Catalog | January 2022

Modicon M171/M172

Logic controllers for HVAC solutions, Configuration software

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- **Modicon** HVAC Controllers
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- **Modicon** Networking
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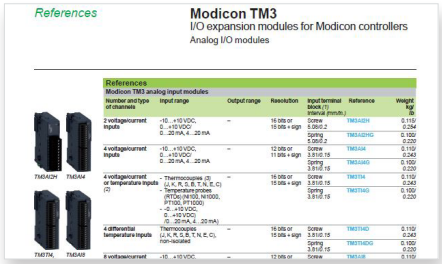

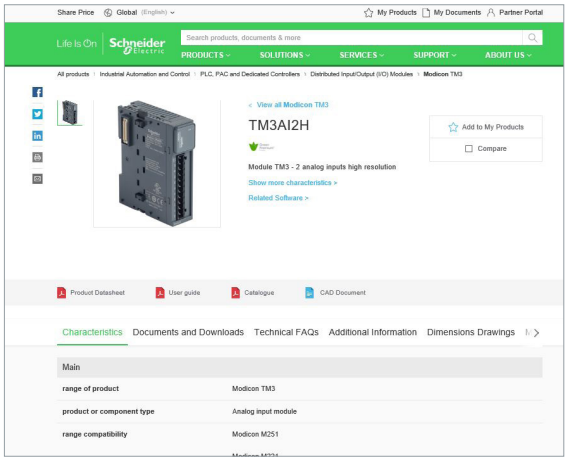

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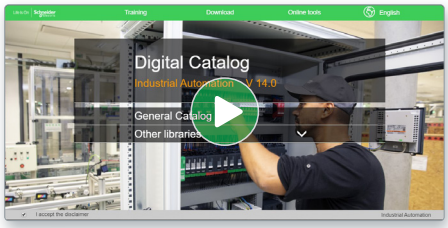

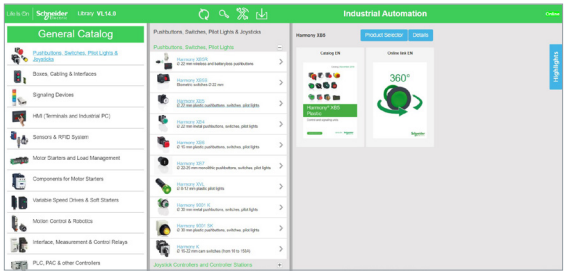

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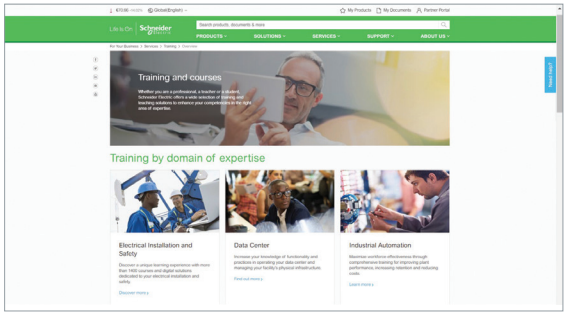

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Modicon M171/M172
Logic controllers for HVAC control solutions

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Modicon M171/M172 logic controllers for HVAC solutions

Maximize business and machine performance with EcoStruxure™ Machine

Maximize business and machine performance with EcoStruxure™ Machine

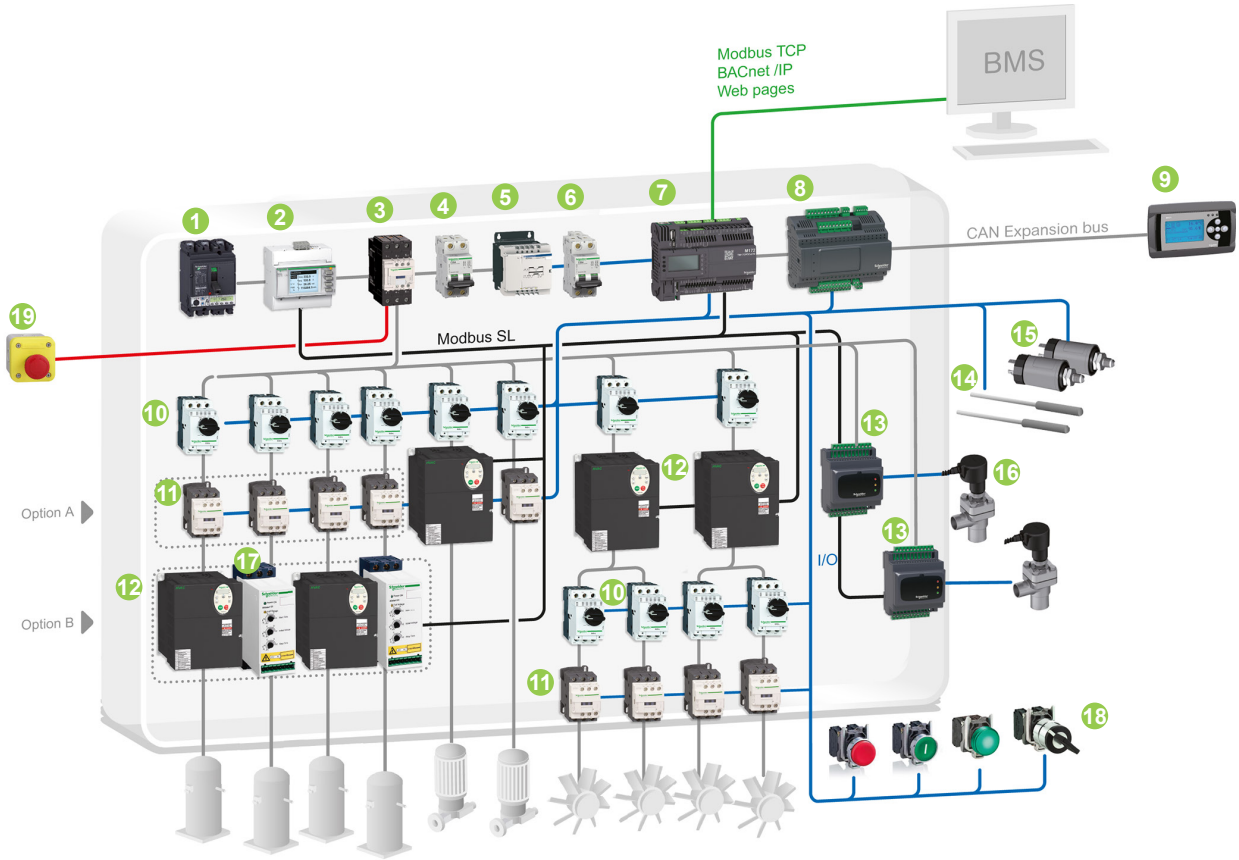
To be competitive in today's digital era, machine builders must be innovative. Smart machines, those that are better connected, more flexible, more efficient, and safe, are enabling machine builders to innovate in ways never before possible.

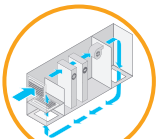
- EcoStruxure™ Machine, our open, interoperable, IoT-enabled system architecture helps you build smarter machines and equipment faster, making your business more efficient, profitable, and sustainable.
- EcoStruxure Machine brings together key technologies for product connectivity and edge control on premises, and cloud technologies to provide analytics and digital services.
- EcoStruxure Machine helps you bring more innovation and added value to your customers throughout the entire machine life cycle

Ready-to-use architectures and function blocks

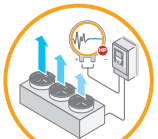
- Tested, Validated, and Documented Architectures (TVDAs) are just one of the ways we help to reduce design time.
- Whether machines are simple or complex, Application Function Blocks (AFBs) make system design fast and easy.

Modicon M171/M172 is part of EcoStruxure Machine

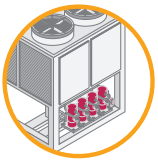




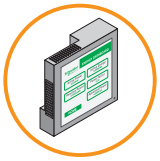
Fan management



Floating High Pressure control



Compressor management



Energy management

Application Function Blocks (AFBs)

HVAC/Chiller/Modbus SL/Modicon M172 Performance logic controller

Solution breakdown

1 **Compact NSX** circuit breaker
2 iEM3000 energy meter
3 **TeSys D** contactor
4 **C60L-MA** modular circuit breaker
5 **Phaseo** switch mode power supply
6 **C60L-DC** DC circuit breaker
7 **Modicon M172** Performance logic controller
8 **Modicon M172** I/O module
9 **Modicon M171** remote display
10 **TeSys GV2L** magnetic circuit breaker
11 **TeSys D** contactor
12 **Altivar 212** variable speed drive, for 0.75 to 75 kW *(1.0 to 100 hp)* motors
13 **Modicon M171** electronic expansion valve driver
14 **Modicon TM1S●●●●** humidity and temperature probes
15 **Telemecanique sensors: XMLP** pressure transmitters
16 Electronic expansion valve
17 **Altistart 01** soft starter
18 **Harmony XB4/XB5** signaling units
19 **Harmony XALK** Emergency stop push button

Modicon M171/M172 logic controllers for HVAC solutions

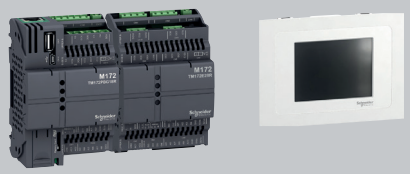
Flexible

Flexible

Flexible and scalable Performance

Whether you specialize in chillers, Air Handling Units for commercial buildings, residential, or industrial applications, etc.
With the range of Modicon M171/M172 logic controllers, EcoStruxure™ Machine is well positioned.
Multiple BMS (Building Management System) connectivity, embedded or as an option, and an embedded web server make remote control and remote access simple to implement, while a unique software environment supports the development of algorithms and functions that can be used on any platform.

Modicon M172 Performance logic controllers



Modicon M172 Optimized logic controllers

Modicon M171 Optimized logic controllers

Scalability ★

Performance and connectivity

- Best-in-class versatility and compact size
- Best-in-class Performance

> Modicon™ **M172** logic controllers for any size of connectable or connected HVAC machine. With Modicon **M172 Optimized**, manage small to large HVAC machines, connectable to BMS or the cloud. Or use Modicon **M172 Performance** to have native connectivity for connected HVAC machines.

> Modicon **M171 Optimized** logic controller for simple and compact machines is one of the smallest programmable controllers on the market. Available also for flush mounting, it requires minimal installation time and offers tremendous versatility.

Modicon M171/M172 logic controllers for HVAC solutions

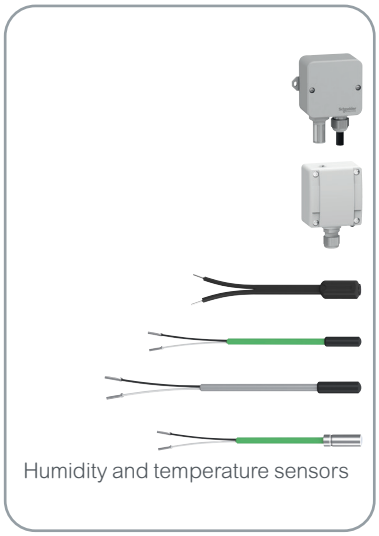
Efficient

Efficient

Everything needed is embedded

The high degree of flexibility makes it very easy to install additional modules and still keep everything in just one configuration:

- Controllers
- Remote displays
- Expansion modules
- Communication modules
- Wide range of humidity and temperature probes



Humidity and temperature sensors

Logic controllers | *Remote displays* | *Expansion modules*

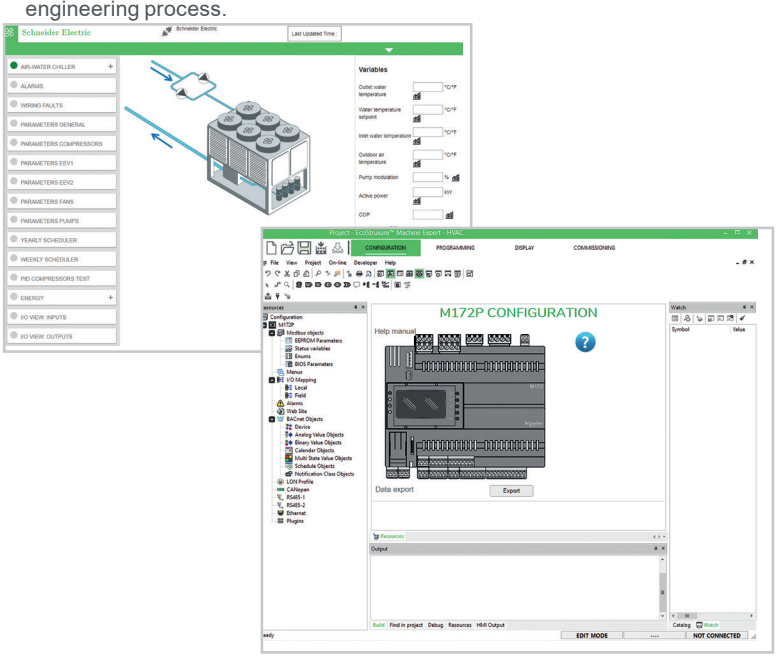
Modicon M171 Optimized, for simple and compact machines

Modicon M172, for any size of connectable or connected machine

Communication modules

Intuitive automation with EcoStruxure Machine Expert - HVAC

- **EcoStruxure Machine Expert - HVAC** is the universal programming software for machines automated by Modicon M171/M172 logic controllers.
- Simplified navigation that requires only a few clicks delivers a more efficient engineering process.

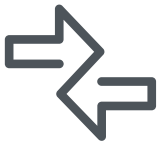


EcoStruxure Machine Expert - HVAC simplifies each of the steps in machine design and commissioning

Modicon M171/M172 logic controllers for HVAC solutions

Connected

Connected



Connected everywhere

Depending on your connectivity needs, select the right product

> **M171 Optimized for simple and compact machines**
- Modbus RTU
- LAN Expansion Bus

> **M172 for any size of connectable (M172 Optimized) or connected (M172 Performance) HVAC machines**
- Modbus RTU
- Modbus TCP
- BACnet MS/TP (B-AAC Profile certified BTL)
- BACnet /IP (B-AAC Profile certified BTL)
- ASCII support for GSM Modem
- CAN Expansion Bus
- LonWorks (FFT-10)
- Webserver, FTP Client/Server, Email, Proxy management, white list, SNTP

Customization and services

Our experts help you every step of the way, from perfecting machine design to on-site servicing of the finished machine

> Global support, 24/7 hotline services, and replacement parts centers around the world enable you to deliver superior customer support and satisfaction

Fully customized solution and co-design with our Application Design Experts (ADE)

> Design an Optimized solution for your machine to create added value, with the help of our experienced ADEs

Turnkey control panel

> Engineering expertise for codes and standards compliance

> Custom engineering to provide the optimum solution and meet specific needs

Collaboration from design to commissioning

> Recruited directly from the industries they serve, ADEs collaborate with you from design through to programming, as well as in the commissioning of turnkey installations

Expert support throughout your system's life cycle

> A dedicated team of Schneider Electric application design experts provides worldwide support for your HVAC solution

Modicon M171/M172 logic controllers for HVAC solutions

Modicon M171/M172 range

HVAC

Heat pump

Chiller

Air handling unit

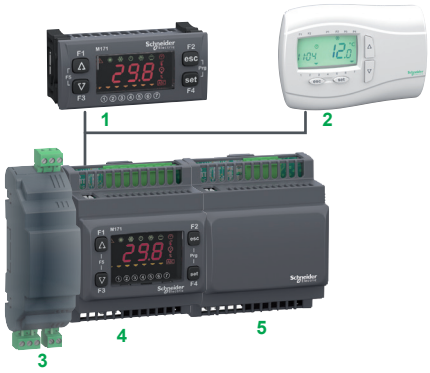
Modicon M171/M172 range

The Modicon M171/M172 logic controller range has been developed to manage digital and analog inputs and outputs for controling HVAC machines and to offer numerous possibilities for connection to different Building Management System communication networks.

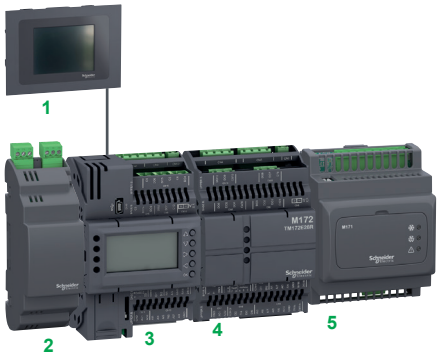
- The range of Modicon M171/M172 logic controllers is a consistent offer made up of:
  - several types of controller depending on the requested Performance and connectivity
  - a variety of communication modules to connect them to the BMS
  - a choice of expansion modules to increase and adapt the number and type of I/O
  - monochrome and color displays
  - EcoStruxure Machine Expert - HVAC, the dedicated software used to program, commission and debug applications
  - and a set of sensors
- The M171/M172 range is suitable for customized applications designed to control HVAC machines such as:
  - Air/water-cooled chiller
  - Rooftop unit
  - Heat pump
  - Compressor rack
  - Ventilation unit
  - Precision air conditioner
  - Heat recovery unit
  - Air handling unit
- The offer is flexible and scalable, depending on the application requirements. Any existing controller can evolve later as all M171/M172 controllers are programmed with the same EcoStruxure Machine Expert - HVAC software.
  - M171 Optimized controllers are designed for simple and compact machines when only Modbus SL is needed with less than 44 I/O.
  - M172 controllers are designed for any size of connectable (M172 Optimized) or connected (M172 Performance) machines, from 7 to 238 I/O and can be used with expansion modules. M172 Performance controllers embed connectivity, and M172 Optimized controllers offer optional connectivity.

Modicon M171/M172 logic controllers for HVAC solutions

System components

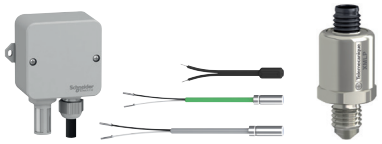


1 *Remote flush mounting display (1)*
2 *Remote wall mounting display (1)*
3 *LAN-RS485 Communication adaptor*
4 *M171 Optimized logic controller*
5 *I/O expansion module*



1 *Color touch screen display*
2 *Communication module*
3 *M172 Optimized logic controller*
4 *I/O expansion module*
5 *Electronic expansion valve driver*

1 *Color touch screen display*
2 *M172 Performance logic controller*
3 *I/O expansion module*



Measurement accessories *Pressure transmitters*

System components

Each family of M171 and M172 controllers, is available in both an Optimized and Performance version, and comprises several types of product sorted by function and compatibility.
Modicon M171/M172 logic controllers are available with or without an embedded display, with or without SSE output depending on the base product.
I/O expansion modules are mixed digital and analog I/O types.

M172 Optimized and Performance logic controllers

- **TM172O●●●●** Optimized and **TM172P●●●●** Performance logic controllers, see page 14
  and **TM172E●●R** I/O expansion module, see page 20
  and **TM172DC●●●●** remote color touch screen displays, see page 22

M171 Optimized logic controllers

- **TM171O●●●●** Optimized logic controllers, see page 24
  and **TM171EO●●R** I/O expansion modules, see page 26
  and **TM171D●●●●** remote displays, see page 29

M171 Performance logic controllers

- **TM171P●●●●** Performance logic controllers, see page 30
  and **TM171EP●●R** I/O expansion modules, see page 31
  and **TM171PFE03** remote display, see page 31

Communication modules

- **TM171A●●●●** communication modules (BMS fieldbus interfaces) provide the **TM171P●●●●** Performance, **TM172O●●●●** Optimized and **TM172P●●●●** Performance logic controllers with a connection to:
  - BACnet MS/TP (B-AAC profile) or IP
  - Modbus SL (Serial Link)
  - Modbus TCP
  - LonWorks (FFT-10)
  - Profibus
  - CAN bus

see page 34

Electronic expansion valve drivers

- **TM172EVEV●●**: electronic expansion valve drivers compatible with Modicon M172 logic controller range and also with third party controllers and electronic expansion valves, see page 36
- **TM171VEVM4** : An autonomous expansion valve driver compatible with the entire Modicon M171/M172 logic controller range and also with third party controllers and electronic expansion valves, see page 36

Measurement accessories

- Specific measurement accessories **TM1S●●●●**: humidity and temperature probes, see page 38
- Pressure transmitters from our partner Telemecanique sensors, see page 40

Software

- EcoStruxure Machine Expert - HVAC programming software, and programming accessories, see page 42

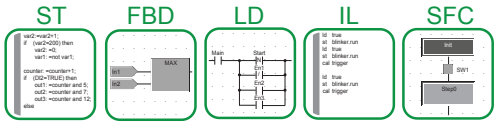
Connection accessories

- Adapted connection accessories: I/O connectors and cables, see page 29

(1) Remote display can also be used with M171 Optimized with embedded display.

Modicon M171/M172 logic controllers for HVAC solutions

Configuration software

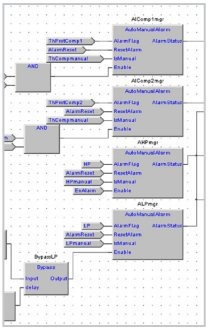


5 languages compliant with IEC 61131-3

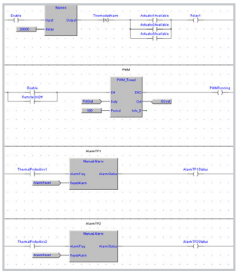
Configuration software

Modicon M171/M172 logic controllers are supported by an intuitive software package: EcoStruxure Machine Expert - HVAC, see page 42.
This software follows a simple drag-and-drop function block approach to configuration and is completed with a library of Application Function Blocks (AFBs) and logic functions.
EcoStruxure Machine Expert - HVAC uses five languages compliant with IEC 61131-3.
Examples:

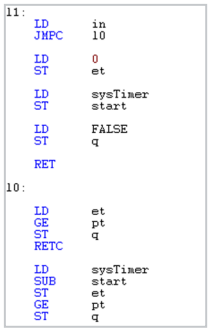
Structured Text language (ST)



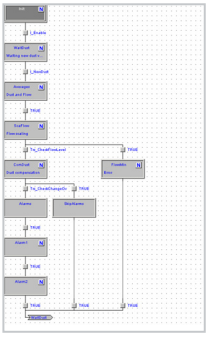
Function Block Diagram language (FBD)



Ladder Diagram language (LD)



Instruction List language (IL)



Sequential Function Chart language (SFC)

Available resources on logic controllers for IEC programming

	Logic controller type		
	M172 Optimized and M172 Performance	**M171 Optimized**	**M171 Performance**
CPU	120 MHz, 32 MB RAM	14.7 MHz	72 MHz, 32 MB RAM
Available memory for application	1.0 MB	188 kB	1.0 MB
Available memory for user interface	1.5 MB	–	1.5 MB
Flash memory data	5 MB	–	126 MB
RAM memory (automatic mapping)	512 kB (256000 word)	2048 B (1024 word)	512 kB (256000 word)
RAM memory (Modbus mapping)	10 kB (5000 word)	1024 B (512 word)	10 kB (5000 word)
EEPROM variables	28 kB (14000 word)	1024 B (512 word)	28 kB(14000 word)

Modicon M171/M172 logic controllers for HVAC solutions

Ethernet connection

M172 Performance logic controllers linked to Ethernet via the embedded RJ45 ports

M172 Optimized logic controller linked to Ethernet via the TM171AETH or TM171AETHRS485 communication module

Ethernet connection

Ethernet access is available on M171/M172 logic controllers:
- embedded in M172 Performance logic controllers
- optional with M171 Performance and M172 Optimized logic controllers by means of a communication module, see page 34

Ethernet access enables several functions such as:
> HTTP Webserver (Webvisu)
> Remote access
- Download program
- Display program download
- Download, upload parameters
- Download firmware
- Debug
- File management

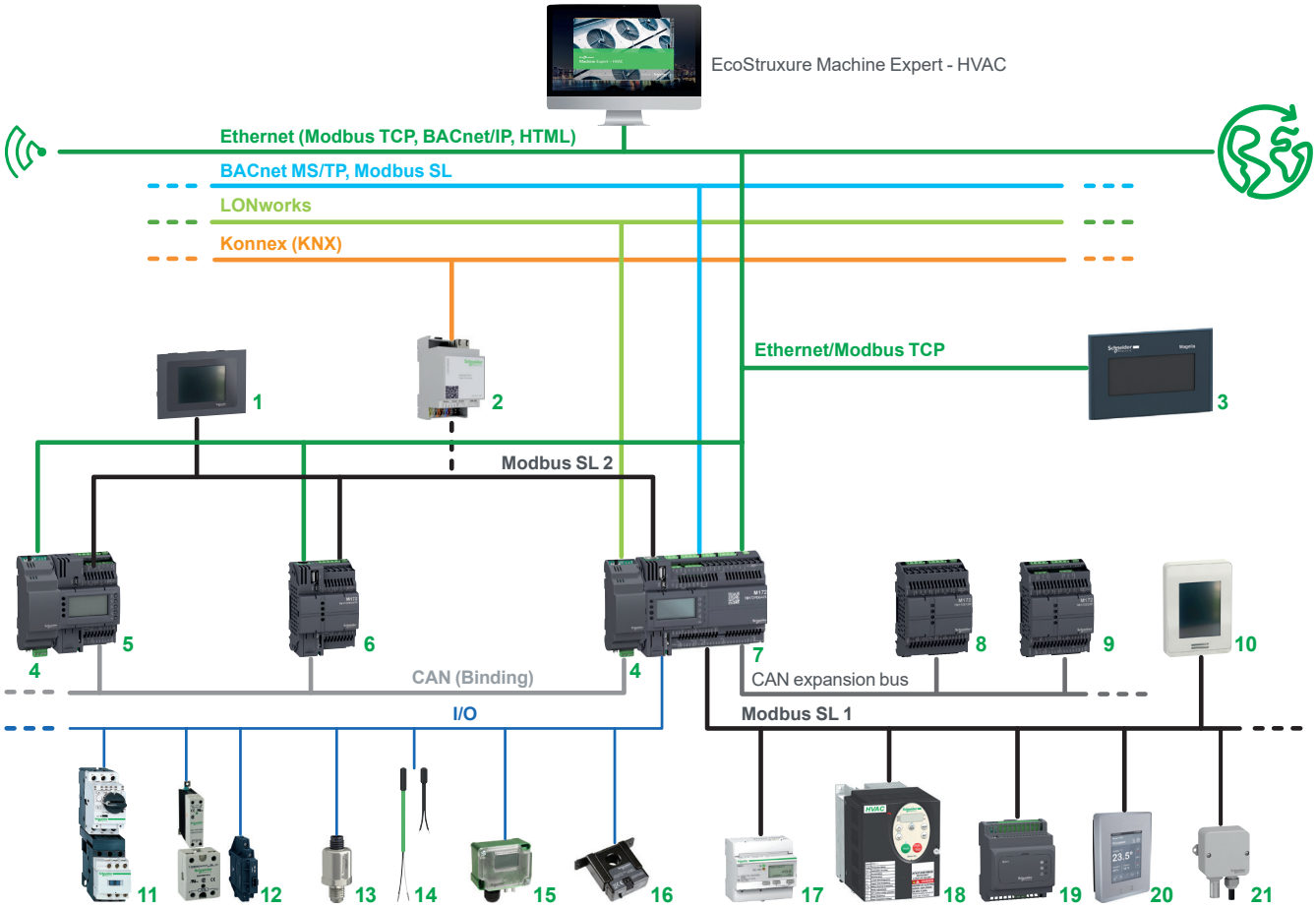
> Bridge: specific function allowing controllers connected in Modbus SL to the same controller to be programmed via Modbus
> FTP client/server

These services are not always available:
> the service can be enabled or disabled via the controller programming
> a white list is used to provide access (no white list defined by default)

Modicon M171/M172 logic controllers for HVAC solutions

M172 logic controllers

Modicon M172 logic controllers for any size of connectable or connected HVAC machines



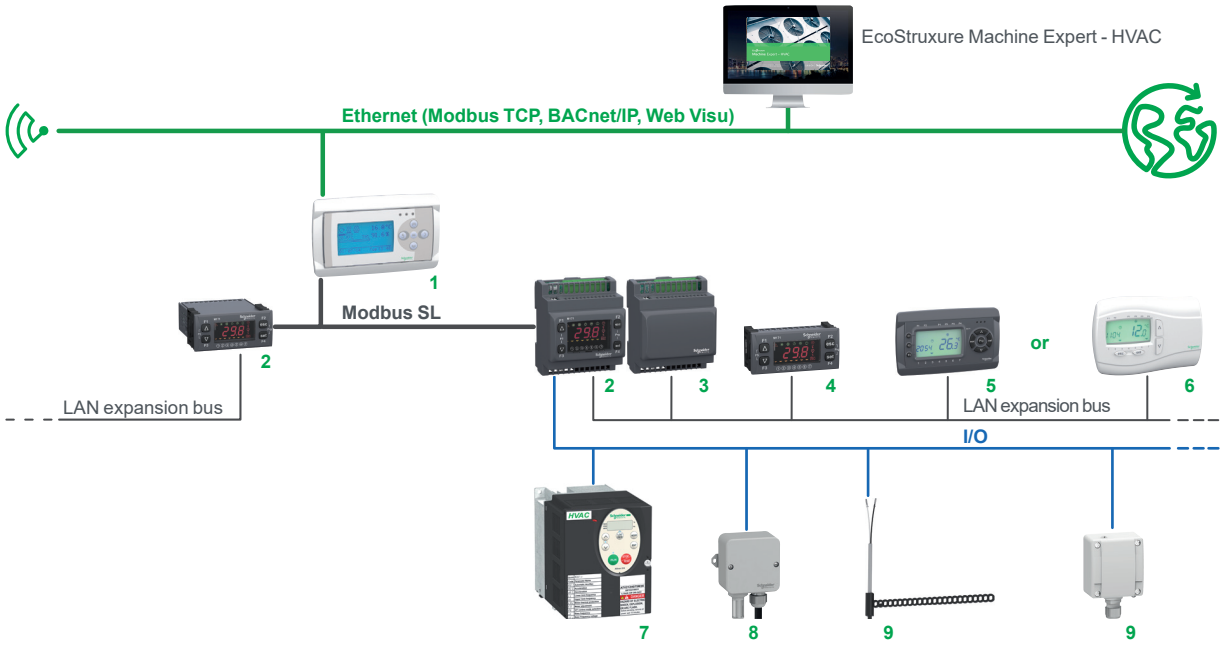
1 ***TM172DCLF●*** *flush mounting display, see page 22*
2 *spaceLYnk gateway (1)*
3 *Harmony STO/STU HMI (1)*
4 ***TM171ALON*** *communication module, see page 34*
5 ***TM171OD●●●*** *Optimized logic controller (18 I/O in 4 DIN), see page 27*
6 ***TM172PB●●●*** *Performance logic controller (7 or 18 I/O in 4 DIN), see page 19*
7 ***TM172PD●●●*** *Performance logic controller (28 or 42 I/O in 8 DIN), see page 19*
8 ***TM172E12R*** *I/O expansion module (12 I/O in 4 DIN), see page 20*
9 ***TM172E28R*** *I/O expansion module (28 I/O in 4 DIN, see page 20*
10 ***TM172DCLWT●*** *wall mounting remote display, see page 22*
11 **TeSys** *D motor starter (1)*
12 *Electromechanical relays, solid state relays (1)*
13 *XMLP pressure transmitter, see page 40*
14 ***TM1ST●●*** *temperature sensor PT1000 or NTC, see page 38*
15 *SPD310 Differential pressure sensor (1)*
16 *H721LC-S6 current transducer (1)*
17 *iEM 3000 energy meter (1)*
18 *Altivar 212 variable speed drive (1)*
19 ***TM171VEVM4*** *electronic expansion valve driver, see page 36*
20 *SE8000 room controller (thermostat) (1)*
21 ***TM1SH●●*** *humidity sensor, see page 39*

(1) Consult this offer on our website

Modicon M171/M172 logic controllers for HVAC solutions

M171 Optimized logic controllers

Modicon M171 Optimized logic controllers for simple and compact machines



1 ***TM171PFE03*** *Performance logic controller, see page 31*
2 ***TM171OFM22R*** *Optimized logic controller - flush mounting, see page 27*
3 ***TM171EO●●*** *I/O expansion module, see page 28*
4 ***TM171DLED*** *remote display, see page 29*
5 ***TM171DLCD2U*** *remote display, see page 29*
6 ***TM171DWAL●●*** *remote wall mounting display, see page 29*
7 *Altivar 212 variable speed drive (1)*
8 ***TM1ST●●*** *temperature sensor PT1000 or NTC, see page 38*
9 ***TM1SH●●*** *humidity sensor, see page 39*

(1) Consult this offer on our website

Modicon M171/M172 logic controllers for HVAC solutions

Application		**Modicon M171 Optimized logic controllers for simple and compact machines**			**Modicon M172 logic controllers for any size of connectable or connected HVAC machines**	
Product name		**Modicon M171 Optimized**			**Modicon M172 Optimized controller**	**Modicon M172 Performance controller**
Applications	Type	Programmable Logic controller				
	HVAC unit	- Air/water-cooled chiller - Rooftop unit - Heat pump - Shelters - Compressor rack - Ventilation unit - Precision air conditioner - Heat recovery unit - Packaged unit - AHU and many more			- Air/water-cooled chiller - Rooftop unit - Heat pump - Shelters - Compressor rack - Ventilation unit - Precision air conditioner - Heat recovery unit - Packaged unit - AHU and many more	
Programming Software		EcoStruxure Machine Expert - HVAC V1.0 or higher				
Maximum number of I/O with expansion modules		28	44		238	
Power Supply		100...240 VAC, isolated	24 VAC/DC for all, except for TM171O●●22S		24 VAC/DC	
Embedded I/Os	Analog Input	5	5		8 or 12	2, 8 or 12
	Digital Input	2	6		2, 8 or 12	2, 8 or 12
	Analog Output	5	5		2, 4 or 6	0, 2, 4 or 6
	Digital Output	4	6		6, 8 or 12	3, 6, 8 or 12
Communication fieldbus and networks	Embedded Communication	- 1 RS485 - 1 LAN expansion bus			- 2 RS485 (Modbus SL or BACnet MS/TP) - 1 CAN expansion bus	▪ 2 RS485 (Modbus SL or BACnet MS/TP) ▪ 1 CAN expansion bus ▪ RJ45 connector ▪ Ethernet
	Optional	None except with a gateway			With TM171A●●● communication modules: - RS485 (Modbus SL or BACnet MS/TP) - CAN bus - RS232 - LonWorks (FFT-10) - Modbus TCP, BACnet /IP, - Ethernet	With TM171A●●● communication modules: - RS485 (Modbus SL or BACnet MS/TP) - CAN bus - RS232 - LonWorks (FFT-10)
	USB port	No (program can be downloaded with the TM171AMFK programming stick and TM171ADMI programming cable)			Yes : 1 USB-Mini-B	Yes: 1 USB-A and 1 USB-Mini-B
	Services	Remote download via Modbus SL			- Download the program via USB-A or Modbus SL - Optional services depending on the Ethernet communication module	- Download the program through USB-A or Modbus SL - Remote access - HTTP Webserver (Webvisu) - FTP client/server - SNPT
Display	Built-in	Built-in versions available			Built-in versions available	Built-in versions available
	Remote	Yes, - with TM171DLED, TM171DLCD, and TM171DWAL2● displays - with TM172DCL●●●● color touch screen displays - with HMI Harmony STU/STO offer, see on our website			Yes, - with TM172DGRP display - with TM172DCL●●●● color touch screen displays - with HMI Harmony STU/STO offer, see on our website	
Mounting		35 mm *(1.38 in)* DIN rail and Flush mounting			35 mm *(1.38 in)* DIN rail, or on panel with TM172AP12PM mounting accessory	
Product certifications		CE, cURus (UL Recognized), CSA, EAC, RCM, RoHS China			CE, cURus (UL Recognized), CSA, EAC, RCM, RoHS China, BACnet BTL	
Reference		**TM171O●M14R, TM171OD14R**	**TM171OF22R, TM171OFM22R TM171O●●22●**		**TM172O●M18R TM172O●28R TM172O●M42R**	**TM172P●G07R TM172P●G18● TM172P●G28● TM172P●G28●I TM172P●G42● TM172P●G42●I**
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Modicon M171/M172 logic controllers for HVAC solutions

M172 Optimized and Performance logic controllers, Remote displays

Application	**Modicon M172 logic controllers for any size of connectable machines**																
Product name	**Modicon M172 Performance**		**Modicon M172 Optimized**		**Modicon M172 Performance**				**Modicon M172 Optimized**		**Modicon M172 Performance**			**Modicon M172 Optimized**		**Modicon M172 Performance**		
Reference	**TM172PBG07R** *(1)*	**TM172PDG07R** *(1)*	**TM172OBM18R** *(1)*	**TM172ODM18R** *(1)*	**TM172PBG18R** *(1)*	**TM172PDG18R** *(1)*	**TM172PDG18S** *(1)*		**TM172OBM28R** *(1)*	**TM172ODM28R** *(1)*	**TM172PBG28R, TM172PBG28RI** *(1)*	**TM172PDG28R, TM172PDG28RI** *(1)*	**TM172PDG28SI** *(1)*	**TM172OBM42R** *(1)*	**TM172ODM42R** *(1)*	**TM172PBG42R, TM172PBG42RI** *(1)*	**TM172PDG42R, TM172PDG42RI** *(1)*	**TM172PDG42S, TM172PDG42SI** *(1)*
Power supply	24 V AC/DC								24 V AC/DC									
Type of mounting	4 DIN, 35 mm/1.38 in ⊔ rail mounting Performance controllers, and Panel mounting with TM172AP12PM mounting accessory *(2)*								8 DIN, 35 mm/1.38 in ⊔ rail mounting Performance controllers, and Panel mounting with TM172AP12PM mounting accessory *(2)*									
Embedded display	No	Built-in display 128x64 LCD with backlight	No	Built-in display 128x64 LCD with backlight	No	Built-in display 128x64 LCD with backlight			No	Built-in display 128x64 LCD with backlight	No	Built-in display 128x64 LCD with backlight		No	Built-in display 128x64 LCD with backlight	No	Built-in display 128x64 LCD with backlight	
Total I/Os	**7**		**18**		**18**				**28**					**42**				
Total Analog Input	**2**		**8**		**8**				**8**					**12**				
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	2		8		8				8					12				
Total Digital Inputs	**2**		**2**		**2**				**8**					**12**				
High speed counter (2 kHz), dry contact	2		2		2				2					2				
24 VAC/DC	–		–		–				6					10				
Total Analog Outputs	**–**		**2**		**2**				**4**					**6**				
0-10 V, or 4-20 mA, or PWM (2 kHz, 24 VDC)	–		2		2				2					2				
0-10 V	–		2		2				2					4				
Total Digital Outputs	**3**		**6**		**6**				**8**					**12**				
Relay 3 A	3		6		6		4		8				6	12				10
SSR 0,5 A	–		–		–		2		–				2	–				2
Compatible expansion module	**TM172E12R**, **TM172E28R**, **TM171EP14R** and **TM171EP27R** (up to 7 I/O expansions max.)								**TM172E12R**, **TM172E28R**, **TM171EP14R** and **TM171EP27R** (up to 7 I/O expansions max.)									
Compatible expansion valve driver	**TM172EVEV1U, TM172EVEV1B, TM172EVEV2B** (up to 4 expansion valve drivers max.)								**TM172EVEV1U, TM172EVEV1B, TM172EVEV2B** (up to 4 expansion valve drivers max.)									
Communication																		
Embedded Ethernet (Modbus TCP, BACnet IP (B-AAC profile), WebVisu)	1		–		1				–		1			–		1		
RS485 (Modbus SL or BACnet MS/TP (B-AAC profile))	2		2		2				2		2			2		2		
CAN expansion bus	1		1		1				1		1			1		1		
Communication module port	1		1		1				1		1			1		1		
USB Mini-B	1		1		1				1		1			1		1		
USB (type A)	1		–		1				–		1			–		1		
µSD Card slot	1		–		1				–		1			–		1		
Optional With communication module (see page 34)	- CAN expansion bus - Modbus TCP - Modbus SL(RS485) - BACnet MS/TP (B-AAC profile) - BACnet IP (B-AAC profile) - RS232 Serial link - LonWorks (FFT-10)																	

(1) Products equipped with an isolated power supply, and two isolated RS485 ports
(2) Accessories to be ordered separately

Application	**Remote displays (compatible with each M172 Logic controller)**						
References	**TM172DGRP**	**TM172DCLWT**	**TM172DCLWTH**	**TM172DCLWTHP**	**TM172DCLFW**	**TM172DCLFG**	
Type of mounting	Remote wall	Remote wall	Remote wall	Remote wall	Remote flush	Remote flush	
Description	LCD display with backlight	LCD display Color touchscreen Temperature	LCD display Color touchscreen Temperature, Relative humidity	LCD display Color touchscreen Temperature, Relative humidity, Presence PIR	LCD display Color touchscreen IP65 (front face)	LCD display Color touchscreen IP65 (front face)	
Programming software	EcoStruxure Machine Expert - HVAC V1.0 or higher						
Product certifications	CE, cURus (UL Recognized), CSA, EAC, RCM, RoHS China						
Communication	CAN expansion bus	Modbus SL		Modbus SL			

Modicon M171/M172 logic controllers for HVAC solutions

M172 logic controllers

4 DIN - with display

8 DIN - without display

M172 Optimized logic controller

4 DIN - without display

8 DIN - with display

M172 Performance logic controller

M172 Optimized and Performance logic controllers

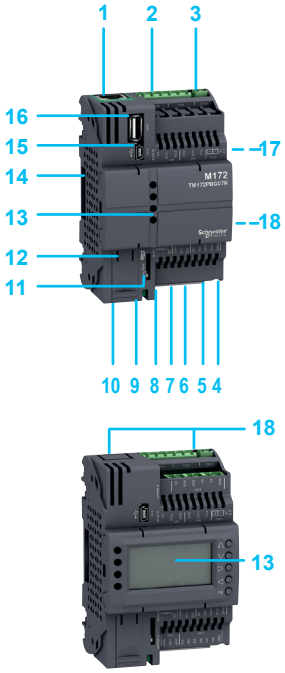
The Modicon M172 logic controllers consist of the M172 Optimized and the M172 Performance logic controllers, differentiated by the connectivity: embedded on M172 Performance, optional on M172 Optimized.
M172 controllers embed 7, 18, 28 or 42 I/O, and can be fitted with a display, with relay outputs, and with SSR outputs, depending on the model.

- The M172 logic controller offer comprises:
  - a M172 model to control from 7 up to 18 embedded I/O (digital and analog), in 4 DIN (controller width is 72 mm /*2.83 in*
  - and M172 models to control from 28 up to 42 embedded I/O (digital and analog), in 8 DIN (controller width 144 mm /*5.66 in*
- Power supply: 24 V ⎓
- Two types of housing:
  - with built-in display
  - without display
- Two types of mounting:
  - On 35 mm/1.38 in ⊔ rail mounting: for M172 controllers to be mounted inside a cabinet
  - On panel with an accessory: for M172 controllers to be mounted on a panel with **TM172AP12PM** fixing accessory
- Communication ports on M172 Optimized logic controllers:
  - Two RS485 for Modbus SL (master/slave) (only 1 master) or 1 for BACnet MS/TP (B-AAC profile, BACnet BTL certified)
  - One for CAN expansion bus
  - Plus one communication module connector
- Communication ports on M172 Performance logic controllers: same as M171 Optimized, plus one RJ45 for Modbus TCP, BACnet IP (B-AAC profile, BACnet BTL certified) and Ethernet
- M172 logic controllers can be connected to communication modules, offering another connection to a CAN expansion bus, Modbus SL or LonWorks, etc., see page 34.
- M172 logic controllers are certified CE, cURus (UL Recognized), CSA, EAC, RCM, RoHS China, and BACnet BTL certified.
- Micro SD card: a slot for a micro SD memory card is available on the front face of the M172 Performance controllers *(1)*.
  The micro SD card is used for:
  - Data logging
  - Webserver storage
- USB programming ports
  - The USB-A port is available on M172 Performance logic controllers, used to transfer programs with a memory stick.
  - USB mini B is available on M172 Optimized and Performance logic controllers, used to connect to a PC for programming, see page 43.

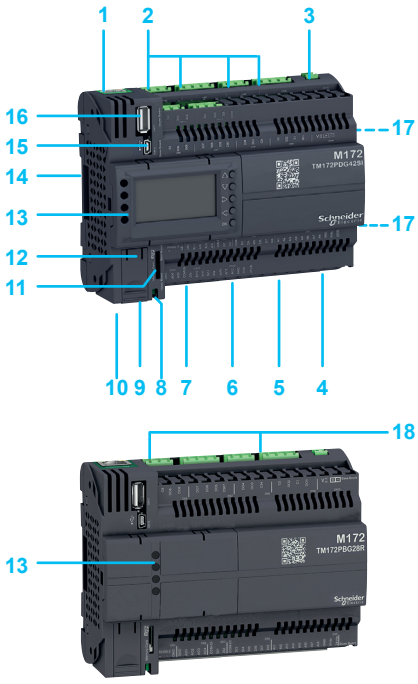
(1) M172 Optimized logic controllers do not have a slot for a micro SD card (no slot can be added later).

Modicon M171/M172 logic controllers for HVAC solutions

M172 logic controllers



4 DIN controller



8 DIN controller

M172 Optimized and Performance logic controllers

M172 logic controllers with 7 or 18 I/O (in 4 DIN: controller width is 72 mm /*2.83 in (1)*

1 RJ45 connector for Ethernet Modbus TCP, BACnet IP (B-AAC profile) *(2)*
2 Connector for removable terminal block for digital outputs
3 Connector for removable terminal block for power supply (24 V ⎓) *(3)*
4 Connector for removable terminal block for analog inputs
5 Connector for removable terminal block for digital intputs
6 Connector for removable terminal block for fast digital inputs (high speed counter)
7 Connector for removable terminal block for analog outputs
8 Connector for removable terminal block for RS485-1 (Modbus SL or BACnet MS/TP) *(3)*
9 Connector for removable terminal block for RS485-2 (Modbus SL or BACnet MS/TP) *(3)*
10 Connector for removable terminal block for CAN expansion bus
11 Slot for micro SD card *(2)*
12 Slot for battery (behind the front flap)
13 On TM17●D●●●: Built-in display, 4 status LEDs and 5 control keys for setting controller parameters
On TM17●B●●●: 4 status LEDs and 5 control keys for setting controller parameters, behind a front panel
14 Connector for communication module
15 USB mini-B port to link a PC
16 USB-A port for USB stick *(2)*
17 Mounting clips for 35 mm/*1.38 in* ⊔ rail mounting
18 Two slots for the **TM172AP12PM** fixing accessory

M172 logic controllers with 28 or 42 I/O (in 8 DIN: controller width is 144 mm /*5.66 in (1)*

1 RJ45 connector for Ethernet Modbus TCP and BACnet IP (B-AAC profile) *(2)*
2 Connector for removable terminal block for digital outputs
3 Connector for removable terminal block for power supply (24 V ⎓) *(3)*
4 Connector for removable terminal block for analog inputs
5 Connector for removable terminal block for digital intputs
6 Connector for removable terminal block for fast digital inputs (high speed counter)
7 Connector for removable terminal block for analog outputs
8 Connector for removable terminal block for RS485-1 (Modbus SL or BACnet MS/TP) *(3)*
9 Connector for removable terminal block for RS485-2 (Modbus SL or BACnet MS/TP) *(3)*
10 Connector for removable terminal block for CAN expansion bus
11 Slot for micro SD card *(2)*
12 Slot for battery (behind the front flap)
13 On **TM172●D●●●●**: Built-in display, 4 status LEDs and 5 control keys for setting controller parameters
On **TM172●B●●●●**: 4 status LEDs and 5 control keys for setting controller parameters, behind a front panel
14 Connector for communication modules
15 USB mini-B port to connect a PC
16 USB-A port for USB stick *(2)*
17 Mounting clips for 35 mm/*1.38 in* ⊔ rail mounting
18 Two slots for the **TM172AP12PM** fixing accessory

(1) TM172ASCTB●●● removable terminal blocks to be ordered separately, see page 17.
(2) Only for M172 Performance
(3) TM172O●●●●, TM172P●G07R, TM172P●G18●, TM172P●G28●I and TM172P●G42●I have an isolated power supply and two isolated RS485 ports.

Modicon M171/M172 logic controllers for HVAC solutions

M172 Optimized logic controllers

M172 Optimized logic controllers: Power supply: 24 V ⎓

35 mm/*1.38 in* ⊔ rail mounting, 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*

TM172OBM18R

TM172ODM18R

TM172OBM28R

TM172ODM28R

TM172OBM42R

TM172ODM42R

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

TM172AP12PM

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

Modicon M171/M172 logic controllers for HVAC solutions

M172 Performance logic controllers

TM172PBG07R

TM172PDG18R

TM172PBG28RI

TM172PDG28RI

TM172PBG42RI

TM172PDG42SI

M172 Performance logic controllers: Power supply: 24 V ⎓

35 mm/*1.38 in* ⊔ rail mounting, 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 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*
				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 ⎓ ■ 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 21

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

Modicon M171/M172 logic controllers for HVAC solutions

M172 logic controllers

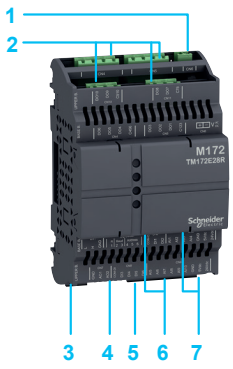
I/O expansion modules

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.

TM172E12R



TM172E28R

TM172E28R

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 for HVAC solutions

M172 logic controllers

I/O expansion modules

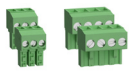
TM172E12R

TM172E28R

I/O expansion modules

35 mm/*1.38 in* ⊔ rail mounting

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*



TM172ASCTB12E

TM172ASCTB28E

TM172AP12PM

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.

Modicon M171/M172 logic controllers for HVAC solutions

M172 logic controllers

Remote displays

Remote displays

Remote color touch screen displays

Six 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. The remote color touch screen displays have the same firmware, meaning they can be swapped interchangeably.

- TM172DCLWT●● are designed for wall mounting and indoor use, depending on the reference, for controlling temperature, relative humidity and PIR presence with built-in sensor.
- TM172DCLF● are designed for flush mounting, and wall mounting with an accessory, and either indoor or outdoor uses, with a white or dark gray housing. An installation 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.

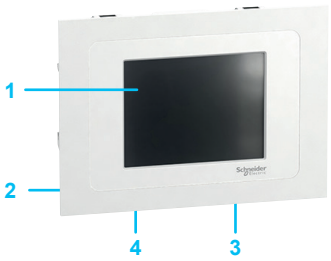
Remote monochrome display

- TM172DGRP monochrome display is dedicated to the M172 Optimized and M172 Performance logic controllers. It is designed for flush mounting, and wall mounting with an accessory, and indoor use. It is programmable with EcoStruxure Machine Expert - HVAC.

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



TM172DCLFW

TM172DCLFG

TM172DCLFW, TM172DCLFG

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

TM172DGRP

TM172DGRP

1 Backlight monochrome LCD screen (240 x 140 pixels)
2 5 control keys
3 CAN bus connector

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

Modicon M171/M172 logic controllers for HVAC solutions

M172 logic controllers

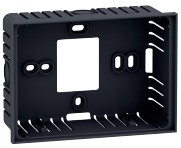
Remote displays

TM172DCLWT●●

TM172DCLFW

TM172DCLFG

TM172DGRP



TM172ABKPG

TM171ABKPG

Remote 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*
		Grey	–	TM172DCLFG	0.205/ *0.452*
Remote display monochrome	■ 5 control keys ■ Backlit LCD, ■ 240 x 140 pixels, ■ Monochrome, ■ With real time clock	Grey		TM172DGRP	0.197/ *0.430*

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*
	Grey wall support for TM172DCLFG display	TM172ABKPG	0.060/ *0.132*
	Wall bracket For TM172DGRP display	TM171ABKPG	0.015/ *0.030*

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

Modicon M171/M172 logic controllers for HVAC solutions

M171 Optimized logic controllers, Remote displays

Application	**Modicon M171 logic controllers for Simple and compact machines**										
Product name	**Modicon M171 Optimized**										
Reference	**TM171OBM14R**	**TM171OD14R**	**TM171ODM14R**		**TM171OBM22R**	**TM171OD22R**	**TM171ODM22R**	**TM171ODM22S**	**TM171OF22R**	**TM171OFM22R**	
Power supply	100-240 VAC				24VAC/DC *(3) (4)*						
Type of mounting	4 DIN, 35 mm/1.38 in ⊔ rail mounting *(1)*				4 DIN, 35 mm/1.38 in ⊔ rail mounting *(1)*				Flush mounting		
Embedded display	–	Built-in display			–	Built-in display					
Total I/Os	**14**				**22**						
Total Analog Inputs	**5**				**5**						
NTC, or PT1000, or digital inputs	2				–						
NTC, or 0-20 mA, or 4-20 mA, or 0-10 V, or 0-5 V, or 0-1 V, or digital inputs	2				2						
NTC, or PT1000, or 0-20 mA, or 4-20 mA, or 0-10 V, or 0-5 V, or 0-1 V, or digital input	1				–						
NTC or digital inputs	–				3						
Total Digital Inputs	**2**				**6**						
open collector or digital inputs *(2)*	2				–						
volt-free in 1 group	–				6						
Total Analog Outputs	**5**				**5**						
open collector (2) for 12 V PWM/PPM or digital inputs	2				–						
open collector for 12 V PWM/PPM	–				2						
0-10 V	2				3						
4-20 mA	1				–						
Total Digital Outputs	**4**				**6**						
Relay 2 A, 230 VAC	4				5			3	5		
open collector	–				1			1	1		
SSR (3 A, 230 VAC)	–				–			2	–		
Maximum I/Os expanded	**22**				**44**						
Compatible expansion module	**TM171EO14R**				**TM171EO15R, TM171EO22R**						
Communication											
Embeded RS485	1	–	1		1	–	1	1	–	1	
LAN expansion bus	1				1						
Connection accessories references (sold in lots of 5)											
Low voltage connector	–				**TM171ACB4OI1M, TM171ACB4OI2M**						
Analog output connector	–				**TM171ACB4OAO1M, TM171ACB4OAO2M**						
Modbus SL connector	–				**TM171ACB4ORS485**	–	**TM171ACB4ORS485**	**TM171ACB4ORS485**	–	**TM171ACB4ORS485**	
LAN expansion bus connector	**TM171ACB4OLAN**				**TM171ACB4OLAN**						

(1) Terminal blocks are supplied with TM171OBM14R, TM171OD14R, and TM171ODM14R.
(2) Both I/O are the same. On the same channel: 2 digital inputs or 2 analog outputs (depending on the configuration).
(3) Except for for TM171ODM22S: 12-24 VAC
(4) Connectors to be ordered separately, see page 29.

Application	**Remote Displays** (compatible with each M171 Logic controller)									
Reference	**TM171DLED**	**TM171DLCD2U**	**TM171DWAL2U**		**TM171DWAL2L**	**TM172DCLWT**	**TM172DCLWTH**	**TM172DCLWTHP**	**TM172DCLFW**	**TM172DCLFG**
Type of mounting	Remote flush	Remote flush	Remote wall		Remote wall	Remote wall	Remote wall	Remote wall	Remote wall	Remote flush
Description	LED display Keyboard: 4 buttons	LCD display Keyboard: 7 buttons	LCD display Keyboard: 4 buttons Without backlight		LCD display Keyboard: 4 buttons With backlight	LCD display Color touchscreen Temperature	LCD display Color touchscreen Temperature, Relative humidity	LCD display Color touchscreen Temperature, Relative humidity Presence PIR	LCD display Color touchscreen IP65 (front face)	LCD display Color touchscreen IP65 (front face)
Programming software	EcoStruxure Machine Expert - HVAC V1.0 or higher				EcoStruxure Machine Expert - HVAC V1.0 or higher					
Product certifications	CE, UL (recognized), cURus, CSA, EAC, RCM, RoHS China.				CE, UL (recognized), cURus, CSA, EAC, RCM, RoHS China.					
Communication	LAN expansion bus				LAN expansion bus	Modbus SL	–	–	–	–

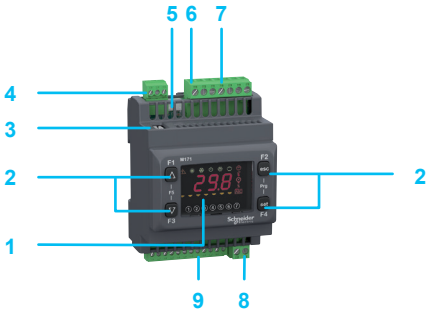
Modicon M171/M172 logic controllers for HVAC solutions

M171 Optimized logic controllers

M171 Optimized controllers

The M171 Optimized logic controllers comprise 10 models that can be used to control from 14 up to 22 embedded I/O (digital and analog).

- Two types of power supply are available:
  - 100-240 V ∿
  - 12-24 V ∿ or 24 V ⎓
- Two types of housing:
  - with built-in display
  - with remote display that can be added by means of the LAN expansion bus
- Two types of mounting:
  - Flush mounting: controllers to be mounted on a cabinet door
  - On 35 mm/1.38 in ⊔ rail mounting: controllers to be mounted inside a cabinet
- Communication ports on M171 Optimized logic controllers:
  - One optional Modbus SL bus
  - One LAN expansion bus
- The M171 Optimized logic controllers are certified CE, UL (recognized), cURus, CSA, EAC, RCM, RoHS China.



35 mm/*1.38 in* ⊔ rail mounting

TM171O●14R Optimized logic controllers

1 Display
2 Four navigation keys for setting controller parameters
3 Programming port (TTL)
4 Removable terminal block for RS 485 serial port (**TM171O●M14R**)
5 Wired connector for LAN expansion bus
6 Mounting clip for 35 mm/*1.38 in* ⊔ rail mounting
7 Removable terminal block for digital outputs
8 Removable terminal block for 100…240 V ∿ power supply
9 Removable terminal block for I/O

TM171O●22R● Optimized logic controllers *(1)*

1 Display
2 Four navigation keys for setting controller parameters
3 Programming port (TTL)
4 Wired connector for RS 485 serial port (**TM171O●M14R**)
5 Mounting clip for 35 mm/*1.38 in* ⊔ rail mounting
6 Removable terminal block for outputs
7 Wired connector for 12-24 V ∿ or 24 V ⎓ power supply, and for low voltage I/O
8 Wired connector for analog output
9 Wired connector for LAN expansion bus

Flush mounting

TM171OF●22R● Optimized logic controllers *(1)*

1 Display
2 Four navigation keys for setting controller parameters
3 Wired connector for RS 485 serial port (**TM171OF●M22R**)
4 Wired connector for analog outputs
5 Wired connector for LAN expansion bus
6 Programming port (TTL)

(1) Connectors to be ordered separately, see page 28.

Modicon M171/M172 logic controllers for HVAC solutions

M171 Optimized logic controllers

TM171OBM14R

TM171OD14R

TM171ODM14R

TM171OBM22R

TM171OD22R

TM171ODM22R

TM171OF22R

TM171OFM22R

M171 Optimized logic controllers: Power supply: 100-240 V ∿

No. of I/O	Number and type of channels: Inputs	Number and type of channels: Outputs	Embedded communication	Display	Reference	Weight kg/*lb*
35 mm/*1.38 in* ⊔ rail mounting *(1)*						
14	**2 digital inputs:** ■ 2 open collector or digital inputs *(2)* **5 configurable analog inputs:** ■ 3 NTC, or PT1000, or digital inputs ■ 2 NTC, or 0-20 mA, or 4-20 mA, or 0-10 V, or 0-5 V, or 0-1 V, or digital inputs	**4 digital outputs:** ■ 3 SPST (2 A, 230 V ∿) with the same common ■ 1 SPDT (2 A, 230 V ∿) **5 analog outputs:** ■ 2 open collector (2) for 12 V PWM/PPM or digital inputs ■ 2 x 0-10 V ■ 1 x 4-20 mA	■ 1 RS485 ■ 1 LAN expansion bus	Remote display (optional)	TM171OBM14R	0.190/ *0.420*
			■ 1 LAN expansion bus	Built-in display	TM171OD14R	0.190/ *0.420*
			■ 1 RS485 ■ 1 LAN expansion bus	Built-in display	TM171ODM14R	0.190/ *0.420*

M171 Optimized logic controllers: Power supply: 12-24 V ∿ or 24 V ⎓ *(3) (4)*

35 mm/*1.38 in* ⊔ rail mounting						
22	**6 digital inputs:** ■ 6 volt-free in 1 group **5 configurable analog inputs:** ■ 3 NTC or digital inputs ■ 2 NTC, or 0-20 mA, or 4-20 mA, or 0-10 V, or 0-5 V, or 0-1 V, or digital inputs	**6 digital outputs:** ■ 3 SPST (2 A, 230 V ∿) with the same common ■ 2 SPST (2 A, 230 V ∿) with independent common ■ 1 open collector **5 analog outputs:** ■ 2 open collector for 12 V PWM/PPM ■ 3 x 0-10 V	■ 1 RS485 ■ 1 LAN expansion bus	Remote display (optional)	TM171OBM22R	0.190/ *0.420*
			■ 1 LAN expansion bus	Built-in display	TM171OD22R	0.190/ *0.420*
			■ 1 RS485 ■ 1 LAN expansion bus	Built-in display	TM171ODM22R	0.190/ *0.420*
		6 digital outputs: ■ 3 SPST (2 A, 230 V ∿) with the same common ■ 2 SSR (3 A, 230 V ∿) ■ 1 open collector **5 analog outputs:** ■ 2 open collector for 12 V PWM/PPM ■ 3 x 0-10 V	■ 1 RS485 ■ 1 LAN expansion bus	Built-in display	TM171ODM22S	0.190/ *0.420*
Flush mounting						
22	**6 digital inputs:** ■ 6 volt-free in 1 group **5 configurable analog inputs:** ■ 3 NTC or digital input ■ 2 NTC, or 0-20 mA, or 4-20 mA, or 0-10 V, or 0-5 V, or 0-1 V, or digital inputs	**6 digital outputs:** ■ 3 SPST (2 A, 230 V ∿) with the same common ■ 2 SPST (2 A, 230 V ∿) with independent common ■ 1 open collector **5 analog outputs:** ■ 2 open collector for 12 V PWM/PPM ■ 3 x 0-10 V	■ 1 LAN expansion bus	Built-in display	TM171OF22R	0.164/ *0.360*
			■ 1 RS485 ■ 1 LAN expansion bus	Built-in display	TM171OFM22R	0.164/ *0.360*

Remote display for M171 Optimized logic controllers

Remote displays		See page 29

Connection accessories for M171 Optimized logic controllers

Connectors	Low voltage connector, Analog output connector, Modbus SL connector, LAN expansion bus connector	See page 29

*(1) Terminal blocks are supplied with **TM171OBM14R**, **TM171OD14R**, and **TM171ODM14R**.*
(2) Both I/O are the same. On the same channel: 2 digital inputs or 2 analog outputs (depending on the configuration).
*(3) Except for for **TM171ODM22S**: 12-24 V ∿.*
(4) Connectors to be ordered separately, see page 28.

Modicon M171/M172 logic controllers for HVAC solutions

M171 Optimized logic controllers

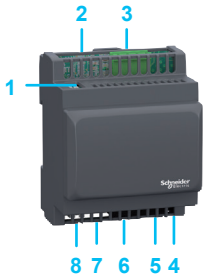
I/O expansion modules

I/O expansion modules

Three I/O expansion modules are available, dedicated to M171 Optimized logic controllers.
- They are used to increase the number of I/O up to 44 on M171 Optimized logic controllers
- Expanded I/O types are digital and analog
- They are connected via the LAN expansion bus on M171 Optimized logic controllers

Compatibility between logic controllers and I/O expansion modules

Logic controller type	Reference	Compatible I/O expansion module (reference)
M171 Optimized	**TM171OBM14R, TM171OD14R, TM171ODM14R**	**TM171EO14R**
	TM171OBM22R, TM171OD22R, TM171ODM22R, TM171ODM22S, TM171OF22R, TM171OFM22R	**TM171EO15R, TM171EO22R**



TM171EO●●R expansion modules *(1)*

35 mm/*1.38 in* ⊔ rail mounting

1 Service port (TTL)
2 Wired connector for removable terminal block for Modbus SL
3 Connector for removable terminal block for digital outputs
4 Wired connector for removable terminal block for power supply (12-24 V ∿ or 24 V ⎓),
5 Wired connector for low voltage I/O
6 Clip for 35 mm/*1.38 in* ⊔ rail mounting
7 Wired connector for removable terminal block for analog outputs
8 Wired connector for removable terminal block for LAN expansion bus

*(1) Removable terminal blocks to be ordered separately, except for **TM171EO14R**.*

I/O expansion modules

35 mm/*1.38 in* ⊔ rail mounting

No. of I/O	Number and type of channels		Compatibility	Embedded communication connection	Reference	Weight kg/*lb*
	Inputs	Outputs				
14	**2 digital inputs:** 2 open collector or digital inputs *(1)* **5 configurable analog inputs:** ■ 3 NTC or digital inputs ■ 2 NTC, or 0-20 mA, or 4-20 mA, or 0-10 V, or 0-5 V, or 0-1 V, or digital inputs	■ 4 digital outputs: ■ 3 SPST (2 A, 230 V ∿) with the same common ■ 1 SPDT (2 A, 230 V ∿) **5 analog outputs:** ■ 2 open collector for 12 V PWM/PPM or digital inputs (1) ■ 2 x 0-10 V ■ 1 x 4-20 mA	TM171OBM14R, TM171OD14R, TM171ODM14R	■ 1 LAN expansion bus	**TM171EO14R**	0.190/ *0.420*
15	**6 digital inputs:** volt-free **3 analog inputs:** NTC or digital inputs	**4 digital outputs:** ■ 3 2 A, 250 V ∿ ■ 1 open collector **2 analog outputs:** open collector (PPM/PWM)	TM171OBM22R, TM171OD22R, TM171ODM22R, TM171ODM22S, TM171OF22R, TM171OFM22R	■ 1 LAN expansion bus	**TM171EO15R**	0.190/ *0.420*
22	**6 digital inputs:** volt-free **5 analog inputs:** ■ 3 NTC or digital inputs ■ 2 NTC, or 0-20 mA, or 4-20 mA, or 0-10 V, or digital inputs	**6 digital outputs:** ■ 5 2 A, 250 V ∿ ■ 1 open collector **5 analog outputs:** ■ 2 open collector (PPM/PWM) ■ 3 x 0-10 V	TM171OBM22R, TM171OD22R, TM171ODM22R, TM171ODM22S, TM171OF22R, TM171OFM22R	■ 1 LAN expansion bus	**TM171EO22R**	0.190/ *0.420*

TM171EO14R

TM171EO15R

TM171EO22R

Connection accessories (2) for expansion modules: TM171EO15R, M171EO22R

Accessories for I/O expansion modules

Designation	Description	Cable length (m/*ft.*)	Unit reference	Weight kg/*lb*
Accessories to be ordered separately				
Analog output connector (0-10 V outputs) **Sold in lots of 5 (item 1)**	Cordset equipped with a 4-pin connector at one end	1/*3.3*	**TM171ACB4OAO1M**	0.075/ *0.170*
		2/*6.6*	**TM171ACB4OAO2M**	0.125/ *0.280*
Low voltage connector **Sold in lots of 5 (item 2)**	Screw terminal block and a cordset equipped with a 20-pin connector at one end	1/*3.3*	**TM171ACB4OI1M**	0.575/ *1.270*
		2/ *6.6*	**TM171ACB4OI2M**	1.120/ *2.470*
Accessory – Supplied with each expansion module				
LAN expansion bus connector **Sold in lots of 5 (item 3)**	Cordset equipped with a 3-pin connector at each end	2/*6.6*	**TM171ACB4OLAN**	0.060/ *0.130*

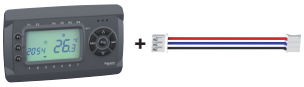
(1) On the same channel: 2 digital inputs or 2 analog outputs (depending on the configuration).
(2) Minimum set for operating controllers.

Modicon M171/M172 logic controllers for HVAC solutions

M171 Optimized logic controllers

Remote displays, Connection accessories

TM171DLED (1)



TM171DLCD2U

TM171DWAL2U

TM171DWAL2L

Remote displays for M171 Optimized logic controllers

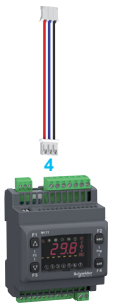
The four available remote displays for the M171 Optimized logic controller offer are distinguished by technology and type of mounting.

- Technology: LED display or LCD display, with or without backlight
- Mounting: flush mounting or wall mounting

The remote displays are connected to the LAN expansion bus which provides the power supply.

Type	Description	Reference	Weight kg/*lb*
Remote flush mounting displays With realtime clock	■ LED display: 4 digits,7 segments ■ Keyboard: 4 buttons ■ Communication port: 1 for LAN expansion bus – with wired connector *(1)* or screw terminal blocks	TM171DLED	0.042/ *0.090*
	■ LCD display (with segments) ■ Keyboard: 7 buttons ■ Flush mounting ■ Communication port: 1 for LAN expansion bus – with screw terminal blocks ■ 2 analog inputs: - 1 NTC or digital input - 1 NTC or 4-20 mA or digital input	TM171DLCD2U	0.170/ *0.370*
Remote wall mounting displays With realtime clock	■ Without backlight	TM171DWAL2U	0.143/ *0.320*
	■ With backlight	TM171DWAL2L	0.143/ *0.320*

Connection accessories *(2)*
for *M171 Optimized logic controller (rail mounting): TM171OBM22R, TM171OD22R, TM171ODM22R and TM171ODM22S*
for *M171 Optimized logic controller (flush mounting): TM171OF22R and TM171OFM22R*



Connection accessories *(2) for M171 Optimized logic controller (rail mounting): TM171OBM14R, TM171OD14R, TM171ODM14R*
N.B.*: terminal blocks are supplied with TM171OBM14R, TM171OD14R, and TM171ODM14R*

TM171ALAN

Connection accessories for M171 Optimized logic controllers to be ordered separately

Type	Item	Description	Cable length (m/*ft.*)	Unit reference	Weight kg/*lb*
Low voltage connector **Sold in lots of 5**	1	Screw terminal block and a cordset equipped with a 20-pin connector at one end	1/*3.3*	TM171ACB4OI1M	0.575/ *1.270*
			2/*6.6*	TM171ACB4OI2M	1.120/ *2.470*
Analog output connector (0-10 V outputs) **Sold in lots of 5**	2	Cordset equipped with a 4-pin connector at one end	1/*3.3*	TM171ACB4OAO1M	0.075/ *0.170*
			2/*6.6*	TM171ACB4OAO2M	0.125/ *0.280*
Modbus connector **Sold in lots of 5**	3	Cordset equipped with a 3-pin connector at one end	1/*3.3*	TM171ACB4ORS485 *(3)*	0.052/ *0.110*
LAN expansion bus connector **Sold in lots of 5**	4	Cordset equipped with a 3-pin connector at each end	2/*6.6*	TM171ACB4OLAN	0.060/ *0.130*
LAN Communication adaptor *Supplied with removable terminal blocs for bus connections*		LAN-RS485 converter (accessory which allows to connect Modbus devices through the LAN connector of the M171 Optimized controller)		TM171ALAN	0.170/ *0.374*

(1) Supplied with LAN expansion bus connector TM171ACB4OLAN.
(2) Minimum set for operating controllers.
(3) This product is only compatible for modbus version of M171 Optimized 22 I/Os.

Modicon M171/M172 logic controllers for HVAC solutions

M171 Performance logic controllers

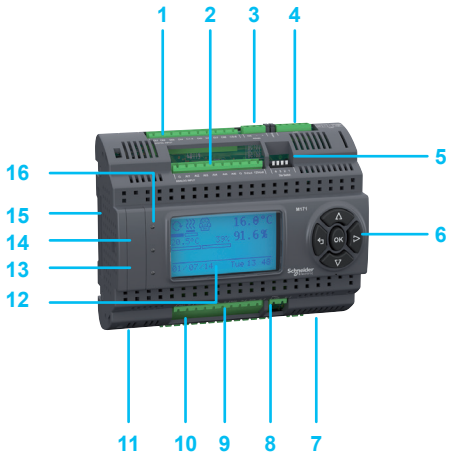
M171 Performance logic controllers

M171 Performance logic controllers comprise 4 models that can be used to control from 3 up to 27 embedded I/O (digital and analog).

- Power supply: 24 V ∿ or 48 V ⎓
- Two types of housing:
  - with built-in display
  - without display

Each controller includes a connection (through the CAN expansion bus or through Modbus SL) for a remote display, available in the catalog.

- Two types of mounting:
  - On 35 mm/*1.38 in* ⊔ rail mounting: controllers to be mounted inside a cabinet
  - Flush mounting: controllers to be mounted on a cabinet door or wall-mounted using the wall bracket accessory, see page 31.
- Communication ports on M171 Performance logic controllers:
  - One Modbus SL master/slave
  - Two USB
  - One CAN expansion bus
  - On flush mounting version:
  - One Modbus SL master/slave
  - One Modbus TCP and BACnet IP (B-AAC profile) (WebVisu)
  - One CAN expansion bus
- M171 Performance logic controllers can be connected to communication modules, adding another connection for the CAN expansion bus, Ethernet network, or Profibus, etc., see page 34.
- M171 Performance logic controllers are certified CE, cURus (UL Recognized), CSA, EAC, RCM, RoHS China.



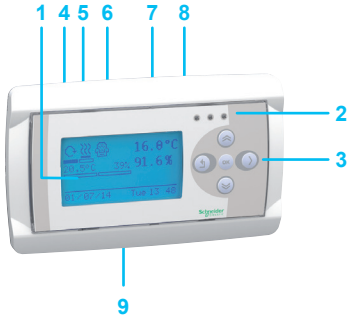
35 mm/*1.38 in* ⊔ rail mounting

TM171P●M27● Performance logic controllers *(1)*

1 Connector for removable terminal block for digital inputs
2 Connector for removable terminal block for analog inputs
3 Connector for removable terminal block for Modbus SL
4 Connector for removable terminal block for CAN expansion bus
5 4-position DIP switches for address selection
6 Five control keys for setting controller parameters
7 Connector for removable terminal block for power supply (24 V ∿, 48 V ⎓)
8 Connector for removable terminal block for fast digital inputs (high speed counter)
9 Connector for removable terminal block for digital outputs
10 Connector for removable terminal block for analog outputs
11 Mounting clips for 35 mm/*1.38 in* ⊔ rail mounting
12 On **TM171PDM27●**: display
On **TM171PBM27R**: 6- and 10-position DIP switches, behind a front panel

Behind the removable protective cover: 13 and 14

13 USB mini-B port to connect a PC
14 USB-A port for USB stick
15 Connector for communication module
16 Three status LEDs



Flush mounting

TM171PFE03R●●● Performance logic controllers *(2)*

1 Display
2 Three status LEDs
3 Five control keys for setting controller parameters

On the rear side of the controller

4 Terminal block for power supply (24 V ∿ or 48 V ⎓)
5 Terminal block for CAN expansion bus
6 Terminal block for Modbus SL
7 Terminal block for analog input
8 RJ45 connector for Ethernet
9 Built-in NTC sensor (analog)

(1) ***TM171ASCTB27*** *removable terminal blocks to be ordered separately, see page 31.*
(2) Terminal blocks supplied with flush mounting version of Performance controllers.

Modicon M171/M172 logic controllers for HVAC solutions

M171 Performance logic controllers

M171 Performance logic controllers: Power supply: 24 V ≂, 48 V ⎓

35 mm/*1.38 in* ⊔ rail mounting

No. of I/O	Number and type of channels		Embedded communication port	Display	Reference	Weight kg/*lb*
	Inputs	Outputs				
27	**9 digital inputs (8 + 1):** ■ 2 groups of 4 digital inputs, 24 V ≂ or 48 V ⎓ ■ 1 fast digital input, or high speed counter volt-free **6 configurable analog inputs:** ■ 2 NTC or digital inputs, ■ 4 NTC, or PT1000, or 4-20 mA, or 0-5 V, or 0-10 V, or 0-30 kΩ/0-5 kΩ variable resistor, or digital inputs	**7 digital outputs:** ■ 2 SPDT (8 A, 230 V ∿) with independent common ■ 5 SPST (5 A, 230 V ∿) with independent common **5 analog outputs:** ■ 3 x 0...+10 V or 4-20 mA ■ 2 x 0...+10 V, or 4-20 mA, or digital output open collector	■ 1 RS485 ■ 1 CAN expansion bus	Remote display (optional)	TM171PBM27R	0.385/ *0.850*
				Built-in display 128x64 LCD with backlight	TM171PDM27R	0.385/ *0.850*
		7 digital outputs: ■ 2 SPDT (8 A, 230 V ∿) with independent common ■ 3 SPST (5 A, 230 V ∿) with independent common ■ 2 SSR (1 A, 230 V ∿) outputs **5 analog outputs:** ■ 3 x 0...+10 V or 4-20 mA ■ 2 x 0...+10 V, or 4-20 mA, or digital output open collector	■ 1 RS485 ■ 1 CAN expansion bus	Built-in display	TM171PDM27S	0.385/ *0.850*

TM171PBM27R

TM171PDM27R

TM171PDM27S

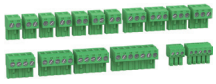
Flush mounting (to be used with the wall bracket accessory – see below)

No. of I/O	Number and type of channels		Embedded communication port	Display	Reference	Weight kg/*lb*
	Inputs	Outputs				
3	**3 configurable analog inputs:** ■ 1 built-in NTC ■ 1 NTC or digital input ■ 1 x 4-20 mA or 0-10 V	–	■ 1 RS485 ■ 1 CAN expansion bus ■ 1 RJ45 for Modbus TCP and BACnet IP (B-AAC profile) and MS/TP (B-AAC profile)	Built-in display	TM171PFE03	0.320/ *0.710*

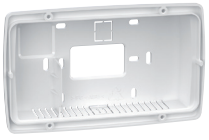
TM171PFE03

Accessories for M171 Performance logic controllers to be ordered separately

Designation	Use	Reference	Weight kg/*lb*
Screw terminal blocks	For **TM171PBM27R**, **TM171PDM27R**, and **TM171PDM27S**	TM171ASCTB27	0.100/ *0.220*
Wall bracket for flush mounting Performance logic controllers	For **TM171PFE03**	TM171ABKPB	0.015/ *0.030*



TM171ASCTB27



TM171ABKPB

Modicon M171/M172 logic controllers for HVAC solutions

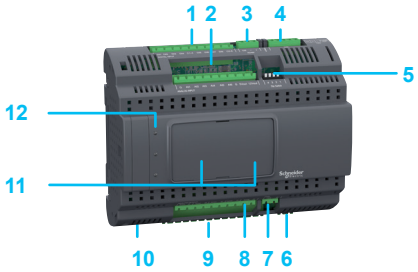
M171 Performance logic controllers
I/O expansion modules

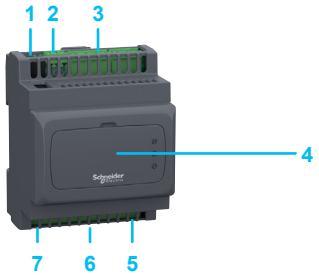
I/O expansion modules

Two I/O expansion modules are available, dedicated to M171 Performance logic controllers, and also compatible with M172 logic controllers.

- They are used to increase the number of I/O:
  - up to 351 on M171 Performance logic controllers
  - up to 366 on M172 logic controllers
- Expanded I/O types are digital and analog
- They are connected via the CAN expansion bus on M171 Performance and M172 logic controllers
- They are compatible with either Performance or Optimized logic controllers

Logic controllers	Compatible I/O expansion module (reference)
M172 Optimized logic controllers (**TM172O●●●●**)	**TM171EP14R**, **TM171EP27R**
M172 Performance logic controllers (**TM172P●●●●**)	**TM171EP14R**, **TM171EP27R**
M171 Optimize logic controllers (**TM171O●●●●**)	–
M171 Performance logic controllers (**TM171P●●●●**)	**TM171EP14R**, **TM171EP27R**





35 mm/*1.38 in* ⊔ rail mounting I/O expansion modules

TM171EP27R expansion module *(1)*

1 Connector for removable terminal block for digital inputs
2 Connector for removable terminal block for analog inputs
3 Connector for removable terminal block for Modbus SL
4 Connector for removable terminal block for CAN expansion bus
5 4-position DIP switches for address selection
6 Connector for removable terminal block for power supply (24 V ≂, 48 V ⎓)
7 Connector for removable terminal block for fast digital inputs
8 Connector for removable terminal block for digital outputs
9 Connector for removable terminal block for analog outputs
10 Clip for 35 mm/*1.38 in* ⊔ rail mounting
11 6- and 10-position DIP switches for address selection
12 3 status LEDs

TM171EP14R expansion module *(1)*

1 4-position DIP switches
2 Connector for removable terminal block for CAN expansion bus
3 Removable terminal block for digital outputs
4 Behind the removable protective cover: Service port (TTL)
5 Connector for low voltage I/O
6 Clip for 35 mm/*1.38 in* ⊔ rail mounting
7 Connector for removable terminal block for power supply (24 V ≂)

(1) Removable terminal blocks to be ordered separately, see page 33

Modicon M171/M172 logic controllers for HVAC solutions

M171 Performance logic controllers
I/O expansion modules

TM171EP14R

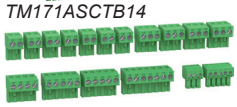
TM171EP27R

I/O expansion modules

35 mm/*1.38 in* ⊔ rail mounting

No. of I/O	Number and type of channels		Compatibility with logic controller	Embedded communication connection	Reference	Weight kg/*lb*
	Inputs	**Outputs**				
14	**4 digital inputs:** 4 x 24 V ∿ or 24V ⎓ *(1)* **4 analog inputs:** (configurable in pairs) 4 NTC, or PT1000, or PTC, or 4-20 mA, or 0-5 V, or 0-10 V, or digital inputs	**4 digital outputs:** ■ 1 SPDT (5 A, 230 V ∿) with independent common ■ 3 SPST (3 A, 230 V ∿) with independent common **2 analog outputs:** ■ 2 x 0-10 V (1)	TM171P●●●● TM172●●●●	■ 1 CAN expansion bus	**TM171EP14R**	0.190/ *0.420*
27	**9 digital inputs (8 + 1):** ■ 2 groups of 4 digital inputs, 24 V ≂ or 48 V ⎓ ■ 1 fast digital input or high speed counter, volt-free **6 analog inputs:** ■ 2 NTC or digital inputs ■ 4 NTC, or 4-20 mA, or 0-10 V, or digital inputs	**7 digital outputs:** ■ 2 SPDT (8 A, 230 V ∿) with independent common ■ 5 SPST (5 A, 230 V ∿) with independent common **5 analog outputs:** ■ 5 x 0-10 V, or 4-20 mA	TM171P●●●●, TM172●●●●	■ 1 CAN expansion bus	**TM171EP27R**	0.385/ *0.850*

TM171ASCTB14


TM171ASCTB27

Accessories for I/O expansion modules to be ordered separately

Designation	Description	Unit reference	Weight kg/*lb*
Screw terminal blocks (inputs, outputs, and communication bus)	14 I/O – For TM171EP14R	**TM171ASCTB14**	0.050/ *0.110*
	27 I/O – For TM171EP27R	**TM171ASCTB27**	0.100/ *0.220*

(1) On the same channel: 2 digital inputs or 2 analog outputs (depending on the configuration).
(2) Minimum set for operating controllers.

Modicon M171/M172 logic controllers for HVAC solutions

Communication modules

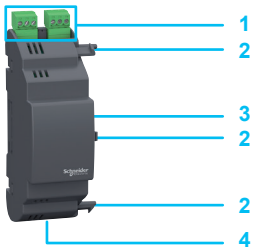
Communication modules

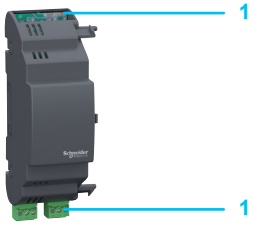
The communication module offer is dedicated to M171 Performance and M172 logic controllers *(1)*.
The 8 optional modules provide specific connections:

- To fieldbuses, including:
  - CAN bus
  - Modbus TCP
  - Profibus
  - Modbus SL (RS 485)
  - BACnet MS/TP (B-AAC profile)
  - BACnet IP (B-AAC profile)
  - RS 232 serial link
  - LonWorks (FFT-10)
  - Konnex (KNX) via Schneider Electric' spaceLYnk gateway *(1)*
- To services, including:
  - Ethernet
  - WebVisu and remote download functions
- They are mounted by simply interlocking on the left-hand side of M171 Performance or M172 logic controllers *(1)*. Only one communication module can be added to a logic controller.
- The communication module is powered by the controller.
- Each communication module has its own type of connector, adapted to the bus or communication network, see page 35.
- They are compatible with either Performance or Optimized logic controllers

Logic controllers	Compatible Communication modules (reference)
M172 Optimized logic controllers (**TM172O●●●●**)	**TM171ACAN, TM171AMB, TM171ARS485, TM171ARS232, TM171ALON, TM171AETH, TM171AETHRS485**
M172 Performance logic controllers (**TM172P●●●●**)	**TM171ACAN, TM171AMB, TM171ARS485, TM171ARS232, TM171ALON**
M171 Optimize logic controllers (**TM171O●●●●**)	–
M171 Performance logic controllers (**TM171P●●●●**)	**TM171ACAN, TM171AETH, TM171APBUS, TM171AMB, TM171ARS485, TM171ARS232, TM171AETHRS485, TM171ALON**

TM171A●●● communication modules





1 Communication connector *(2)*
2 Locking device
3 Expansion connector to the controller
4 Clip for 35 mm/*1.38 in* ⊔ rail mounting

(1) spaceLYnk offer: please consult the offer on its website
(2) The communication connector type depends on the communication modules, see page 35.

Modicon M171/M172 logic controllers for HVAC solutions

Communication modules

Communication modules

35 mm/*1.38 in* ⊔ rail mounting

Fieldbus, services access	Compatibility with logic controller	Communication port	Reference *(1)*	Weight kg/*lb*
TM171ACAN ■ CAN	M172 Optimized, M172 Performance, M171 Performance	■ 2 screw terminal blocks (1)	**TM171ACAN**	0.077/ *0.170*
TM171AETH ■ Modbus TCP ■ Ethernet ■ BACnet IP (B-AAC profile) ■ WebVisu and remote download functions	M171 Performance M172 Optimized	■ 1 RJ45	**TM171AETH**	0.077/ *0.170*
TM171APBUS ■ Profibus	M171 Performance	■ 1 SUB-D 9	**TM171APBUS**	0.077/ *0.170*
TM171AMB ■ Modbus SL (RS485)	M172 Optimized, M172 Performance, M171 Performance	■ 2 screw terminal blocks (1)	**TM171AMB**	0.077/ *0.170*
TM171ARS485 ■ Modbus SL or BACnet MS/TP (B-AAC profile)	M172 Optimized, M172 Performance, M171 Performance	■ 2 screw terminal blocks (1)	**TM171ARS485**	0.077/ *0.170*
TM171ARS232 ■ RS 232 serial link ■ Relay output	M172 Optimized, M172 Performance, M171 Performance	■ 1 SUB-D 9 for RS 232 ■ 1 screw terminal block for relay output (1)	**TM171ARS232**	0.077/ *0.170*
TM171AETHRS485 ■ Modbus TCP and BACnet/IP ■ Modbus SL or BACnet MS/TP (B-AAC profile) ■ WebVisu and remote download functions ■ Ethernet	M171 Performance M172 Optimized	■ 1 RJ45 for Ethernet ■ 2 screw terminal blocks for RS485 (1)	**TM171AETHRS485**	0.077/ *0.170*
TM171ALON ■ LonWorks (FFT-10)	M172 Optimized, M172 Performance, M171 Performance	■ 1 screw terminal block for LON bus	**TM171ALON**	0.077/ *0.170*

(1) Removable terminal blocks supplied with communication modules.

Modicon M171/M172 logic controllers for HVAC solutions

Electronic expansion valve drivers

Modicon M172 EEVD

Modicon M171 EEVD

Electronic expansion valve drivers

Electronic expansion valves drivers are specifically designed to control electronic expansion valves used in various types of refrigeration systems.
They regulate the superheat level by modulating the valve position and can be used with various type of refrigerants and for many applications, from small residential unit to large HVAC systems. The control system optimizes the superheat control and increase the energy savings of the unit.

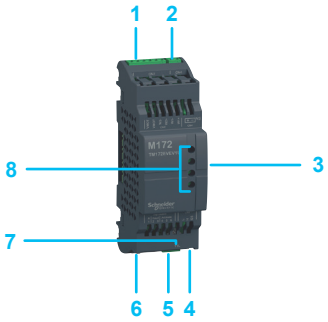
Two versions of drivers are available:

- Modicon M172 EEVD: Electronic Expansion Valve Drivers that are used in combination of the Modicon M172 controller range. The pressure and temperatures sensors are wired to the Modicon M172 controller which manages the control algorithm. The user has the choice to use preprogrammed superheat functions or to create his own control algorithm. This provides a very optimized and flexible solution.
  Several versions are available depending of the valve technology (unipolar or bipolar) and the number of valves to control (single or dual valves). Those drivers are compatible with the battery backup which provides energy to close the valve in case of power failure.
- Modicon M171 EEVD: Superheat Electronic Expansion Valve Driver that can be used independently to any other controller. The temperature and pressure sensors are directly wired to the driver and the embedded control algorithm regulates the superheat. This driver is equipped with Modbus SL communication which allows to communicate with the Modicon M171/M172 or third party Modbus devices for remote monitoring and setting configuration.

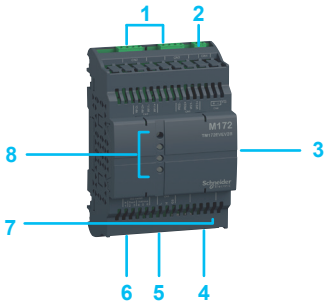
Logic controllers	Compatible EEVD	
M172 Optimized logic controllers (**TM172O●●●●**)	TM172EVEV1U, TM172EVEV1B, TM172EVEV2B	TM171VEVM4
M172 Performance logic controllers (**TM172P●●●●**)		
M171 Optimized logic controllers (**TM171O●●●●**)	–	
M171 Performance logic controllers (**TM171P●●●●**)	–	

- They are certified CE, UL, CSA, EAC, RoHS China

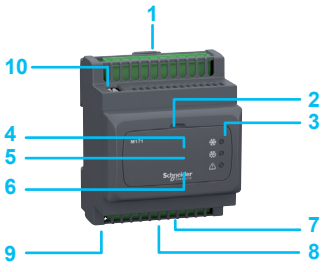
35 mm/*1.38 in* ⊔ rail mounting



TM172EVEV1U, TM172EVEV1B



TM172EVEV2B



TM171VEVM4

Modicon M172 EEVD *(1)*
1 Valve Outputs terminal block - CN2, CN3
2 Power supply terminal block - CN4
3 Battery backup connector
4 CAN Expansion bus port terminal block - CN1
5 Clip-on lock for 35 mm/1.38 in ⊔ rail
6 Dip switch
7 TTL programming port
8 Status LEDs

Modicon M171 EEVD *(2)*
1 Output terminal block and power supply connector (24 V ≂)
2 Protective cover
3 Status LEDs
Behind the removable protective cover:
4 6-position DIP switches
5 Status LED (for operation with TM171AMFK programming stick)
6 LAN serial port for connecting TM171DLED remote display
7 Terminal block for analog/digital inputs
8 Clip for 35 mm/1.38 in ⊔ rail mounting
9 Modbus (RS 485) port
10 TTL programming port

(1) Screw terminal blocks are delivered with ,TM171EVEV●● electronic expansion valve drivers.
(2) Screw terminal blocks to be ordered separately, see page 37.

Modicon M171/M172 logic controllers for HVAC solutions

Electronic expansion valve drivers

TM172EVEV1U

TM172EVEV1B

TM172EVEV2B

TM171VEVM4

TM172EVEVBAT

TM171ASCTBVEV

Electronic expansion valve drivers

Modicon M172 EEVD

Application	Communication	Size *(3)*	Reference	Weight kg/*lb*
EEVD for single valve unipolar *(1) (2)*	CAN expansion Bus	2 DIN	TM172EVEV1U	0.087/ *0.191*
EEVD for single valve bipolar *(1) (2)*	CAN expansion Bus	2 DIN	TM172EVEV1B	0.089/ *0.196*
EEVD for dual valves bipolar *(1) (2)*	CAN expansion Bus	4 DIN	TM172EVEV2B	0.119/ *0.262*

Modicon M171 EEVD

Application	Number and type of channels		Reference	Weight kg/*lb*
	Inputs	Outputs		
Superheat EEVD RS485 for Modbus SL, for single valve Size: 4 DIN *(3)* (Screw terminal blocks to be ordered separately)	**2 digital inputs:** ■ 2 volt-free **4 analog inputs:** ■ 2 NTC ■ 2 PT1000, 4-20 mA, or 0-5 V, or 0-10 V	**2 digital outputs:** ■ 1 open collector (100 mA, 12 V ⎓) ■ 1 SPST NO relay contact, 5 A, ∿ 250 V	TM171VEVM4	0.190/ *0.420*

Accessories for electronic expansion valve drivers: to be ordered separately

Designation	Use	To use with	Reference	Weight kg/*lb*
Battery backup	To provide power when the primary source of power is unavailable.	TM172EVEV1U TM172EVEV1B TM172EVEV2B	TM172EVEVBAT	0.157/ *0.346*
Screw terminal blocks	For connecting Power supply, sensor power supply, digital and analog I/O, Modbus link	TM171VEVM4	TM171ASCTBVEV	0.050/ *0.110*

(1) Compatible with Battery backup TM172EVEVBAT
(2) Removable screw terminal blocks are included with TM172EVEV●● drives.
(3) in 2 DIN: controller width is 36 mm (1.41 in) in 4 DIN: controller width is 72 mm /2.83 in).

Modicon M171/M172 logic controllers for HVAC solutions

Measurement accessories

Measurement accessories

Designation	Use ■ Applications	Description	Cable length m *(ft)*	Unitreference	Sold in lots of *(1)*	Weight kg/ *lb*
Temperature control						
NTC probes	Multi-purpose ■ Temperature control: - 50…+110 °C *(-122…+230 °F)*	- IP 68 - Grey - Equipped with 2 conductor cables for controller side	1.5 *(4.92)*	TM1STNTCRN52015	8	0.144/*0.320*
				TM1STNTCRN5201P	100	0.144/*0.320*
			3 *(9.84)*	TM1STNTCRN52030	5	0.180/*0.400*
				TM1STNTCRN5203P	50	0.180/*0.400*
			5 *(16.40)*	TM1STNTCRN52050	4	0.228/*0.500*
				TM1STNTCRN5205P	25	0.228/*0.500*
NTC probes	Multi-purpose ■ Temperature control: - 50…+110 °C *(-122…+230 °F)*	- IP 67 - Grey - Equipped with 2 conductor cables for controller side	1.5 *(4.92)*	TM1STNTCRN61515	8	0.104/*0.230*
				TM1STNTCRN6151P	100	0.104/*0.230*
			3 *(9.84)*	TM1STNTCRN61530	5	0.125/*0.280*
				TM1STNTCRN6153P	50	0.125/*0.280*
			5 *(16.40)*	TM1STNTCRN61550	4	0.164/*0.360*
				TM1STNTCRN6155P	25	0.164/*0.360*
NTC probes	Multi-purpose ■ Temperature control: - 50…+110 °C *(-122…+230 °F)*	- FAST - IP 67 - Grey - Equipped with 2 conductor cables for controller side	1.5 *(4.92)*	TM1STNTCSF44015	8	0.144/*0.320*
				TM1STNTCSF4401P	100	0.144/*0.320*
			3 *(9.84)*	TM1STNTCSF44030	5	0.175/*0.390*
				TM1STNTCSF4403P	50	0.175/*0.390*
NTC probes	Multi-purpose ■ Temperature control: - 50…+110 °C *(-122…+230 °F)*	- IP 68 - Grey - Equipped with 2 conductor cables for controller side	1.5 *(4.92)*	TM1STNTCSN62015	8	0.144/*0.320*
				TM1STNTCSN6201P	100	0.144/*0.320*
			3 *(9.84)*	TM1STNTCSN62030	5	0.175/*0.390*
				TM1STNTCSN6203P	50	0.175/*0.390*
			5 *(16.40)*	TM1STNTCSN62050	4	0.232/*0.510*
				TM1STNTCSN6205P	25	0.232/*0.510*
NTC probes with a strap	Pipe ■ Temperature control: - 50…+110 °C *(-122…+230 °F)*	- IP 68 - Grey - Equipped with 2 conductor cables for controller side - Equipped with strap	1.5 *(4.92)*	TM1STNTCTN62015	8	0.152/*0.340*
				TM1STNTCTN6201P	100	0.152/*0.340*
			3 *(9.84)*	TM1STNTCTN62030	5	0.180/*0.400*
				TM1STNTCTN6203P	50	0.180/*0.400*
PT1000 probes	Multi-purpose ■ Temperature control: - 50…+110 °C *(-122…+230 °F)*	- IP 68 - Green - Equipped with 2 conductor cables for controller side	1.5 *(4.92)*	TM1STPTTSN62015	8	0.144/*0.320*
				TM1STPTTSN6201P	100	0.144/*0.320*
			3 *(9.84)*	TM1STPTTSN62030	5	0.175/*0.390*
				TM1STPTTSN6203P	50	0.175/*0.390*
			5 *(16.40)*	TM1STPTTSN62050	4	0.232/*0.510*
				TM1STPTTSN6205P	25	0.232/*0.510*
PT1000 probes	Multi-purpose ■ Temperature control: - 50…+110 °C *(-122…+230 °F)*	- IP 68 - Green - Equipped with 2 conductor cables for controller side	1.5 *(4.92)*	TM1STPTTSN52015	8	0.136/*0.300*
				TM1STPTTSN5201P	100	0.136/*0.300*
			3 *(9.84)*	TM1STPTTSN52030	5	0.175/*0.390*
				TM1STPTTSN5203P	50	0.175/*0.390*
			5 *(16.40)*	TM1STPTTSN52050	4	0.232/*0.510*
				TM1STPTTSN5205P	25	0.232/*0.510*

(1) The given value is the number of products delivered for one ordered reference.

Modicon M171/M172 logic controllers for HVAC solutions

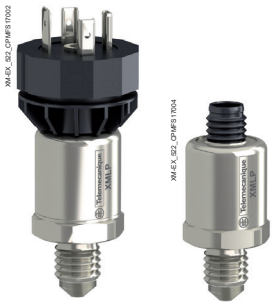
Measurement accessories

Measurement accessories

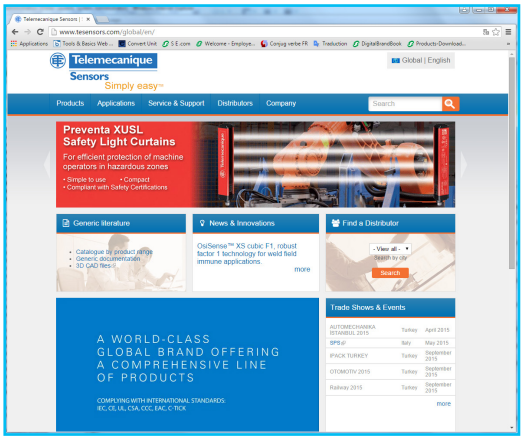
Designation	Use ■ Applications	Description	Reference	Weight kg/ *lb*
Temperature control				
NTC probe 	Outside air ■ Temperature control: -50…100 °C *(-58...212 °F)*	- IP 65 - Wall mounting - NTC 10kOhm /25°C	TM1STNTCW69755	0.050/ *0.110*
NTC probe 	Inside air (room) ■ Temperature control: -25…40 °C *(-13…104 °F)*	- IP 30 - Indoor wall mounting - NTC 10kOhm /25°C	TM1STNTCWN75750	0.050/ *0.110*
Humidity control				
Humidity probe 	Multi-purpose ■ Humidity control: 0…100%	- IP 65 - Wall mounting - 4-20 mA	TM1SHC4	0.140/ *0.308*
Humidity & temperature control				
Humidity & temperature probes 	Multi-purpose ■ Humidity control: 0…100% ■ Temperature control: -40…60 °C *(-40...140 °F)*	- IP 65 - Wall mounting - 4-20 mA, NTC 10kOhm /25°C	TM1SHTCN4	0.140/ *0.308*
	Multi-purpose ■ Humidity control: 0…100% ■ Temperature control: -40…60 °C *(-40...140 °F)*	- IP 65 - Wall mounting - 2x 4-20 mA	TM1SHTCC4	0.140/ *0.308*
	Multi-purpose ■ Humidity control: 0…100% ■ Temperature control: -40…60 °C *(-40...140 °F)*	- IP 65 - Wall mounting - 2x Modbus ports embedded (RS-485 / Modbus RTU)	TM1SHTM4	0.140/ *0.308*

Modicon M171/M172 logic controllers for HVAC solutions

Pressure transmitters



XMLP *pressure transmitters*



Discover XMLP offer on Telemecanique Sensors

XMLP pressure transmitters

Schneider Electric recommends his partner Telemecanique Sensors, which proposes the range of **XMLP** pressure transmitters.

These transmitters integrate a metal pressure measuring cell.
This measuring cell, which is welded directly onto the AISI 316L stainless steel transmitter body, offers the following advantages:

- An all-metal pressure chamber, with no elastomer gasket in contact with the fluid
- Compatibility with a large number of fluids: air, fresh water, hydraulic oils, refrigeration fluids, all fluids or gases compatible with AISI 316L stainless steel

> Pressure transmitters can control fluids ranging in temperature from -30 to120 °C. *(-22 to 248°F)*

General characteristics

> Made of stainless steel, **XMLP** pressure transmitters are compact and rugged.
> Their degree of protection varies according to the type of connector:
- IP 65 for EN 175301-803-A connector versions
- IP 65 and IP 67 for Packard Metri-Pack connector versions
- IP 65, IP 67 and IP 69K for M12 connector versions

> With typical precision better than 0.5% of the rating, **XMLP** transmitters are suitable for industrial applications such as HVAC systems (for ratings greater than or equal to 9 bar or 100 psi only)
> Their power supply *(1)* depends on the type of analogue output:
- 5 V +/- 10% for the 0.5…4.5 V ratiometric output
- 12 or 24 V (nominal), operating from 7 to 33 V for the 4…20 mA output
- 24 V (nominal), operating from 12 to 33 V for the 0…10 V output

More information on catalog

Functions

XMLP pressure transmitters have an analogue output which delivers a signal proportional to the measured pressure.
This output can be one of the following types:

- 4…20 mA
- 0…10 V
- 0.5…4.5 V ratiometric

> The pressure ranges available are:

■ vacuum measuring
- -1…0 bar
- -14.5…0 psi

■ pressure measuring
- 0…600 bar
- 0…6,000 psi

■ combined pressure measuring (vacuum and pressure)
- -1…25 bar
- -14.5…60 psi

> The **XMLP** offer is available with four types of electrical connection:
- M12, 4-pin connector
- EN 175301-803-A (ex DIN 43650) connector
- Packard Metri-Pack 150 connector
- 2 m PVC cable

> Several types of fluid connection are available:
- G1/4 A male
- 1/4”-18NPT male
- SAE 7/16-20UNF-2A male
- SAE 7/16-20UNF-2B female (with or without Schrader pin depending on the model)

More information on **XMLP** pressure transmitters catalog

(1) Use Safety Extra Low Voltage (SELV) or Protected Extra Low Voltage (PELV) power supply.

Modicon M171/M172 logic controllers for HVAC solutions

Variable speed drives

Application	Type of machine controlled	Compressor		
	Number of phases	3		
	Type of motor	Asynchronous	Asynchronous and Synchronous	Asynchronous and Synchronous for scroll
Compressor size	**0.18 kW** *(0.25 HP)*	**Altivar 12** Consult catalog Ref. DIA2ED2130101EN	**Altivar 320** Consult catalog Ref. DIA2ED2160311EN	–
	0.37 kW *(0.5 HP)*			–
	0.75 kW *(1 HP)*			**Altivar 212** Consult catalog Ref. DIA2ED2101102EN
	2.2 kW *(0.25 HP)*			
	4.0 kW *(5 HP)*			
	7.5 kW *(10 HP)*	–		
	15 kW *(20 HP)*	–		
	18.5 kW *(25 HP)*	–	–	
	22 kW *(30 HP)*	–	–	
	30 kW *(40 HP)*	–	–	
	37 kW *(50 HP)*	–	–	
	45 kW *(60 HP)*	–	–	
	55 kW *(67 HP)*	–	–	
	75 kW *(100 HP)*	–	–	
	90 kW *(120 HP)*	–	–	–
	110 kW *(150 HP)*	–	–	–
	315 kW *(422 HP)*	–	–	–
	355 kW *(480 HP)*	–	**Altivar Process Drive Systems** *(1)* Consult catalog Ref. DIA2ED2140502EN	–
	400 kW *(540 HP)*	–		–
	450 kW *(603 HP)*	–		–
	500 kW *(670 HP)*	–		–
	560 kW *(750 HP)*	–		–
	630 kW *(850 HP)*	–		–
	710 kW *(950 HP)*	–		–
	800 kW *(1100 HP)*	–		–

Application	Type of machine controlled	Fan	
	Number of phases	3	
Fan size	**0.18 kW** *(0.25 HP)*	**Altivar 12** Consult catalog Ref. DIA2ED2130101EN	–
	0.37 kW *(0.5 HP)*		–
	0.75 kW *(1 HP)*		**Altivar 212** Consult catalog Ref.DIA2ED2101102EN
	2.2 kW *(0.25 HP)*		
	4.0 kW *(5 HP)*		
	7.5 kW *(10 HP)*	–	
	15 kW *(20 HP)*	–	
	75 kW *(100 HP)*	–	
	> 75 kW *(> 100 HP)*	–	**Altivar Process Drive Systems** *(1)* Consult catalog Ref. DIA2ED2140502EN

Compatible range of variable speed drives

(1) Altivar Process Drive Systems is a customized offer based on Altivar Process ATV600 products.

Modicon M171/M172 logic controllers for HVAC solutions

EcoStruxure Machine Expert - HVAC programming software

Software solution

EcoStruxure Machine Expert - HVAC programming software

EcoStruxure Machine Expert - HVAC programming software is compliant with IEC 61131-3. It can be used to develop, configure, and commission HVAC solution systems.

It includes:

- Programming Modicon M171/M172 logic controllers (Performance and Optimized) and remote display units
- Setting up expansion buses and networks
- Creating the screen of the displays (built-in and displays of the M171/M172 logic controller offer)
- Configuring BMS communication modules on BACnet MS/TP (B-AAC profile), Modbus SL, Modbus TCP, BAcnet MS/TP, BACnet IP (B-AAC profile), and LonWorks (FFT-10)
- Dedicated libraries such as:
  - a library of application function blocks
  - a library of Tested, Validated, and Documented Applications (TVDA)
- Full simulation mode

General characteristics

Programming languages	■ ST (Structured Text) ■ FBD (Function Block Diagram) ■ LD (Ladder) ■ IL (Instruction List) ■ SFC (Sequential Function Chart)
Applications	■ Graphical and text-based languages: - Adaptation to each developer background - Library management - Code debugging - Parameter definition - Simulation mode ■ Advanced programming: - Vectors - Pointers
System solutions management	■ Multi-target project ■ Management of Modbus data ■ Data exchange between several Modicon **M171/M172 Performance** logic controllers
Graphical user interface	■ Graphic display: - Multipage - Buttons - Edit box - Static text - Images - Animations - Bars - Lists of data (parameters/variables/alarms) ■ Configurable buttons ■ Multilanguage ■ Automatic documentation
Communication bus configurators	■ Control networks: Modbus TCP, Modbus SL, Profibus ■ Expansion bus fieldbus: CAN expansion bus ■ BMS connectivity: BACnet MS/TP (B-AAC profile), BACnet IP (B-AAC profile), LonWorks (FFT-10)
Advanced simulation options	■ Full simulation - I/O emulation - HMI - IEC code - Live debug - Triggers - Oscilloscope
Advanced debugging and simulation options	■ Remote control/download: - Modbus SL & TCP - CAN - Modem ■ Parameter management ■ Status monitoring ■ Field test: - Oscilloscope - Debug window - Export to Excel

Modicon M171/M172 logic controllers for HVAC solutions

EcoStruxure Machine Expert - HVAC programming software

EcoStruxure Machine Expert - HVAC programming software

Programming software

EcoStruxure Machine Expert - HVAC software is supplied by downloading from our website
The product version concerned offers the EcoStruxure Machine Expert - HVAC functions associated with logic controllers.

Operative System
- Windows 8/8.1, 64 Bit
- Windows 10, 64 Bit

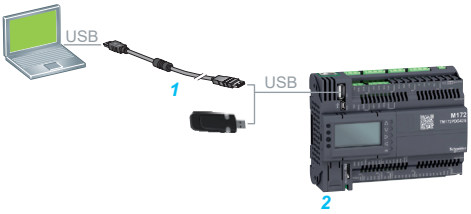
Hardware requirements
- Processor Intel Pentium 1.6 GHz processor or greater
- RAM 1 GB; 2 GB preferred
- Hard Disk 500 MB hard disk space for a default installation; allow a further 1 GB hard disk space for installing libraries and dedicated applications
- Peripherals mouse or compatible pointing device
- Peripherals USB interface
- Web access Web registration requires Internet access

Designation	Application	Reference
EcoStruxure Machine Expert - HVAC programming software	M171 Optimized logic controllers, M171 Performance logic controllers, M172 logic controllers	Only available as a download from our website

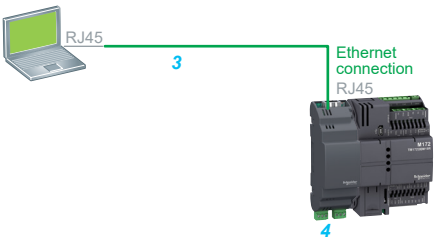
Programming accessories

The USB cable is recommended for local programming. An Ethernet port is recommended for remote download or remote programming.

Description	Characteristics and use	Length m/*ft.*	Reference	Weight kg/*lb*
Programming cable *(1)*	From the PC USB-A port to the USB mini-B port on M171 Performance and M172 logic controllers *(2)*	3/*0.98*	TCSXCNAMUM3P	0.065/ *0.143*
Ethernet connection cable cable - shielded twisted pair straight cord *(3)*	Equipped with 1 RJ45 connector at each end From the PC RJ45 port to the RJ45 port on TM171AETH communication module and M172 logic controller *(4)* CE compatible	2/*6.56* *(1)*	490NTW00002	–



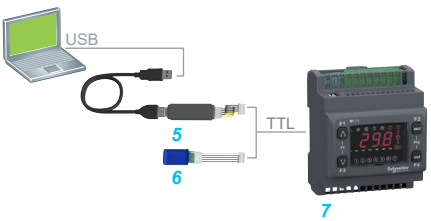
Local programming, download via USB port M171 & M172 Performance



Remote programming via USB port M172 Performance

Programming accessories for M171 Optimized logic controllers

Description	Characteristics and use	Reference	Weight kg/*lb*
Programming cable *(5)*	To be used between a PC and the TTL programming port of M171 Optimized logic controllers *(7)*	TM171ADMI	0.157/ *0.350*
Programming stick *(6)*	To be used to transfer parameters from one M171 Optimized logic controller *(7)* to another, or to download the program	TM171AMFK	0.010/ *0.020*



Local programming, download via TTL port M171 Optimized

(1) Other lengths available: 5 m/16.40 ft, 12 m/39.37 ft, 40 m/131.23 ft, and 80 m/262.47 ft, see on our website.

Modicon M171/M172 logic controllers for HVAC solutions

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