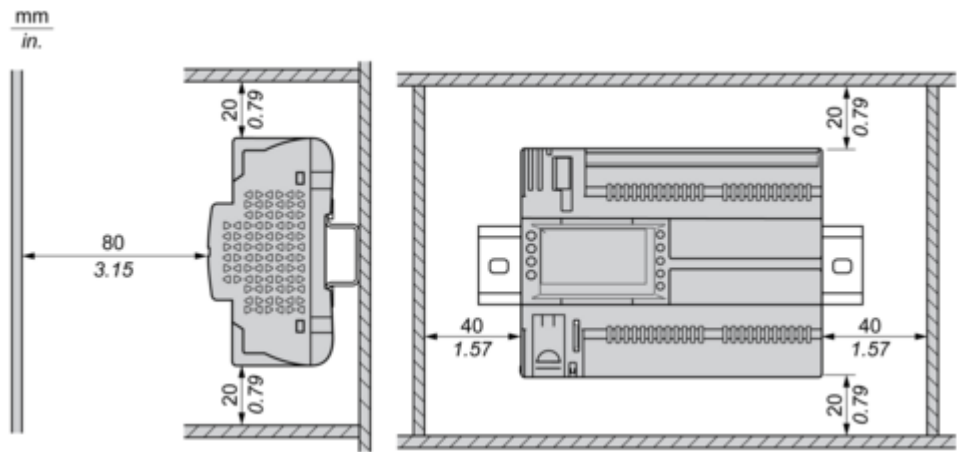
Controller can be mounted horizontally upward with a temperature derating (maximum ambient temperature: 60 °C (140 °F)).



Incorrect Mounting Position

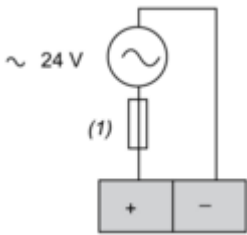
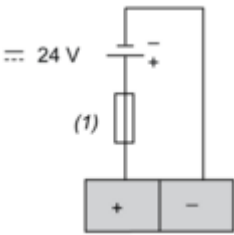


Clearance



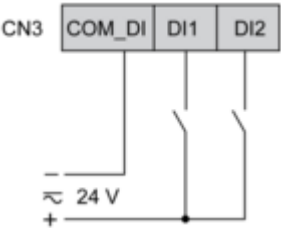
Connections and Schema

Power Supply

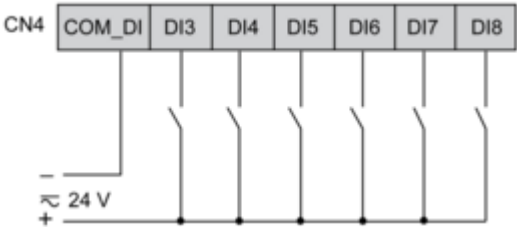
| 24 Vac                                                                            | 24 Vdc                                                                            |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  |  |
| (1) Type T fuse 2 A                                                               |                                                                                   |

CN3 Fast Digital Inputs

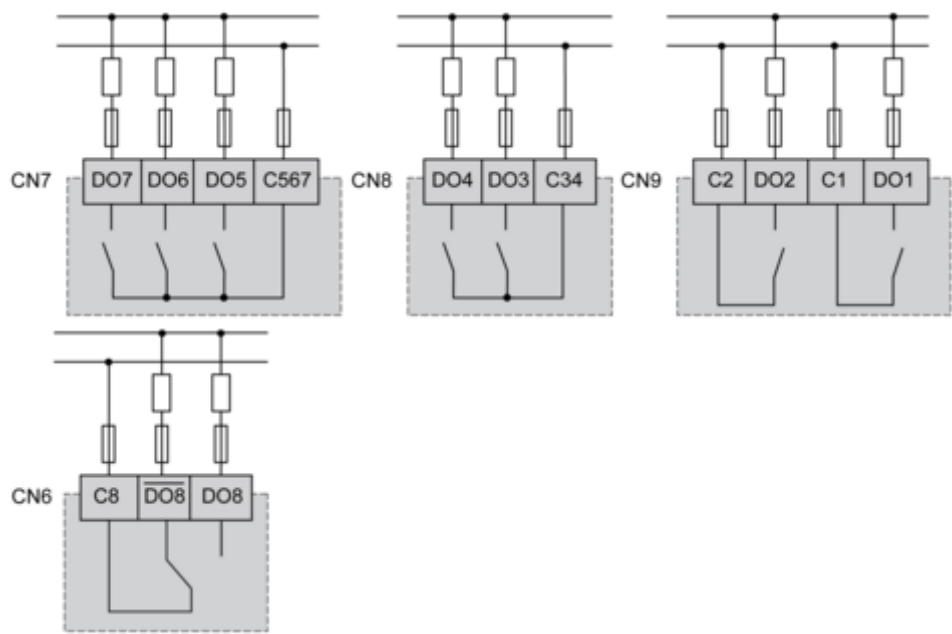
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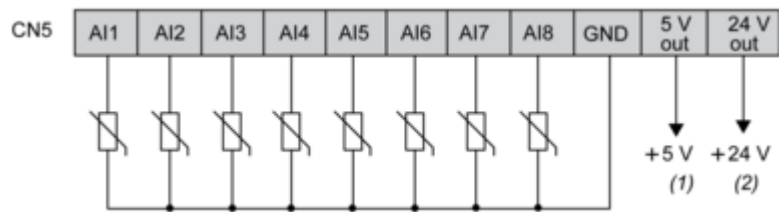
CN4 Digital Inputs



CN7, CN8, CN9, CN6 High Voltage Relay SPST Digital Output



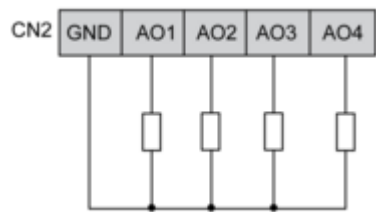
CN5 Analog Inputs



- (1) Max. current : 50 mA.
- (2) Max. current : 150 mA.

CN2 Analog Outputs

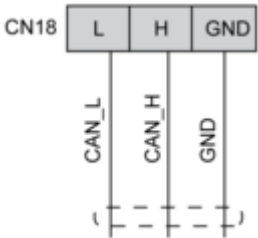
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AO3, AO4 can be used also as PWM generator, up to 2kHz.

CN18 CAN Expansion Bus Port

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CN19, CN1 CAN Expansion Bus Port

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