

# TM172PDG42S

Modicon M172 Performance Display 42 I/Os,  
Modbus, Solid State Relay



## Main

|                              |                                                                                                                                                                                                       |
|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Range of product             | Modicon M171/M172                                                                                                                                                                                     |
| Product or component type    | Programmable controllers                                                                                                                                                                              |
| Product specific application | HVAC and pumping solution                                                                                                                                                                             |
| Variant                      | Programmable                                                                                                                                                                                          |
| Number of inputs/outputs     | 42                                                                                                                                                                                                    |
| Discrete input number        | 12                                                                                                                                                                                                    |
| Discrete output number       | 2 for relay outputs SPST with same common<br>2 for solid state, isolated SSR with independent common<br>2 for relay outputs SPDT with same common<br>3 for relay outputs SPST with independent common |
| Discrete output current      | 0.5 A for solid state, isolated<br>1 A for relay SPDT<br>3 A for relay SPST                                                                                                                           |
| Analogue input number        | 12 configurable by pair                                                                                                                                                                               |
| Analogue output number       | 4 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       | 12 analog input(s)<br>6 analog output(s)<br>12 digital input(s)<br>12 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           | 20 kOhm                                                                                                                                                                                                                                                                                                                                                                                                    |
| Analogue input type       | Voltage 0...10 V<br>Current 0...20 mA/4...20 mA<br>Direct input<br>Impedance 0...1500 hOhm<br>Impedance 0...300 daOhm<br>Voltage 0...5 V (absolute or ratiometric)<br>PTC temperature probe - 55...150 °C - res.: 0.1 °C<br>NTC temperature probe - 50...110 °C - res.: 0.1 °C (extended)<br>NTC temperature probe - 40...150 °C - res.: 0.1 °C<br>Pt 1000 temperature probe - 200...850 °C - res.: 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)                                                                                                                                                                                                                                                                                                             |
| [Us] rated supply voltage | 20...38 V DC<br>24 V +/- 10 % AC                                                                                                                                                                                                                                                                                                                                                                           |
| Power consumption in W    | 15 W at 24 V AC/DC                                                                                                                                                                                                                                                                                                                                                                                         |
| Realtime clock            | Built-in realtime clock at -20...55 °C                                                                                                                                                                                                                                                                                                                                                                     |
| Display type              | Backlit LCD - 128 x 64 pixels                                                                                                                                                                                                                                                                                                                                                                              |
| Overvoltage category      | II                                                                                                                                                                                                                                                                                                                                                                                                         |
| Local signalling          | 1 LED red programmable<br>1 LED yellow programmable                                                                                                                                                                                                                                                                                                                                                        |

The information provided in this documentation contains general descriptions and/or technical characteristics of the products contained herein. 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. It is the duty of any such user or integrator to perform the appropriate and complete risk analysis, evaluation and testing of the products with respect to the relevant specific application or use thereof. Neither Schneider Electric Industries SAS nor any of its affiliates or subsidiaries shall be responsible or liable for misuse of the information contained herein.

|                  |                                               |
|------------------|-----------------------------------------------|
|                  | 1 LED green programmable<br>1 LED green power |
| Mounting support | DIN rail<br>Panel mounting with accessory     |
| Width            | 144 mm                                        |
| Height           | 110 mm                                        |
| Depth            | 60.5 mm                                       |
| Product weight   | 0.385 kg                                      |

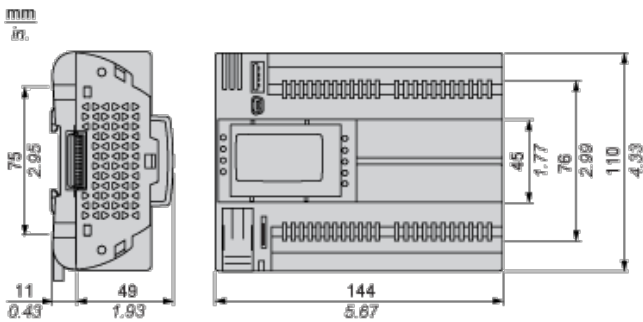
### Environment

|                                       |                                                                                                                                                       |
|---------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| directives                            | 2006/95/EC - low voltage directive<br>86/188/EEC - physical agents (noise) directive<br>2011/65/EU - RoHS directive<br>1907/2006/EC - REACH directive |
| standards                             | EN/IEC 60730                                                                                                                                          |
| product certifications                | CE<br>CSA (pending)<br>EAC (pending)<br>CURus (pending)                                                                                               |
| ambient air temperature for operation | -20...55 °C 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                                                                                                                                                     |

### Offer Sustainability

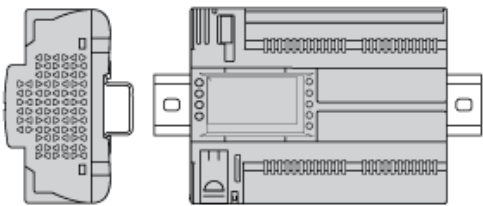
|                                  |                                                                       |
|----------------------------------|-----------------------------------------------------------------------|
| Sustainable offer status         | Green Premium product                                                 |
| RoHS (date code: YYWW)           | Compliant - since 1530 - Schneider Electric declaration of conformity |
| REACH                            | Reference not containing SVHC above the threshold                     |
| Product environmental profile    | Available                                                             |
| Product end of life instructions | Available                                                             |

### Dimensions



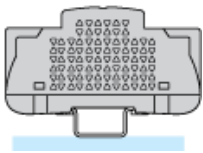
### Mounting Positions

#### Correct Mounting Position

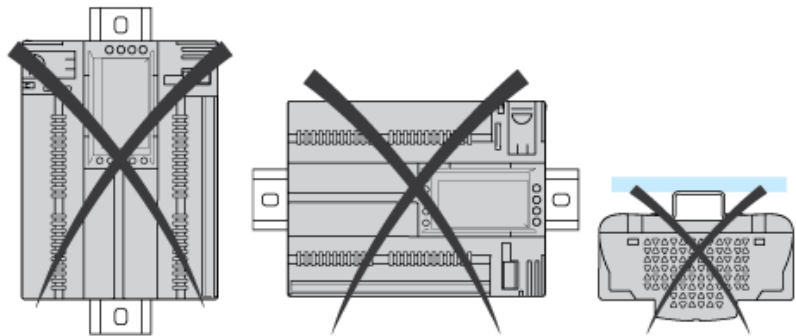


#### Acceptable Mounting Position

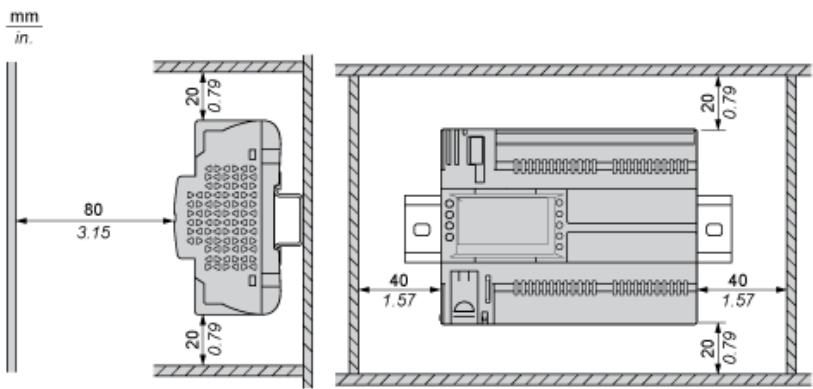
Controller can be mounted horizontally upward with a temperature derating (maximum ambient temperature: 60 °C (140 °F)).



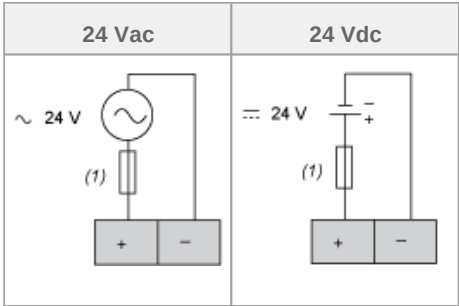
Incorrect Mounting Position



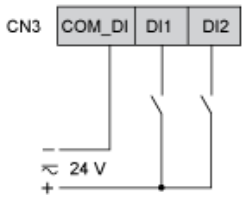
### Clearance



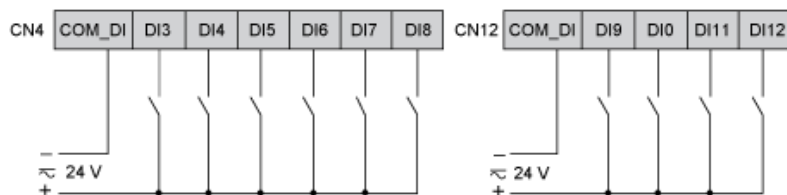
### Power Supply



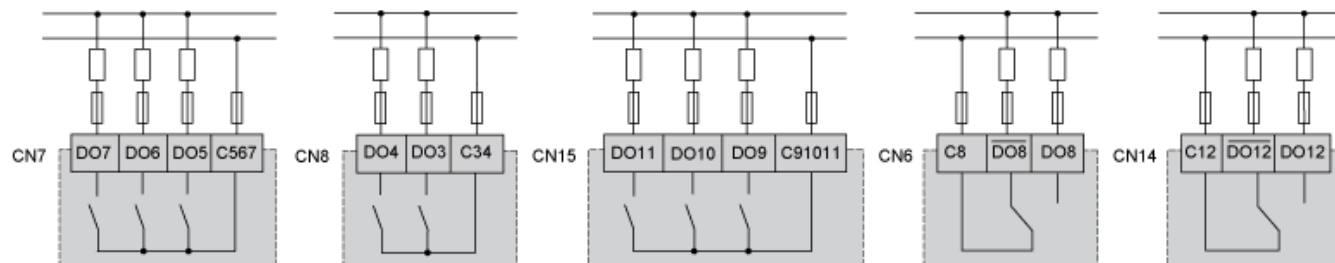
### CN3 Fast Digital Inputs



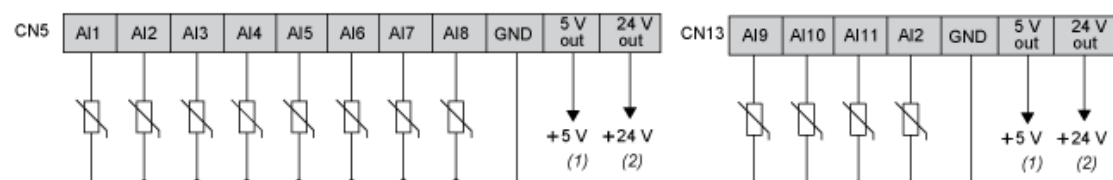
### CN4, CN12 Digital Inputs



## CN7, CN8, CN15, CN6, CN14 High Voltage Relay SPST Digital Output

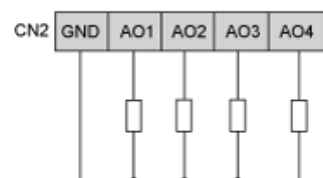


## CN5, CN13 Analog Inputs

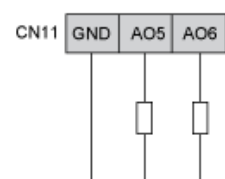


- (1) (CN5 + CN13) Max. current : 50 mA.
- (2) (CN5 + CN13) Max. current : 150 mA.

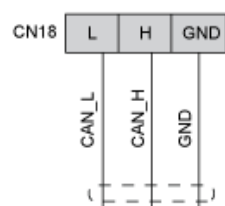
## CN2, CN11 Analog Outputs



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



## CN18 CAN Expansion Bus Port



## CN19, CN1 CAN Expansion Bus Port

