

EcoStruxure Machine Expert - HVAC Release Notes

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All pertinent state, regional, and local safety regulations must be observed when installing and using this product. For reasons of safety and to help ensure compliance with documented system data, only the manufacturer should perform repairs to components.

When devices are used for applications with technical safety requirements, the relevant instructions must be followed.

Failure to use Schneider Electric software or approved software with our hardware products may result in injury, harm, or improper operating results.

Failure to observe this information can result in injury or equipment damage.

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Safety Information



Important Information

NOTICE

Read these instructions carefully, and look at the equipment to become familiar with the device before trying to install, operate, service, or maintain it. The following special messages may appear throughout this documentation or on the equipment to warn of potential hazards or to call attention to information that clarifies or simplifies a procedure.



The addition of this symbol to a “Danger” or “Warning” safety label indicates that an electrical hazard exists which will result in personal injury if the instructions are not followed.



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

DANGER

DANGER indicates a hazardous situation which, if not avoided, **will result in** death or serious injury.

WARNING

WARNING indicates a hazardous situation which, if not avoided, **could result in** death or serious injury.

CAUTION

CAUTION indicates a hazardous situation which, if not avoided, **could result in** minor or moderate injury.

NOTICE

NOTICE is used to address practices not related to physical injury.

PLEASE NOTE

Electrical equipment should be installed, operated, serviced, and maintained only by qualified personnel. No responsibility is assumed by Schneider Electric for any consequences arising out of the use of this material.

A qualified person is one who has skills and knowledge related to the construction and operation of electrical equipment and its installation, and has received safety training to recognize and avoid the hazards involved.

About the Book



At a Glance

Document Scope

This document contains important information about the hardware/firmware/software delivery of product EcoStruxure Machine Expert - HVAC. Read the complete document before you use the product or products described herein.

Validity Note

The information in this Release Notes document is applicable only for EcoStruxure Machine Expert – HVAC compatible products. This document has been updated for the release of EcoStruxure Machine Expert – HVAC V1.3.0.

The technical characteristics of the devices described in this document also appear online. To access this information online go to the Schneider Electric home page

<https://www.se.com/ww/en/download/>.

The characteristics that are presented in the present document should be the same as those characteristics that appear online. In line with our policy of constant improvement, we may revise content over time to improve clarity and accuracy. If you see a difference between the document and online information, use the online information as your reference.

Chapter 1

Product Information

Overview

Maintenance release of EcoStruxure Machine Expert – HVAC, with implementation of new features and bug fixing.

Product Identification

Reference	Description	Version	Note
TM172EVEV1U	Modicon M172 Expansion 1 EEV Unipolar	Firmware msk: 772.00	New
TM172EVEV●B	Modicon M172 Expansion 1 or 2 EEV Bipolar	Firmware msk: 766.00	New
TM171PDM27●	Modicon M171 Performance Logic Controllers 27 I/Os	Firmware msk: 423.27	NOT updated
TM171PBM27R	Modicon M171 Performance Logic Controllers 27 I/Os	Firmware msk: 477.27	NOT updated
TM171PFE03	Modicon M171 Flush mounting Performance Controllers	Firmware msk: 489.20	NOT updated
TM171DGRP	Remote Display HMI	Firmware msk: 476.20	NOT updated
TM172P●●●28●●●/ TM172P●●●42●●● TM172O●●●28●●/ TM172O●●●42●●/	Modicon M172 Optimized and Performance Logic Controllers 28 and 42 I/Os	Firmware msk: 596.11	updated
TM172P●●●07●●/ TM172P●●●18●● TM17O●●●18●●	Modicon M172 Optimized and Performance Logic Controllers 7 and 18 I/Os	Firmware msk: 668.11	updated
TM172DCLW●●●●/ TM172DCLF●●	Modicon M172 Display Color TouchScreen, Temperature (Humidity) built-in sensor(s) Modicon M172 Display Color TouchScreen Flush Mounting	Firmware msk: 659.07	NOT updated
TM171O●●●●●	Modicon M171 Optimized Logic Controllers	Firmware msk: 542.10	updated
TM171O●●●●●	Modicon M171 Optimized Logic Controllers	Firmware msk: 412.21	updated
TM172E●●●R	Modicon M172 Opt. & Perf. Expansion 12 and 28 I/Os	Firmware msk: 640.03	NOT updated
TM171VEV●●●	Modicon M171 EEV Driver	Firmware msk: 497.13 (obsolete) 589.20	NOT updated

Release History

Version	Release Date	Description
1.3.0	January 2021	EcoStruxure Machine Expert – HVAC 1.3.0
1.2.1	May 2020	EcoStruxure Machine Expert – HVAC 1.2.1
1.2	March 2020	EcoStruxure Machine Expert – HVAC 1.2
1.1	June 2019	EcoStruxure Machine Expert – HVAC 1.1
1.0	October 2018	EcoStruxure Machine Expert – HVAC 1.0

System Requirements

Schneider Electric EcoStruxure Machine Expert - HVAC can be installed on a personal computer having the following characteristics:

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

EcoStruxure Machine Expert - HVAC requires Administrator rights to be installed.

For further information, contact your Schneider Electric support center.

Compatibility

All Modicon M171-M172 Optimized and Performance Logic Controllers

Installation Instructions

EcoStruxure Machine Expert - HVAC software can be downloaded from our website www.schneider-electric.com.

The product version concerned offers the EcoStruxure Machine Expert - HVAC functions associated with logic controllers.

Follow setup wizard and refer to EcoStruxure Machine Expert – HVAC Operating Guide

Chapter 2

Hardware/Firmware Information

New Features

NEW TM172EVEV1U/TM172EVEV●B (FIRMWARE MSK 772.00 AND MSK 766.00)

- New Modicon M172 Expansions to drive 1 Unipolar Electronic Expansion Valve or up to 2 Bipolar Electronic Expansion Valves

NEW FEATURES IN TM172P●●●●●●/TM172O●●●●●● (FIRMWARE MSK 596.11 AND MSK 668.11)

- Reconfiguration Master to Slave on RS485-2 from IEC code [PEP0538358R]:
 - if Modbus register 16145 is set different from 0 and MbMRtu_IsDisByPar function is present before MbMRtu_OpenChn function in CONNEC.PAR file then Modbus Master is disabled and Modbus Slave is enabled
- Improvment to decrease boot time due CAN device missing [PEP0586748R]:
 - if Modbus register 16144 is set different from 0 and COPM_SlavePresenceByPar function is present before COPM_SlaveAssignfunction in CONNEC.PAR file then master controller skip initialization of the CAN expansion indicated in register 16144 as following:
 - register 16144 bit0 : if 0 the 1st CAN slave in CONNEC.PAR sequence is present otherwise it is not present
 - register 16144 bit1 : if 0 the 2nd CAN slave in CONNEC.PAR sequence is present otherwise it is not present
 - ...
 - register 16144 bit11 : if 0 the 11th CAN slave in CONNEC.PAR sequence is present otherwise it is not present
- Extension to negative value for web select objects [PEP0579366R]:
 - <select> range is now from -999 to 9999
- Improve not changing IP address on fly [PEP0585331R+ PEP0535704R]:
 - every time was written a parameter from 15798 to 15817 a timeout of 30 seconds is loaded. This timeout delay reload of ETH settings
- New target Data Block to prevent reading application executable [PEP0538806R]:
 - introduced BOOL MEMO Data Block 5001.0 : if FALSE then *.COD files can be opened by FTP or virtual FTP otherwise not (*.COD files can't be opened by FTP and virtual FTP)

NEW FEATURES IN TM171O●●●●● (FIRMWARE MSK 542.10)

- Modbus protocol available on COM0 (LAN)
- Modbus master available on COM0 (LAN)
- Added parameters CF35, CF36, CF37 to set protocol on COM0
- CF00 change of range to select protocol on COM0
- Added parameter CF39 to select which COM port is enabled for modbus master
- Preset of parameters CF35, CF36, CF37, CF39 with default values to permit to program old devices without updating EEPROM map

NEW FEATURES IN TM171O●●●●● (FIRMWARE MSK 412.21)

- Modbus protocol available on COM0 (LAN)
- Added parameters CF35, CF36, CF37 to set protocol on COM0
- CF00 change of range to select protocol on COM0
- Preset of parameters CF35, CF36, CF37 with default values to permit to program old devices without updating EEPROM map

Mitigated Anomalies

TM172P●●●●●●/TM172O●●●●●● (FIRMWARE MSK 596.11 AND MSK 668.11)

Solved the following issue:

- recognize only first USB key plugged after a boot [PEP0619316R]
- FTP Command Timeout changing from 10 to 30 seconds [PEP0619315R]
- input Web server authentication always active in iOS [PEP0590032R]
- Removing file using FTP a WDT reset occurs [PEP0598326R]
- Green led ON before end download with USB key [PEP0566377R]
- After a getEventInformation BACnet command , controller reply with a message too long [PEP0606924R]
- When a BMS try to change PA6 for BACnet AV the controller should reply with a write-access denied and not change PA15 [PEP0609809R]
- Communication issues with BACnet MS/TP, BACnet verify Tusage_delay and Tusage_timeout [PEP0610079R+ PEP0598325R]
- TM172P●●●●●● WDT0 reset at power on [PEP0620875R]

TM171O●●●●● (FIRMWARE MSK 542.10 AND MSK 412.21)

Solved the following issues:

- Improved serial communication

Chapter 4

Software Information

New Features

- Integrated new Schneider Electric Software Update (SESU) 2.5.0
- New command line switched included in batch download (e.g retries)
- Possibility to open multiple resources-tree at the same time
- Menu folder shown in Global shared, EEPROM and Status Variables
- Added possibility to create multiple EEPROM and Status variables, similarly to local variables
- Added possibility to comment out Ladder/FBD networks to remove them from the compilation process.
- Libraries now available with direct link to target (msk 668.11 and msk 569.11 only)
- New features in AFB Application library (1.3.2):
 - New AFBs EEVDCntrl (1.0.3), EEVSHCntrl (1.0.3), SuperHeatCalc (1.0.1), EEVDAlarmMgmt (1.0.1), CheckCOMAlarm (1.0.1) for EEV application control
 - New AFB EEVDSettingsU (1.1.2) for unipolar EEVD management
 - New AFB EEVDSettingsB (1.1.2) for bipolar EEVD management
 - Added new refrigerants from 13 to 26 and custom refrigerant (255) in Press2Temp (1.1.2) and Temp2Press (1.1.2) AFBs

Mitigated Anomalies

- Solved the following issues:
 - Integrated new Registration Software mechanism to fix *artf214353 vulnerability*
 - Integrated new Registration Software mechanism to fix a cybersecurity issue that could allow attackers to redirect Schneider Electric Software Update to a malicious Update server.
 - Added find and replace feature for Configuration tab [PEP0534102R]
 - Added Driver Televis generation also for TM1710 [PEP0549522R]
 - Corrected object property description for FB OverwriteLocaldisplay [PEP0574965R]
 - Bug fix in the closure of FTPGateway [PEP0576119R]
 - TM171VEV : fixed description issue for dE25 [PEP0579832R] and integration of SP and MOP values made available through modbus [PEP0579829R]
 - Bug fix in installation folder [PEP0583837]
 - Bug fix in firmware upgrade via COM on TM172 [PEP0583846R]
 - Speed up TM172 boot in case of not connected CAN expansions [PEP0586748R]
 - Bug fix in defining string variable of length 1 [PEP0587563R]
 - Bug fix in moving program between tasks [PEP0590033R]
 - Bug fix in window appearance, help on line [PEP0590034R, PEP0595573R]
 - Added dE97 in the catalogue of TM171VEV 3.0 [PEP0590644R]
 - Added pre-compilation directive to exclude part of source code from the compilation process [PEP0595577R]
 - Big fix on BIOS Eumerator removal [PEP0595586R]
 - Added Port_FTP_Pi in PARAM.BIN file [PEP0595587R]
 - Bug fix on compilation error generation if, with custom modbus editor the number of registers exceed the allowed ones [PEP0507325R]
 - Solved the following issues in AFB Application library (1.3.2):
 - Changed low limit of iFixeVal from 0 to -500 in FloatingWaterTempSet (1.1.0)

-
- [PEP0541404R]
 - Default values changed for uiLowNoiseMaxFreq, uiFanFreqMin, uiFanFreqMax, uiHysteresis in FanMgmt (1.0.1) [PEP0554840R]
 - Correction of bug: hysteresis implemented for uiArrFreqLimits in CompCntrl_VS (1.1.1) [PEP0572944R]
 - New inputs for custom refrigerant in Press2Temp for FloatingHighPresCntrl (1.1.0) and EvapPresCntrl (1.1.0) [PEP0607634R]

Known Operational Anomalies

NONE

Chapter 5

Additional Information

Other Important External Information

None

Release Notes History

Release Notes EcoStruxure Machine Expert – HVAC v1.2.1

Third Release

Release Notes EcoStruxure Machine Expert – HVAC v1.2

Second Release

Release Notes EcoStruxure Machine Expert – HVAC v1.1

First Release

New Features Hardware/Firmware v1.2.1

NEW FEATURES IN TM172P●●●●●●●●/TM172O●●●●●●●● (FIRMWARE MSK 596.10 AND MSK 668.10)

- For reasons of Internet security:
 - Modbus TCP / BACnet IP / FTP are disabled by default. Therefore Modbus TCP / BACnet IP / FTP have to be manually enabled.
 - The following Target functions has new added return codes:
 - sysHTTP_AuthentGuest()
 - sysHTTP_Authentication()
 - sysFTP_AuthentGuest()
 - sysFTP_Authentication()
- Increased number of Modbus TCP Client from 3 to 8
- Increased number of register from 16 to 20 for the following Modbus on event functions [PEP0543596R]:
 - sysMbMRTU_FC03()
 - sysMbMRTU_FC01()
 - sysMbMRTU_FC02()
 - sysMbMRTU_FC04()
 - sysMbMRTU_FC15()
 - sysMbMRTU_FC16()
- Introduced the following Target variables to count the number of Modbus message received on the relate serial port [PEP0551966R]:
 - sysMODBUS_msg_received_USB AT %MD5000.0 :
UDINT; { DE:"Counter for modbus message received on USB-device" }

- sysMODBUS_msg_received_RS485-1 AT %MD5000.1 :
UDINT; { DE:"Counter for modbus message received on RS485-1" }
 - sysMODBUS_msg_received_RS485-2 AT %MD5000.2 :
UDINT; { DE:"Counter for modbus message received on RS485-2" }
 - sysMODBUS_msg_received_RS485-Plugin AT %MD5000.3 :
UDINT; { DE:"Counter for modbus message received on RS485/232 Plugin" }
- Modified in Read Only the MAC address [PEP0471181R]
- Introduced Target function sysLocalADCs_Fast() to read scaled Analog to Digital Converters values to be able to handle a faster read of Analog Inputs configured as Digital Inputs [PEP0556153R]
- Introduced Target function sysUART_Reinit() to modify run-time UARTs settings using sysUART_getbuf() and sysUART_putbuf() Target functions [PEP0564799R]
- Introduced Baud Rate at 2400b/s for sysUART Target functions [PEP0571727R]

NEW FEATURES IN TM171VEV●● (FIRMWARE MSK 589.20)

- Implemented Unipolar Valves driving for Parker-Sporlan CEV models

Mitigated Anomalies Hardware/Firmware v1.2.1

TM172P●●●●●●/TM172O●●●●●● (FIRMWARE MSK 596.10 AND MSK 668.10)

Solved the following issue:

- Additional 0xCC character received in sysUART_getbuff() Target function [PEP0558035R]
- After several copy of a file from microSD to USB-host controller reset

TM172DCL●●● (FIRMWARE MSK 659.07)

Solved the following issues:

- sysMbMRTU_FC03() Target function not include all error cases [PEP0567500R]
- When a page change it is visible a display flickering [PEP0538357R]

TM171VEV●● (FIRMWARE MSK 589.20)

Solved the following issues:

- when change MOP setpoint (SP3) Driver must be reset to have new setting active. [PEP0543517R]

New Features Hardware/Firmware v1.1

NEW FEATURES IN TM172P●●●●●●/TM172O●●●●●● (FIRMWARE MSK 596.09 AND MSK 668.09)

- Introduced target functions sysHTTP_AuthentOnOff() and sysFTP_AuthentOnOff() to disable/enable authentication (enabled by default)
- Introduced two new SNVTs for LONWOKS protocol:
 - SNVT_setting
 - SNVT_state
- Introduced target function sysLcd_RotateAt180(mode) to rotate display visualization. Keys work accordingly to mode value: TRUE=rotation at 180°, FALSE=default visualization

Mitigated Anomalies Hardware/Firmware v1.1

TM172P●●●●●●/TM172O●●●●●● (FIRMWARE MSK 596.09 AND MSK 668.09)

Solved the following issues:

- microSD mount at startup that lock the controller. Fixed max timeout of 30 seconds to mount a volume
- TM172O●●28●/ TM172O●●42● models continuously reset at power-on if powered only via USB-device.
- Not able to manage multiple object subscribes Bacnet MSTP

TM172DCL●●● (FIRMWARE MSK 659.06)

Solved the following issues:

- Not possible to enter edit mode with enums
- Bad navigation between different enumeratives
- Editing of INT with format XXX.Y doesn't work if you try to enter values between 0.1 and 0.9
- Not possible to send broadcast messages
- String writing by commissioning using USB port is not correct

New Features Software v1.1

Localization on dialog forms is now possible

Mitigated Anomalies Software v1.1

Solved the following issues:

- Function Block QRCodeDisplay launch compiler critical error if used with TM172DCL●●●.
- Value for RS-485 set in configuration aren't written like default
- Issue with "Modified" state after a "Refresh current target" command
- "Build all" disabled while the HMI project is loading
- File PARAM.BIN is wrong, string termination is missing
- Switching perspective issue
- Add the possibility to download single PLC, HMI and HMI Remote from ESME Installer as with SoMachine
- EWC.exe: error in the compilation of the project with Chinese characters in the name
- File list (.ini) encoding issue
- Modbus Custom editor: all protocol are not added if driver is modified.
- In Modbus custom editor is not possible to insert modbus register of different type (input, Holding...) with same modbus address
- Code generation error: SFC control variables not found
- Import of TM171P Blind Project with HMI Remote doesn't function.
- Black tabs in Auto Hide Mode. It's difficult read the name of the window
- A program error for a particular configuration of the group policy
- In simulation mode a breakpoint is reached after the CASE OF and after the ELSE
- Error in print on Ladder project
- Breakpoints used inside inner loop

Known Operational Anomalies v1.1

Minor vulnerability fixed on dll hijacking (internal reference artf270287)