Modicon M171/M172 logic controllers
M172 optimized logic controllers


TM172OBM18R


TM172ODM18R


TM172OBM28R


TM172ODM28R


TM172OBM42R


TM172ODM42R

References

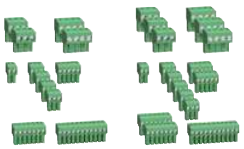
M172 optimized logic controllers: Power supply: 24 V ≂

35 mm/*1.38 in.* ⊔ rail mounting performance controllers, and Panel mounting with accessory

No. of I/O	Number and type of channels		Embedded communication port	Display	Reference	Weight kg/*lb*
	Inputs	Outputs				
18	**2 digital inputs:** ■ 2 high speed counter (2 kHz), dry contact **8 analog inputs** (configurable in pairs): ■ 8 NTC, or PT1000, or PTC, or 0-20 mA, or 4-20 mA, or 0-5 V, or 0-10 V, or hOhm, or daOhm, or digital input	**6 digital outputs:** ■ 1 SPDT relay 3 A ■ 2 SPST 3 A with the same common ■ 1 SPST 3 A ■ 2 SPST 3 A with independent common **2 analog outputs:** ■ 2 x 0-10 V, or 4-20 mA, or PWM (2 kHz, 24 V ⎓)	■ 1 CAN expansion bus ■ 2 RS485 ■ 1 USB Mini-B ■ 1 Communication module port	Remote display (optional)	**TM172OBM18R** *(1)*	0.170/ *0.375*
				Built-in display 128x64 LCD with backlight	**TM172ODM18R** *(1)*	0.195/ *0.430*
28	**8 digital inputs:** ■ 6 24 V ∿ or ⎓ ■ 2 high speed counters, dry contact **8 analog inputs** (configurable in pairs): ■ 8 NTC, or PT1000, or PTC, or 0-20 mA, or 4-20 mA, or 0-5 V, or 0-10 V, or digital input	**8 digital outputs:** ■ 1 SPDT Relay 3 A ■ 3 SPST 3 A with the same common ■ 2 SPST 3 A with the same common ■ 2 SPST 3 A with independent common **4 analog outputs** ■ 2 x 0-10 V, or 4-20 mA, or PWM (2 kHz, 24 V ⎓) ■ 2 x 0-10 V	■ 1 CAN expansion bus ■ 2 RS485 ■ 1 USB Mini-B ■ 1 Communication module port	Remote display (optional)	**TM172OBM28R** *(1)*	0.390/ *0.859*
				Built-in display 128x64 LCD with backlight	**TM172ODM28R** *(1)*	0.390/ *0.859*
42	**12 digital inputs:** ■ 10 24 V ∿ or ⎓ ■ 2 high speed counters, dry contact **12 analog inputs** (configurable in pairs): ■ 12 NTC, or PT1000, or PTC, or 0-20 mA, or 4-20 mA, or 0-5 V, or 0-10 V, or digital input	**12 digital outputs:** ■ 2 SPDT Relay 3 A ■ 3 SPST 3 A with the same common ■ 3 SPST 3 A with the same common ■ 2 SPST 3 A with the same common ■ 2 SPST 3 A with independent common **6 analog outputs:** ■ 2 x 0-10 V, or 4-20 mA, or PWM (2 kHz, 24 V ⎓) ■ 4 x 0-10 V	■ 1 CAN expansion bus ■ 2 RS485 ■ 1 USB Mini-B ■ 1 Communication module port	Remote display (optional)	**TM172OBM42R** *(1)*	0.480/ *1.058*
				Built-in display 128x64 LCD with backlight	**TM172ODM42R** *(1)*	0.480/ *1.058*

Accessories to be ordered separately

Designation	Use for	Reference	Weight kg/*lb*
I/O screw terminal blocks	**TM172●●●07R** logic controllers	**TM172ASCTB07**	0.025/ *0.055*
	TM172●●●18● logic controllers	**TM172ASCTB18**	0.040/ *0.088*
	TM172P●●●28●, **TM172P●●●28●I** logic controllers	**TM172ASCTB28**	0.100/ *0.220*
	TM172P●●●42●, **TM172P●●●42●I** logic controllers	**TM172ASCTB42**	0.150/ *0.331*
Fixing accessory: 12 clip-on locks for panel mounting	For mounting M172 logic controllers and M172 expansion modules on panel	**TM172AP12PM**	0.050/ *0.110*


TM172ASCTB28 TM172ASCTB42


TM172AP12PM

(1) Products equipped with an isolated power supply, and two isolated RS485 ports

Modicon M171/M172 logic controllers
M172 performance logic controllers


TM172PBG07R


TM172PDG18R


TM172PBG28R


TM172PDG28●


TM172PBG28RI


TM172PDG28●I


TM172PBG42●


TM172PDG42●


TM172PBG42RI


TM172PDG42●I

References

M172 performance logic controllers: Power supply: 24 V ⎓

35 mm/*1.38 in.* ⊔ rail mounting performance controllers, and panel mounting with accessory

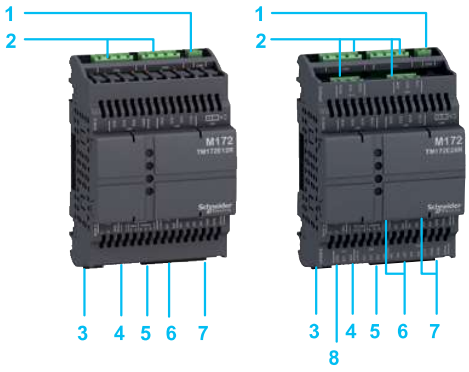
No. of I/O	Number and type of channels		Embedded communication port	Display	Reference	Weight kg/*lb*
	Inputs	Outputs				
7	**2 digital inputs:** ■ 2 high speed counter (2 kHz), dry contact **2 analog inputs** (configurable in pairs): ■ 2 NTC, or PT1000, or PTC, or 0-20 mA, or 4-20 mA, or 0-5 V, or 0-10 V, or hOhm, or daOhm, or digital input	**3 digital outputs:** ■ 1 SPDT relay 3 A ■ 2 SPST 3 A with the same common	■ 1 Ethernet ■ 1 CAN expansion bus ■ 2 RS485 ■ 1 USB (type A) ■ 1 USB Mini-B ■ 1 Communication module port ■ 1 µSD Card slot	Remote display (optional)	**TM172PBG07R** *(1)*	0.175/ *0.386*
				Built-in display 128x64 LCD with backlight	**TM172PDG07R** *(1)*	0.200/ *0.441*
18	**2 digital inputs:** ■ 2 high speed counters, dry contact **8 analog inputs** (configurable in pairs): ■ 8 NTC, or PT1000, or PTC, or 0-20 mA, or 4-20 mA, or 0-5 V, or 0-10 V, or hOhm, or daOhm, or digital input	**6 digital outputs** ■ 1 SPDT relay 3 A ■ 2 SPST 3 A with the same common ■ 1 SPST 3 A ■ 2 SPST 3 A with independent common ■ Optional 2 SSR 0.5 A with independent common for **TM172PDG18S** only **2 Analog outputs:** ■ 2 x 0-10 V, or 4-20 mA, or PWM (2 kHz, 24 V ⎓)	■ 1 Ethernet ■ 1 CAN expansion bus ■ 2 RS485 ■ 1 USB (type A) ■ 1 USB Mini-B ■ 1 Communication module port ■ 1 µSD Card slot	Remote display (optional)	**TM172PBG18R** *(1)*	0.200/ *0.441*
				Built-in display 128x64 LCD with backlight	**TM172PDG18R** *(1)*	0.225/ *0.496*
					TM172PDG18S *(1)*	0.225/ *0.496*
28	**8 digital inputs:** ■ 6 24 V ∿ or ⎓ ■ 2 high speed counters, dry contact **8 analog inputs,** (configurable in pairs): ■ 8 NTC, or PT1000, or PTC, or 0-20 mA, or 4-20 mA, or 0-5 V, or 0-10 V, or digital input	**8 digital outputs:** ■ 1 SPDT Relay 1 A or 3 A for **TM172P●G28●I** ■ 3 SPST 3 A with the same common ■ 2 SPST 3 A with the same common ■ 2 SPST 3 A with independent common ■ Optional 2 SSR 0.5 A with independent common for **TM172PDG28S** and **TM172PDG28SI** only **4 analog outputs:** ■ 2 x 0-10 V, or 4-20 mA, or PWM (2 kHz, 24 V ⎓) ■ 2 x 0-10 V	■ 1 Ethernet ■ 1 CAN expansion bus ■ 2 RS485 ■ 1 USB (type A) ■ 1 USB Mini-B ■ 1 Communication module port ■ 1 µSD Card slot	Remote display (optional)	**TM172PBG28R**	0.300/ *0.661*
				Built-in display 128x64 LCD with backlight	**TM172PDG28R**	0.300/ *0.661*
					TM172PDG28S	0.300/ *0.661*
				Remote display (optional)	**TM172PBG28RI** *(1)*	0.390/ *0.859*
				Built-in display 128x64 LCD with backlight	**TM172PDG28RI** *(1)*	0.390/ *0.859*
					TM172PDG28SI *(1)*	0.390/ *0.859*
42	**12 digital inputs:** ■ 10 24 V ∿ or ⎓ ■ 2 high speed counter, dry contact **12 analog inputs,** (configurable in pairs): ■ 12 NTC, or PT1000, or PTC, or 0-20 mA, or 4-20 mA, or 0-5 V, or 0-10 V, or digital input	**12 digital outputs:** ■ 2 SPDT relay 1 A or 3 A for **TM172P●G42●I** ■ 3 SPST 3 A with the same common ■ 3 SPST 3 A with the same common ■ 2 SPST 3 A with the same common ■ 2 SPST 3 A with independent common ■ Optional 2 SSR 0.5 A with independent common for **TM172PDG42S** and **TM172PDG42SI** only **6 analog outputs:** ■ 2 x 0-10 V, or 4-20 mA, or PWM (2 kHz, 24 V ⎓) ■ 4 x 0-10 V	■ 1 Ethernet ■ 1 CAN expansion bus ■ 2 RS485 ■ 1 USB (type A) ■ 1 USB Mini-B ■ 1 Communication module port ■ 1 µSD Card slot	Remote display (optional)	**TM172PBG42R**	0.385/ *0.849*
				Built-in display 128x64 LCD with backlight	**TM172PDG42R**	0.385/ *0.849*
					TM172PDG42S	0.385/ *0.849*
				Remote display (optional)	**TM172PBG42RI** *(1)*	0.480/ *1.058*
				Built-in display 128x64 LCD with backlight	**TM172PDG42RI** *(1)*	0.480/ *1.058*
					TM172PDG42SI *(1)*	0.480/ *1.058*

Accessories to be ordered separately

I/O screw terminal blocks, Fixing accessory See page 16

(1) Products equipped with an isolated power supply, and two isolated RS485 ports

Modicon M171/M172 logic controllers
I/O expansion modules



TM172E12R *TM172E28R*



TM172E●●R

Presentation

I/O expansion modules

Two I/O expansion modules are available, dedicated to M172 optimized and M172 performance logic controllers.

- They are used to increase the number of I/O up to 238 on M172 logic controllers.
- Expanded I/O types are digital and analog; the mix between inputs and outputs differs according to the module, making it easier to adapt the configuration to each need.
- They are connected via the CAN expansion bus on M172 logic controllers.
- All M172 logic controllers are compatible with all M172E expansion modules. Legacy TM171EP expansion modules are also compatible with M172.
- The maximum number of expansion modules on the CAN expansion bus is 7, in any combination (if more expansions are needed, please contact our Customer Care Centre).
- The M172E expansion modules are equipped with DIP switches which can be used to set the baud rate, the network address and also to incorporate a 120 ohm terminal resistor.
- The I/O can be configured in pairs, like M172 controllers.

Description

35 mm/*1.38 in.* ⊔ rail mounting I/O expansion modules (panel mounting with accessory)

TM172E12R and **TM172E28R** expansion modules *(1)*
1 Connector for removable terminal block for power supply (24 V ⎓)
2 Removable terminal block for digital outputs
3 Connector for removable terminal block for CAN expansion bus
4 DIP switches
5 Clip for 35 mm/*1.38 in.* ⊔ rail mounting
6 Connector for removable terminal block for digital inputs
7 Connector for removable terminal block for analog inputs with 5 V ⎓/24 V ⎓ output power supply

TM172E28R expansion module *(1)*
8 Connector for removable terminal block for analog outputs
9 Two slots for **TM172AP12PM** fixing accessory

(1) Removable terminal blocks to be ordered separately, *see page 19.*

Modicon M171/M172 logic controllers
I/O expansion modules



TM172E12R



TM172E28R

References

35 mm/*1.38 in.* ⊔ rail mounting expansion modules

No. of I/O	Number and type of channels		Compatibility	Embedded communication connection	Reference	Weight kg/*lb*
	Inputs *(1)*	Outputs *(1)*				
12	**2 digital inputs:** ■ 2 high speed counters, dry contact **4 analog inputs:** ■ 4 NTC or PT1000, or PTC, or 0-20 mA, or 4-20 mA, or 0-5 V, or 0-10 V, or hOhm, or daOhm, or digital inputs	**6 digital outputs:** ■ 3 SPST 3 A with the same common ■ 3 SPST 3 A with the same common	M172 logic controllers	■ 1 CAN expansion bus	**TM172E12R**	0.140/ *0.308*
28	**6 digital inputs:** ■ 4 ∿ or 24 V ⎓ ■ 2 high speed counters, dry contact **10 analog inputs**: ■ 10 NTCor PT1000, or PTC, or 0-20 mA, or 4-20 mA, or 0-5 V, or 0-10 V, or hOhm, or daOhm, or digital inputs	**10 digital outputs:** ■ 3 SPST 3 A with the same common ■ 3 SPST 3 A with the same common ■ 2 SPST 3 A with the same common ■ 2 SPST 3 A with the same common **2 analog outputs:** ■ 2 x 0-10 V, or 4-20 mA,or PWM (2 kHz, 24 V ⎓)	M172 logic controllers	■ 1 CAN expansion bus	**TM172E28R**	0.190/ *0.418*

Accessories to be ordered separately

Designation	Compatibility	Reference	Weight kg/*lb*
Screw terminal blocks (inputs, outputs, and communication bus)	**TM172E12R** expansion module	**TM172ASCTB12E**	0.070/ *0.154*
	TM172E28R expansion module	**TM172ASCTB28E**	0.100/ *0.220*
Fixing accessory: 12 clip-on locks for panel mounting	**TM172E●●R** expansion modules	**TM172AP12PM**	0.055/ *0.110*

(1) Removable terminal blocks to be ordered separately.



TM172ASCTB12E



TM172ASCTB28E



TM172AP12PM

Presentation

Remote color touch screen displays

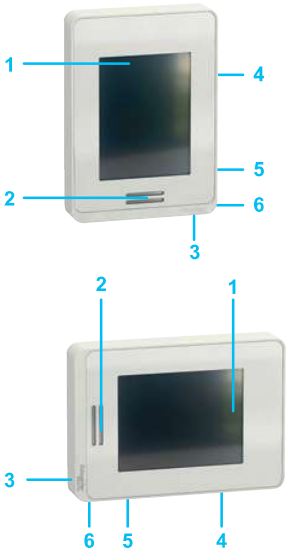
Five remote color touch screen displays are dedicated to the M172 optimized and M172 performance logic controllers, distinguished by use and type of mounting.
These displays can be also used with M171 controllers with Modbus SL or with third-party products equipped via Modbus SL.
They are all programmable with EcoStruxure Machine Expert - HVAC V2.4 or higher.
The remote color touch screen displays have the same firmware, meaning they can be swapped interchangeably.

There are two types of remote color touch screen display:

- Three **TM172DCLW●●●** designed for:
  - wall mounting
  - indoor use
  - depending on the reference with temperature, relative humidity and built-in PIR presence sensor
- Two **TM172DCLF●** designed for
  - flush mounting or wall mounting with an accessory
  - indoor or outdoor use
  - white or dark gray housing
  - installing displays on a wall with TM172ABKP●● accessories, useful for a plant room.
- **TM172DCLWT●●●** and **TM172DCLF●** displays can be mounted vertically (portrait) or horizontally (landscape) *(1)*.
- They can be configured for Modbus SL as master or slave, by means of the software.
  - On Modbus SL Slave, up to 8 displays can be installed in the same network.
  - On Modbus SL Master, up to 8 devices can be managed via the display.

Description

TM172DCLWT●●●



TM172DCLWT●●●

1 3.5" color touch screen LCD (320 x 240 pixels)
2 Holes for presence (motion) detection
3 Input connector (USB Micro-B port)
4 Power Supply (24 V ⎓)
5 RS485 Modbus serial line
6 Holes for temperature and humidity measurement

TM172DCLF●●



TM172DCLF●

1 3.5" color touch screen LCD (320 x 240 pixels)
2 Input connector (USB Micro-B port)
3 Power Supply (24 V ⎓)
5 RS485 Modbus serial line

(1) With landscape mounting, temperature and humidity sensors cannot be used as they are not accurate.

Modicon M171/M172 logic controllers
Remote displays


TM172DCLWTHP


TM172DCLFW


TM172DCLFG


TM172ABKPG

References

Remote color touch screen displays

Type	Description	Housing	Built-in sensor for	Reference	Weight kg/*lb*
Remote color touch screen wall mounting displays	■ Power supply: 24 V ⎓ ■ Color touchscreen ■ Size: 3.5“ ■ Resolution: 320 x 240 pixels ■ IP20 ■ Communication port: 1 RS485, Modbus SL with terminal blocks	White	■ Temperature	**TM172DCLWT**	0.340/ *0.749*
			■ Temperature ■ Relative humidity	**TM172DCLWTH**	0.340/ *0.749*
			■ Temperature ■ Relative humidity ■ Presence PIR	**TM172DCLWTHP**	0.340/ *0.749*
Remote color touch screen flush mounting displays	■ Power supply: 24 V ⎓ ■ Color touchscreen ■ Size: 3.5“ ■ Resolution: 320 x 240 pixels ■ IP65 (front face) ■ Communication port: 1 RS485, Modbus SL with terminal blocks	White	–	**TM172DCLFW**	0.205/ *0.452*
		Gray	–	**TM172DCLFG**	0.205/ *0.452*

Accessories to be ordered separately

Type	Use	Reference	Weight kg/*lb*
Mounting accessories *(1)*	White wall support for **TM172DCLFW** display	**TM172ABKPW**	0.060/ *0.132*
	Gray wall support for **TM172DCLFG** display	**TM172ABKPG**	0.060/ *0.132*

(1) With the use of TM172ABKP●● accessories, the degree of protection for the TM172DCLF● displays is IP20.