EcoStruxure Machine Expert V2.0

Release Notes

RN0000000035.09
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www.se.com

Legal Information

Table of Contents

Safety Information

Important Information

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

Document Scope

This document contains important information about the delivery of the product EcoStruxure Machine Expert V2.0, and the history of previous Release Notes. Read the complete document before you use the product or products that are described in here.

Validity Note

The information in this Release Notes document is applicable only for EcoStruxure Machine Expert compatible products.

This document has been updated for the release of EcoStruxure™ Machine Expert V2.0.

The characteristics that are described in the present document, as well as those described in the documents included in the Related Documents section below, can be found online. To access the information online, go to the Schneider Electric home page www.se.com/ww/en/download/.

The characteristics that are described 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.

Related Documents

Document title	Reference
Schneider Electric Software Installer - User Guide	EIO0000002848 (ENG); EIO0000002849 (FRE); EIO0000002850 (GER); EIO0000002852 (SPA); EIO0000002851 (ITA); EIO0000002853 (CHS)
EcoStruxure Machine Expert Compatibility and Migration User Guide	EIO0000002842 (ENG); EIO0000002843 (FRE); EIO0000002844 (GER); EIO0000002846 (SPA); EIO0000002845 (ITA); EIO0000002847 (CHS)

Product Information V2.0

Product Information

Overview

EcoStruxure Machine Expert

EcoStruxure Machine Expert is a unique solution software for developing, configuring, and commissioning the entire machine in a single software environment, including logic, motion control, HMI, and related network automation functions.

NOTE: If you are using templates and examples which are not updated with the update of EcoStruxure Machine Expert V2.0, you may be presented the **Update Project** dialog. If you are opening an example or template for the first time, you should update to have the correct and corresponding libraries and other necessary support.

EcoStruxure Machine Expert - Safety

EcoStruxure Machine Expert - Safety is a component of EcoStruxure Machine Expert. It is an engineering tool used to develop safety-related applications for the Safety Logic Controller TM5CSLC•00FS.

Integrity of Your Software

To verify the integrity of your software, you have to ensure the internet connection before starting the software for the first time.

EcoStruxure Machine Expert - Installation Note

In our efforts of continuous improvement, major releases such as EcoStruxure Machine Expert V1.1 or EcoStruxure Machine Expert V1.2 may have some minor releases thereafter to improve quality, add minor features or add hardware that may not have been available at the time of the major release. These minor releases will update the existing installed version on your machine to which they belong. However, major releases are installed as separate instances on your PC. For example, EcoStruxure Machine Expert V2.0 provides a full installation of the software and related system components.

Contrast this to a PC that has EcoStruxure Machine Expert V1.1 installed as you install, for example, EcoStruxure Machine Expert V2.0. In this case, EcoStruxure Machine Expert V2.0 will be installed as a complete and separate instance to EcoStruxure Machine Expert V1.1 (or any of its minor releases like, for example, EcoStruxure Machine Expert V1.1 SP1).

Product Identification

Reference	Description
Schneider Electric Software Installer	V20.21.09802
EcoStruxure Machine Expert	V2.0
EcoStruxure Machine Expert - Safety	V2.0.61.7465
Safety Plugin (SafeLogger, Safety Offline Help)	(5.3.61.7608)

NOTE: You can see the installed software versions in the Schneider Electric Software Installer.

Release History

Version	Release Date	Description
V1.1	July 2019	EcoStruxure Machine Expert V1.1
V1.1 SP1	November 2019	EcoStruxure Machine Expert V1.1 SP1
V1.2	December 2019	EcoStruxure Machine Expert V1.2
V1.2.1	February 2020	EcoStruxure Machine Expert V1.2.1
V1.2.2	March 2020	EcoStruxure Machine Expert V1.2.2
V1.2.3	May 2020	EcoStruxure Machine Expert V1.2.3
V1.2.4	August 2020	EcoStruxure Machine Expert V1.2.4
V1.2.5	September 2020	EcoStruxure Machine Expert V1.2.5
V1.2.6	October 2020	EcoStruxure Machine Expert V1.2.6
V2.0	April 2021	EcoStruxure Machine Expert V2.0

System Requirements

EcoStruxure Machine Expert can be installed on a personal computer with the following hardware:

- Processor Core 2 Duo or greater
- RAM Memory 4 GB minimum, 8 GB recommended or greater
- Hard disk 8 GB for typical and 15 GB for full software installation
- Display 1280 x 1024 resolution or greater
- Mouse or compatible pointing device
- USB interface
- Internet access

EcoStruxure Machine Expert V2.0 can be installed on the following operating systems:

- Microsoft Windows 8.1 Professional Edition (64 Bit)
- Microsoft Windows 10 (64 Bit)

NOTE: Some components still support 32 Bit operating systems (see the following table).

Software	Supported OS
EcoStruxure Machine Expert	64 Bit
EcoStruxure Machine Expert - Safety	32 Bit & 64 Bit
Schneider Electric Software Installer	32 Bit & 64 Bit
SQL gateway	32 Bit & 64 Bit
Gateway	32 Bit & 64 Bit
Device Assistant	32 Bit & 64 Bit
Diagnostics	32 Bit & 64 Bit
Controller Assistant	32 Bit & 64 Bit
Motion Sizer	32 Bit & 64 Bit

Microsoft.NET Framework

EcoStruxure Machine Expert requires the .NET Framework 4.7.2. Therefore, it is required to have a current Windows version on your system. If a previous version is found on your current Windows version, EcoStruxure Machine Expert will install the required version.

The DTM installation requires the Microsoft.NET Framework 3.5 Service Pack 1 with the latest updates.

This package is not installed with Windows 8.1 or Windows 10. An internet connection is required to install Microsoft.NET Framework 3.5.

For information on how to install it, refer to https://docs.microsoft.com/en-us/dotnet/framework/install/dotnet-35-windows-10.

Installation Instructions

Overview

The Schneider Electric Software Installer is used for configuring and installing the EcoStruxure Machine Expert software. For information on the installation procedure, refer to the Schneider Electric Software Installer User Guide.

Limitations on USB Driver Installation for M241/M251 Controllers

In some cases, this driver installation is incomplete. The controller is shown with a yellow triangle in the **Device Manager**.

You can solve this issue by manually installing the USB driver for the marked device. The driver is available in the following directories:

- *C:\Program Files (x86)\Schneider Electric\EcoStruxure Machine Expert\Tools\Gateway\Driver\USB PLC Driver\Win7_x64 for x64 systems*
- *C:\Program Files (x86)\Schneider Electric\EcoStruxure Machine Expert\Tools\Gateway\Driver\USB PLC Driver\Win7_x86 for x86 systems*

Limitations on EcoStruxure Machine Expert - Safety Installation

Installing the Safety component via Schneider Electric Software Installer requires at minimum to select and install one available controller (Modicon or PacDrive) component to get a full usable system environment (refer to Schneider Electric Software Installer User Guide).

Make sure that during the installation of EcoStruxure Machine Expert - Safety, no instance of a previously installed legacy version of SoSafe programmable V2.x is running.

Installation of CodeMeter

In order to take advantage of the latest bug fixes and security enhancements, you must update the third-party tool CodeMeter. Go to https://www.wibu.com/support/user/user-software.html and install the latest patch.

Licensing Information

For EcoStruxure Machine Expert V2.0 a new license is required and can be ordered with the same reference. A valid V2.0 license allows you to use also EcoStruxure Machine Expert version V1.1 and V1.2 installations on the system.

For further information, refer to the Schneider Electric Software Installer Online help.

Hardware/Firmware Information V2.0

Hardware/Firmware Information

Version Identification

Description	Firmware Version
M241	5.1.9.14
M251	5.1.9.14
M262	5.1.5.30
TMSES4	1.0.0.8
TM3DQ8••	2.0
TM3DQ16••	2.0
TM3DQ32••	2.0
TM5NEIP1	3.10
TM5NS31	2.78
LXM32S•••M2 / LXM32S•••N4	• Drive firmware: V1.10.2 • Sercos3 interface firmware: V1.10.7
LXM52••••C•••••	1.54.26.0
ILM••••••••••••	1.54.26.0
LXM62••••C•••••	• 1.64.10.0 for hardware revision RS1• • 1.54.27.0 for hardware revision RS0•
LXM62••••D•••••	• 1.64.10.0 for hardware revision RS1• • 1.54.27.0 for hardware revision RS0•
LXM62••••E•••••	1.54.27.0
LXM62••••F•••••	1.54.27.0
LXM62••••G•••••	1.64.10.0
LMC Eco	V1.64.18.26
LMC Pro	V1.64.18.26
LMC Pro2	V1.64.18.26
ATV340S	• Drive firmware: V1.4IE09_B06 • Sercos3 interface firmware: A1.2IE01_B00

Description	Safety-Related Firmware Version
LXM62••••E•••••	1.2.4.0
LXM62••••F•••••	1.2.4.0
VW3E702200000 safety option module	1.2.4.0
TM5CSLC100FS	2.56
TM5CSLC200FS	2.56
BWU2984 SWID	134253
BWU2984 Safe CPU A	135115
BWU2984 Safe CPU B	135116
ASIMON360	3.2.6.7

Contact your local Schneider Electric representative in case you need specific information for your intended machine architecture.

Certificates on the Controller

Certificates on the controller use the real time clock.

NOTE: To create certificates with a valid expiration date, set the real time clock to the present time beforehand.

TM5 EtherNet/IP Bus Coupler

NOTE: The TM5 EtherNet/IP bus coupler is not available for PacDrive controllers with EcoStruxure Machine Expert V2.0. Projects containing this module can be opened with EcoStruxure Machine Expert V2.0 but cannot be compiled.

To compile your project containing the TM5 EtherNet/IP bus coupler, use the original EcoStruxure Machine Expert version you used to create the project.

However, the TM5 EtherNet/IP bus coupler remains compatible with the Modicon M262, M241 and M251.

New Features

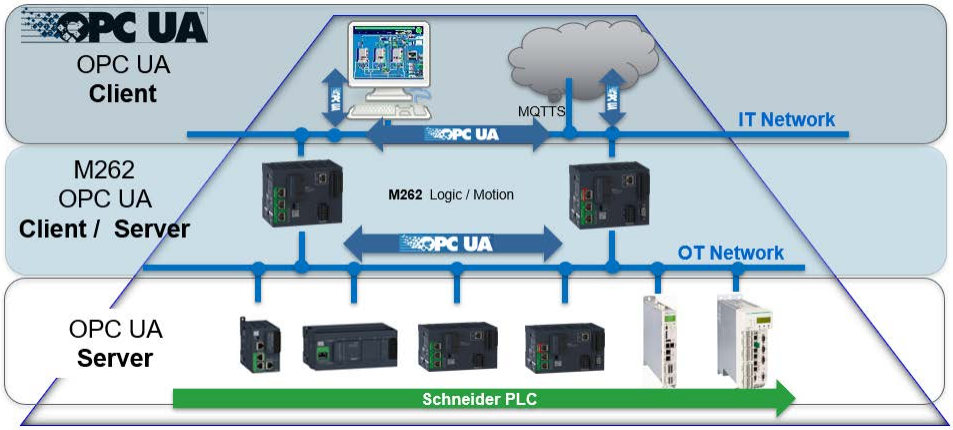
M262 OPC UA Client Enhancements

OPC Unified Architecture (OPC UA) is a vendor-independent communication protocol for industrial automation applications.

The client / server OPC UA capability is embedded in version V5.1.5.15 of the following M262 platforms:

- M262L20MESE8T
- M262M25MESS8T
- M262M35MESS8T

The controller can be client and server simultaneously. The OPC UA client functionality is delivered in the OpcUaHandling library.



OPC UA data exchange is performed using function blocks that are compliant with the PLCopen specification *PLCopen OPC-UA Client for IEC61131-3* version 1.1 and provide the following functions:

- Read/write of multiple items
- Diagnostics

For the new function blocks, refer to *OpcUaHandling* in the *Library Information* chapter, page 27.

OPC UA Server Enhancements

The OPC Unified Architecture server (OPC UA server) allows the Modicon M262 Logic/Motion Controller to exchange data with the OPC UA clients.

Server and client communicate through sessions.

New OPC UA Server Symbols Configuration

In addition to IEC base data types, the OPC UA server can also expose OPC UA variables from IEC symbols that are composed of the following complex types:

- Arrays and multi-dimensional arrays (limited to three dimensions).
- Structured data types and nested structured data types as long as they are not composed of a UNION field.

Performance OPC UA Client / Server

The table lists the OPC UA performance:

OPC UA Client		OPC UA Server	
Number of servers concurrently	5	Number of client connections concurrently	4
Nodes per client / connection	5,000	Number's variables / connection	5,000
-	-	Number's variables / connection (maximum)	15,000
Minimum refresh time client	Server capability	Performance refresh variable	200 ms...5,000 ms
Subscription Client / Server			
Maximum queue list size per subscribed node	10	-	-
Maximum number of subscriptions	Server capability	Maximum number of subscriptions (server)	100
Variables per subscription	100	-	-
Maximum number of returned browse results with one execution	30	-	-

New Controller

The new controller reference TM262M05MESS8T is added. Modicon M262M05 is the new entry level for synchronized motion application (up to 4 synchronized axes) and embedded safety. For details refer to the catalog.

TM262M35MESS8T Improvement

The maximum number of synchronized axes has been increased from 16 to 24 in 4 ms Sercos cycle time.

Global View of the Axis Number on Sercos

New references and capabilities on the number of Sercos drives and devices are added:

	Sercos cycle	Max Number Sercos drives	Max Number Sercos devices (including Sercos drives)
TM262M05	1ms	4	6
	2ms	4	10
	4ms	4	12
TM262M15	1ms	4	8
	2ms	4	16
	4ms	4	16
TM262M25	1ms	4	12
	2ms	8	16
	4ms	8	24
TM262M35	1ms	8	16
	2ms	16	24
	4ms	24	40

NTP V4.0

NTP V4.0 client/server is available in the M262 references, configuration through configuration screen with EcoStruxure Machine Expert.

Other

- New rules for Cybersecurity embedded.
- New symbol configuration management thanks to the Symbol set.
- New Diagnostic feature embedded.

Modicon M262 Motion Controller

G-Code and CNC Solutions
With M262 M05, M15, M25 and M35 it is possible to create CNC applications with libraries that are compatible to those used in LMC058 and LMC078 applications.

Main features are:

- CNCExtension library (compatible with SM3_CNC)
- Functions for path conversions and compensations
- Full set of interpolation functions
- 3D CNC editor according to DIN 66025 (G-code) for motion planning and representation; with parallel textual and graphical display and DXF import.

CSV - Cyclic Synchronous Velocity
When an application requires that the motor maintains a set speed, even under varying loads, CSV mode is used (position is ignored). Examples of applications that use CSV mode are conveyor tracking, dispensing, and machining processes such as grinding or polishing, where motor load varies but velocity needs to be maintained throughout the process.

Modicon M241/M251 Logic Controllers

- Possibility to configure IP routes in the controller.
- Possibility to configure the KeepAlive time and communication time-out for TCP connections.
- Encrypted communication is available for embedded Webserver (HTTPS) and FTP server (FTPS).

Modicon TM3 Standard I/O

New hardware revisions are available for TM3DQ8••, TM3DIQ16••, and TM3DQ32••.

The new TM3 I/O modules are supported by M241, M251, M262 controllers and TM3 bus couplers. The following new features are configurable with modules of software version V2.0 or later:

- Output fallback function: When the I/O bus connection is lost, user-configurable fallback values are applied to the outputs of the TM3 digital output modules after a delay time period has elapsed.
- Firmware upgrade: The firmware of the TM3 I/O modules can be updated by the controller.

Drives

New Diagnostic Message - The new diagnostic message 8915: *Selected EncoderMode not supported* is triggered if the EncoderMode “Machine encoder is only used for position control / 1” is selected with a linear motor or an asynchronous motor. In this case it replaces the diagnostic message 8503: *Sercos service channel error detected*.

PacDrive LMC Control

Sercos Robustness - Allows you to keep the Sercos network operable even if a non-critical device is in an inoperable state or is removed. For further information, refer to *Sercos Improvements (Sercos Robustness) for PacDrive Control* in the *Additional Information* chapter, page 49.

OPC UA Client - New function blocks based on PLCopen standards are available to establish OPC UA client connections between controllers. For further information, refer to the new features of the OpcUaHandling library, page 27 or to the OpcUaHandling Library Guide.

Additional Ethernet Port - Provides the possibility to have an additional standard Ethernet interface on board. For further information, refer to *Additional Ethernet Port for PacDrive Control* in the *Additional Information* chapter, page 45.

Profinet Topology Editor - New editor to display the network topology, available for the Profinet IO controller.

UTC and Time Zone Information - The LMC PacDrive family supports UTC time and time zone information via IEC interface.

Encrypted Communication - The LMC PacDrive family supports encrypted communication between the controller and the engineering tool EcoStruxure Machine Expert.

M262: Single Wiring Coexistence (SWC) Architecture

The architecture limitation is removed. TM5NS31 and TM5CSLCx00FS can now be the last device in the Sercos segment.

Mitigated Anomalies

Drives

ID	Description
SERVOD-163	The diagnostic message *8916: Wrong ControlMode selected* is no longer triggered and the status LED of the drive is not flashing red when a motor without encoder was used. This occurred during a drive boot before Sercos reached the phase 4. Workaround with EcoStruxure Machine Expert V1.2: The diagnostic message can be acknowledged.
SERVOD-261	When an update of the drive firmware was started with the Device Assistant while the Sercos was in phase 4, the correct error message is triggered.
SERVOD-283	The parameters *GearIn* and *GearOut* now allow for greater maximum values. The limits have been increased from 999999 to 9999999 (from 6 to 7 digits) for both parameters.
SERVOD-309	The diagnostic message *8137: Motorless* can now be acknowledged.
SERVOD-312	The execution of *FB_InitMachineEncoder* reset the *EncoderMode "Machine encoder is only used for position control / 1"* in the drive so it was different to the *EncoderMode* in the controller configuration. The *RefPosition* of the drive was adjusted to the position of the *MachineEncoder* while the position control in the drive was performed with the motor encoder. Typically there is a big position difference between the two encoders. Therefore, the diagnostic message *8111: Shutdown due to tracking deviation* was triggered when the *ControllerEnable* was set.
SERVOD-346	When Sercos was in phase 4 in line topology, a LXM62StandardPlus or a LXM62AdvancedPlus was the last device in line and the second port of the controller had been connected with the second port of this drive so that the topology should switch from line to ring, a C1D error was triggered.
SERVOD-350	There was sometimes an inaccurate current value for asynchronous motors in open-loop control because the standstill (*RefVelocity = 0*) was not detected correctly. In this case the current value was changing without an action in the movement.
SERVOD-409 / SERVOD-435 / LXM62P-1630	New diagnostic messages are triggered with Hiperface DSL encoders: • *8171: Encoder communication disturbance detected* is a diagnostic message to inform about a disturbance in the encoder communication that does not lead to a shutdown yet. • *8175: Extended message for encoder disturbance* is triggered after diagnostic message 8171 to show additional data in the drive logger that must be asked from the encoder first. Therefore, this logger entry is delayed. • *8176: Encoder connection break* is a diagnostic message to show a physical break of the connection to the encoder. • *8958: Encoder communication not possible* is a diagnostic message triggered when data could not be read from the encoder several times. An error code from the encoder is available as additional data in drive logger. This diagnostic message had only existed for standard Hiperface encoders in the past.
-	When the encoder supply voltage (provided by the drive) is too low during firmware boot, the diagnostic message *8185: Internal device error* is triggered.
SERVOD-429	The new states *16#B5 "ReleaseEncoderlessVelocityControl"* and *16#C5 "ActiveEncoderlessVelocityControl"* have been added for *InternalDeviceState*. These new states are used in *ControlMode "Encoderless velocity closed-loop control / 2"* and replaces the states *16#B1 "Release the brake for position control"* and *16#C1 "Active position control"* in this case.
-	When a Sercos parameter with the attribute write protected in CP4 was written in Sercos phase 4, the Sercos service channel error with the extension *0x7001 Parameter doesn't exist* was triggered instead of *0x7005 Write protected at time*.
SERVOD-452 / SERVOD-491 / SERVOD-503	The diagnostic message *8503: Sercos service channel error detected* has been replaced by the diagnostic message *8916: Wrong ControlMode selected*, if *EncoderMode* of the machine encoder does not match with the selected *ControlMode* or if an encoder is needed but not available for the selected *ControlMode*. It is also considered, if a machine encoder is used with *ControlMode "open-loop control / 1"* or *"Encoderless velocity closed-loop control / 2"* or with linear or asynchronous motors, because these combinations are not allowed.
SERVOD-469	**Identify Device** had always been indicated on both axis of a DoubleDrive. The flashing of S3 and State LED was not synchronized.
SERVOD-479	The *ControlMode "Encoderless velocity closed-loop control / 2"* was not usable on axis B of LXM62StandardPlus DoubleDrive. This mode could be configured but was not operating as required.
-	When an invalid encoder position is detected, the diagnostic message *8105: Encoder position invalid* or *8195: Machine Encoder* position invalid is triggered and the position is adjusted again. If, however, an invalid position is again detected while one of these diagnostic messages is still pending, this did not lead to a new position adjustment. Due to this effect the encoder position could differ from the physical position with standard Hiperface encoders. A pending diagnostic message *8105: Encoder position invalid* could lead to an undetected deviation in the position from the motor encoder and a lost commutation of the motor. The diagnostic message *8908: Unintended motor operation detected* could be triggered as soon as *ControllerEnable* has been set.

ID	Description
	A pending diagnostic message *8195: Machine Encoder position invalid* no longer leads to an undetected deviation in the position from the machine encoder.
SERVOD-481	Incorrect counter values: infrequently an incorrect counter value was displayed at TouchProbe inputs from drives. The counting itself was not incorrect but the displayed counter value could be incorrect.
SERVOD-509	The number of allowed additional IDN was reduced from 6 to 5 if the Machine Encoder has been used on LXM62AdvancedDrive. The number of additional IDN is now restored to 6.
SERVOD-1699	A drive firmware update with FDR (Fast Device Replacement) could be declined by a timeout in the LMC (visible in the MessageLogger), mainly when it was used with a high amount of axis. The stability of the FDR process is improved by a better response behavior on the drive side.

HMISCU Controllers

ID	Description
CVE-2019-9008	Specific cybersecurity vulnerabilities are mitigated.
CVE-2019-9009	Specific cybersecurity vulnerabilities are mitigated.
CVE-2020-10245	Specific cybersecurity vulnerabilities are mitigated.
CVE-2020-7052	Specific cybersecurity vulnerabilities are mitigated.

M262

ID	Description
M262-4249	Upon restart the TMS was randomly not taken into account.
M262-4503	In case an SLCx00 or TM5NS31 was the last Sercos device in the SWC architecture, the PhaseUp was sometimes not performed.
M262-4549	When modifying the user rights, you had to ensure that no external equipment made an attempt to access M262 variables with former credentials.
M262-4557	*NbOfIncs* and *NbOfUnits* values had to be < 2,147,483,647 (231), otherwise the capture was invalid.
M262-4574	If SoMachine V4.3 or an earlier version was installed on the computer, the IP address used by the PC was not correct. Thus, the USB communication was not operational.
M262-4576	An M262 was not discovered by USB and could not be connected to EcoStruxure Machine Expert.
M262-4655	WebVisualization: Each refresh of variable manages a communication access if the user rights are validated, a password will be requested for these actions. Username and password are requested each time a page refresh / online change / application download is performed by the WebVisualization.
M262-4658	An error was detected when restarting projects with 4 KB retain variables. The download could be unsuccessful and the message *TLS_IO_Communication* was displayed.
M262-4683	TcpUdpCommunication library: At first startup after firmware update, the certificate store was not ready. An application that included TLS communication needed a second startup.
M262-5224	CANopen: After a few hours LXM32A returned the error code B4000.
M262-5137	*SysTimeRtcSet*: After a power OFF the real time clock (RTC) of the controller was no longer accessible if it is set by the *SysTimeRtcSet* function.
M262-5260	OpcUaClient: *ServerState* = *Running* while the cable was disconnected.
M262-5350	Crash "SchedException" occurred while downloading via Ethernet.
M262-5376	EtherNet/IP Scanner: Loss of ATV320 connection occurred after a project update.
BOC-1143	TM5NEIP did not start properly. Workaround: Adapt the cycle time in configuration if needed.
CVE-2019-9008	Specific cybersecurity vulnerabilities are mitigated.
CVE-2019-9009	Specific cybersecurity vulnerabilities are mitigated.
CVE-2020-10245	Specific cybersecurity vulnerabilities are mitigated.
CVE-2020-7052	Specific cybersecurity vulnerabilities are mitigated.

M262 Motion

ID	Description
MK-992	The Scaling library is removed. As a result, customer projects including this library (Machine Expert V1.1) could not be converted to Machine Expert V1.1 SP1 or greater without the error message *"Unhandled execution has occurred in your application"*. Workaround: Either do not convert or copy the application content instead of converting it.
MK-1155	*MC_CamIn* had an offset compared to the absolute master position. This offset increased at each execution. This occurred if master start mode was absolute and slave start mode was absolute or ramp-in. This could have led to a jump on the slave axis.

M262 Safety

ID	Description
OEM00076931	In case an SLCx00 or TM5NS31 was the last Sercos device in the SWC architecture, the PhaseUp was often not possible.

M241/M251

ID	Description
CVE-2021-22699	Specific cybersecurity vulnerabilities are mitigated.
CVE-2019-12257, CVE-2019-12255, CVE-2019-12261, CVE-2019-12263, CVE-2019-12258, CVE-2019-12259, CVE-2019-12262, CVE-2019-12264, CVE-2019-12265	Specific cybersecurity vulnerabilities are mitigated.
CVE-2019-9008	Specific cybersecurity vulnerabilities are mitigated.
CVE-2019-9009	Specific cybersecurity vulnerabilities are mitigated.
CVE-2020-10245	Specific cybersecurity vulnerabilities are mitigated.
CVE-2020-7052	Specific cybersecurity vulnerabilities are mitigated.
M2X1-5	The **Upload Recipes From Devices** command is functional now.
M2X1-145 / OEM00077297	After > 300 power cycles the controller indicated error states on the Ethernet adapter and the **TM3BC_ EtherNetIP_3_RemoteAdapter** nodes.
M2X1-173	The webserver session was not handled correctly on M241 controllers.
M2X1-190 / OEM00077736	The function block *FB_FtpClient* block did not detect a communication loss during file transfer.
M2X1-219 / OEM00077779	The application could not be simulated if the function block *FB_TesysU* was used.
M2X1-236 / OEM00079349	Incorrect boot up IP address on the USB Ethernet interface is resolved.
M2X1-263 / OEM00069074	TM251MESE: After > 200 power cycles, ETH1/ETH2 indicated that the Ethernet port was not connected.
M2X1-264 / OEM00068693	After disconnecting and reconnecting the Ethernet cable, some Ethernet services did not restart correctly (for example, could not ping an IP address).
M2X1-269 / OEM00072286	When the mappings were deleted from the output variables mapping, the default values remained enabled (Transition Run>Stop).
M2X1-285 / OEM00060503	The M241 controller forwarded packets to its gateway.
M2X1-300 / OEM00077688	The user connections to the controller could be blocked.
M2X1-354 / OEM00066223	Logged data entries were missing.
M2X1-357 / OEM00075550	Even if function code 5 was configured, the Modbus serial IOScanner sent function code 15.
M2X1-413	ASCII Manager: The last byte was lost when an odd number of bytes was available.
M2X1-444	M251/M241 received the incorrect frame when **Frame Received Timeout** value was minimum.

PacDrive LMC Control

ID	Description
CVE-2019-9008	Specific cybersecurity vulnerabilities are mitigated.
CVE-2019-9009	Specific cybersecurity vulnerabilities are mitigated.
CVE-2020-10245	Specific cybersecurity vulnerabilities are mitigated.
CVE-2020-7052	Specific cybersecurity vulnerabilities are mitigated.
CVE-2020-10664	Specific cybersecurity vulnerabilities are mitigated.
LMCFW-1389	An OPC UA server error with *TskOpcUaAsyn / TskOpcUaJob* was detected when the IEC code was modified.
LMCFW-1395	An IO Link error was detected at the incorrect event channel.

ID	Description
LMCFW-1402 / LMCFW-2047	A software error (PageFault) *8902 TskOpcUaAsyn / TskOpcUaJob* was detected after IEC program modification.
LMCFW-1962	State of the touch probe input was only refreshed for the first 16 touch probe inputs.
LMCFW-2010	A Real-Time Process (RTP) exception was detected with hardware watchdog after calling *FC_TPEdge*.
LMCFW-2048	Specific cybersecurity vulnerabilities are mitigated.
LMCFW-2370	Unusual drive velocity peaks were detected in the Sercos line topology.
LMCFW-2379	The message *8191: Mechanical overload protection without power on the axis* was triggered when switching the *TorqueLimiton* mode to *Mechanical Overload Protection* even if the axis was not powered.
LMCFW-2528	The function *FC_ControllerStopSet* was not working depending on the parameter *i_rDeceleration*.
LMCFW-2819	OPC UA time stamp could not be adjusted to UTC time.
LMCFW-2823	The parameter *VendorCode* in a Sercos drive was not verified.
LMCFW-2824	The *SercosDrive* parameter was not updated.
LMCFW-2906	The OPC UA server replied an incorrect *ArrayDimensions* value for scalar.
LMCFW-3101	The unresponsive behavior with the bit *'Valid'* of *FC_GetParameter* no longer applies.
LMCFW-3230	The firmware update did not work in some cases.
LMCFW-3334	Unexpected build errors were triggered.
LMCFW-3825	The FDR state 1 was skipped during the FDR procedure.
LMCFW-3878	An OPC UA exception was raised during an online change.
LMCFW-4028	The Profinet hardware watchdog was exceeded repeatedly.
LMCFW-4038	The *FC_DiagConfigSet2* did not operate as intended.
SI-3444 / OEM00076369	Modifications were detected for persistent variables, although the persistent variables were not modified. This occurred if a 128 MB Compact Flash (CF) memory card was used.

TM3 Bus Coupler

ID	Description
TM3BC-1313	Analog input values were not updated correctly when the diagnostic parameter of the analog module was disabled.

Known Operational Anomalies

Lexium 62

ID	Description
SERVOD-520	Overcurrent can occur if the following conditions apply: • A LXM62 StandardPlus or LXM62 AdvancedPlus drive is used with Plus firmware (non-compatibility mode). AND • The LXM62 drive is decelerated with a high current (> 50 A). AND • A motor is operated with high velocity (> 60% of nominal speed). AND • The current is changing forcefully (> 20 A/ms). This can lead to the diagnostic messages *8107: Overcurrent* or *8119: Power stage short-circuit / ground fault*, and the power stage is switched off (free-wheeling mode). If the message 8119 is displayed, you must reset the drive. This issue can also occur when switching off *ControllerEnable* or when the drive triggers a reaction (to stop the motor) from another diagnostic message. Workaround: • Reduce the velocity. • Reduce the deceleration. • Reduce the jerk. • Reduce the peak current (*UserDrivePeakCurrent*). • Reduce the current limitation (*UserCurrentLimit* or *DriveStopCurrentLimit*). • Reduce the control loop gain of the velocity and position control loop. You can combine the measures freely.

M262

ID	Description
M262-5063	When the object *UserIdentityToken.UserIdentityTokenType* is used in an OPC UA visualization, the WebVisualization screen may close. Workaround: Restart the WebVisualization screen.
M262-5870	The axis error ID 108 read with *FBReadAxis* error can be detected if more than six parameters are exchanged with an ATV320.
M262-5913	After several consecutive power cycles, the controller infrequently stops operating and the log message *BlkDrvUdp* is indicated.
M262-5948	With large applications using Input Run / Stop the controller is starting slower than if the RUN/STOP input is not configured.
M262-6032	Starting the WebVisualization immediately after the controller is running takes longer with EcoStruxure Machine Expert V2.0 (average time 1 s).
M262-6077	After an update from V1.2.4 to V2, the login via **Nodename** may not be possible. Workaround: Change the **Connection Mode** to **Fast TCP**.
M262-6098	If the controller is restarted after an online change, infrequently the IP address can be lost.
M262-6100	The M262 controller can start in exception state after downloading the WebVisualization via FTP. Workaround: Restart the controller after download.
M262-6151	Infrequently, if the number of TM3BCEIP bus coupler exceeds 15, and one of those bus couplers is power cycled, it is no longer seen on the network.

M262 Motion

ID	Description
MK-1088	General Motion Control - *CamIn*: The slave is not moving in the first cycle if started while the master axis is moving (*MasterStartMode* absolute).
MK-1168	General Motion Control: An unexpected movement of *PLCO.MC_MoveAbsolute* with Jerk = 1E+16 occurs.
MK-1213	When you disable the axis while running in CSV mode, the axis can freeze for a few cycles (~5 cycles), this freeze can be heard on the motor shaft. If this axis is master of another axis (for example, *MC_GearIn*), this freeze can be visible on the slave axis.
MK-1281	An exception can occur in the controller (seen as System watchdog) if the execution time exceeds 700 µs (code executed in the *AFTER_RTP* task) during the Sercos PhaseUp. Workaround: Add a condition (wait phase 4) before executing the IEC code of the *AFTER_RTP* task.

M241/M251

ID	Description
M2X1-690	The EcoStruxure Operator Terminal Expert cannot establish a connection to the M241/M251 controller when the connection mode **IP address** is selected. Workaround: It is working well if the connection mode **Node name** is selected.
M2X1-526 / PEP0626052R	Application loaded into controller using **mass storage** feature does not always start in run. Workaround: Perform a **Clean all** action before building the application to resolve the issue (requires EcoStruxure Machine Expert V2.0).
M2X1-590	Status of IP Master communication is not refreshed after an application update. Workaround: Perform a power cycle to resolve the issue.
M2X1-634	After an online change, open editors may display online value of variables incorrectly. Workaround: Close opened tabs and re-open again to resolve the issue.
M2X1-650	Webvisualisation may not respond after an online change command. Workaround: Perform a **Clean all** command to resolve the issue.
M2X1-654	After upgrading a SoMachine V4.3 project, going to the **Users and Groups** tab may lead to a message about existing device user data even if the initial application did not contain user rights definition. Workaround: Ignore and close the popup message.
M2X1-619	SetCurrentTaskCycle is not available and returns error 1.

PacDrive LMC Control

ID	Description
LMCFW-2023 / OEM00076650	Too many fieldbus participants with too much data can lead to the following error message: *EtherCAT Master: Download bus configuration to NetX* .
LMCFW-2820	An incorrect status is returned by the system when the TM5 module is in error state.
LMCFW-2877	LMC Pro 2 and LMC Eco are not starting up when a USB key is not formatted with FAT and connected.
LMCFW-2878	No communication error is displayed when the Profinet device is disconnected.
LMCFW-2910	*PositionBehaviorOfMasterAndSlave* may have different behaviour in C2C.
LMCFW-2911	Name and IP address may not be displayed in the hardware after downloading the Profinet configuration.
LMCFW-3137	*IO-Channel Optimization* leads to an incorrect transfer of input/output data.
LMCFW-3490	A Sercos message may be displayed when displaying SLC variables
LMCFW-3869	The function block *FB_RobotP/S/TSeries* may trigger the hardware watchdog in combination with C2C.
LMCFW-3988	The Profinet **Scan For Devices** displays a controller IP address conflict.
LMCFW-3991	The Profinet diagnostics functions return the message 'Not Supported'.
LMCFW-4129	A hardware watchdog occurs while a break point is active and a download is executed.

ID	Description
LMCFW-4132	A disabled Profinet device may update the input values.
LMCFW-4230	An error is detected during firmware change of the LXM62DC13 using FDR (Fast Device Replacement).
LMCFW-4490	Output signals may not be transmitted in time in a Profinet network.
LMCFW-4512	For a large system setup (more than 119 axis) a watchdog error may be detected on the LMC controller during the Sercos PhaseUp.
LMCFW-4549	The LMC Pro controller may not boot when a USB key is plugged into the port **CN7**.
LMCFW-4565	A cycle time overrun (> 8 ms) may occur after downloading the project for the first time.
LMCFW-4575	A Sercos error can be detected after reconnecting a device that uses the Sercos Robustness feature, page 49.
LMCFW-4606	A connection to a PC-based OPC UA server (using the name instead of the IP address) with PacDrive LMC controller as client cannot be established.
LMCFW-4684	An exception *Cycletime overrun* may occur with a ProfiNetIO controller. Workaround: Temporarily update the Watchdog sensitivity and / or the Overrun factor by using the *SystemInterface* function *FC_CycleTimeSet()*.
LMCFW-4695	A PacDrive LMC controller as OPC UA client does not support the login only with credentials but without certificates.
LMCFW-4725	*SysTimeRtcSetTimezone* may not set the time as expected.
LMCFW-4738	A missing CANbus device may lead to the runtime error messages *1074798862* and *1074798343* that are not documented.
LMCFW-4790	The Network protocols Profinet and Profibus cannot be configured together and will not operate simultaneously when using the onboard interfaces.
OEM00054944	It is not possible to establish an EtherNet/IP connection when the EtherNet/IP device (ATV32/IL•) is connected directly to the controller. Workaround: Add a switch between the controller and the EtherNet/IP device.

Library Information V2.0

Library Information

Version Identification

Description	Version
ApplicationLogger	1.1.4.0
CNCExtension	1.0.4.0
CommonMotionInterface	1.4.3.0
CommonMotionTypes	1.0.2.0
CommonToolbox	1.0.2.0
EMailHandling	2.1.0.0
EtherNetIP Explicit Messaging	1.1.9.0
EtherNetIP Remote Adapter	1.1.2.0
FastSampling	1.0.1.0
FileFormatUtility	1.5.5.0
FtpRemoteFileHandling	1.3.8.0
GMC Independent Altivar	1.3.2.0
GMC Independent Lexium	1.2.3.0
GMC Independent PLCopen MC	1.3.3.0
HttpHandling	1.2.0.0
M262Diagnostics	V1.0.7.0
MachineAssistantServices	1.0.2.0
Mathematics	1.0.2.0
ModbusHandling	1.0.5.0
MotionInterface	2.0.108.9437
MqttHandling	2.1.0.0
OpcUaHandling	2.0.14.0
PD_AxisModule	1.6.4.0
PD_ETest	1.5.1.0
PD_MultiBelt	1.4.7.0
PD_PacDriveLib	1.9.6.0
PD_SmartInfeed	1.4.5.0
PD_SoMotionGenerator	1.6.2.0
PD_Template	1.6.4.0
PLCopen MC part 1	2.0.108.9437
PreventaSupport	1.1.7.0
Robotic	3.1.2.0
RoboticModule	2.12.0.0
RoboticsAutoTune	2.0.0.0
SchneiderElectricRobotics	2.10.0.0
SchneiderElectricRobotics Parameters	2.13.0.0
SchneiderElectricRobotics Toolbox	1.5.0.0
Sercos Device Modules	1.0.0.0

Description	Version
SercosMaster	2.0.108.9437
SlcRemoteController	1.3.8.0
SqlRemoteAccess	2.0.3.0
TcpUdpCommunication	2.1.4.0
TeSys island	2.0.4.0
TwidoEmulationsupport	1.2.3.0
Unwinder	1.3.0.0
XpsuSupport	1.0.4.0

New Features

CNCExtension

The new library offers tools to use the G-Code functionalities with M262 controllers.

EMailHandling, HttpHandling, MqttHandling, TcpUdpCommunication

- New parameter in connection settings to specify a host name for the TLS feature Server Name Indication (SNI).
- TLS protocol version 1.3 is supported.
- Improved diagnostics about the result of the certificate verification.
- Improved certificate verification. That allows to simplify the management of certificate by taking into account only root certificate from the chain of trust from the server certificate.
- Secured communication using TLS encryption is supported by PacDrive LMC motion controllers.

FastSampling

The new library provides functionalities to sample the drive position, current and velocity faster than in a Sercos cycle.

FileFormatUtility

The library is available to parse a JSON-formatted file, to modify parsed strings and write them back to an application buffer or file.

The updated function block *FB_JasonUtilities* allows to parse an application buffer out of a JSON-formatted string or a file.

GMC Independent PLCopen MC

Support of Lexium MDrive on EtherNet/IP for Modicon M2xx and Modicon M262 Motion Controllers.

MachineAssistantServices

The new library offers functionalities to discover Ethernet devices and to perform a basic configuration of these devices.

Mathematics

The library has new mathematical structures and global constants.

ModbusHandling

The new library provides function blocks to implement Modbus client and server functionality in the application.

OpcUaHandling

The complete features of the library are now also supported by PacDrive LMC controllers.

New function blocks available:

- *UA_Browse*
- *UA_MonitoredItemAddList*
- *UA_MonitoredItemOperateList*
- *UA_MonitoredItemRemoveList*
- *UA_SubscriptionCreate*
- *UA_SubscriptionDelete*
- *UA_SubscriptionProcessed*
- *UA_TranslatePathList*

PD_PacDriveLib

The library replaces all STRUCTS of the folder Mathematics with the alias of SE_Math (Mathematics library).

The following data types are changed to the ALIAS type which reference to the corresponding data types of the CommonMotionTypes library:

- *ET_CamType*
- *ET_MultiCamWsMode*
- *ST_CamPoint*
- *ST_MultiCam*
- *ST_Vector3D*

PD_SoMotionGenerator

ET_DiagExt.NoJobWhileAxisMoving is not triggered anymore.

The reference to the PD_PacDriveLib library is changed to CommonMotionTypes library directly.

PreventaSupport

Function blocks with obsolete attributes are marked and refer to the new library XpsuSupport which includes several improvements.

Sercos Device Modules

A new function template is available: Lexium 32S_Sercos

XpsuSupport

The new library provides the *FB_XpsuDiag* and *FB_XpsuMain* function blocks to be used for diagnostic and maintenance purposes with XPSU safety modules.

NOTE: The XpsuSupport Library Guide is not available and will be submitted shortly on the Help Server.

Examples

Machine Advisor Communication example:

- Extended diagnostic feature to retrieve the result of an unsuccessful certificate verification.

OpcUaHandling example:

- New example implementing the OPC UA client feature on a PacDrive LMC controller.

CNCExtension example:

- New example implementing an application which indicates the general way of working in an M262 controller application using the CNCExtension library. Real axes (drives) are not required as the motion is running in **Simulated** working mode.

Updated example projects:

- OpcUaClient example

Mitigated Anomalies

ID	Description
BOC-486 / SI-1711	PD_ETest: Allow the recording of measurands from TestCases / TestResouces located in a library.
BOC-577 / IECLIB-2231	PD_MultiBelt: Prevention of watchdog exceptions during startup of *AutomaticMode* with warm start on MultiBelt applications with 8 belts.
BOC-579 / IECLIB-1232 / OEM00070287 / IECLIB-2447 / OEM00076384	PD_AxisModule V1.6.4.0: *SetPos* homing modes are now possible with disabled axis power by use of switch *i_xKeepPowerDisabled* in *ST_HomeSetPos* of *PD_AxisModule*. ApplicationLogger entries to detect *SetPosHoming* with enabled axis power. New *FC_InitHomeSetPos2* and *FC_InitHomeRestorePos2* for compatible offer of *i_xKeepPowerDisabled* in *TemplatePilotProgrammingFramework*.
BOC-701 / IECLIB-2601	PD_MultiBelt: StationOffset (*alrStationOffset*) was incorrect for a train.
BOC-710 / IECLIB-2595	GMC Independent libraries: *MC_Stop* with ILX was blocking the state machine when an error occurred during stop.
BOC-815 / IECLIB-2688	PD_SmartInFeed: In case of generating targets by use of *IF_TargetGenerator.etMode -> ET_TargetGeneratorMode.TouchProbe*, the user must configure *TouchProbeTargetType*. If the user neglects this step, it led to a spurious PageFault if the *VelocityRatio* function block is used at the same time. Therefore, the parameter *etTargetTpType* was set to the default value *SI.ET_SimTypeTp.VirtualTp*.
BOC-816 / IECLIB-2689	PD_SmartInFeed: Added new *ET_DiagExt.NoTargetFound* to help avoid a PageFault in case of missing target.
BOC-836 / IECLIB-2709	MqttHandling: Assigned comments to correct function block inputs.
BOC-844 / IECLIB-2761	PD_SmartInFeed: Call of *Init* Method of *RandomGenerator* for simulation of different product length (*xProductLenghtVariance*) was missing.
BOC-982 / IECLIB-2873	Exception *8105 - Encoder Signal out of Range* did not reset the flag *HomeOk* for an axis in the template.
BOC-1012 / IECLIB-2888	ApplicationLogger: The resolution of the timestamp of a log entry created with EcoStruxure Machine Expert V1.2.3.0 was not provided in milliseconds.
BOC-1027 / IECLIB-2907	GMC Independent PLCopen MC: *MC_Jog* - Added resetting the trigger to detect, if the velocity changed. The function block will process now the target velocity every controller cycle, if the value of the input *Velocity* changed.
BOC-1028 / IECLIB-2904	In the present CrankModuleExample project in EcoStruxure Machine Expert an old VIS_AxisModule was used.

ID	Description
BOC-1107 / IECLIB-3420	GMC Independent PLCopen MC: *MC_Power* - Improved timeout error. Added new diagnostic code (*PowerTimeout*) and moved providing the diagnostic code from the function block *MC_Power* to the function block *MC_ReadAxisError*.
BOC-1117 / IECLIB-3437	GMC Independent libraries: The function block *MC_Power* did not enable the power stage in combination with Lexium_IL•2 drives.
BOC-1118 / IECLIB-3438	GMC Independent Lexium: *SetStopRamp_ILX* (ILA2, ILE2) - Implemented reading the configured ramp type (profile or torque) and write the dedicated ramp parameter depending on this ramp type.
BOC-1119 / IECLIB-3440	CrankModule library: The crank module warm start could be executed before the transformation was active.
BOC-1120 / IECLIB-3439	GMC Independent libraries: *MC_ReadAxisInfo* - The outputs *LimitSwitchPos* and *LimitSwitchNeg* were not correct when Safe Torque Off (STO) inputs were FALSE.
BOC-1123 / ROB-124	In case of an emergency stop (E-Stop) the use of the variable *rstRefOrientationTCP* inside of *FB_ AdditionalTransformationTCP* triggered a watchdog.
BOC-1134 / IECLIB-3450	GMC Independent PLCopen MC: *MC_ReadStatus* - Fixed bugs and modified the function blocks *MC_Reset* and *MC_ReadStatus* and the internal function *FC_DeviceStateToPlcOpenState* to fulfill the PLCopen state diagram.
BOC-1176 / IECLIB-3504	CommonToolbox: The output of the *FB_HeatingControl* kept the output *q_xPwmOutput* at TRUE during Autotune and an error appeared, or after an setpoint changes from a higher value to a very low value.
IECLIB-1833 / OEM00075244	PD_AxisModule V1.6.4.0: The *FC_InitDriveParameter* no longer performs automatic settings for *SlaveAxis.Delay* if the master signal is transferred via the C2C- or encoder network. An example code is available as a comment in *Init_XXXX* instead.
IECLIB-1883	Unwinder: The parameter *i_lrJLoadGain* only affect the additional load from the foil.
IECLIB-2442	PD_SoMotionGenerator: Stop profile is now correct for *etJobType = ET_MotionJobType.PosStop*.
IECLIB-2534	M262Diagnostics: Incorrect reading of online parameters from Sercos slave devices is corrected.
IECLIB-2609	GMC Independent PLCopen MC: In case the function block *MC_Stop* was interrupted by an error, a newly executed motion function block (after disabling and enabling the power stage) was aborted, when the input *MC_ Stop.Execute* was set to FALSE.
IECLIB-2737	TcpUdpCommunication: The property *FB_TcpServer2.SockOpt_ReceiveBufferSize* is fixed for M262 controllers.
IECLIB-2807	SlcRemoteController: *FB_RemoteController* indicates status is correctly after formatting or changing Safe Key.
IECLIB-2909	FtpRemoteFileHandling: On LMC058 and M258 the LIST command for servers which send the data in several frames sometimes did not work correctly if the *FB_FtbClient* was previously connected to another FTP server.
IECLIB-3458	FileFormatUtility: The methods *Select* and *SelectElementOfArrayByIndex* now operates properly with nested arrays and complex types.
IECLIB-3486	FileFormatUtility: The method *Select* is now compatible with Json formatted string whose root element is a type *TypeArray*.
IECLIB-3535	GMC Independent PLCopen MC: Executing the function block *MC_Stop*, while *MC_Power* was disabling the power, created an error.
IECLIB-3576	FileFormatUtility: String length to determinate cut of truncated string no longer considers whitespace in front of value.
IECLIB-3577	FileFormatUtility: *SelectNext* returns the correct diagnostic message in case the root item was selected.
IECLIB-16844	TcpUdpCommunication: • The default socket option *GVL.G_stDefaultSocketOptionsTcpClient.timTimeoutConnectTlsValue* was not taken into account as timeout for establishing a connection using the method *ConnectTls()*. • The default socket option *GVL.G_stDefaultSocketOptionsTcpServer.timTimeoutAcceptTlsValue* was not taken into account as timeout for accepting a new connection on a secured server socket.
M262-5106	Changing the cycle time of a task caused an exception during download of the application using OPC UA.
M262-5092	Downloading large and complex applications caused an exception during download of the application.
M262-5072	Using multiple OPC UA clients and a large number of nodes resulted in a long execution time and consequently in a watchdog exception.
M262-4248	OPC UA client: `UA_ReadList` using a pointer in persistent variables led to an exception error. An advisory was already present during the build: “Do not use POINTER in persistent variables, since addresses will change at download.”

Known Operational Anomalies

ID	Description
BOC-529 / IECLIB-2141	Moving the homed MultiBelt-Trains far in one direction by hand causes exception after Automatic Start.
BOC-531 / IECLIB-2498	Multibelt homing operates incorrectly after changing Belt-Length.
BOC-578 / IECLIB-2451	PacDriveLib motion function blocks report “Axis not ready” in combination with *FC_OverloadDetection*.
BOC-671 / IECLIB-2577	SmartInfeed: Filter setting causes error “unknown feedback” when *IrIdleDistanceAfterPosEdge* = *G_ IrProductLength*.
BOC-742 / IECLIB-2613	*FC_ControllerStopSet* operates incorrectly depending on the value of parameter *i_rDeceleration*.
BOC-1083 / IECLIB-3444	Multibelt feedback variable *xReadyForStep* is infrequently FALSE for one Sercos cycle.
BOC-1139 / IECLIB-3445	AxisModule: If the module is already stopped and you send a CMD *DriveEnableOff* in this situation, the CMD is not acknowledged.
BOC-1162 / IECLIB-3462	The simulation of a SmartInfeed is still active, even when setting the corresponding variable to FALSE.
BOC-1201 / IECLIB-3553	FtpRemoteFileHandling: No error is detected for the LIST command when the buffer size is too small.
IECLIB-16830	ModbusHandling: The connection management behavior of *FB_ModbusTcpServer* described in the ModbusHandling Library Guide is not supported. If the maximum number of 16 client connections from *FB_ModbusTcpServer* is reached, new connection requests are not processed.

Software Information V2.0

Software Information

Version Identification

Description	Version
Schneider Electric Software Installer	20.21.09802
Diagnostics	20.0.21.0
Controller Assistant	20.0.21.0
Device Assistant	20.0.21.0
DiffViewer	20.0.21.0
Gateway	20.0.21.0
Launcher	20.0.21.0
OPCServer	3.5.16.30
SVN	4.2.7.0
Logic Builder(1)	2.0
Vijeo-Designer	6.2.11.1012
CoDeSys	V3.5 SP16 Patch4 HF2
SQL Gateway	2.0.0.0
Motion Sizer	4.2.0.0
(1) If using a virtual machine, the download of the online help operates correctly only if the option **Accelerate 3D graphics** is deactivated in the VM settings.	

New Features Schneider Electric Software Installer

Schneider Electric Software Installer

- A remaining time is shown for download and installation.
- The installation configuration (components) can be exported and imported.
- It is possible to check for updates for the installer.
- A repair of the installation is introduced.

New Features EcoStruxure Machine Expert

New Compiler Version

EcoStruxure Machine Expert V2.0 uses CoDeSys service pack 16: compiler version 3.5.16.84.

Cam Editor Online View

The use of the feature Cam Editor has been extended with an online view.

The benefits of the Cam Editor online view are:

- See the values in the controller
- Get motion feedback from your application

NOTE: The profiles IncliSin, User profile (spline) , HarmoComb, ModAccTrCom, and ModiSinCom are not supported.

User Documentation

- A seamless integration of customer's libraries and help files in parallel to the official Online Help has been introduced. Supported formats are CHM and HTML.
- The Offline Help is available in standalone mode.

Script Hooks

The **Script Hook Manager** has been introduced to execute Python scripts triggered on events like ProjectSave, ProjectClosed, several SVN events, etc.

The benefits of the Script Hooks are:

- Automatic backups with different names of a project
- Get a reminder to save the project archive
- Automate additional work to any menu command

Sercos Diagnostic

A new page "Bus View" has been introduced inside Sercos editor for PacDrive.

The benefits of the new page are:

- Compare configuration with connected devices
- New graphic support to identify Sercos problems
- Filter possibilities: Filter to hide / show missing or "too many" devices
- Real-time online values to detect Sercos problems
- Direct jump to the device editors
- See a detected cable issue direct in the view

New Project Format

- A new project setting for security improvement has been introduced.
- You can now choose between the three options **No protection**, **Integrity check** and **Encryption**.
- **Integrity check** is the default project type for new projects/libraries. This setting means that a manipulation outside of EcoStruxure Machine Expert is detected and the project cannot be opened any more.

Device Assistant

Application Type and **Sercos Address** are now supported and are shown in two new columns.

The benefits of the revised version of the Device Assistant are:

- Quick read-only information of existing command **Edit parameters...**.
- Double drives are displayed with literal prefix like "A:" or "B:".

Machine Expert Code Analysis - Rule Set

Three predefined rules sets (All Rules, Basic Rules and Standard Rules) have been introduced which can be selected before adding conventions or metric tables.

The benefits of the rule set are:

- Easy start up target to smooth start and focus on most relevant finding at the beginning.
- Avoid getting big list of findings when start cleaning up the project with code analysis.

Machine Expert Code Analysis - New Metric Query's for Comments

New queries are available to check the comments for code, declaration and description.

Machine Expert Code Analysis - New Convention Query

A new convention query has been introduced which allows to detect if a function block or structure is used as input parameter type (Copy-per-Value). Same is true for device representing function blocks.

Machine Expert Code Analysis - New Metric Application Size

There are three new metrics available:

- Application Size (Code)
- Application Size (Data)
- Application Size (Data+Code)

Machine Expert Code Analysis - New Convention: Persistent and Retain Usage Check

- When retain or persistent variables are used in function block declarations, the complete memory location of the function block is in the **Retain** area of the controller.
- The memory performance of **Retain** is slower than normal memory and causes performance issues executing the code in time-critical situations.

Machine Advisor Code Analysis

- It has been introduced that the convention trend can be displayed and exported.
- Rule sets and new queries are available from Machine Expert.

SQL Gateway

The SQL Gateway supports an Oracle database.

Axis Editor - Online / Offline Behavior

- Opening of the online dialog by double-clicking in the **Edit** field has been introduced.
- **Write Online** changes axis configuration online.
- **Write Offline** changes axis configuration in the project.

NOTE: The feature requires an update of the AxisUiInterface library.

Application Logger

The functions of the Application Logger have been revised and now offer the following benefits:

- The Logger Point ID can be filtered now.
- Logger entries can be colored via context menu as already known from the Diagnostics tool.
- Each entry in each column can be used as color identified.

Other Modifications

- Usability of Smart coding has been improved.
- Extensive improvements of the ST editor.
- CFC: Update of the editor.

General Improvement

- General
  - Improved scaling with high DPI monitors (as of Windows 10)
- **Applications tree**
  - Display of access modifiers (PROTECTED, PRIVATE, INTERNAL)
- Bookmarks
  - Global and persistent bookmarks (**Bookmarks** view)
- Compiler
  - Memory reduction
- Continuous Function Chart (CFC) Editor
  - Support of qualified values
  - Code generation for automatic assignment and monitoring
  - Multiple insertion of elements from **Toolbox** via Ctrl + left mouse click
  - Auto Data Flow mode (automatic execution order based on element positions and linking), adaptable in CFC POU properties
  - Command **Set Start of Feedback loops**
  - Drag and drop of variables from declaration to block inputs/outputs
  - Improved Auto routing of connections
- Controller - **Log** tab
  - Sorting of table columns
- Controller - **PLC Settings** tab
  - Enabling of CAA Device Diagnosis
- Cross Reference
  - Filtering of found symbols
  - New column **Usage context**
- Device Editors
  - New **Log** tab shows log messages related to the device
  - Expandable messages
- **Devices tree**
  - Errors of (collapsed) child devices visible on parent devices
  - Notification about errors / acknowledgement of errors via contextual menu
- Device User Management
  - Secured, encrypted transmission of user name and passwords - now only possible online
  - Export/import via password-secured file

- Fieldbus
  - Support of function block for I/O channels
- IEC Languages
  - Task local variables
  - *ABSTRACT* as new keyword
  - New data type *__VECTOR*
  - 64-bit data types: *LDATE*, *LDATE_AND_TIME*, *LTIME_OF_DAY*
- Library Manager
  - Better navigation through linked identifiers, forward and backward buttons
- Cybersecurity
  - Encrypted communication (no / optional / enforced encryption) via **Communication Settings**
  - Optional / enforced Device User Management via **Communication Settings**
  - Signing of compiler libraries
- SmartCoding
  - Switch scopes (all, keywords, global, local) with arrow left / right
  - Highlighting searched strings in results.
- ST Editor
  - Highlighting of all occurrences of the selected symbol
  - Search symbol via Ctrl+Shift+I
  - Declaring variables via SmartTag
  - Auto declaring variables via SmartTag
- Status bar
  - Offline status field for “Up To Date” application
- SVN
  - Improved performance for comparing working project with base project
- Symbol Configuration
  - Configurable set of different symbols for separate clients
- Task Configuration
  - Display of variable usage in different tasks
- Toolbar
  - Selection of active application in drop-down box
- Visualization
  - Stabilization of XY chart
  - Trace (filling curves, curls as markings)
  - Trend (graphs with fill color)
  - Rectangle (radius setting)
  - Combo box (value range, supports dynamically selected text list)
  - Frame shifting (via input configuration - switch frame visualization)
  - Trace and Trend (additional color configuration)
  - Integrated visualization shows the online WebVisualization functions
  - Configurable tab order
- Watch List
  - Monitoring of instances via interfaces or pointers
- WebVisualization
  - Overlays (dynamic movement for the elements, inner rotation)
  - Time-controlled animations (smooth moving of menus, smooth showing/ hiding dialogs, animated images - GIF, SVG -, less load on controller)

New Features EcoStruxure Machine Expert - Safety

New Features

- Integration of SAFEPROG V3.7
- External compare interface for non-graphical objects (e.g. structured text, project info)
- Extended ST language features enabled (FOR, CASE, IF, EXIT, RETURN)
- Search function is available in worksheets with structured text (ST)
- Italian language support on the GUI elements and user documentation (online/offline help)
- Quality improvements on software and user documentation
- Cybersecurity improvements
- New TM5/TM7 IO FW seco component added to Schneider Electric Software Installer. Delivers now version consistent qualified safety IO slice FW also directly to customer installation. Update as described via Device Assistant tool.
- Updated TM5CSLCx00FS FW (SWC enhancement)
- Updated TM5SPS10FS FW enabling higher switching cycle frequency up to 2 Hz.
- Support of TM262M05 for functional safety
- Support of LXM62DC13E safety drive

Compatibility EcoStruxure Machine Expert

Overview

EcoStruxure Machine Expert V2.0 can be installed in parallel to EcoStruxure Machine Expert V1.1 or V1.1SP1 or V1.2.x.

EcoStruxure Machine Expert can be installed in parallel to other Schneider Electric software products, such as SoMachine and SoMachine Motion.

Compatibility of Device User Management

The user rights storage format is updated with EcoStruxure Machine Expert V2.0.

User rights included in controllers programmed with EcoStruxure Machine Expert versions earlier than V2.0 must be recreated after updating their firmware version to EcoStruxure Machine Expert V2.0.

For general information on compatibility of EcoStruxure Machine Expert, refer to the Compatibility and Migration Guide.

Compatibility of Python Function `change_device_user_password`

The Python function `change_device_user_password` from `usermgt.py` was replaced by `create_live_user_management()` and `change_user_password(user, oldPassword, newPassword)` from `ScriptOnlineDevice`.

`change_device_user_password` can be used for controllers with a firmware version prior to EcoStruxure Machine Expert V2.0.

Compatibility EcoStruxure Machine Expert - Safety

Project Updates

- No incompatibility for re-use of safety projects generated with former versions.

  NOTE: Updated projects from former versions opened in EcoStruxure Machine Expert - Safety V2.0 do not show project CRC. A re-compile of the project is needed once to update to new internal safety project structure. After this step the project CRC is re-calculated and will be shown now and will be the same as former project. No change of any functional safety related function by this process.
- Safety release is updated to Machine Expert V2.0.
- No re-certification needed related to new TM5CSLCx00FS and TM5SPS10FS delivered FW versions and unchanged updated projects to this version.
- However in case of updating systems with new TM5SPS10FS V332 FW the related safety function has to be tested and the updated technical characteristics in the user guide have to be considered.

  NOTE: In general, after a safety system update the safety related functions have to be re-tested as usual.

Overview of the validated EcoStruxure Machine Expert - Safety version with the appropriate safety-related firmware.

Device	Safety-related firmware version for EcoStruxure Machine Expert - Safety version			
	1.1	1.2	1.2.2	2.0
TM5CSLC100FS	2.52	2.52	2.53	2.56
TM5CSLC200FS	2.52	2.52	2.53	2.56
TM5SAI4AFS	322	322	322	322
TM5SDC1FS	302	302	302	302
TM5SDI20DFS	305	305	305	305
TM5SDI2DFS	305	305	305	305
TM5SDI4DFS	305	305	305	305
TM5SDM4DTRFS	305	305	305	305
TM5SDM8TBFS	305	305	305	305
TM5SDO2DTRFS	300	300	300	300
TM5SDO2TAFS	280	280	280	280
TM5SDO2TFS	280	280	280	280
TM5SDO4TAFS	280	280	280	280
TM5SDO4TFS	280	280	280	280
TM5SDO6TBFS	295	295	295	295
TM5SPS10FS	320	320	320	332
TM5STI4ATCFS	322	322	322	322
TM7SDI8DFS	305	305	305	305
TM7SDM12DTFS	305	305	305	305

Mitigated Anomalies

EcoStruxure Machine Expert

ID	Description
OEM00074431 / CDSYS-139	Auto-Declare Using a statement like `ptVar := ADR(var);` where *ptVar* is declared a *POINTER TO INT* had led to an auto-declaration proposal of *POINTER TO INT* for var instead of *INT*.
OEM00074574 / CDSYS-141	Auto-Declare: Using a statement like `GVL.toto := bool_1;` where *bool_1* is declared as *BOOL* and *GVL* is the name of a GVL caused an autodeclaration proposal of *INT* for toto instead of *BOOL*
OEM00074647 / CDSYS-143	Auto-Declare: Using Auto-Declare from a POU did not offer an already existing PersistentVars as object, except if selecting in the following order: *PERSISTENT* and *RETAIN* followed by *VAR_GLOBAL* as scope.
OEM00076869 / CDSYS-197	Project Export/Import: After exporting modules, when importing, the modules were reordered alphabetically by module name.
OEM00071094 / CDSYS-72	Trace: Multi-selection of variables in the **Trace Record** part of the **Trace Configuration** dialog box was not supported.
OEM00071445 / CDSYS-76	ProfiNetIO-Controller (Master): New parameters on the General tab: I/O provider/ consumer status. Parameter Application stop > Substitute values: When the user stops the application, the provider state was set to BAD. The slaves then had set the inputs and outputs to predefined substitute values.
OEM00071929 / CDSYS-83	Online Change: Adding a library opened the **Online Change** dialog box, even if nothing was used out of this library.
OEM00072060 / CDSYS-84	Auto-Declare: Using a statement like *IF Var_0 OR Var_1 THEN* had triggered an auto-declaration proposal of *INT* instead of *BOOL*.
SI-3971 / DTM-68	When you converted a controller, for example, an M262L20 to an M262M35, the module configuration of the TM5/TM7 interface was not converted and was no longer available after conversion.
BOC-45 / CDSYS-1	A double-click on an error message did not open the **Trace Configuration** with additional information about an incorrect variable.
BOC-54 / CDSYS-376	There was a performance impact from EcoStruxure Machine Expert on LMC controller when an ALIAS was used.
BOC-67 / SI-5594	Automatic I/O mapping was not available via Python.
BOC-412 / PLAT- 612	LogRecord Datelogging added an incorrect time stamp to each record.
BOC-423 / CDSYS-373	Online change was prohibited after minor changes with an error *C0367: "Internal Error 3 prohibiting Online Change! Clean Application and download necessary"*.
BOC-469 / SI- 6563	The multiple download did not work with DTM of ATV320.
BOC-471 / SI- 5601	The **Configuration** tab of TM5 CANopen bus coupler was hidden after export device.
BOC-481 / SI- 3793	In some projects, the drive parameter was changed after a project update.
BOC-485 / SI- 4549	It was not possible to add a user documentation to EcoStruxure Machine Expert.
BOC-486 / SI- 1711	It was not possible to use a test resource from a library in ETest.
BOC-500 / CDSYS-271	Replace function caused an error *"Value cannot be null"* when a visualization was used.
BOC-501 / CDSYS-246	After contacts in LD network were added the network was not displayed correctly.
BOC-502 / CDSYS-243	If the attribute `'to_string'` in an enumeration of a library was used, a compiler error was triggered on the project which used the library functionality.
BOC-503 / CDSYS-240	The percentage (%) value information of **Memory area 4** for controller was incorrect in German language.
BOC-504 / CDSYS-237	When getting an error message with additional related code position information for the occurrence in the different task the positions were missing or incorrect.
BOC-505 / CDSYS-210	In some projects an *"Internal system error"* was triggered during code generation.
BOC-506 / CDSYS-193	A replacement of multiple items with auto-complete (IntelliSense) in some projects created an assertion.
BOC-508 / CDSYS-158	Under certain circumstances, the values of global variable list *Global_SWC_Variable* were not visible after login (*"???"* appeared in place of the values). If you executed a mouse-click into the variable list, the current values appeared.
BOC-509 / CDSYS-157	Hiding a graph in the visualization operated incorrectly.
BOC-511 / CDSYS-59	It was not possible to get the information about the number of selected variables in the **Symbol Configuration**.

ID	Description
BOC-522 / CDSYS-249	It was not possible to change the sort sequence of files on a flash card.
BOC-523 / CDSYS-233	Empty rungs (LD) were generated after a PLCopen XML export/import.
BOC-524 / CDSYS-167	When the IEC trace was used, a software error (*PageFault*) was triggered while reading the config file.
BOC-525 / CDSYS-133	A compiler error was triggered when multiple assignment on an output were used.
BOC-526 / SI- 6288	Default value of *TraceBufferSize* in EcoStruxure Machine Expert was too small.
BOC-527 / CDSYS-88	If the pragma `If defined` was used, EcoStruxure Machine Expert automatically modified the `type` to capital letters `TYPE`, if the cursor was leaving the line of code.
BOC-536 / CDSYS-327	**Project Compare** did not operate in some projects, terminating with a *"Cannot compare"* error.
BOC-539 / CDSYS-273	When modifications were reverted in an SVN project, the project was synchronized with SVN and a notification was displayed: *"An inconsistency or unexpected error was detected and automatically repaired. Please check your project. If this problem is repeatable, please contact the support department with the steps to repeat."*
BOC-541 / CDSYS-245	The FBD output connection had an incorrect color.
BOC-543 / CDSYS-224	A trace parameter of type *AS* created an error *"CycleTime overrun"*.
BOC-544 / CDSYS-155 / OEM00075351	You log in to a project (FBD code) and put the focus on a network (which is not the last one) in an action/program. If you log out and log in again, the focus will be on the last network in the action/program. The same behavior is shown up, if you switch between actions.
BOC-547 / CDSYS-134 / OEM00073945	Accessing a variable name of the TM5 module, I/O mapping was not possible with Python scripting using an ARRAY.
BOC-548 / CDSYS-124	Find and replace: Regular expression was operating correctly for find, but if you try to replace a string the control characters (e.g. `\t` for tab) were not filtered, means the control character is part of the replacing string after replacing.
BOC-549 / CDSYS-120	A reset of the flag *"Connect boxes with straight lines"* in **Tools > Options > FBD**. EcoStruxure Machine Expert created junctions in the signal path.
BOC-550 / CDSYS-66 / OEM00069953	To display different comments for libraries you can enter the key *LibDocContent*. Using *LibDocContent* with *DocsOnly* of *CommentsAndDocs*, the same results were displayed.
BOC-551 / CDSYS-238	A rising edge contact was not working in parallel branch in LD.
BOC-552 / CDSYS-189	If a copy and paste of a part of a CFC code was executed and the copied part is near the position of the original part. Every further copy and paste attempt was result in a copied code far away from the position of the original code.
BOC-558 / M2X1- 183 / OEM00078429	**Relocation Table**: The **Length** of ARRAY variables containing structures with elements of type DATE, TIME, DATE_AND_TIME is now correctly displayed.
BOC-562 / CDSYS-270	**Library Manager**: No namespace of inherited function blocks was shown.
BOC-570 / CDSYS-81	The EtherNet/IP communication was not working, if the adapter connection was configured to **predefined connection** (EDS file).
BOC-581 / CDSYS-360	Direct call of the *PLC_R* (for example *_dwSerialNumber* etc.) variable(s) under the Vijeo Designer numeric display, caused a controller error.
BOC-636 / SI- 5609	It was not possible to stop the application before an application download.
BOC-645 / CDSYS-390	Bitmap was not displayed for all POUs in FBD.
BOC-659 / SI-5598	VisualizationManager: The **Visual Style Editor** was not operational.
BOC-666 / CDSYS-405	SVN compare function needed a lot of time in large projects.
BOC-673 / CDSYS-396	There was a precompiling error with the RTC Control example project regarding *iq_dwDateTime*.
BOC-685 / CDSYS-401	The state (TRUE/FALSE) of an input variable of a method was not monitored in **Online** view, if the variable was an element of an ARRAY and negated.
BOC-686 / SI- 5871	An error message was triggered when persistent variables were reset from EcoStruxure Machine Expert.
BOC-688 / CDSYS-400	An SVN update was possible while the application was online (project online).

ID	Description
BOC-713 / SI- 5676	There was no pop-up when and why a license was not accepted.
BOC-721 / CDSYS-426	It was not possible to precisely select the location of a comment in Chinese character with the mouse or keyboard in ST editor.
BOC-722 / CDSYS-425	The cursor position in LD function block was lost when you changed tabs.
BOC-731 / CDSYS-427	The *GetDayofWeek* function from *CAA_DTUtil* library sent an incorrect return value on Saturday 2/29/2020 (Leap Year).
BOC-747 / SI-5746	There was no setting to prefer the Online help offline.
BOC-769 / IAT-78	Online Help: The modified installation path created unnecessary folders.
BOC-812 / CDSYS-442	Open an expression structure (e.g. *raifBelt-Array*) of the *SmartInfeed* closes automatically while scrolling (with scroll bar and/or mouse wheel), at some Arrays (e.g. *raifTargets-Array*) it was not possible to open the array because it closed immediately after opening.
BOC-813 / CDSYS-443	Refactoring, for example a function name “local”, in the active editor the name was not changed in the project (e. g. **Device tree**).
BOC-846 / PLAT- 942	When using the BIT data type, the analysis of the relocation table was not able to calculate the size of the related structure variables.
BOC-850 / CDSYS-459	An external file in EcoStruxure Machine Expert that was only inserted as a link was not opened correctly. Instead of the original file, only a temporary one was opened that could not be edited.
BOC-861 / SI- 5984	*ApplicationLogger*: The text size of the *ApplicationLogger* filter was not sufficient to read the complete text.
BOC-866 / CDSYS-464	The precompile error for the attribute ‘strict’ (ENUM) was misleading.
BOC-870 / CDSYS-465	The precompile function has returned incorrect precompile error messages which was misleading.
BOC-874 / CDSYS-462	The I/O mapping as a result of the importation of some EtherNet/IP EDS files was incorrect if the length of a member in the Assembly Member List was different from the length of the parameter used.
BOC-878 / CDSYS-466	When you had loaded a trace data recorded with a runtime buffer size > 10001, only the last “part” of the full trace was visible.
BOC-879 / CDSYS-463	An ENUM with the attribute ‘strict’ in `VAR_IN_OUT` did not cause a compile error.
BOC-892 / CDSYS-467	Diagonal visualization element had moved unintentionally.
BOC-895 / CDSYS-468	After an import from code of an XML file (Import PLCopenXML), the code was modified (*Out1* added to several functions).
BOC-909 / CDSYS-486	The visualization had shown randomly one or more black squares on the screen after using the numpad window.
BOC-947 / CDSYS-388	The Trace stopped recording after 1h 11min.
BOC-949	It was not possible to precisely select the location of a variable in Chinese character with the mouse or keyboard in ST editor.
BOC-971 / SI- 6376	Smpb file is proposed as supported file, but when opening such a file an error occured.
BOC-980 / CDSYS-529	Generate code leads no longer to an AssertionFailed exception in some projects using function blocks which use arrays with a variable size.
BOC-992 / CDSYS-527	Array online monitoring range works properly and allows more than 1000 REFERENCE TO ARRAY elements for online monitoring.
BOC-999 / CDSYS-532	Global search for cross reference is now possible.
BOC-1000 / SI- 6472	The communication parameters of a Profinet device are now displayed correct in the PDI file.
BOC-1002 / SI- 6473	Converted a PacDrive LMC Pro to a PacDrive LMC Eco project, the **PLC Settings** are no longer changed unintenionally.
BOC-1003 / SI- 6474	Now messages are shown about changed library version after converting a controller.
BOC-1004 / SI- 6475	The activation of a parameterized *TestCase* had led to compile errors, if the handover of the test parameters in an array was realized as follows: [2 (0), 5, 6].
BOC-1017 / SI- 6542	Device addressing in the popup menu points now to the correct PacDrive controller.

ID	Description
BOC-1022 / SI-6574	Opening a large project on SVN was time-comsuming.
BOC-1046 / M2X1-142	The M241 controller was missing in the TM3HSC library version mapping list.
BOC-1068 / CDSYS-564	A user structure which “extends” from *PDL.ST_Vector3D* created the compiler error “Keyword EXTENDS not applicable to type *PDL.ST_Vector3D*”.
BOC-1072 / CDSYS-552	Smart coding did not work on alias from a library of type ARRAY OF STRUCTURE.
BOC-1086 / SI- 5669	The functionality of **Add function from Template** did not transfer the IP address used in the template to the device.
BOC-1089	The PreCompiler created an error if a project with M262M controller was used where the `ARRAY OF PLCO.MC_CAM_ID` was used in the code.
BOC-1100 / CDS-64615	In an application with two function blocks *FB_1* and *FB_2* where *FB_1* has two methods that it provides to *FB_2*. A call of *FB_2* generated the advisory message *C0298 “Calculation of stack usage incomplete because of recursive calls*: `SR_Main () -> FB_2 () -> FB_1.METH_1 () -> FB_1.METH_2 () -> FB_1.METH_2 ()` ".
BOC-1103 / PLAT-1278	The Download App macro contains now the command to download the WebVisualization files.
BOC-1109 / SI- 4922	Activation of Code Analysis trial is now successful.
BOC-1112 / CDSYS-518	It was not possible to verify the state / modifications of *UserRightsManagement* via IEC (monitoring of a parameter).
BOC-1164	The refactoring of a global constant did not work correctly when the global constant was used for the declaration of an array in a structure.
BOC-1174 / SI- 8901	**Save parameters of all devices** has generated an error message, when a ProfNet device was used.
BOC-1177 / SI- 8952	Library namespace was not shown in the CAM Editor.
BOC-1207 / M2x1–512	OPC UA: Not all M241/M251 variables inside an array were visible for an OPC UA client.
BOC-1218 / CDSYS-717	Library installation was unsuccessful while antivirus software was running.
BOC-1272 / CDSYS-564	Using a Vector3D resulted in detected precompiler errors, redmarking from smart coding.
CVE-2020-12525	Specific cybersecurity vulnerabilities are mitigated.
CVE-2019-13538	Specific cybersecurity vulnerabilities are mitigated.
CVE-2019-9008	Specific cybersecurity vulnerabilities are mitigated.
CVE-2019-7052	Specific cybersecurity vulnerabilities are mitigated.

EcoStruxure Machine Expert - Safety

ID	Description
SSP50-6783 / OEM00060343	In the SafeLogger you can read that the status of an input/output of a safety-related module has changed. More detailed information on the reason can be now decoded out of the additional info0 and info1 information. (Refer to the SafeLogger User Guide for details).
SSP50-6800 / OEM00068735	If you set the *MaxDataTransportTime* and *CommunicationWatchdog* parameters to significantly greater values than proposed by the calculator (for example, 6500 ms), this can result in an unstable system because these parameters influence the timeouts and restart timing of the safety-related system. In this case, the ModuleOK status for some safety-related modules is not reached or is unstable. Workaround: Use the values calculated by the Response Time Calculator or do not increase the parameters by more than factor two.
SSP50-6805 / OEM00068980	If you set the value for *MinDataTransportTime* to a value less than the value calculated by the Response Time Calculator, a build error message may be displayed. Workaround: The *MinDataTransportTime* must be set to the calculated value.
OEM00052480	An error was detected if a special character (e.g., German umlauts) was entered as part of the naming of a variable (in ST) in EcoStruxure Machine Expert - Safety. It was not possible to ignore or cancel this exception. Workaround: Special character compatibility is improved. However, it is best if you do not use special characters in variable names.
SSP50-4523 / SSP50-6890 / OEM00078271	The TM5SPS10FS module did not differentiate if the user parameter *centralcontrol* was set to Central or Direct.

Schneider Electric Software Installer

ID	Description
SI-5642	It is now possible to add an HMI to the project after deinstallation of a legacy version.
SI-6757	The device cache was corrupted after installation of “LogicBuilder softmotion” while the Logic Builder was open.

Documentation

ID	Description
BOC-314 / SI- 5435	The attribute ‘to_string’ was missing in Online help.
BOC-426 / SI- 5425	The Online help for *RecipeManCommands* did not include the data types of the method parameters.
BOC-460 / SI- 5446	There was no explanation on how to select a general export/import or a fast export/import.

Known Operational Anomalies

Controller Assistant

ID	Description

SI-11876	If Controller Assistant is executed via command line, the commands `-savecontrol` and `-loadcontrol` require additional switches to read / write the device user rights management. Without the commands, the operation is unsuccessful and the message “Cannot save device user rights to current image without a password.” or “Cannot import device user rights from current image without a password.” is displayed.
	
	Workaround:
	• For `-savecontrol` use:
	`ReadOnlineUserRightsManagement<Ignore|Read> [-UserRightsManagementPassword<Password>]`
	• For `-loadcontrol` use:
	`WriteOnlineUserRightsManagement<Keep|Overwrite|Restore> [-UserRightsManagementPassword<Password>]`
	The `UserRightsManagementPassword` is only required for the options read and overwrite.

EcoStruxure Machine Expert

ID	Description
BOC-34 / SI-5600	Link to DHCP server configuration does not work for Modbus TCP.
BOC-376 / MS- 2018	The combination of SH3055 motors with GBX080 gearboxes is shown, even though such a combination is not allowed by the technical data sheet of GBX gearboxes.
BOC-468 / CDSYS-291	No compiler error is displayed for duplicate IO mapping.
BOC-470 / CDSYS-290	An error message due to direct addressing indicates incorrect spot.
BOC-513 / CDSYS-54	In the CAM editor the tappet values can be modified in the table. Using this method the value is limited to the *SlaveEndPosition* which is incorrect.
BOC-516 / CDSYS-21	The *PLC_R.ApplicationSignature* changes with the code compile as soon as the compile info file is deleted (**Clean** or **Multiple download**) even the code is not changed.
BOC-545 / CDSYS-152	If variables from a library are declared inside the global variable list, errors can occur while compiling the project.
BOC-554 / CDSYS-31	GIPLC1.1.0.0 order of variables declaration in function blocks is incorrect.
BOC-605 / MS-1960	No negative parameter is possible for Crank.
BOC-607 / MS- 1950	The description for inertia of pinion is not clear in the Motion Sizer.
BOC-608 / MS-1947	There is a documentation issue for ILM140 drives in Motion Sizer, the length and the winding type of the motor and drive type do not match.
BOC-609 / MS- 1944	The torque characteristic is not updated in the Motion Sizer after an update from the PWM frequency.
BOC-612 / MS- 1943	Incorrect jerk is displayed for motion law ‘mod sin’ in the Motion Sizer.
BOC-613 / MS- 1913	It is not possible to open some Motion Sizer projects (invalid object identifier).
BOC-617 / MS-1946	Not possible to select minimal supply voltage for ILM.
BOC-618 / MS- 1940	If a new gear box is manually added to the GearBox editor in Motion Sizer, an uneven gear factor is not displayed correctly.
BOC-619 / MS-1969	Motion Sizer: On a crank mechanic, the position curve is incorrect and also the label of the curve is incorrect.
BOC-620 / MS-1942	Motion Sizer: SH3 140 motors are missing in the motor database.
BOC-783 / MS-2062	Motion Sizer mains result not displayed due to load diagram and the cycle times set to an integer value.
BOC-794 / MS-2065	In some Motion Sizer projects there is an unexpected peak acceleration limitation in the results which does not match the motion profile.
BOC-847 / CDSYS-458	Missing documentation of CloseDialog2.
BOC-932 / CDSYS-500	The use of an AT declaration for a 32 bit variable (e.g. DWORD) inside a Struct, leads to an error from the equal check.
BOC-1061 / CDSYS-557	**Replace all** function only renames the first object found in the selection of an CFC (Continuous Function Chart).
BOC-1163 / CDSYS-563	Members of Structures extending Alias of Structure are not displayed in the **Input Assistant**.
BOC-1140 / CDSYS-634	If a mistake happened inside the declaration of enumeration with the attribute `'to_string'`, which is then used for a statement case; the compiler does not show the compiling error properly - Object and Position is missing.
BOC-1140 / CDSYS-634	If a mistake happened inside the declaration of enumeration with the attribute `'to_string'`, which is then used for a statement case; the compiler does not show the compiling error properly - Object and Position is missing.
BOC-1172 / IAT-97	SESU shows EcoStruxure Machine Expert V1.2.4.0 update even though EcoStruxure Machine Expert V1.2.5.0 is installed already.
BOC-1207 / M2X1-512	OPC UA issue on M241/M251: variables inside arrays are not all seen by an OPC UA client.
BOC-1238	The I/O mapping of some EDS files is incorrect in PacDrive projects.
BOC-1239	The compiler does not display the exception *C0224 Call Recursion: SR_Recursive -> SR_Recursive* if the program (which has the exception) is called inside the SFC-POU.
BOC-1285 / CDSYS-775	SFC action with qualifier `N` is not executed correctly.
BOC-1295 / PLAT-1392	An error message is triggered if a located struct is added to the OPC UA **Symbol Configuration**.

ID	Description
BOC-1307 / CDSYS-800	The time base of **Trace** is set to hours if resolution µs is selected.
CDSYS-765 / SI-9968	After updating a project created with EcoStruxure Machine Expert V1.1 (or SoMachine V4.3) compiler messages may be displayed regarding the library IoDrvModbusSerial that is required by the devices ZBRN2 Harmony XB4R/5R (on Modbus Serial IO Scanner) or ZBRN1 (on Industrial Ethernet Manager). Workaround: Delete the Modbus Serial IO Scanner and/or the ZBRN1 device from your application and restore them afterwards.

EcoStruxure Machine Expert - Safety

ID	Description
SSP50-9033	After a deinstallation of EcoStruxure Machine Expert V2.0 from a machine which had a parallel installation of EcoStruxure Machine Expert V1.2.x, the safety project import/export function of the remaining EcoStruxure Machine Expert V1.2.x installation is no longer available. Workarounds: • Execute the repair function of the Schneider Electric Software Installer on the EcoStruxure Machine Expert V1.2.x. Or • Desinstall and reinstall the safety component for the V1.2.x version in the component view of the Schneider Electric Software Installer.

Schneider Electric Software Installer

ID	Description
SI-3860	If a Windows update is started during installation, a restart dialog box is displayed while the Harmony (DTM) is being installed.
SI-6370	Library documentation is missing in the **Library Manager** after deinstallation of a legacy version.

Additional Information

Additional Ethernet Port for PacDrive LMC Control

Overview

The additional Ethernet port provides the possibility to have an additional standard Ethernet interface on board for the following controllers:

- PacDrive LMC Pro/Pro2
- PacDrive LMC Eco (option module)

Ethernet Interface

The new Ethernet object provides for TCP/UDP communication.

- To establish a connection via the additional port with the Logic Builder in combination with the connection mode **Fast TCP**, enter the IP address of the additional port.
- To establish a connection via the additional port with the Logic Builder in combination with the connection mode **Nodename** (or **IP Address**), use the IP address of the default port.
- To establish a connection via the additional port with Vijeo-Designer in combination with the connection mode **Nodename**, use the node name of the default port but ensure that theIP addresses of the network cards of the PC and the HMIs are configured in accordance with the additional network.

Parameters

Overview

The **Ethernet** object uses the **UserFunctions** node of the EcoStruxure Machine Expert Logic Builder to implement the parameters.

- **Common** parameters, that are also provided by other user functions:
  - *LogAdr*
  - *ObjectType*
  - *stLogicalAddress*
- Specific parameters for **UserFunctions**:
  - *Enable*, page 45
  - *State*, page 46
  - *IP Address*, page 47
  - *Subnetmask*, page 47
  - *NetX_Connector*, page 48
  - *Valid*, page 48

Enable

General

Type	EF
Address	16#000B
Offline editable	Yes
Devices supporting the parameter	Ethernet
Traceable	Yes
Default value	on / 1

Functional Description

The parameter *Enable* determines the moment when the Ethernet object is activated.

- If the parameter *Enable* is set to *off / 0*, then the Ethernet object is not activated at the start of the controller.

  The Ethernet object can later be activated by switching the value to *on / 1*.
- If the parameter *Enable* is set to *on / 1* at the start of the controller, then the Ethernet object is activated at the start of the controller.

  The Ethernet object cannot be deactivated later. When setting from *on / 1* to *off / 0*, the value stays at *on /1* and the diagnostic message 8740 *Device cannot be disabled* is added to the message logger.
- The parameter defines the moment, when the Ethernet firmware is loaded.

  When the interface was activated, it cannot be deactivated because the Ethernet firmware cannot be unloaded.

Value	Data type	Meaning
off / 0	BOOL	Ethernet object is not activated at the start of the controller.
on / 1	BOOL	Ethernet object is activated at the start of the controller. When switching from *off / 0* to *on / 1* the Ethernet object is activated.

State

General

Type	AF
Address	16#000C
Offline editable	No
Devices supporting the parameter	Ethernet
Traceable	Yes
Default value	off / 0

Functional Description

The parameter indicates the status of the Ethernet object, and when the Ethernet object can be used for Ethernet communication.

Value	Data type	Meaning
off / 0	DINT	Ethernet object is not active. Ethernet firmware is not loaded.
loading / 1	DINT	Ethernet firmware is loading.
down / 2	DINT	Ethernet firmware is loaded. The Ethernet interface is down and cannot be used for Ethernet communication.
running / 3	DINT	Ethernet object is activated. Ethernet firmware is loaded. Ethernet interface is running and can be used for Ethernet communication.

IP Address

General

Type	EF
Address	16#000D
Offline editable	Yes
Devices supporting the parameter	Ethernet
Traceable	No
Default value	'192.168.1.100'

Functional Description

Defines the IP address of the additional standard Ethernet interface.

The parameter is checked for:

- Proper format [a1].[a2].[a3].[a4].
- The first position [a1] > 0 and ≠ 127 (127.x.x.x would be the local host)
- Overlapping with other network interfaces (standard Ethernet, Sercos UCC). When overlapping is detected, the diagnostic message *8967 NRT IP parameter device different* is added to the message logger.

Value	Data type	Meaning
'192.168.1.100' (default)	STRING(15)	IP address of the additional standard Ethernet interface.

Subnetmask

General

Type	EF
Address	16#000E
Offline editable	Yes
Devices supporting the parameter	Ethernet
Traceable	No
Default value	'255.255.255.0'

Functional Description

The parameter defines the subnet mask of the additional standard Ethernet interface.

The parameter is checked for:

- Proper format [a1].[a2].[a3].[a4].
- The subnet mask consists of two parts from a binary point of view: [t1][t2], with [t1] consisting of binary 1 s and [t2] of binary 0 s (for example, 255.255.245.0 is not permitted since the third digit (245) is 1111 0101 in binary code, which means that the first 0 on the left is followed by more 1 s).
- The entered value is not 255.255.255.255.
- Overlapping with other network interfaces (standard Ethernet, Sercos UCC). When overlapping is detected, the diagnostic message 8967 *NRT IP parameter device different* is added to the message logger.

Value	Data type	Meaning
'255.255.255.0' (default)	STRING(15)	Subnet mask of the additional standard Ethernet interface.

NetX_Connector

General

Type	EF
Address	16#000F
Offline editable	Yes
Devices supporting the parameter	Ethernet
Traceable	Yes
Default value	Front / 1

Functional Description

The parameter *NetX_Connector* is set and can be set only to the value *Front / 1*.

Value	Data type	Meaning
Front / 1	DINT	Ethernet interface activated at connectors CN10 and CN11.

Valid

General

Type	EF
Address	16#00010
Offline editable	No
Devices supporting the parameter	Ethernet
Traceable	Yes
Default value	no / 1

Functional Description

The parameter allows to verify if the user function is activated. This is used for dynamic machine configuration.

At the Ethernet object the value is TRUE, because when the Ethernet object is added, the user function is always activated.

Value	Data type	Meaning
yes / 1	BOOL	User function is activated.

Sercos Improvements (Sercos Robustness) for PacDrive LMC Control

Overview

Sercos Robustness provides the possibility to keep the Sercos network operable even if a non-critical device is in an inoperable state or removed.

Sercos system reaction:

- Same default system behavior of the Sercos bus. A device error causes the Sercos bus to shut down and the Sercos master state change to error.
- The new system reaction of the Sercos master allows to continue operation in phase 4 even if a device goes in the Fail state (for example, broken device). The drives run in a virtual mode.
- Safety-related application allows to use the new system reaction.

Configuration of feature:

- Configuration on device level.
- Configuration is activated during Sercos phase up.

Supported Devices

The following devices support Sercos robustness:

- LXM62
- LXM62 PS
- LXM62ILM
- LXM52
- TM5NS31
- Sercos drives (third party drive)
- Sercos IO devices (third party IO devices)

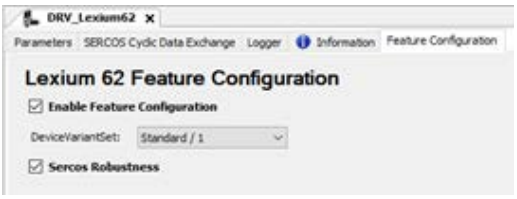
Configuring Sercos Robustness System Reaction

The Sercos robustness function allows you to configure new system reaction using the application for each supported device:

- Activation via new user function **Sercos Robustness**. Refer to Activating the Sercos Robustness Function, page 50.
- New device parameter *ConfiguredSystemReaction* to set the system reaction *default* or *system reaction 1* (refer to IEC Interfaces — Parameter Definition, page 50).
- New device parameter *SystemReaction* displays the system reaction from the device.
- New device working state *error* – for example, inoperable devices switch into error state.
- New icon update when device is in an error situation.
- The parameters can be accessed via IEC application.

Activating the Sercos Robustness Function

To activate the **Sercos Robustness** and its new **UserFunctions**, click the tab **Feature Configuration** of your device. Then select **Enable Feature Configuration** and **Sercos Robustness**.



IEC Interfaces — Parameter Definition

Overview

Sercos robustness provides features for improved tolerance: *Sercos Master Object* and *Sercos Device Object*.

Sercos Master Object

- New global parameter to indicate the level of error behavior within the machine application.
- The parameter definition allows a quick overview in the diagnosis file:
  - *SystemReaction*: Enumeration
    - *Standard/Default – 0*;
    - *systemReaction1 – 1*;

Sercos Device Object

New *WorkingState* of Sercos slaves.

- *real*, *virtual*, *deactivated*, *Error* (optional).
  - Sercos robustness:
    - If a device has a detected Sercos error and *SystemReaction* is set to *systemReaction1*, the *WorkingState* is transitioned to *Error*.
    - Changing the state of the device is handled within the real time process.
    - The device object icon changes from green to orange.

New parameters to select the Sercos system reaction, provided by the new user function Sercos robustness:

- *ConfiguredSystemReaction*: Enumeration
  - *Standard/Default – 0*;
  - *systemReaction1 – 1*;

    The value of this parameter is written to parameter *SystemReaction* in CP=0.
- *SystemReaction*: Enumeration
  - *Standard/Default – 0*;
  - *systemReaction1 – 1*;
- *Valid*: Enumeration
  - *no – 0*;
  - *yes – 1*;

Release Notes History

EcoStruxure Machine Expert V1.1

Hardware/Firmware Information

Version Identification

Description	Firmware Version
M241	5.0.7.20
M251	5.0.7.20
M262	5.0.2.1
TMSES4	1.0.0.8
TM3BCEIP	1.2.1.1
TM3•HSC202•	2.0
TM3DI16	2.0
TM3DI16G	2.0
TM3DI16K	2.0
TM5NS31	2.74
LXM32S•••M2 drive	1.06.03
LXM32S•••M2 Sercos	1.08.04
LXM32S•••N4 drive	1.06.03
LXM32S•••N4 Sercos	1.08.04
LXM52••••C•••••	1.54.26.0
ILM••••••••••••	1.54.26.0
LXM62••••C•••••	• 1.60.0.0 for hardware revision RS1• • 1.54.27.0 for hardware revision RS0•
LXM62••••D•••••	• 1.60.0.0 for hardware revision RS1• • 1.54.27.0 for hardware revision RS0•
LXM62••••E•••••	1.54.27.0
LXM62••••F•••••	1.54.27.0
LXM62••••G•••••	1.60.1.0
LMC Eco	1.60.3.3
LMC Pro	1.60.3.3
LMC Pro2	1.60.3.3

Description	Safety-Related Firmware Version
LXM62••••E•••••	1.2.4.0
LXM62••••F•••••	1.2.4.0
VW3E702200000 safety option module	1.2.4.0
TM5CSLC100FS	2.52
TM5CSLC200FS	2.52
BWU2984 SWID	134253
BWU2984 Safe CPU A	135115
BWU2984 Safe CPU B	135116
ASIMON360	3.2.6.7

Safety-Related Products

Additional information on the Safety Option Module VW3E702200000 for Lexium 62 ILM:

Lexium ILM070, ILM100 and ILM140 motors must have a certain hardware revision of the electronic unit and a new FPGA (field-programmable gate array) to be compatible with the Safety Option Module for Lexium 62 ILM.

The new revision is included in Lexium ILM motors with the following S/N and DOM:

- ILM070: S/N ≥ 2506064503 (DOM ≥ 11.09.2015)
- ILM100: S/N ≥ 2506058831 (DOM ≥ 18.08.2015)
- ILM140: S/N ≥ 2506059644 (DOM ≥ 21.08.2015)
- New FPGA version: CB0013_D010_0109_00_04

When using earlier versions of the Lexium ILM, the Safety Option Module is not recognized, and the drive does not start.

For PacDrive architectures the AS-i/Sercos III Safety Gateway BWU2984 is integrated.For more information, refer to the AS-i/Sercos III Safety Gateway BWU2984 for Embedded Safety System - Bihl+Wiedemann Integration Guide.

Performance and System Limitations of New TM5CSLC•00FS Firmware Version

The new TM5CSLC•00FS firmware version delivered with EcoStruxure Machine Expert V1.1 has some performance improvements in relation to previous TM5CSLC•00FS firmware versions.

The total number of safety axis and safety I/Os in a system depends on several factors such as, for example, Sercos cycle time, activated/simulated devices, configured devices in the architecture, and local device configurations using additional IDNs, local I/Os on drives, etc. When the system limit is reached, a C1D C30F 0109 hex is triggered.

The supported axis in a system running on the edge of device limitations can vary between boot up by ± 1. Therefore, it is a good practice to stay two axis away from the detected system limit.

For more information on performance refer to System Limitations (see Embedded Safety for M262, Integration Guide).

Contact your local Schneider Electric representative in case you need specific information for your intended machine architecture.

New Features

M241/M251

- Support of CoDeSys V3.5 SP12
- Default login/password changed when user rights are not activated.
- User right management adapted to CoDeSys V3.5 SP12
- Support of TM3BCEIP TM3 EtherNet/IP bus coupler for distributed I/O architectures
- Behavior of outputs in STOP mode: default value applies after application download, controller power cycle, reset cold/warm
- Behavior of outputs during the transitions from RUN to STOP, and from RUN to EXCEPTION also sets default output values
- Support of TM3DI16/G and TM3DI16K renewal modules (latch and filter functions are only configurable with modules of software version 2 or greater).
- Support of `FC_GetFreeDiskSpace`, `FC_GetLabel`, `FC_GetTotalDiskSpace`

- Extended Motion Function Blocks to allow the configuration of 4 *JerkRatio* parameter settings.

M262

Modicon M262 Logic/Motion Controller offer is made for performance - demanding machines.

- M262 controllers are ready for IIoT, (MQTT, AMQP, OPC UA, TLS,…) and combine logic, motion and safety-related control applications:
  - TM262L: for the logic control of multiple input and output configurations
  - TM262M: for the motion control of up to 16 synchronized axes

    In combination with a TM5CSLC•00FS for safety-related control applications up to SIL3.
- Modicon M262 Logic/Motion Controller embed 4 fast digital inputs and 4 fast digital outputs, connected to the controller with the use of screw terminals on the front face of controllers.
- Modicon M262 Logic/Motion Controllers (TM262M•••) embed an encoder input (SSI or incremental).
- Modicon M262 Logic/Motion Controllers can be combined with Modicon TM3, Modicon TM5, and Modicon TM7 offers using Sercos III, EtherNet/IP and CANopen bus couplers.
- Modicon M262 Logic/Motion Controllers have a Dual Core processor:
  - Core 1: is dedicated exclusively to managing program tasks and offers the maximum resources for real-time execution of the application code.
  - Core 2: is dedicated to executing communication tasks, which then have no further impact on the application execution performance.
- Performance:
  - 256 MByte RAM memory
  - 128 MByte Flash memory
  - 3-5 ns/ instruction
- A slot for an industrial memory card is available on the front face of the controllers:
  - SD-card up to 2 GB, or
  - SDHC-card up to 32 GB
- A QR-code, printed on the front face of the controllers and Smart Communication modules, provides a link to the Schneider Electric maintenance page of the product.
- A TMS bus port allows the connection of Smart Communication modules, assembled by simple interlocking on the left-hand side of the controllers.
- A TM3 bus port allows the connection of TM3 expansion modules, assembled by simple interlocking on the right-hand side of the controllers.

PacDrive LMC Controls

- Watchdog supervision during I/O-update:
  - Watchdog was deactivated during the cyclic execution when I/Os were updated. Now the watchdog stays active during I/O-updates.
  - If a given limit for I/O updates is exceeded, a watchdog is triggered.
- PROFINET:
  - The consumer and provider statuses (CS and PS) are now available in the application. The provider status appears in the tab **PNIO Module I/O Mapping**.

NOTE: Verify the direct call of % addresses in your application. The preferred solution to access the % addresses in your application is to map variables to all the % addresses.

Accessories TMS

The TM262 Logic/Motion Controllers allows to connect 3 TMS communication modules.

TM3 EtherNet/IP Bus Coupler

TM3 EtherNet/IP Bus Coupler is a distributed architecture solution, which enables the creation of distributed islands of industrial TM3 I/Os managed by a master controller M241, M251 or M262 via Ethernet fieldbus.

New features:

- The TM3 EtherNet/IP bus coupler supports TM3 and TM2 I/O modules:
  - Up to 14 TM3 I/O modules
  - Up to 7 TM2 I/O modules
  - Up to 7 TM2 I/Os mixed with TM3
- The TM3 EtherNet/IP bus coupler has an embedded webserver which supports:
  - User rights management
  - BOOTIP, DHCP, fixed IP-configuration
  - Bus coupler firmware update
- The TM3 EtherNet/IP bus coupler has an embedded switch with isolated RJ45 ports to support daisy chaining and ring topologies (RSTP/SNMP).
- The TM3 EtherNet/IP bus coupler provides cyber security protection features supporting Achilles level 1.

Limitations:

- Latch feature is not supported for TM3DI16, TM3DI16G, TM3DI16K.
- TM3 expert I/O are not supported.
- Only single user can modify the firmware update or write values through embedded webserver.
- The maximum number of TM3 I/O modules will be validated by software and may result in a lower number, depending on the number of analog I/O modules used.

TM3 Expert I/O

The TM262 Logic/Motion Controller supports 4 types of high speed counting modules:

- TM3XFHSC202
- TM3XFHSC202G
- TM3XHSC202
- TM3XHSC202G

These modules are connected on the right side of the controller and allow management of 2 counting channels with / without reflex output.

TM3XFHSX202 / TM3XFHSX202G can be configured to raise events in the controller to manage fast actions.

The firmware of the I/O module can be updated by the controller.

Limitations:

The TM3XFHSC202 / TM3XFHSC202G and TM3XHSC202 / TM3XHSC202G high speed counting modules are not supported by M241/M251 logic controllers nor the TM3 EtherNet/IP bus coupler

TM3 Standard I/O

New hardware revision for TM3DI16, TM3DI16G, TM3DI16K.

These new TM3 I/O modules are supported by M241, M251, M262 and TM3 EtherNet/IP bus coupler and support new features:

- Configurable input filter
  - The input acquisition time filter can be adjusted to allow fast input signals (0.3 - 12 msec).
- Input latch function
  - The input latch function allows to capture input signals with short durations and memorize the state till the next controller task execution.
  - This feature is not supported by the TM3 EtherNet/IP bus coupler.
- Firmware upgrade
  - The firmware of the I/O-module can be updated by the controller.

LXM32S Servo drives

The Lexium 32 product family consists of various servo drive models that cover different application areas. Together with Lexium BMH servo motors or Lexium BSH servo motors, as well as a comprehensive portfolio of options and accessories, the drives are suited to implement compact, high-performance drive solutions for a wide range of power requirements.

New features:

- Sercos module firmware update with Device Assistant
- Diagnostic object S-0-0390 can be mapped to the realtime data, showing C1D / C2D with corresponding error number
- IP-settings coming from Sercos become valid without powercycle
- DS402 statusword P-0-3027.0.2 can be mapped to the real-time data.
- Support of ProfileTorque mode with target value via parameter
- Support of PTI/PTO Torque mode
- Support of index pulse with SinCos1Vpp as machine encoder
- Controlled ramp down when drive will be disabled
- Locate device function by commissioning the SoMove configuration software
- SIN/COS values are traceable
- Error class for error A344 can be defined when using machine encoder for position control.

LXM32S Firmware Version Requirements

The LXM32S firmware is not automatically updated from M262. Therefore, the following firmware version requirements must be met:

- Drive firmware: V1.06.03 or later
- Sercos module firmware: V1.08.04 or later

If the firmware does not meet these requirements, it must be updated. For performing the firmware update, please contact your local Schneider Electric representative.

Lexium 62 Standard Plus and Advanced Plus System Integration

- System integration of the LXM62 Standard Plus and Advanced plus drive within the basic object Lexium LXM62 Drive.
- New configuration tab **Feature Configuration** to select the **DeviceVariant** within the drive object.

DeviceVariant for Lexium 62:

DeviceVariant type	Description
Standard	Standard Lexium 62 functions are available. No additional user functions.
Standard Plus	Additional Standard Plus user functions are supported.
Advanced Plus	Additional Advanced Plus user functions are supported.
Application defined	• Selection of the available user functions. • Possibility to create a generic project. • Configuration of the device variant type via IEC before the Sercos phase-up check.

During Sercos phase-up, PacDrive LMC Pro, PacDrive LMC Pro2 and PacDrive LMC Eco verifies if the configuration matches with the connected physical devices.

User functions

The new concept allows you to select the new drive-specific features with EcoStruxure Machine Expert inside the **Lexium LXM62 Drive** object. After selecting the **DeviceVariant** type in the **Feature Configuration** tab, the supported user functions are visible in the user interface and can be activated with the check box or using the IEC application. After the activation of a user function, the corresponding parameters appear in the parameter editor and can be used in the IEC application.

Supported features of LXM62 Standard Plus:

Feature	Description
Brake check functions (new system interface library functions)	• `FC_BrakeCheckGetState`(...) • `FC_BrakeCheckSet`(...) Verify whether the coupled brake is able to hold its specified torque.
Encoderless velocity control	• Support of BMP servo motors without encoder • Open-loop control for low velocity. The current is pre-defined by the drive and displayed by the object parameter *StartingRefCurrent*. You can adjust it with object parameter *UserStartingRefCurrent*. • Closed-loop position control for high velocity. The required velocity for the closed-loop control is displayed by the object parameter *MinimalOperatingVelocity*.
Torque limitation	Two new modes available: acceleration-dependent torque limitation and mechanical overload protection. • Both configurations allow to limit the torque on load side. • The functionality is enabled and switched with the object parameter *TorqueLimitationMode*. • The torque levels are set by the user with two object parameters *AccelerationTorqueLimit* and *DecelerationTorqueLimit*. • In mechanical overload protection mode, the motor is switched to torque free, when the adjusted torque is exceeded on the load side. It can be filtered to adjust the sensitivity. • In acceleration-dependent torque limitation mode, the torque on the load side is limited.

Supported features of LXM62 Advanced Plus:

- All features for LXM62 Standard Plus
- Incremental Encoder Output

  Encoder signal reflection of motor encoder or machine encoder.
- Machine Encoder Input

  The Machine Encoder Input is only used for the position control in the drives control loop.

Supported features of the *UserMotorTypePlate* library:

- *FB_InitMachineEncoder*

  POU to initialize the machine encoder type plate for LXM62 Advanced Plus.

Fast Device Replacement

- Support of the new Lexium LXM62 Drive Standard Plus and Advanced Plus with fast device replacement.
- A message logger entry is added if the configuration and physical device do not match.

Lexium ILM62 Integrated Servo Drives

Multiaxis integrated servo drives from 0.31 to 1.91 kW for automation solutions based on PacDrive 3.

Mitigated Anomalies

PacDrive LMC Controls & I/Os

ID	Description
OEM00069352 / LMCFW-1153	For the TM5 modules TM5SE1IC20005 and TM5SE1MISC20005, the counter data type is corrected (DWORD).
OEM00069411 / IECLIB-1547	Functions returning a large amount of data (for example, with an ARRAY[0..1023] OF STRING[255]) triggered a watchdog error message.
OEM00070481	After a project download, the EtherNet/IP scanner started with the diagnostic message: *Module not found*.
OEM00071401 / LMCFW-1985	TM5CSLCx00FS (Safety Logic Controller) did not start if the SLC was the first device in the Sercos ring.
OEM00071989	A *Not enough memory on device* exception detected in a Logic Motion Controller during download triggered a watchdog error message.
OEM00074169	An OPC UA server detected a `page fault` in the Logic Motion Controller when an OPC UA client initialized an OPC UA item with the value *OPC_Quality_BadWaitingForInitialData*.
OEM00076495 / LMCFW-1184	The internal function *TranslateBrowsePathsToNodeIds* of the OPC UA server terminated with an error and returned the diagnostic code *BadNoMatch* during a client request.

Lexium52 / 62 / 62 ILM

ID	Description
OEM00055840	Lexium 62 Double Drive with two different *InverterEnable*: A rising edge on the *InverterEnable* input for drive B caused a peak current in drive A. The diagnostic message *8107 Overcurrent* was displayed and a jerk was detected in drive A.
OEM00074423	A new Lexium 62 firmware was successfully updated with a legacy **Device Assistant**. Nevertheless, the drive did not operate after the update. No diagnostic message was displayed.

M241/M251

ID	Description
OEM00060178	Different versions of the IoDrvModbusSerial library were added to the **Library Manager** when using the **Modbus IO Scanner** with different controllers.
OEM00063394	After disconnecting the CANbus connection of a **J1939_ECU** device, the device in the **Devices** tree was still displayed in green color and the status of the **J1939_ECU** device was still displayed as running.

ID	Description
OEM00066740	The **Task Configuration > Monitor** tab displayed more tasks than the number of tasks that had been configured.
OEM00068203	The **Input Assistant** did not provide instances of the HSCSimple counter.
OEM00068334	Configuring fast outputs (pulse generators) for an M241 controller caused a shutdown of the programming software.
OEM00069524	The **Relocation Table** editor allowed to assign variables outside of the dynamic memory area (read and write).
OEM00069581	**Relocation Table**: Downloading an application was possible even though the relocation table provided invalid values.
OEM00071569	The NetManage tool provided incorrect information when connected to an M241 controller by a TM4ES4 Ethernet communication module.
OEM00073294	Using a PTO (Pulse Train Output) with an M241 controller configured in homing mode *ShortReference_Reversal* did not operate correctly. The movement did not end as intended.
OEM00075330	FDR (Fast Device Replacement) service authentication is successful now when IP mode is set to DHCP.
OEM00072090	Using the **Modbus TCP IO Scanner**, the inputs no longer keep the former values after an application download.
OEM00076970	EtherNet/IP Scanner is more stable now after an online change (no timeout).
OEM00077608	The file system is no longer corrupted after multiple manually executed HTTP requests with long URL addresses.
OEM00077471	Using the *FB_ControlClone* (to control cloning of a M241 controller) is possible now when the user rights are activated.
OEM00072657	**X-Frame-Options** header is now protected against clickjacking (user interface redress attack).
PEP0502989R	Communication with Festo motor controller CMMO/CMMP devices can be established now.
PEP0310789R / PLAT-239	The Modbus TCP connection timeout is adjusted now.
PEP0351007R / PLAT-337	The Ethernet connection is interrupted no longer when receiving Modbus TCP requests not written correctly.
PEP0439107R	The communication between the **Controller Assistant** and an M241 controller is possible now when connecting to the second ETH2 network interface.
PEP0408448R	Misleading error log messages in the M241 controller log file are removed.
PEP0428747R	The status of the homing function block is correct now when using homing mode 20.
PEP0444388R	Loading/storing of data parameters table in the webserver is improved.

Library Information

Version Identification

Description	Version
ApplicationLogger	1.1.2.0
AsyncManager	1.0.5.0
AutoTune	1.3.14.0
Booster Pumping	5.0.0.5
CommonMotionTypes	1.0.1.0
CrankModule	1.3.4.0
EMailHandling	2.0.4.0
EtherNetIP Explicit Messaging	1.1.7.0
EtherNetIP Remote Adapter	1.0.10.0

Description	Version
FileFormatUtility	1.2.6.0
FtpRemoteFileHandling	1.2.3.0
GMC Independent Altivar	1.2.4.0
GMC Independent Lexium	1.1.7.0
GMC Independent PLCopen	1.2.3.0
HttpHandling	1.0.11.0
M262 Encoder	1.0.0.2
M262 PLCSystem	1.0.0.19
M262Diagnostics	1.0.1.0
MotionInterface	1.0.69.5509
MqttHandling	2.0.6.0
PackML	1.2.3.0
PD_AxisModule	1.6.2.0
PD_EDesignAxisModule	2.3.2.0
PD_EdesignCore	2.2.6.0
PD_EdesignCrankModule	1.5.2.0
PD_ETest	1.3.6.0
PD_GlobalDiagnostics	1.3.1.0
PD_MultiBelt	1.4.2.0
PD_MultibeltModule	1.4.1.0
PD_PacDriveLib	1.8.7.0
PD_SmartInfeed	1.4.3.0
PD_SmartInfeedModule	1.3.1.0
PD_SoMotionGenerator	1.5.1.0
PD_Template	1.6.1.0
PLCopen MC part 1	1.0.69.5509
PreventaSupport	1.1.1.0
Robotic	2.12.1.0
RoboticModule	2.8.0.0
SchneiderElectricRobotics	2.8.0.0
SchneiderElectricRobotics Parameters	2.9.0.0
SchneiderElectricRobotics Toolbox	1.2.0.0
SercosCommunication	1.0.1.0
SercosDriveUtility	1.1.1.0
SercosMaster	1.0.69.5509
SlcRemoteController	1.3.6.0
SnmpManager	1.2.1.0
SqlRemoteAccess	1.1.2.0
TcpUdpCommunication	2.0.11.0
TeSys island	1.1.0.0
TimeSync	1.1.2.0
Toolbox	3.2.1.0
TwidoEmulationsupport	1.2.2.0

Description	Version
Unwinder	1.2.2.0
UnwinderModule	1.1.0.0
UserMotorTypePlate	1.3.9.0
UserTorqueFeedForward	1.1.2.0

Version Identification Safety Libraries

Description	Version
EnableSwitch_SE_SF	V0.99 from 10/28/15
PLCopen_SF	V1.00 from 09/14/07
Preventa_SafeMotion	V0100.0100 from 02/08/16

New Features

ApplicationLogger

The controller related dependencies are deleted. The library is now also working on M2•• controllers.

AsyncManager

Offers the functionality to call time-intensive jobs asynchronously to help prevent cycle time overruns without the need to create additional tasks separately.

CommonMotionTypes

This library supports common motion data types independent of the controller platform.

EMailHandling

- The function block `FB_SendEMail` provides parameters for recipients of type CC and BCC.
- Improved online modification behavior:
  - All function blocks in the library can detect an online modification of the application.

    In the event of a detected online modification while the function block is in progress, all input parameters of type REFERENCE TO and POINTER TO are updated.
  - New global variable `SE_EMail.GCL.G_xOnlineChangeAllowed` indicates if an online modification can be performed in executed function blocks out of the EmailHandling library.

FileFormatUtility

- Added function block `FB_CreateJsonFormattedString` which is used to facilitate the creation of a text STRING in JavaScript Object Notation (JSON) format.
- Added function block `FB_WriteFile` which is used to write or append content into a new or existing file on the file system of the controller.
- Improved online change behavior:
  - All function blocks in the library can detect an online modification of the application.

In the event of a detected online modification while the function block is in progress, all input parameters of type REFERENCE TO and POINTER TO are updated.

- New global variable `FFU.GCL.G_xOnlineChangeAllowed` indicates if an online modification can be performed in executed function blocks out of the FileFormatUtility library.

GMC Independent Altivar

- Support for ATV32 and ATV71 are removed.
- Improvement of the function blocks `SetDriveRamp_ATV` and `SetFrequencyRange_ATV`: Errors resulting from write requests inside the function block abort subsequent write commands and will no longer cause communication deadlock.

GMC Independent Lexium

- Integration of LXM32 and ILX CANopen drives.
- Improvement of the function blocks `SetDriveRamp_LXM` and `SetDriveRamp_ILX`: Errors resulting from write requests inside the function block abort subsequent write commands and will no longer cause communication deadlock.
- Integration of Lexium SD328A (CANopen).

GMC Independent PLCopen

ET_DeviceType to use this Enum together with the AxisRefBase to identify the added axis type.

HttpHandling

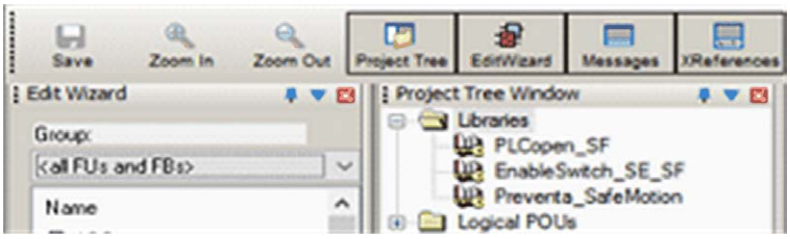
New library providing HTTP client with GET and POST commands.

Library EnableSwitch_SE_SF

The safety-related `SF_EnableSwitch` function block evaluates the signals of a manually actuated three-stage enable switch (in accordance with EN 60204) to identify its switching stage and direction.

Library PLCopen_SF

The safety-related functions or function blocks described within this library are solely intended for creating safety-related code for suitable Safety Logic Controllers using EcoStruxure Machine Expert - Safety software. You can only combine your safety-relevant tasks within the safety-related control system if the tasks are integrated into the execution process in a correct and functionally safe manner as defined in the applicable standards.



Library Preventa_SafeMotion

The safety-related `SF_SafeMotionControl` function block acts as an interface between the Safety Logic Controller and the Safety Module (option module) which is the safety-related component of the ILM62 or LXM62 standard drive.

M262Diagnostics

Library added to gather system information on the M262 controller application and the configured devices in it.

M262 Encoder

Library added to support standard encoder input service for M262 controller.

M262 PLCSystem

Library added to provide read & write services for M262 controller.

MachineAssistantServices

Library added to provide functionality to discover Ethernet devices connected to the controller and to perform commands to detected devices.

MotionInterface

Library added to affect low level access for motion control for M262M•5 controllers.

MqttHandling

- Library added to provide the MQTT client functionality to exchange data with other devices over the network through an MQTT message server.
- Includes feature to establish an encrypted connection to a TCP server.

PackML

- Library is updated to support the ANSI/ISA TR88.00.02-2015.
  - Two new POUs, `FC_SetWarning` and `FC_GetDateTimeAsArray`, are provided accordingly.
  - Five new frame visualizations, `FR_StateDisabled`, `FR_AlarmSingleLine`, `FR_AlarmHistorySingleLine`, `FR_DateTimeDisplay` and `FR_Warning`, are provided accordingly.
- The variable `GPL.Gc_uiNumberOfMaterials` has been removed.
- The background colors for offline mode in the provided visualizations corresponds now to the color which becomes effective in online mode.
- `FB_ModeManager`:
  - In the event of a detected error during execution (`q_xError` = TRUE) the output `q_xError` is reset.
  - The values of the inputs `i_diUnitMode` and `i_diStateCurrent` are verified only upon a rising edge of `i_xUnitModeChangeRequest`.
  - A rising edge of the inputs `i_xUnitModeChangeRequest` and `i_xModeChangeDone` is detected only if output `q_xReady` is TRUE.
  - Upon a falling edge of the input `i_xUnitModeChangeRequest`, a detected error during latest execution is reset. A restart of the function block is no longer required.

PD_PacDriveLib

The PacDriveLib Homing functions and function blocks are prepared for use with MachineEncoder. If the MachineEncoder is active, then the EncoderPosition from the MachineEncoder is used for homing.

PLCopen MC part 1

Library added to provide motion control according to PLCopen Motion Control Part 1 v2.0 (formerly parts 1 and 2) for M262M•5 controller.

PreventaSupport

Library added to support diagnostic and maintenance tasks for Preventa safety-related modules.

Robotic

Library added to provide a collection of POUs for controlling robot kinematics.

The following kinematics can be controlled:

- Triaxial delta robot - `IF_RobotConfiguration.Delta3Ax`
- Triaxial cartesian robot - `IF_RobotConfiguration.Cartesian3Ax`
- Biaxial cartesian robot - `IF_RobotConfiguration.Cartesian2Ax`
- Biaxial delta robot - `IF_RobotConfiguration.Delta2Ax`
- Biaxial articulated robot - `IF_RobotConfiguration.Articulated2Ax`
- Four axial SCARA robot -`IF_RobotConfiguration.Scara4Ax`
- Up to triaxial user-defined robot - `IF_RobotConfiguration.User3Ax`

Motion interpolation in order to move to a point in two or three-dimensional space:

- Linear interpolation - `IF_RobotMotion.MoveL`
- Circular interpolation - `IF_RobotMotion.MoveC`
- Spline interpolation - `IF_RobotMotion.MoveS`
- Joint interpolation - `IF_RobotMotion.MoveJ`

RoboticModule

Library added containing the equipment module for the default PacDrive 3 template and auxiliary functions. It includes the functionality of the Robotic library.

- The interfaces of the provided equipment module enable an integration into the default PacDrive 3 template.
- RoboticModule provides the operation modes Auto, Homing, Manual and BrakeRelease.

SchneiderElectricRobotics

Library added containing function blocks to parametrize a Schneider Electric robot.

SchneiderElectricRobotics Parameters

Library added containing the parameters for a Schneider Electric robot.

SchneiderElectricRobotics Toolbox

Library added to provide provides structures, functions and function blocks for the following purposes:

- Read the protocol of a camera.
- Send data, for example, to simulate the protocol of a camera.
- Generate random Cartesian poses.
- Parameterize and generate a list of targets.

SercosDriveUtility

Library added to read and write drive configurations using the Sercos III fieldbus network.

SercosMaster

Library added to provide low level access to the Sercos master for M262M•5 controllers.

SlcRemoteController

- The command `ET_UserCommand.SetSafeKeyPassword` added for the function block `FB_RemoteController`, to allow setting or modifying the password on the SafeKey.

  Execute this command to set a password before downloading the application using the function block `FB_DownloadApplication`.
- The library is compatible with M262 by substitution of PacDriveLib dependency with generic `AsyncManager`.

TcpUdpCommunication

- Fix of an anomaly in buffer handling on receiving messages with fill level greater than 65535 bytes.
- Corrected behavior: In case of an interruption of the connection while sending or receiving data, the property `State` indicates `ShutDown` and the property `Result` indicates `ClosedByPeer`.
- The property `IsReadable` is reset if the connection is interrupted.
- The function block `FB_TcpClient` provides the property `SockOpt_CustomPort` which is used to specify the port used by the client for the next connection.
- The function block `FB_TcpServer` provides the property `SockOpt_LingerEnabled`. This property is used to enable or disable the socket option `Linger` influencing the behavior on closing a connection.
- The processing of methods is no longer influenced by online monitoring of certain properties at the same time.
- The library offers functionality to establish TLS encrypted TCP connections.

TeSys Island

- Library added to provide function blocks to develop applications for TeSys island.
- The function blocks manage the digital functional object known as Avatar by:
  - controllingAvatars.
  - reading diagnostic information from Avatars.
  - reading energy data from Avatars.
  - reading asset data from individual modules of TeSys island.

UserMotorTypePlate

The function block `FB_InitMachineEncoder` is included to initialize the machine encoder with a typeplate (the machine encoder object is available on Lexium 62 Advanced Plus).

Examples

New example projects:

- XML file handling example
- CSV file handling example
- Email handling example
- MQTT example using JSON format
- Machine Advisor communication example

Updated example projetcts:

- PackML example updated according to the library update
- RTC TimeZone example with SNTP client
- SLC remote controller example

New function template:

- HTTP client

Mitigated Anomalies

Libraries

ID	Description
OEM00052518 / IECLIB-1631	*MTP.FB_MotorDataRead*: Improved diagnostic message if no type plate is stored in the drive.
OEM00071708 / IECLIB-1551	PacDriveLib library: After disabling the function blocks *FB_HomeForce* and *FB_HomeTorque*, all outputs are reset.
OEM00071904 / IECLIB-1349	MultiBelt Library: The parameter *xLeaveStation* of *ST_Station* is now compatible with indexed stations.
OEM00075161 / IECLIB-1771	SmartInfeed library: After `SI.FB_Infeed.i_xStart := FALSE`, the state machine is now finished correctly. To achieve this, a new GPL parameter was added: *Gc_lrMasterMotionActiveVelLimit* Internal velocity limit parameter to verify in *FB_Infeed* if the master of the *InfeedBelt* is in motion.
OEM00060445 / IECLIB-1348	TcpUdpCommunication library: You can access the properties of the *FB_TcpServer* function block from different tasks. The *InputOutOfRange* message is no longer reported.
OEM00069263 / IECLIB-957	EMailHandling library: By setting *GVL.Gc_udiMaxNumberOfAttachmentPaths* to a value greater than one, the function block can receive more than one email.
OEM00064768 / IECLIB-404	GMC Independent Altivar library and GMC Independent Lexium library: You can use now *ET_DeviceType* together with *AxisRefBase* to identify an added axis type.
OEM00043940	IoDrvModbusSerial library: It is now possible to write a single register and to initialize a server.
IECLIB-1708	GMC Independent Altivar library: Active movements of Altivar drives are stopped now if the application is set to stop.

Software Information

Version Identification

Description	Version
Machine Expert Installer	11.19.16801
Diagnostics	18.0.10.0
Controller Assistant	18.0.10.0
Device Assistant	18.0.10.0
DiffViewer	18.0.10.0
Gateway	18.0.10.0
Launcher	18.0.10.0
OPCServer	3.5.12.70
SoftSPS	3.5.12.80
SVN	4.2.4.0
Logic Builder(1)	1.1
Vijeo-Designer	6.2.8.1016
CoDeSys	V3.5 SP12 Patch8 HF1
SQL Gateway	18.0.1.0
Motion Sizer	4.1.0.0
(1) If using a virtual machine, the download of the online help operates correctly only if the option **Accelerate 3D graphics** is deactivated in the VM settings.	

New Features for Machine Expert Installer and Online Help

Machine Expert Installer

The Machine Expert Installer provides an intuitive user interface to perform an online installation. During installation phase, you can select required sets which will be automatically downloaded and installed.

You can also use the Machine Expert Installer to customize an existing installation of the EcoStruxure Machine Expert product.

Online Help

With EcoStruxure Machine Expert, the online help is published as HTML5 help only on a Web server. You can download a local copy of the online help using Machine Expert Installer.

Known restrictions on different browsers used with the HTML5 help:

Browser and Version	Restriction	Workaround
Internet Explorer V11	Poor graphic / display quality	–
	If the HTML5 help is located on a local PC, then: • Contents are blocked. • Help pages cannot be opened. **NOTE:** When the HTML5 help is located on the Web, the restrictions do not exist.	1. Open the Internet Explorer and go to Tools -> Internet Options. 2. Click the **Advanced** tab and scroll down to the **Security** section. 3. Enable the check box **Allow active content to run in files on My computer**.

Browser and Version	Restriction	Workaround
Chrome V63	If the HTML5 help is located on a local PC, then: • Printing subtopics is not supported. • Changing the topic language is not supported. **NOTE:** When the HTML5 help is located on the Web, the restrictions do not exist.	–
Edge V40	If the HTML5 help is located on a local PC, then: • The contextual help opens only the individual topic, but not the HTML5 GUI. **NOTE:** When the HTML5 help is located on the Web, the restrictions do not exist.	–

New Features EcoStruxure Machine Expert

Project Update

- Project update categories are separated in single pages.
- Overview page summarizes the update actions: sufficient in most cases.
- Details for update of different parts of the system in separate tabs.
- Update of visualization styles added.
- Detailed information on library update enhanced by presenting the updated list of libraries.
- Display of progress status added.

  NOTE: When you update a SoMachine project which contains solution libraries (Pumping, Packaging, Hoisting) to EcoStruxure Machine Expert, the solution libraries will not be updated. You have to replace the Pumping library manually by the Booster Pumping library. Hoisting and Packaging libraries are not supported by EcoStruxure Machine Expert V1.1.

Functional View

- A view has been introduced to group the project objects by logical machine units.
- These groups can be saved and re-used in other projects.

Smart Template

The Smart Template has been conceptually redesigned to open the framework beyond Robotics functionality.

The benefits of the revised version of Smart Template are:

- You can start to program with a default project and can add smart template functionality afterwards. Robotics projects can now be under SVN control and support folder structures.
- Can be used for more than one controller in a project. Smart Template functions or modules can be added to several controllers in a project.
- Supported SVN-functionality. Smart Template modules are handled in SVN (commit, update…) like any other POU in the system. Sub-elements (configuration, methods, …) are considered appropriately.

- Smart Template is open for new IEC-frameworks. The modules are self-describing and no longer limited to a specific infrastructure like PacDrive Template. Basically any IEC-environment can be used from zero to maximum.

Supported Features:

- **Modules** view

  Smart Template module instances can be added in an own view called **Modules**.

- **Add module** / **Add object**

  Modules can be added using the **Add module** dialog providing more information and flexibility in terms of versioning, etc. Currently the following modules and objects are usable:

  - Camera module
  - Camera configuration
  - Module interface
  - Method
  - Action
  - Transition
  - Notes

- **Module manager**
  - Key element to manage several modules, their version and their referenced libraries.
  - Modules can be updated as easy as libraries.
  - The user code, the user configuration and the resolved library version are used to generate the code for smart template
- **Camera Module**
  - Supports the known functionality to connect vision systems - generic cameras and specific for Cognex cameras.
  - Online views allow to see the camera status, the position of products identified.

Migration Strategy of Smart Template

As the old Robotics for SmartTemplate-Framework is not supported any longer, the code and configuration has to be transferred to a new **Standard** project.

1. Create a new empty project in EcoStruxure Machine Expert.
2. Copy and paste the source code.
3. Add the modules to the new project via **Add module** and adapt the configuration according to the old project.

Code Analysis

Code Analysis add-on was improved and stabilized.

- New metrics (cyclomatic complexity)
- Compile messages as part of the convention results output.
- Analysis of libraries (POU-space analysis) is supported now.
- User interface and scripting API for machine advisor code analysis connection to upload snapshots and queries

ETEST

ETEST improves the usability and the handling of integration in Continuous Integration systems, especially when working with big and/or long running test projects.

- Optional test case methods
  - The ETEST standard methods (**Prepare**, **Execute**, **Finalize**, **CleanUp**) are optional for test cases and test resources
- Test duration
  - The test results view shows the duration of each executed test case.
  - The exported result file contains the start, end time and duration of each test case.
- Test progress:
  - The result of each test case will be printed to the shell console, if executed via scripting.
  - You always know which tests are already finished in long-running test-series.

Diagnostics

- Diagnostics supports the Safe Logger for safety-related devices.
- Support for Lexium 62 Standard Plus and Advanced Plus.

Controller Assistant

Support for Lexium 62 Standard Plus and Advanced Plus.

Device Assistant

Support for Lexium 62 Standard Plus and Advanced Plus.

New Features for EcoStruxure Machine Expert - Safety

Overview

- EcoStruxure Machine Expert - Safety component distribution / installation using Machine Expert Installer together with the EcoStruxure Machine Expert components (Install new Software (Online) (see Schneider Electric Software Installer, User Guide)).
- Floating licenses: New license type for EcoStruxure Machine Expert - Safety and BWU2984 AS-i safety gateway available.
- Embedded Safety integration into TM262M• controller architectures. (TM5CSLCx00FS, TM5/TM7 Safety I/Os).
- Online Help:
  - HTML 5
  - Online help (safety and non-safety parts)
  - Offline help (safety)
- Support of context-sensitive help in EcoStruxure Machine Expert - Safety.
- Integration of latest help and documentation content.
- Update to EcoStruxure Machine Expert product changes.
- Fixed documentation issues of previous versions.
- Lexium 62 with new hardware revision is supported (no change on safety functionality).
- Updated EULA (End User License Agreement)

Compatibility EcoStruxure Machine Expert

Overview

EcoStruxure Machine Expert can be installed in parallel to other Schneider Electric software products, such as SoMachine and SoMachine Motion.

For general information on compatibility of EcoStruxure Machine Expert, refer to the Compatibility and Migration Guide (see EcoStruxure Machine Expert Compatibility and Migration, User Guide).

Behavior Modifications in EcoStruxure Machine Expert compared to SoMachine / SoMachine Motion Versions

NOTE: For a list of compiler versions included in EcoStruxure Machine Expert, SoMachine and SoMachine Motion versions indicated in the following table, refer to the Compatibility and Migration Guide appendices (see EcoStruxure Machine Expert Compatibility and Migration, User Guide).

ID	Description
OEM00071037	**Firewall**:The file name **Firewall** is case sensitive. Only a default firewall file, named **FirewallDefault.cmd**, is recognized.
OEM00071000 / SI-5249	**I/O Mapping**: Modified behavior of **Default Value**. If the compiler version is EcoStruxure Machine Expert V1.1or later: You can edit this field only, when mapping an input/output to a new created variable. When mapping to an existing variable, the initialization value of the variable is used as the default value. Selecting a compiler version earlier than EcoStruxure Machine Expert V1.1 , the default values can also be edited and are applied in case of mapping to an existing variable or to no variable. When importing projects from SoMachine / SoMachine Motion, default values are still imported for the cases above, but are not visible and not applied, as long as the compiler version is ≥ EcoStruxure Machine Expert V1.1. See also OEM00072811.
OEM00071094 / CDSYS-72	**Trace**: Multi-selection of variables in the **Trace Record** part of the **Trace Configuration** dialog is not supported.
OEM00071748 / CDSYS-82	**Tabular Declaration**: The number of variables in online mode is limited to 1000.
OEM00071929 / CDSYS-83	**Online Change**: Adding a library opens the **Online Change** dialog, even if nothing was used out of this library. After confirming this dialog, the message **Code has not changed. No online change necessary** is generated.
OEM00072060 / CDSYS-84	**Auto-Declare**: Using a statement like *IF Var_0 OR Var_1 THEN* triggers an auto-declaration proposal of INT instead of BOOL.
OEM00072474 / CDSYS-100	**SVN**: After checking out a project from **SVN** and closing the project, an entry is created in the **Recent files** menu, even though the corresponding file has not been saved. Selecting this entry will fail to open the project with an error message.
OEM00072745	**Compiler**: Bool is not supported as a base type in enumerations and causes a compiler error message. Only Integer data types are supported.
OEM00072811 / CDSYS-105	**I/O Mapping**: **Reset Mapping** does not delete default values. **Reset Mapping** deletes the variables in the **I/O Mapping**. If a Default variable was associated with such a deleted variable, this is no longer shown and applied. However, creating a new variable for the same I/O will bring back the old Default value. Note, that you can only modify the Default value, when you have created a new variable first. See also OEM00071000.
OEM00073255 / CDSYS-119	**Find**: The **Find** command is associated to the shortcut Ctrl+F. The shortcut only works, when an editor window is open.
OEM00073314 / CDSYS-120	**FBD**: If the FBD option **Connect boxes with straight lines is selected**, connection lines (links) between function blocks may overlap.

ID	Description
OEM00074431 / CDSYS-139	**Auto-Declare** Using a statement like `ptVar := ADR(var);` , where `ptVar` is declared a `POINTER TO INT` , will lead to an auto-declaration proposal of `POINTER TO INT` for `var`, instead of `INT`.
OEM00074574 / CDSYS-141	**Auto-Declare**: Using a statement like `GVL.toto := bool_1;`, where `bool_1` is declared as BOOL and `GVL` is the name of a `GVL`, causes an autodeclaration proposal of INT for `toto` instead of BOOL.
OEM00074609 / SI-4762	**Reset Cold/ Reset Warm**: Breakpoints that were activated before executing the commands are still active after the execution of the command. (In SoMachine / SoMachine Motion they were deactivated).
OEM00074647 / CDSYS-143	**Auto-Declare**: Using **Auto-Declare** from a POU will not offer an already existent `PersistantVars` as object, except if selecting in the following order: **PERSISTANT** and **RETAIN** followed by **VAR_GLOBAL** as scope.
OEM00074787	**SysTimeRtc**: The actual behavior of functions *SysTimeRtcConvertHighResToLocal*, *SysTimeRtcConvertLocalToHighRes*, *SysTimeRtcConvertUtcToLocal* and *SysTimeRtcConvertLocalToUtc* is compliant to the defined *TimezoneInformation* (struct) definition of member <*iBias*> (which itself is based on Windows Definition), where UTC = localtime + bias. Therefore, the bias for eastern longitude is negative and the bias for western longitude is positive.
OEM00076496	**Project Compare**: New menu command ""**Project - Commit t accepted changes**. The command is also availableas toolbar button and allows to commit already accepted differences from the project comparison to the current project. Thus, you are no longer limited to committing differences accepted in one compare view only. Instead you can determine the time and extent of the **Commit**.
OEM00076869 / CDSYS-197	**Project Export/Import**: After exporting modules, when importing the modules are reordered alphabetically by module name.
OEM00071445 / CDSYS-76	**ProfiNetIO-Controller (Master)**: New parameters on the **General** tab: I/O provider/ consumer status. Parameter **Application stop > Substitute values** : When the user stops the application, the provider state is set to **BAD**. The slaves then set the inputs and outputs to predefined substitute values. For more details refer to the Online Help.
OEM00074786	**SFC - Init step**: For the compiler version of EcoStruxure Machine Expert V1.1 or later the `Init` step counts from the program start moment (not from the system start moment. Additionally, triggering `SFCInit` or `SFCReset` flag resets the `Init` step time to zero.
SP12CDS-57549	**Compiler, I/O Mapping**: Task deployment for function blocks used in initial values. For the compiler version of EcoStruxure Machine Expert V1.1 or later: only these tasks will be used as update task for function block instances with I/Os, in which an access to the I/Os can be detected, or in which the instance is called directly. This behavior may lead to a smaller number of output updates. For example, if a function block instance is declared in a program, but there is no direct call of this instance, there will be no update in the task in which the program is called. Direct call means, that calls via interface are not considered. You can manually edit the tasks in which to update I/Os in the I/O configuration.
SP12CDS-56915	**Compiler**: A Bit-located Bool variable assigned to a `REFERENCE TO BOOL` variable generates a compiler error. For the compiler version of EcoStruxure Machine Expert V1.1 or later, a compiler error is generated when assigning a BOOL variable located on a bit address to a `REFERENCE TO BOOL` variable. Workaround: assign the bit located variable to a Boolean variable first and assign the latter to the `REFERENCE` variable.
SP12CDS-59141	**Compiler**: Unexpected online change related to the usage of the `PersistantVars` object with attributes. For the compiler version of EcoStruxure Machine Expert V1.1 or later, the order of attributes in a `PersistantVars` list object is always fix (sorted lexically). Opening projects without update, that contain a compiler version earlier than EcoStruxure Machine Expert V1.1 and attempting to login may request an online change in the above-mentioned case.

ID	Description
	Project Archive: Sending a project archive via mail directly from the **Save Archive** dialog is not supported in EcoStruxure Machine Expert V1.1 (64-bit) due to MAPI limitations.
SP11CDS-35119	**Trace**: flexible assignment of variables to diagrams. EcoStruxure Machine Expertsupports configuring one or more diagrams within the trace and displaying one or more variables, allowing a flexible arrangement of these variables within the diagrams. All diagrams share the same time axis, but the appearance including the Y-axis can be configured separately for each diagram. **Download and Upload diagram configurations to the PLC** and **Save and load diagram configurations in the trace.csv format** are not supported. When opening projects containing **Single-/Multichannel traces**, they will be displayed in an equivalent way. The former menu command **Multichannel** (changing the view only) was replaced by two new commands **Convert to Single/Multi Channel**, which modify the configuration accordingly.
SP11CDS-52137	**Compiler**: Compiler Error message for libraries with invalid namespace. For the compiler version of EcoStruxure Machine Expert V1.1 or later, a compiler error will be generated for library namespaces that are not valid identifiers according to IEC 61131-3.
SP11CDS-47465	**Runtime**: Default values: **STOP to STOP over Reset** behaves differently than **RUN to STOP over Reset**. Default values for direct addressed outputs are set, if application is in stop, and a reset is executed. Previously, the direct adressed outputs were not reset in this scenario.
SP10P10CDS-50882	**ScriptEngine**: IronPython behavior regarding reading files. Within IronPython, Byte Order Marks (BOM) at the start of files are not implicitly skipped any more, which may lead to a different behavior of scripts parsing files, for example using the ConfigParser module. Open these files using codecs.open ().

SP10CDS-43667	**Compiler**: Initialization (order) of DUT structures
	
	For the compiler version of SoMachine Motion V4.4 or later, the initialization order of arrays of Data Unit Types..
	
	Example:
	`arr : ARRAY [0..1] OF DUT := [(a := 1), (a := 2)];" ) is: FOR i := 0 TO 1 DO arr[i].FB_Init; END_FOR arr[0].a := 1; arr[1].a := 2;`
	
	Where the order for compiler version < V4.4 Motion was:
	`arr[0].FB_Init(); arr[0].a := 1; arr[1].FB_Init(); arr[1].a := 2;`
	
	Additionally, if a `DUT` variable is initialized by assigning another variable, as in:
	`xx : DUT := yy;`
	
	with compiler version SoMachine Motion V4.4 or later, there will also be a `FB_Init` call in this case.

SP10CDS-47295	**Compiler**: C0405 multiple assignments to interfaces variables not allowed. For compiler versions of SoMachine Motion V4.4 or later, a compiler error is generated for constructs like: `itfVar1 := itfVar2 := 0;`
SP10CDS-49943	**Symbol Configuration**: Properties with monitoring type **variable**. For the compiler version of SoMachine Motion V4.4 or later, properties with monitoring type **variable** are exported read-only in the Symbol Configuration.
SP10CDS-49852	**Project User Management: Settings**: New hash format for passwords. Hashes for user passwords can now be stored with a new format, which supports salt and a new hash algorithm, improving the security of a password against guessing and brute-force. The password hash of a user is converted with the first login after the setting was changed. The project loses its backward compatibility with the conversion to the new password hashes. You can convert the new password hashes back by disabling the setting and re-login of every user, which logged in during the time the setting

ID	Description
	was enabled. Another option is to set a new password for every user (that logged in while the setting was enabled).
SP10CDS-49093	**Online Change**: Programming system with .Net 4.6 Framework. In projects using Webvisualization it might not be possible to login without an Online Change, if the project contains an **Imagepool** object, referencing the same image more than once.
SP10CDS-25116	**Gateway, RTS**: `NodeName` limitation to 50 characters: The `NodeName` of controllers (as displayed in the **Communication Settings** dialog) is now limited to 50 wide-char characters (including NULL termination). If a controller with a longer node name is updated to a SoMachine Motion V4.4 version or later , the node name is cut to this limit. Clients like **PLCHandler** or **OPC Server** cannot conntect when using the old, longer `NodeName`. In this case, you need to update the connection parameters of the affected clients and/ or rename your controller.
SP9CDS-47453 / OEM00061201	**Online Change**: Handle out of memory exception For compiler versions of SoMachine Motion V4.4 or later, in the case of memory outage during online change, a compiler error C0398 will be generated.
SP9CDS-46022	Compiler: AT declaration in `VAR_TEMP`, `VAR_IN_OUT` and `VAR CONSTANT`. For compiler versions of SoMachine Motion V4.4 or later, a compiler error C0392 is generated if an AT declaration is used inside one of the following blocks: `VAR_TEMP`, `VAR_IN_OUT` and `VAR CONSTANT`.
SP9CDS-45977	**Compiler**: Assignment of function block outputs to interfaces. For compiler versions of SoMachine Motion V4.4 or later, the assignment is not supported, a type mismatch error is reported for the following case: `fbUser(fbOut => iMain);`
SP9CDS-43812	**Compiler**: `__ISVALIDREF` returns TRUE for check of interface instance with value zero. `__ISVALIDREF` is a special operator that can now only be used for checking references. A compiler error gets generated in case `__ISVALIDREF` is used with any other type than REFERENCE types. Interfaces and pointers can be checked via `interf <> 0` , `pointer <> 0` .

SP9CDS-44576	**Compiler / Online Change**: AT declarations
	
	If an address is moved from one variable to another variable, an online change will not be possible; a compiler error will be generated.
	
	Example:
	`var1 : BYTE; -> var1 AT %MB0 : BYTE;`
	`var2 AT %MB0 : BYTE; var2 : BYTE;`

SP9CDS-45776	**Compiler**: Array with length 0. For compiler versions of SoMachine Motion V4.4 or later, a compiler error will be generated for arrays like: `arr[0..unsigned_const-1]`, if the `unsigned_const` is 0. The upper limit is evaluated as an unsigned operation and would result in a too large number for any signed array limit. Use a signed constant instead, or cast the constant to a signed type: `arr[0..TO_INT(unsigned_const)-1]`
SP9CDS-45575	**Compiler**: PRIVATE, PROTECTED not allowed for `FB_Init`, `FB_Exit`, `FB_ReInit`. For compiler versions of SoMachine Motion V4.4, a compiler error will be generated, if an `FB_Init`, `FB_Exit` or `FB_ReInit` method is declared as PRIVATE or PROTECTED.

ID	Description
SP9CDS-45684	**Compiler**: Writing to %I* input variables. For compiler versions of SoMachine Motion V4.4, a compiler error will be generated, when writing to variables located at %I* addresses
SP9CDS-383	**Compiler**: FB_Exit is called to destroy local instances. For compiler versions of SoMachine Motion V4.4, FB_EXIT is now called for instances allocated on the stack before the owning scope returns. A warning informs you about the changed semantics in these cases. In order to suppress the warning, decorate the POU declaring the local instance with the warning disable macro for warning code C0394 (`{warning disable C0394}`).

NOTE: If you are extracting a project archive in EcoStruxure Machine Expert that has been created with SoMachine or SoMachine Motion, and **Options** are selected in the **Extract Project Archive** dialog box, your EcoStruxure Machine Expert installation may be altered and it may appear the devices are missing.

⚠CAUTION

INOPERABLE EQUIPMENT

When you extract a project archive that has been created with a different programming software, deselect the **Options** check box in the **Extract Project Archive** dialog box.

Failure to follow these instructions can result in injury or equipment damage.

To restore your EcoStruxure Machine Expert installation, execute the **Tools > Options** command and select the **Directories (Devices, Libraries,...)** option. From the **Directories (Devices, Libraries,...)** dialog box, click the **Reset repository locations** button and the devices are restored.

NOTE:

- If a SoMachine or SoMachine Motion project with HMIs is loaded, it may occur that Vijeo-Designer must be started by the update. In this case, it may occur that Vijeo-Designer is only started in the background.

  Vijeo-Designer must be opened manually to continue the update.
- If a SoMachine or SoMachine Motion project with obsolete HMIs is loaded, it may occur that Vijeo-Designer is started and you are prompted to enter a reference number.

  If the reference number is not available, click **No** and the device is updated automatically to a preprogrammed type.
- If a SoMachine or SoMachine Motion project with obsolete HMIs (with control) is loaded, the HMI is converted in Vijeo-Designer to a supported HMI.

Compatibility EcoStruxure Machine Expert - Safety

Overview

Former SoSafe Programmable versions cannot be started from EcoStruxure Machine Expert environment anymore and can only be installed and used if the related SoMachine Motion version is installed.

However, the former SoSafe Programmable projects - starting from V2.1 - can be imported, re-used, and updated in EcoStruxure Machine Expert - Safety V1.1.

In almost all cases, the update works without impact on the overall safety application and the resulting project CRC (cyclic redundant checksum) value stays the same and there is no recertification needed.

However, EcoStruxure Machine Expert - Safety with this release does not support reusing a project built on EcoStruxure Machine Expert - Safety with LMCx01 system to EcoStruxure Machine Expert - Safety with M262 system or vice-versa.

Identified Incompatible Project Updates

The CRC of the safety project done before SoSafe Programmable V2.21 is changed if the old project contains the following safety devices:

- TM5SAI4AFS
- TM5STI4ATCFS

In this case, the safety project must be compiled again and downloaded to the TM5CSLCx00FS and the related safety function must be validated and recertified.

It is still possible to install former SoSafe Programmable versions in parallel to EcoStruxure Machine Expert - Safety as long the compatible SoMachine Motion package is available on the PC. Thus, you can maintain old projects using previous compatible engineering tool chains.

Overview of the validated safety-related software with the appropriate safety-related firmware.

Device	**Safety-related firmware version for SoSafe Programmable version**				
	1.0	**2.0**	**2.1**	**2.2**	**2.21**(1)
TM5CSLC100FS	1.10	2.36	2.41	2.44	2.47
TM5CSLC200FS	1.10	2.36	2.41	2.44	2.47
TM5SAI4AFS	–	–	302	302	322
TM5SDC1FS	–	–	302	302	302
TM5SDI20DFS	–	–	301	305	305
TM5SDI2DFS	281	281	301	305	305
TM5SDI4DFS	281	281	301	305	305
TM5SDM4DTRFS	281	281	301	305	305
TM5SDM8TBFS	–	–	301	305	305
TM5SDO2DTRFS	–	–	300	300	300
TM5SDO2TAFS	280	280	280	280	280
TM5SDO2TFS	280	280	280	280	280
TM5SDO4TAFS	280	280	280	280	280
TM5SDO4TFS	280	280	280	280	280
TM5SDO6TBFS	–	295	295	295	295
TM5SPS10FS	–	–	320	320	320
TM5STI4ATCFS	–	–	–	–	322
TM7SDI8DFS	–	–	301	305	305
TM7SDM12DTFS	280	280	301	305	305
(1) EcoStruxure Machine Expert - Safety V1.1 is compatible with the same component versions as SoSafe Programmable V2.21.					

Mitigated Anomalies

Machine Expert Installer

ID	**Description**
OEM00073838	SoMachine Motion installation on a Windows system with Turkish language is operational.

Online Help

ID	Description
OEM00060935	Missing information on the safety-related characteristics of the Safe Logic Controller TM5CSLCx00FS and the TM5/TM7 I/O safety-related modules added in the Online Help.
OEM00067912	Missing information on the safety-related parameters in the configuration window of safety-related drives added in the Online Help.
OEM00069590	In the German Online Help, the links of the chapters *Lexium 62 Single/Double Drive Embedded Safety* and *Lexium 62 ILM Safety Option Module* are operational.
OEM00069710	In the Online Help, the link to the *PacDrive TM5/TM7 Safety System Planning and Installation Guide* is operational.
OEM00070505 OEM00070510	In the Online Help, the description of some LED indicators of the TM5CSLCx00FS is present. The following was enhanced: • Missing module detected. • Boot phase. • Debug state (RUN, STOP, HALT).
OEM00070844	In the Online Help, the parameter information on the encoder resolution of motors (*EncoderResolutionRotary*) is present.
OEM00071262	In the Online Help, the description for the TM5CSLCx00FS cycle time parameter provides sufficient information.

EcoStruxure Machine Expert

ID	Description
OEM00055804	In simulation mode, you can assign the application to the same node name as the Soft PLC. The **Vijeo-Designer Simulation Runtime** on the same Windows PC will connect to the simulated PLC.
OEM00061672	The diagnostic message *Program name or function block instance expected instead of IoMgr...* no longer is displayed at the first login or after the **Update > Build > Generate code** procedure.
OEM00067034 / SI-5218	When converting an M251 controller to an M241 controller, the modules of an Ethernet OTB slave are no longer arranged in reverse order.
OEM00067403 / SI-3320	In online mode, the parameters for Modbus TCP servers can no longer be edited or modified.
OEM00068030 / SI-1116	It is now possible to install Sercos III EtherCAT bridge devices without losing parameters in the device description.
OEM00070178 / SI-1069	McAfee security analysis no longer incorrectly declares the *Clean_all.exe* files as Trojans.
OEM00071130 / SI-5252	In the **Add Device** dialog box, the iPC Series is now available.
OEM00071816 / SI-5259	The *SiteManagerEmbedded.exe* file (used for Vijeo-Designer) is available in the *Tools* folder.
OEM00062595 / MS-1605	Motion Sizer: In the **Device selection** dialog, the **Inertia ratio** column can be sorted.
OEM00006868	Smart Coding no longer displays incorrect icons for POUs or actions in the SFC (Sequential Function Chart) editor.
OEM00010333	**GlobalImagePool**: After embedding an image into a project, the image has become part of the project and the referenced file is no longer needed. The embedded image without referenced file is no longer displayed in red.
OEM00012125	**Source Download**: If you execute the **Source Download** command, your project is no longer automatically saved without first prompting you to confirm.
OEM00016215	Variable declaration: The declaration of variables in the tabular declaration editor no longer automatically adds an additional pair of keywords (*VAR*, *END_VAR*) to the textual declaration editor.

ID	Description
OEM00019426	For **Visualization** elements, user-defined colors are retained.
OEM00022360 OEM00033901	The size of project files no longer increase over time due to precompile and auxiliary files for shared strings.
OEM00025211	When there is no memory space available on the file system of the controller, the `Create boot application` application command can not be executed successfully, but no message is displayed indicating the reason. Workaround: The message can be created by the function *CAL_SysFileWrite* with the return value *ERR_DISK_FULL*.
OEM00026350	Behavior of outputs for *STOPPED* state (from Addendum SoM V3.1): All outputs initially assume their configured state (**Keep current values** or **Set all outputs to default**). The subsequent state of the outputs depends on the value of the **Update IO while in stop** setting, or the state dictated by output forcing if used and on commands received from remote devices. **NOTE:** The initial assumption of state of the outputs is for the equivalent of one controller cycle. After this, the subsequent state takes effect. For detailed information, refer to the *Programming Guide* specific to your controller, chapter *Controller States Description*.
OEM00027910	Opening the preview of project documentation no longer leads to overflow of GDI (Graphics Device Interface) objects.
OEM00028990	When function *DirList* out of the CAA File library was used to read files and folders from the controller file system the first file/folder is no longer missing.
OEM00030446	When the **Tools > Options** dialog box was closed with the **X** button, the settings are no longer saved (as if the **OK** button was clicked).
OEM00030618	Variable declaration: The order of the variables copied from one GVL to another GVL is correct.
OEM00031906	CANopen, DTM: If the CANopen option **Block SDO, DTM and NMT access while application is running** is set, after the application is running and subsequently stopped, the DTM (Device Type Manager) can be synchronized.
OEM00035324	Case sensitive renaming a POU is possible.
OEM00035704	In online mode, you can no longer add a POU to the MAST task by drag-and-drop in the **Device Editor**.
OEM00035785	Library **Manager > Add Library > Placeholder**: Placeholders defined in the library profile (like for the Standard•• library) are present in the placeholder list.
OEM00037183	Addressing bits in variables: Compiler error message is now generated indicating that bit access is only possible on integer variables.
OEM00038122	A cut-and-paste operation is now possible for a POU in an application if a device with the same name exists.
OEM00038656	When adding a POU to the MAST task by using the contextual menu, the entered comment is now taken into account.
OEM00038866	Creating an *ARRAY OF BOOL* located on a bit address, **Build > Generate Code** no longer generates an internal error message.
OEM00039266	Adding an FB (function block) to an LD (Ladder Diagram) no longer results in an undefined FB when clicking outside the FB edit dialog box instead of confirming the name with the **Enter** key.
OEM00041670	Downloading a project which included a visualization trace for which a DWORD variable was specified in the **Load trace from a file > FileName** property, no longer cause connection issues.
OEM00041917	If you used the 3S CanOpenStack library in your project, a build error is no longer generated when using a POU named *START* or *STOP*.
OEM00042160	If you disconnect an Ethernet cable from a device for a short time and reconnected it, is now recognized that the device was reconnected.
OEM00042331	The *%I* and *%Q* addresses of a project are organized during code generation. Less time is required to manage a large number of *%I*/*%Q* addresses existing in a project, when the option **Always update variables** is activated.
OEM00042591	The correct message is now displayed when trying to connect to a device with an incompatible firmware version.
OEM00042732	**Symbol Configuration**: The symbols from **Symbol Configuration** can now be exported to Vijeo-Designer after a second modification.

ID	Description
OEM00043711	When outputs have default values configured and are driven by an external task and the external task has not been executed at least once, the default values are now not applied when the controller mode changes from RUN to STOP.
OEM00043954	WebVisualization: The configured background color is now used for the complete website.
OEM00044255	In **EcoStruxure Machine Expert Logic Builder** under **Project > Project Settings > Security > Enable project file encryption > Password**, you are no longer prompted for the present password and the new password if the security settings have never been enabled. You are now asked only for the new password.
OEM00044349	WebVisualization: The controller no longer transitions to STOP mode when you open a tab of the WebVisualization.
OEM00044785	WebVisualization: Connecting to WebVisualization with a tablet or a smartphone now consistently returns the addressed page.
OEM00044844	CAA_File.library: The function *FILE.DirList* now provides information about the file size and date when *xDone=TRUE* and the directory is empty.
OEM00045192	Resolution of a DTM (Device Type Manager) communication issue now allows FDT (Field Device Tool) information to be saved.
OEM00045337	SysDir Library: *CreateFolderTransfer* now calls *CAL_SysDirClose* when the directory is invalid.
OEM00045442	The **Symbol Configuration** object can now be used/configured for a Turkish localization.
OEM00045474	Symbols created with the **Symbol Configuration** editor can now be shared with the Vijeo-Designer after upgrading the programming software.
OEM00045495	When you cancel the closing of a project, the message: *Could not save project. Object reference not set to an instance of an object.* is no longer presented and you can login to the controller.
OEM00045521	An unhandled exception no longer occurs during **Project > Export** when changing the message categories.
OEM00046210	Variables of large POUs in a CFC program can now be monitored online.
OEM00046215	If you attach two addresses to one contact/coil, a build error message is displayed.
OEM00046286	In the communication elements list of the **Add Device** dialog box, one version is now displayed for the Modbus devices.
OEM00046718	The message *Assertion Failed* is no longer displayed during the build process when you use a function of the Conveying library or the Conveying Templates library and afterwards remove the libraries from the project.
OEM00046780	A runtime system shutdown during operation no longer occurs when using a large number of network adapters.
OEM00046838	Toolbar and toolbox no longer disappear while using drag-and-drop of elements/ operators in an undocked POU editor.
OEM00047072	Elements of an *ARRAY [x..y] OF STRUCT* can now be read by Vijeo-Designer.
OEM00047248	In **EcoStruxure Machine Expert Logic Builder** under **Tools > Options > International Settings**, the option to select English as language appears now only once in the list.
OEM00047320	Online with an extensive WebVisualization: you can now run an additional stand-alone visualization in parallel.
OEM00047399	In the **Tools** tree and the **Applications** tree, the green **(+)** button is now visible when the width of the **Tools** tree or the **Applications** tree is small.
OEM00047586	In the GUI of the programming software, some French translations are no longer missing and French characters are now displayed correctly.
OEM00047786	If you now reduce the size of the **Visualization Manager** dialog box, buttons are displayed proportionally, and can now be read.
OEM00047962	If you now delete an operator or function block from the LD or FBD editor, and attempt to drag-and-drop another, different element, the correct element will appear as opposed to the element which was deleted.
OEM00048174	The Modbus channel dialog of the Modbus I/O scanner is now translated to Italian.

ID	Description
OEM00048226	The removing of the CANopen connection cable from an Altivar drive (ATV61/ ATV71) is now detected.
OEM00048337	*SysSockGetRecvSizeUdp* now returns *ERR_FAILED* if a timeout occurs.
OEM00048341	In the **Project > Project Settings** dialog box, some Italian words were not translated.
OEM00048342	The **Tools > Library Repository** dialog is now translated to Italian.
OEM00048605	When clicking the **Export groups for global visualization** button in the **Visualization Manager > User Management > Groups** tab), the error message *Unhandled exception* is no longer displayed.
OEM00049190 / PLAT-109	In the GUI of the programming software, there is no longer some Chinese translations missing.
OEM00049405	By converting an XBTGC HMI Controller to an HMISCU Controller, the build error message *Out of code memory* is no longer displayed.
OEM00049576	The operating modes **Circular** and **Stop when full** for the log file of the data log manager now operate correctly. The entries are added at the correct position and the log file is not limited to a fixed size.
OEM00050567	When you add a **Visualization** to a project and perform an **Undo** and then a **Redo**, the navigators (**Devices** tree, **Applications** tree, ...) of the programming software now continue to operate correctly.
OEM00050997	DTM dialog message boxes now display the correct icons.
OEM00051067	Index variable values are now displayed correctly when the index variable is of type UINT.
OEM00051333	WebVisualization: When you modified the WebVisualization property **Best Fit** from **Use specified client size** to **Best fit in online mode**, this modification is now taken into account.
OEM00051955	Lexium 23 (LXM23) drive: It is no longer necessary to execute the *MC_Reset* function block twice to bring the status (PLCopen) from *ErrorStop* to *StandStill* when a limit switch (AI14, AI15) is released.
OEM00052042	WebVisualization: The displayed content is now more consistent depending on the browser or smartphone used.
OEM00052458	Performance has been improved when opening a project which includes a CANbus network.
OEM00052907	Now you can close the editor of drive DTMs which control and run a motor, or go offline before the motor is stopped.
OEM00053685	NVL (Network Variables List): During creation of an NVL receiver list, it is now possible to add NVL senders to NVL receiver lists.
OEM00053715	The FDT (Field Device Tool) frame application now verifies whether a DTM (Device Type Manager) is in state *Configured* before executing import/export and copy/paste operations.
OEM00053859	The time to perform the **Build > Clean All** command is now more consistent across projects.
OEM00053917 / IECLIB-1423	Unsupported libraries are no longer delivered in the **Category: Test Versions**.
OEM00054730	Configuring the hotkeys in the **VisualizationManager** window now operates correctly.
OEM00055008	It is now possible to import a device to a connector which is configured with the attribute *explicit=true*.
OEM00055516	In a project which contains the Lexium 32i library and the Lexium 28 library, the structured view in the **Input Assistant** now displays the correct sorting of the function blocks.
OEM00055707	You can now attach several **Groups** to the same position in your visualization, select the groups, and move them to a new position without an error message being displayed.
OEM00057166	Using the **Input Assistant** in a visualization no longer causes a shutdown of the programming software.
OEM00057461	When a contact or a coil was added to an LD network and you attempt to attach a variable, the **Input Assistant** now proposes a BOOL instead of an INT.

ID	Description
OEM00057572	When using **Project > Compare**, a null reference exception message is no longer displayed and the compare feature operates.
OEM00057670	The attempt to edit the **HMI Application** object of a Vijeo-Designer device while the **Cross Reference List** is open no longer causes a shutdown of the programming software.
OEM00058078	If you select several function blocks in an FBD (Function Block Diagram) and delete them, all of them are now deleted.
OEM00058877 / IECLIB-1006	For a **PGN** (Parameter Group Number) inserted into a **J1939_ECU** device (CANbus), all the parameter values are now sent.
OEM00059249	The attempt to open **Project > Project Information**, no longer results in the errant display of the message: *Object reference not set to an instance of an object*.
OEM00059361	After importing an EDS file (device description), the **Hardware Catalog** is now updated and the added device is available.
OEM00059847	WebVisualization: When you modify the WebVisualization settings, the settings are now taken into account for download.
OEM00059965	After deleting the first **TX Signal** of a **J1939_ECU** device (CANbus), the I/O mapping of the associated **PGN** (Parameter Group Number) is now correct.
OEM00060184	SVN: Modifications on a CANopen node in the first instance of a project are recognized by SVN and are now also taken into account for the second instance of the project.
OEM00060617 / IECLIB-1006	After saving and reopening a project, the **I/O Mapping** tab of a **J1939_ECU** device now displays the **Unit** column for the TX/RX signals.
OEM00060712	SVN: The time stamps now displayed by SVN provide the local time of the computer running the programming software.
OEM00061003	Replacing an element in an LD network by drag-and-drop from the **ToolBox** now operates correctly.
OEM00061075	Devices can now be added, copied and pasted, and then deleted from a project without provoking an error message when you execute the **Build** command.
OEM00061639	SVN: Modifications on the first instance of a project are now taken into account by SVN for the second instance of the project.
OEM00062014	After executing the **Convert Device** command, a GVL (Global Variable List) is no longer missing in the project.
OEM00062211	Using **Project > Export**, the prompt to overwrite the already existing project now appears only once.
OEM00062593	Trying to log in to a controller no longer results in an internal error message displayed and the need to execute the **Clean all** command in order to log in.
OEM00063335	After disconnecting the CANbus connection of a **J1939_ECU** device, all devices in the **Devices** tree now display the appropriate color and the status of the **J1939_ECU** device is now displayed correctly.
OEM00063354	The status LEDs (**CAN_R**, **CAN_E**) of the **J1939_ECU** device are no longer turned off in all operating modes.
OEM00063414	SVN: Under **Project Settings > Security > Enable project file encryption > Password**, you can add a password to your project. After checking in the project to SVN and checking it out again, the password is now retained.
OEM00063623	SVN: After checking out a project from SVN, save the project and then reopen it again, objects are now highlighted or not as is appropriate.
OEM00063640	In a Ladder Diagram, inserting a function block into a parallel contact branch is now possible.
OEM00063811	SVN: After checking out a project from SVN, the time stamps are now synchronized with the working copy.
OEM00065365	Using the **Input Assistant** to attach a global variable out of the TcpUdpCommunication library to an application, the name space is now only added once (*TCPUDP.GVL.G_stDefault*).
OEM00065836	**Unforce and Restore all Selected Values** now affects *%QX0.0* outputs.
OEM00065955	Performance was improved when mapping variables to bits using Modbus TCP servers.

ID	Description
OEM00066218	In connected mode, the tooltip of a variable with mapping to *%IX* is now correct.
OEM00066295	Variable address mapping can now be deleted in the table view of the declaration section.
OEM00066930	IntelliSense now operates for actions.
OEM00067143	SVN: Performance improvement when calculating the *SVN_Version_INFO*.
OEM00067152	AS-i Sercos Gateway: During an update procedure, the configured non-safety-related submodules are no longer replaced by default modules.
OEM00067216 / IECLIB-670	Clicking the **Ignore** button to the error message *Out of global data memory* no longer causes a shutdown of the programming software when logging in to a controller.
OEM00067283	After performing multiple online changes on a project with an HMISCU Controller, the connection to the controller is no longer interrupted.
OEM00067382	PLCopenXML import: Importing files (Sercos slaves) exported from projects created with earlier software versions is improved.
OEM00067384	PLCopenXML import: Importing files (controllers) exported from projects created with earlier software versions is improved.
OEM00067452	Whenever a **Source Upload** (after an upload and download of **Users and Groups**) is performed, a user logon is no longer displayed.
OEM00067621	**VisualizationManager > User Management**: After deleting a **RemoteTargetVisualization** or a **WebVisualization**, a build error message is no longer displayed when activating the user rights.
OEM00067743	An incorrect declaration of the initial value of an INT variable no longer causes a shutdown of the programming software.
OEM00067888	Using the **Cut** command in an FBD (Function Block Diagram) no longer causes a shutdown of the programming software.
OEM00067935	Modifications in the **Recipe Manager** are now managed correctly during **Online Change**.
OEM00068130	SVN: Each server polling no longer increases the number of available updates.
OEM00068211	SVN: Server polling now updates the locked-by-other-user icon.
OEM00068219	In an FBD (Function Block Diagram), it is now possible to search for a variable used in an **Execute** box.
OEM00068229	**Symbol Configuration**: Modifying the access rights of an object in the **Symbol Configuration Editor** no longer causes a shutdown of the programming software.
OEM00068383	SVN: Including external objects (*svn.include_external(URL)*) is now compatible with Python scripting.
OEM00068449	OPC DA (Open Platform Communications Data Access): The communication between OPC clients and the OPC server of controllers no longer stops after one of the OPC clients sends a request for one or more variables of a <Controller> PLCSystem library.
OEM00068458 / IECLIB-1446	Running a **Trend Recording** and starting and stopping the application no longer results in a watchdog exception.
OEM00068537 / CDSYS-50	**Symbol Configuration**: The variable list of the **Symbol Configuration Editor** is now updated correctly.
OEM00068562 / CDSYS-51	The **Diff Viewer** no longer displays misleading information on unmodified objects.
OEM00068649 / CDSYS-52	In the **Diff Viewer**, it is now possible to accept the detected modifications with the related button. The new command **Project > Commit accepted changes**, was added. This command is also available as a button in the toolbar.
OEM00068767	**Auto Declare** no longer proposes a **Type** without namespace.
OEM00068847	Program simulation is now possible when a POU contains ARRAY variables and where a variable and an arithmetic operator are used for addressing the ARRAY (Example: *slider[sli_index+1]:=55*).
OEM00068853	Python Scripting: Setting a new value via *IScriptDriverInfo.always_update_variables* now operates correctly.

ID	Description
OEM00068954	PLCopenXML import: Some objects, such as `SoftMotion General Axis Pool`, can now be imported.
OEM00068970	PLCopenXML import: Some objects, such as `PowerDistribution`, `DM72F0`, `DM72F1`, and `TM5_Manager`, can now be imported.
OEM00069258	SVN: A CANbus device is no longer erroneously highlighted as modified.
OEM00069291 / SI-1107	SVN: Each instance of the application now independently updates the parameter values without first being closed.
OEM00069359	In an LD (Ladder Diagram), inserting a function block into a contact branch no longer causes an incorrect diagram.
OEM00069424 / SI-656	It no longer takes long time to close a project while **View > Hardware Catalog > Devices & Modules** was open.
OEM00069603	Updating the programming software to the latest version: During update, implicit tasks (related to modules) are no longer added to the application when they are already available in the application.
OEM00069634	PLCopenXML import: All importable objects can now be imported.
OEM00069976	Tables in **Visualization** objects have been made more stable.
OEM00070615	When sending a UDP packet of size 0 to destination port 1740, the communication with the controller is no longer stopped.
OEM00071356	PLCopenXML import: After an import and an export, an output of *SR_Main* is no longer missing.
OEM00071386	**Cross References** (locations where variables are used within a project) now operates without generating spurious error messages.
OEM00071389	Using **Auto declare** for commands in an FBD network no longer cause an unhandled exception.
OEM00071445 / CDSYS-76	PROFINET I/Os are now updated when the application program is stopped.
OEM00071842	Dynamically created recipes are now loaded during download.
OEM00071886	It is now possible to edit parameter lists of libraries in the **Library Manager** of the **POUs** tree.
OEM00072172	If an edge detection is used at an output of an object in FBD, this edge detection is now retained after PLCopenXML export and PLCopenXML import of the POU.
OEM00072392	Using **Auto declare** for an **Execute** box in an FBD network no longer causes an unhandled exception.
OEM00072417	Using **Refactoring > Rename** (project-wide renaming of object names and variable names) no longer results in the message: *Index was outside the bounds of the array*.
OEM00072810	If you select a visualization style that differs from the default, the programming software no longer requests an online change at login after the programming software has been closed and reopened.
OEM00073327	Copy-and-paste of variables in the trace configuration, no longer causes an unhandled exception.
OEM00073465	SVN: The time it takes to update a function block to the latest revision of SVN has been improved.
OEM00073690 / SI-2292	The default resolution of the following placeholders is now correct: *SysSocket2*, *CmpTls*, *CmpX509Cert*.
OEM00074493	As the compile process consumes a large amount of memory size, a download or online change is now performed after the compile process has been finished.
OEM00074646	A **Clean all** operation led to a peak in memory usage and kept the automatic memory management from collecting garbage memory.
OEM00074872	Access to the filesystem no longer negatively influences the real-time behavior of the system.
OEM00075100 / SI-3324	Comparing different versions of a project is now improved.
OEM00075449	PLCopenXML import: After a PLCopenXML export and subsequent import, an additional output (*Out1*) is no longer added to an action.

ID	Description
OEM00075456	PLCopenXML import: If a function (FC) with assignment but without variable is exported, the assignment is no longer lost after import.
OEM00075518	**Go To Definition** command: The command now operates correctly for enumerations in the online view.
OEM00075789	Selecting a variable in the **Trace Configuration** dialog no longer "freezes" the application.
OEM00075950	Python Scripting: *ScriptDriverInfo.driver_info* now operates correctly for fieldbus devices.
OEM00069264 / SI-3430	SVN: Reverting project modifications on a controller now operates correctly.
OEM00075591	Opening a SoMachine Motion V4.41 project with EcoStruxure Machine Expert, the correct visualization profile is used now.
OEM00070437 / SSP50-4194	Tying to export the SafeLogger messages to a storage device (for example, an USB device) that does not provide enough memory space, no longer causes a shutdown of the programming software.
OEM00070681 / SI-2262	In the **Dependency View** of the **Code Analysis Manager**, the German translation is corrected for specific objects.
OEM00071201	The French and German localization of the **User Management** dialog (**Visualization Manager**) has been adapted to the English version.
OEM00072358 / SI-2490	The Vijeo-Designer no longer shuts down with HMI **Connection Mode > IP Address (Fast TCP)**.
OEM00072397 / LMCFW-1000	The **Controller Assistant** now loads the firmware of drives. Thus, FDR (Fast Device Replacement) may now operate for drives.
OEM00073151 / SI-2037	SVN: There is now an option to revert a complete project to a specific revision.
OEM00073371 / SI-2254	Firmware update with the Controller Assistant: The **Sercos device firmware version** dialog was improved. Now the Sercos files from the selected firmware version are used.
OEM00073417 / SI-2466	The programming software no longer shuts down after opening and closing a project several times.
OEM00075268	An unhandled exception is no longer caused by copying and pasting a variable inside the trace configuration.
OEM00075412	Graphics added to the WebVisualization in the programming software are now displayed in the web browser.
OEM00075624 / SI-3446	*CheckLRangeSigned* and *CheckLRangeUnsigned* (*CheckLibs* = POU for implicit checks) now trigger a reaction on PacDrive controller.
OEM00074309 / LMCFW-1154	If you modify the Logic Motion Controller settings or the fieldbus device settings, the fieldbus now continues to operate after a program download.
OEM00075265 / LMCFW-1468	The CanL2 communication now operates even after performing several project downloads.
OEM00070192	NetManager Server service no longer causes communication traffic issues. The automatic refresh behavior was modified.
OEM00076105	Using the **Project > Convert Device** command to convert the Magelis GTUX HMIG3X device to an HMIG2U device, the screen resolution is now adapted correctly.
OEM00074658 / SI-3196	DTM - TM5/TM7: Using an **.eds* file for a TM5/TM7 island without activating the **Create all SDOs** check box no longer results in an incorrect I/O mapping.

EcoStruxure Machine Expert - Safety

ID	Description
OEM00063913 / LMCFW-577	Applications with an LMC Pro2 controller and many safety-related devices no longer have safety-related axes reporting incorrect reference values which lead to Sercos issues and system shutdown.
OEM00070603 / LMCFW-1973	Phase-up of Sercos with the largest possible safety-related application and a specific device sequence is now possible.

ID	Description
OEM00068174 / SSP50-6797	STO (Safe Torque Off) is stabilized and a communication error is no longer detected.
OEM00069176	A web-based installation of the EcoStruxure Machine Expert - Safety is now available.
OEM00071263	In the Online Help, the description for the TM5CSLCX00FS cycle time has been enhanced and more detailed information is provided.
OEM00072267	In the SafeLogger, a safety-related message is not displayed if the TM5CSLCx00FS is not in operational state due to an incorrect encoder resolution.

Known Operational Anomalies

Limitations for the Release of TM262M••

- Disabling of Safety slices is not supported.
- There are restrictions on the simulation feature of devices in some use cases for machine options.
- The Safety Logic Controller will switch to SafeOS state SAFERUN in case Sercos state NRT is active. This is normal behavior and is used to debug the Safety Logic Controller application in case no TM262M is connected.
- Validation of file name is not performed when a new application file is saved in the local directory: If a file with the same name is in a folder and the user confirms to save in dialog, then the existing file is overwritten without further notification to the user.

Limitations for the Release of TM262••

The minimum required firmware version is 5.0.2.1. If the product has an earlier firmware version, firmware update is mandatory. Update can be executed via SD-card or the Controller Assistant.

Limitations for the Release of PacDrive Controllers

Validation of file name is not performed when a new application file is saved in the local directory. If a file with the same name is in a folder and the user confirms to save in the dialog, then the existing file is overwritten without further notification to the user.

Immediate Addressing

EcoStruxure Machine Expert allows you to program instructions using either a direct or indirect method of parameter usage. The direct method is called Immediate Addressing where you use direct address of a parameter, such as %IWx or %QWx for example. The indirect method is called Symbolic Addressing where you first define symbols for these same parameters, and then use the symbols in association with your program instructions.

Both methods are valid and acceptable, but Symbolic Addressing offers distinct advantages, especially if you later make modifications to your configuration. When you configure I/O and other devices for your application, EcoStruxure Machine Expert automatically allocates and assigns the immediate addresses. Afterward, if you add or delete I/O or other devices from your configuration, EcoStruxure Machine Expert will account for any changes to the configuration by reallocating and reassigning the immediate addresses. This necessarily will change the assignments from what they had once been from the point of the change(s) in the configuration.

If you have already created all or part of your program using immediate addresses, you will need to account for this change in any program instructions, function blocks, etc., by modifying all the immediate addresses that have been reassigned. However, if you use symbols in place of immediate addresses in your

program, this action is unnecessary. Symbols are automatically updated with their new immediate address associations provided that they are attached to the address in the I/O Mapping dialog of the corresponding Device Editor, and not simply an ‘AT’ declaration in the program itself.

⚠WARNING

UNINTENDED EQUIPMENT OPERATION

Inspect and modify as necessary any immediate I/O addresses used in the application after modifying the configuration.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

NOTE: Systematically use symbols while programming to help avoid extensive program modifications and limit the possibility of programming anomalies once a program configuration has been modified by adding or deleting I/O or other devices.

EcoStruxure Machine Expert - Safety

ID	Description
OEM00060343 / SSP50-6783	In the SafeLogger you can read that the status of an input/output of a safety-related module has changed. Detailed information on the reason can be decoded out of the additional *info0* and *info1* information. (Refer to the SafeLogger User Guide).
OEM00060774	The communication state between the Safe Logic Controller TM5CSLCx00FS and a drive is not indicated by a message in the SafeLogger: Under certain conditions, a drive is treated as a non-working drive but this is not recognized by the SafeLogger or by the drive. You have to restart the Safe Logic Controller TM5CSLCx00FS to recover.
OEM00068735 / SSP50-6800	If you set the *MaxDataTransportTime* and *CommunicationWatchdog* parameters to significantly greater values than proposed by the calculator (for example, 6500 ms), this can result in an unstable system because these parameters influence the timeouts and restart timing of the safety-related system. In this case, the *ModuleOK* status for some safety-related modules is not reached or is unstable. Use the values calculated by the **Response Time Calculator**. Do not increase the parameters by more than factor two.
OEM00068980 / SSP50-6805	If you set the value for *MinDataTransportTime* to a value less than the value calculated by the **Response Time Calculator**, a build error message may be displayed. The *MinDataTransportTime* must be set to the calculated value.
OEM00069079	System limitation on number of drives with 1 ms Sercos time setting: With TM5CSLCx00FS firmware version 2.47 and earlier, up to 22 safety-related drives can be handled with 1 ms Sercos time setting. The maximum number of slaves depends on different factors: • The number of physical connected devices. • The configured additional real-time parameters. • The data exchanged between LMC and TM5CSLCx00FS. • The number of additional safety-related devices (I/O modules, safety-related gateways...). Workaround: When the error message *C1D 0x010A* is displayed, the system limit is reached. In this case, the system must be optimized on the influencing factors. Another possibility to increase the number of supported safety-related drives is to split the machine into several modules, with each one having a TM5CSLCx00FS and an LMC inside.
OEM00069082 / SSP50-6808	TM5CSLCx00FS displays the internal error message *BF86*: This occurs when *SafeModuleOK* parameter is not used in all safety-related modules in the system. Workaround: Use the *SafeModuleOK* parameter in all safety-related modules.
OEM00070294 / SSP50-6812	The channel of a safety-related module goes to FALSE if an unsuitable cycle time value is configured: The *CycleTime* value must be greater than the processing time for the safety-related application. If the *CycleTime* parameter value is less than or too close to the processing time, a cycle time violation may occur.

ID	Description
	The cycle time configured for TM5CSLCx00FS must be an integer multiple of the Sercos cycle time. You must configure an appropriate TM5CSLCx00FS cycle time: • Set a greater cycle time value for the TM5CSLCx00FS. • Download and run the safety-related application. • Open the SafePLC control dialog and click the info button: The present processing time is displayed. • Set the TM5CSLCx00FS cycle time to a value ≥ processing time + 1 ms.
OEM00070390	No information could be found for the SafeLogger entry *0x9406*. This entry indicates a cross communication issue in the network processing engine.
OEM00070466 / SSP50-4192	When the *MaxDataTransportTime* value is set to a value that is too small, the *TM5CSLCx00FS* does not change its status to RUN. Workaround: Use the value from the **Response Time Calculator**. If this value does not work, increase the *MaxDataTransportTime*/*CommunicationWatchdog* in small steps up to a maximum of two times the calculated value.
OEM00070475	TM5CSLCx00FS does not change its status to RUN and stays in *PreOp* mode. Possible reasons: • For one or more drives, the safety-related parameters are not valid. • *OutputActiveSet* value is missing. • *AutoRun* is not activated. • Safety response time relevant parameters are not set to appropriate values.
OEM00070493 / SSP50-6817	Sporadically, safety-related modules do not go to operational state: After the restart of an LMC (Logic Motion Controller), the TM5CSLCx00FS goes to operational state but the safety-related modules stay in pre-operational state. Workaround: Restart the entire system.
OEM00071897 / SSP50-6831	In the SafeLogger, some issues are displayed as non-safety-related messages, whereas they should be safety-related messages. Known issues: • *0x9414 Cross communication error* • *0x960B Internal error cross communication* • *0xD126 Execution differences processes* • *0x8609 Supply voltage error* Use the latest firmware versions for the safety-related components in your system.
OEM00077282 / SSP50-6867	In one special tested system configuration, running with 1 ms Sercos cycle time the state of *SafeModulOK* parameter of one safety-related module changes from TRUE to FALSE. This does not occur with 2 ms and 4 ms as Sercos cycle time in the same configuration. Workaround: Use 2 ms or 4 ms as Sercos cycle time if applicable for your application or slightly adjust the safety-related timing parameters (for example *maxDataTransportTime*).
OEM00052480	Support of special characters (German umlauts) in variable names in ST: An error is detected if a special character is entered as part of the naming of a variable in EcoStruxure Machine Expert - Safety. It is not possible to ignore or cancel this exception. The program must be terminated by the windows task manager. After restarting EcoStruxure Machine Expert - Safety, the special character can be deleted. Workaround: Do not use special characters in variable names.
OEM00073379 / SSP50-6844	TM5CSLCx00FS stays in boot state after MXCHG confirmation for drives: TM5CSLCx00FS indicates MXCHG after the drive has been replaced. To confirm drive replacement, MXCHG ask for confirmation twice. After the second MXCHG confirmation, TM5CSLCx00FS reboot its-self and stays in bootphase (FIL leds light) until it is physically restarted. Workaround: Switch off and on the control voltage.
OEM00070117 / SSP50-6811	Number of possible safety-related axes varies between ring and line topology.
OEM00077251 / SSP50-6866	TM5 modules switch *SafeChannelOK* state to FALSE during Sercos ring break.

Documentation - Mitigated Anomalies

Documentation

ID	Description
OEM00061702	In the German Online Help, the section headers of some TM5/TM7 safety-related modules are now translated.
OEM00061925	Some information on using SELV/PELV for TM5 safety-related modules is no longer missing in the Online Help.
OEM00062559	In the Online Help, the SVN icons are now documented.
OEM00063454	In the Online Help, the description for *ErrorState_2* and *ModuleOK* of the TM5SDM8DTS module is no longer missing.
OEM00065214	Multiple download: An information was added to the Online Help to deselect the **Start all applications after download** option to help prevent the targeted controllers from restarting in the *RUNNING* state.
OEM00072124	Hanging and Pulling Loads (*Lexium 52 drive - Product manual*): A misleading reference to Lexium 62 variants E/F was removed.

EcoStruxure Machine Expert V1.1 SP1

Hardware/Firmware Information

Version Identification

Description	Firmware Version
M241	5.0.7.23
M251	5.0.7.23
M262	5.0.3.2
TMSES4	1.0.0.8
TM3BCEIP	1.2.1.1
TM3•HSC202•	2.0
TM3DI16	2.0
TM3DI16G	2.0
TM3DI16K	2.0
TM5NS31	2.74
LXM32S•••M2 drive	1.06.03
LXM32S•••M2 Sercos	1.08.04
LXM32S•••N4 drive	1.06.03
LXM32S•••N4 Sercos	1.08.04
LXM52••••C•••••	1.54.26.0
ILM••••••••••••	1.54.26.0
LXM62••••C•••••	• 1.60.0.0 for hardware revision RS1• • 1.54.27.0 for hardware revision RS0•
LXM62••••D•••••	• 1.60.0.0 for hardware revision RS1• • 1.54.27.0 for hardware revision RS0•
LXM62••••E•••••	1.54.27.0
LXM62••••F•••••	1.54.27.0
LXM62••••G•••••	1.60.1.0
LMC Eco	1.61.0.1
LMC Pro	1.61.0.1
LMC Pro2	1.61.0.1

Description	Safety-Related Firmware Version
LXM62••••E•••••	1.2.4.0
LXM62••••F•••••	1.2.4.0
VW3E702200000 safety option module	1.2.4.0
TM5CSLC100FS	2.52
TM5CSLC200FS	2.52
BWU2984 SWID	134253
BWU2984 Safe CPU A	135115
BWU2984 Safe CPU B	135116
ASIMON360	3.2.6.7

Contact your local Schneider Electric representative in case you need specific information for your intended machine architecture.

Mitigated Anomalies

PacDrive LMC Controls & I/Os

ID	Description
OEM00078652 / OEM00077643 / LMCFW-1524	The function `SystemInterface.FC_DrvEncSetPosition` cannot write the encoder position of an ILM.

M241/M251

ID	Description
OEM00076481	Crafted HTTP request on web visualization could lead to information leakage or unintended controller behavior.
OEM00078382	Missing input validation in Web interface.
OEM00078535	Crafted HTTP request on web visualization could lead to unintended controller behavior.
PEP0536708R	ASCII frames dropped when serial connection was configured with low baudrate and disturbances were applied on the line.

M262

ID	Description
OEM00078089	After several hundred of 'Reset Cold', an error could appear. Internal error was detected on the controller, the ERR LED fast flashing and the application removed.
OEM00078072	Some controller tasks were stopped without information (no error detected) in debug mode.
OEM00078057	SSI encoder: Value was temporarily outdated (each 20 ms) - same value during two SSI cycle times.
OEM00077980	M262: Unintended stop of operation under specific denial of service, causing internal error on controller with the ERR LED fast flashing and the application removed.
OEM00077977	When the connection was interrupted during the transfer phase download FTP over TLS, the controller task stopped without information (no error message).
OEM00077909	If a TMSES4 was configured and available, approximately every 6 s the serial communication was interrupted for approximately 3 s.
OEM00077889	When access to variables not available in the controller was requested through Machine Expert Protocol, an internal error was detected on the controller with 'Led ERR Fast flashing' and the application was removed.

ID	Description
OEM00076813	No hardware fallback if the controller was non-responsive after a watchdog Hardware timeout (1.6 s).
OEM00074451	After one week of operation, the controller time was ahead of local time (approximately 4 s).

M262 - Motion

ID	Description
MK-833	Lexium 32S `CaptureEdge` (Cap1, Cap2, and Cap3) offline parameter value was not applied after download.
MK-817	Controller task suspended after a reset of the encoder error.
MK-804	The Sercos service channel stopped operating after several hours.
MK-790	Unstable SSI encoder movement of Position/Vel/Acc.
MK-778	Safety Logic Controller integration - parameter editor: The information about which function blocks to use was incorrect.
MK-767	An axis with `CustomJob` without master could not be master for another axis.
MK-764	`MC_Power` error did not reset properly in some special cases.
MK-734	It was not possible to reach Sercos phase 4 when Sercos bus coupler TM5NS31 with safety slices was set to simulated working mode.
MK-699	`xIsHomed` flag was not reset properly on encoder axis.
MK-631	Improved performance while performing Sercos phase up.
MK-249	`SLC.OutputActiveSet` offline parameter value was not applied after download.
MK-223	Sercos master `DesiredPhase` offline parameter value was not applied after download.

Known Operational Anomalies

PacDrive LMC Controls & I/Os

ID	Description
OEM00054944	It is not possible to establish an EtherNet/IP connection when the EtherNet/IP device (ATV32/IL•) is connected directly to the controller. **Workaround**: You must add a switch between the controller and the EtherNet/IP device.
OEM00070704 / LMCFW-1976	If EcoStruxure Machine Expert and previous SoMachine Motion versions are installed in parallel on the local PC, the **Controller Assistant** provides a firmware version for selection that does not match.
OEM00076369 / SI-3444	Modifications are detected for persistent variables, although the persistent variables were not modified. This occurs if a 128 Mb Compact Flash (CF) memory card is used.
OEM00076650 / LMCFW-2023	Too many fieldbus participants with too much data can lead to the following error message: *EtherCAT Master: Download busconfiguration to NetX...*.

Lexium 52 / 62 / 62 ILM

ID	Description
OEM00063956	ILM motor: If the Kendrion brake is used, the voltage value for the holding brake is set to the minimum value required by the brake. This minimum value is monitored. Deviations during measuring can cause malfunctions of the brake. **NOTE:** See important hazard message after the table.
OEM00065793	If you use a Lexium 62 drive (LXM62) in open-loop control and set *RefVelocity = 0*, a current value is displayed in the monitoring trace diagram, even though no current value was expected in open-loop control.
OEM00069062 / SSP50-7128	Diagnostic code 8123 is reported for one of the axes at standstill: An application containing a master axis with a Cam and other axes at standstill reports the diagnostic code 8123 when testing under specific conditions.
OEM00069830	A Sercos run-up with a double-line topology is not possible for Lexium 62 drives.
OEM00070988	The Lexium 52 drive does not boot after firmware update (version 1.54.10 -> 1.54.23).
OEM00072092	Your application contains a Lexium 62/ILM 62 drive with safety-related modules (LXM62/ILM62 Safety Module). If you reboot the Sercos network, the diagnostic message *8169 Sercos Slave comm. disturbance detected* is displayed in the message logger.
OEM00073627	Using an MH3 motor with a Sinus/Cosinus encoder connected to a Lexium 52/62 drive triggers the diagnostic message *8908 Unintended motor operation detected*.
OEM00074275	Lexium 62 Plus: After online modification of parameters and then a phase down and phase up in a different topology, modification of parameters of type ES is no longer possible.
OEM00075885	Lexium 62 Plus: Flashing of state LED during device identification on single drives and advanced drives is slower (2 Hz) than on double drives.
OEM00077378 (OE-M00073129)	Lexium 62 Plus: A sequence of Sercos topology modifications may lead to a Sercos error message.
–	Lexium 62 Plus: The diagnostic message *8503 Service service channel error detected* is triggered at phase up if one of the following parameters is configured as a real-time parameter: *UserDefinedStopJerk*, *UserDefinedStopDeceleration*, *TrackingDeviationLimit*.
–	Lexium 62 Plus: Firmware update using the device assistant inside virtual machines may not update all drives. Repeated updates may be required.
–	Lexium 62 Plus: Writing the motor type plate for sensorless motors into advanced drives (variant G) triggers an error message, that type plate has not been written. Nevertheless the type plate is available after a reboot of the drive.
–	Lexium 62 Plus: Machine encoder data is not actualized after change of encoder and reinitialization. A power cycle is required.
OEM00078751	If Lexium 62 Advanced is configured to use machine encoder and no machine encoder is connected, no diagnostics message is triggered.
OEM00078419	For asynchronous motors used in combination with Lexium 52 / Lexium 62, the sign of the current value does not match with the direction of the motor.
OEM00078784	Changing the filter time in combination with torque limitation triggers a Sercos parameter channel error.

⚠WARNING

UNINTENDED EQUIPMENT OPERATION

- Verify that movements without braking effect cannot cause injuries or equipment damage.
- Verify the function of the holding brake at regular intervals.
- Do not use the holding brake as a service brake.
- Do not use the holding brake for safety-related purposes.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

M241/M251

ID	Description
OEM00074655 / PLAT-524	M241/M251: The **Online > Multiple Download** command is not performed correctly for Modicon M241 / M251 Logic Controllers: When an application with two controllers has been modified and the **Multiple Download** command is executed, the application is not downloaded to one of the controllers. **Workaround**: Execute the **Build > Clean All** command before executing the **Online > Multiple Download** command.
OEM00074733 / PLAT-525	The default values of cartridge outputs are not applied in the same way during RUN->STOP and RUN->RESET WARM transitions.
OEM00077573 / PLAT-556	An error message is displayed for the TM4PDPS1 library (Profibus) after opening a project archive generated with SoMachine V4.3. **Workaround**: Set the correct version (legacy vesrion) manually in the **Library Manager**.
OEM00072286 / PLAT-490	Default values remain enabled during RUN->STOP transition even if removed from the application.
OEM00077925 / PLAT-563	During migration of an application from SoMachine V4.3 (with user rights enabled) to EcoStruxure Machine Expert, the user rights are not automatically converted before being downloaded to controller. You cannot log in into the controller. **Workaround**: Use a script stored on the SD card executing the command *delete /usr/** or performing a firmware update from the SD card.

M262

ID	Description
OEM00077150 / IECLIB-2031	TcpUdpCommunication library: At first startup after firmware update, the certificate store is not ready. An application that includes TLS communication needs a second startup.
OEM00071051	Tasks of type Freewheeling must have a minimum cycle time of 3 ms.
OEM00073787	WebVisualization with trace objects significantly increases the processor load.
OEM00074101	The Sercos master does not provide network configuration parameters for Sercos slaves (IP address, subnet mask, gateway).
OEM00074841	SSL connection is noticeably slow if client has chosen a cipher suite that uses DHE/ECDHE key exchange.
OEM00075485	Adding a TM5NS31 and I/O modules to a Sercos network impacts the M262 cycle task.
OEM00075670	WebVisualization: **SelfAwareness** variables cannot be used directly inside a WebVisualization.
OEM00076315	The diagnostic structures of PLCSystem/PLCSystemBase library (for example *PLC_R*) cannot be accessed directly from external monitoring devices through the **Symbol Configuration**. They first must be copied to local variables.
OEM00076939	All nodes in a ring topology need to support RSTP (rapid spanning tree protocol).
OEM00076940	EtherNet/IP Scanner: A “stateful” firewall keeps in its memory the connections flow. If such a firewall is defined, the EtherNet/IP traffic from slaves sending their assemblies in multicast may be blocked. So this firewall mode must not be used in this case.
OEM00077157	OTB devices may not respect the scanner RPI (Requested Packet Interval) when TM3 analog modules are configured.
OEM00077199	After transferring an application using an SD card, a TM3XHSC module may restart with an error message. A power cycle restores the correct operation.
OEM00077280	Using the *PLCO.MC_TouchProbe* with an invalid argument for *ifTrigger* is not managed as expected.
OEM00077663	If a firmware update using an SD card completes with a steady yellow SD card LED, repeat the firmware update operation.
OEM00077713	When you are modifying the user rights, ensure that no external equipment are trying to access M262 variables with former credentials.
OEM00077807	TM3 bus cycle time must not be set to a value greater than 200 ms when TM3XHSC modules are configured.

ID	Description
OEM00077830	*NbOfIncs* and *NbOfUnits* values must be < 2,147,483,647 (2^{31}), else the capture is invalid.
OEM00077839	The boot time of a controller increases when the number of files increases.
OEM00077915 / BOC-304	The PWR LED turns to red when the internal temperature is > 80° (instead of > 100°).
OEM00076745	If EcoStruxure Machine Expert is running in a Virtual Machine (VMware), M262-USB may conflict with the VMware: • USB communication is inoperable. • The controller is not discovered in: *My Controller/Communication setting*. Install EcoStruxure Machine Expert directly on the PC or use Ethernet for PC connection to the controller.
OEM00077894	If SoMachine V4.3 or an earlier version was installed on the computer, the IP address used by the PC is not correct. Thus, the USB communication is not operational. **Workaround**: You have to select the network interface SE RNDIS PSX M262 connection under *Control Panel\Network and Internet\Network and Sharing Center* and set the IP address manually to 192.168.200.2.
OEM00077911	An M262 is not discovered by USB and cannot be connected to EcoStruxure Machine Expert. **Workaround**: You have to restart the USB by the gateway. Select the gateway tray application and restart the gateway.
OEM00077737	When unplugging and plugging an M262 cable (Eth2-RJ45), there was Modbus IO-scanner application loss on the ATV340.

M262 - Motion

ID	Description
MK-823	When working with 16 LXM32S and 23 TM5 BC and 1 SLC with multiple `MC_CamIn` running on all LXM32S, and when using a MAST task at 5 ms, the controller reports an overload of the task. **Workaround**: When working with big configurations, ensure that you use a proper cycle time for your controller task by verifying the load of your task during commissioning. Also, configure a Watchdog on your task to ensure that there is no overload during run time.
MK-835	`MC_TouchProbe` reports no error when the drive is disconnected. When you execute an `MC_TouchProbe` on an LXM32S and you disconnect the drive, the function block does not report an error. The output `Busy` stays active. **Workaround**: Make sure to cancel the running `MC_TouchProbe` using `MC_AbortTrigger`.
MK-847	Starting `MC_CamIn` with non-connected SSI-encoder as master results in the `ErrorID : Unexpected Feedback`. **Workaround**: If starting an `MC_CamIn` with an SSI-encoder as master, and this SSI-encoder is not connected to the M262, the `ErrorId` reported is `Unexpected Feedback` when it should be `MasterDataInvalid`.

HMISCU Controllers

ID	Description
OEM00077527 / SI-4094	The EcoStruxure Machine Expert Logic Builder command **Refactoring > Rename** is not available for HMISCU controllers. You must rename HMISCU controllers manually without the Refactoring feature.

Library Information

Version Identification

Description	Version
ApplicationLogger	1.1.2.0
AsyncManager	1.0.5.0
AutoTune	1.3.14.0
Booster Pumping	5.0.0.5
CommonMotionTypes	1.0.1.0
CrankModule	1.3.4.0
EMailHandling	2.0.4.0
EtherNetIP Explicit Messaging	1.1.7.0
EtherNetIP Remote Adapter	1.0.10.0
FileFormatUtility	1.2.6.0
FtpRemoteFileHandling	1.2.4.0
GMC Independent Altivar	1.2.4.0
GMC Independent Lexium	1.1.7.0
GMC Independent PLCopen	1.2.3.0
HttpHandling	1.0.11.0
M262 Encoder	1.0.0.2
M262 PLCSystem	1.0.0.19
M262Diagnostics	1.0.1.0
MotionInterface	1.1.75.12
MqttHandling	2.0.6.0
PackML	1.2.3.0
PD_AxisModule	1.6.2.0
PD_EDesignAxisModule	2.3.2.0
PD_EdesignCore	2.2.6.0
PD_EdesignCrankModule	1.5.2.0
PD_ETest	1.3.6.0
PD_GlobalDiagnostics	1.3.1.0
PD_MultiBelt	1.4.3.0
PD_MultibeltModule	1.4.1.0
PD_PacDriveLib	1.8.7.0
PD_SmartInfeed	1.4.3.0
PD_SmartInfeedModule	1.3.1.0
PD_SoMotionGenerator	1.5.1.0
PD_Template	1.6.1.0
PLCopen MC part 1	1.1.69.12
PreventaSupport	1.1.1.0
Robotic	2.12.1.0
RoboticModule	2.8.0.0
SchneiderElectricRobotics	2.8.0.0
SchneiderElectricRobotics Parameters	2.9.0.0

Description	Version
SchneiderElectricRobotics Toolbox	1.2.0.0
SercosCommunication	1.0.1.0
SercosDriveUtility	1.1.1.0
SercosMaster	1.1.75.12
SlcRemoteController	1.3.6.0
SnmpManager	1.2.1.0
SqlRemoteAccess	1.1.2.0
TcpUdpCommunication	2.0.11.0
TeSys island	1.1.0.0
TimeSync	1.1.2.0
Toolbox	3.0.1.0
TwidoEmulationsupport	1.2.2.0
Unwinder	1.2.3.0
UnwinderModule	1.1.0.0
UserMotorTypePlate	1.3.9.0
UserTorqueFeedForward	1.1.2.0

Version Identification Safety Libraries

Description	Version
EnableSwitch_SE_SF	V0.99 from 10/28/15
PLCopen_SF	V1.00 from 09/14/07
Preventa_SafeMotion	V0100.0100 from 02/08/16

Mitigated Anomalies

Libraries

ID	Description
OEM00077455 / IECLIB-2072	*FB_FtpClient*: Communication interruption during file transfer is now detected.

Known Operational Anomalies

Libraries

ID	Description
OEM00056474 / IECLIB-94	AxisModule library: The command *ET_Cmd.StartTrigWaitInPos* is sent to the *FB_AxisModule* to perform a positioning while the command is active, the input *iq_diCmd* is overwritten by the value 0. In this situation, the *FB_AxisModule* triggers the diagnostic message *UnexpectedProgramBehavior* (*DiagExt* = *UnknownCase*). **Workaround**: Re-enable the function block to quit the diagnostic message.
OEM00072319 / IECLIB-1966	SmartInfeed library: Using the *ET_TargetGeneratorMode.External* in combination with the *FB_VelocityRatioAlgorithm* and defining an invalid target position triggers a `page fault` exception.
OEM00073262 / IECLIB-2427	MultiBelt library: If the start station is defined as a *PassBy* station, the second train remains in arriving state (*ET_TrainState.Arriving*).

ID	Description
OEM00073263 / IECLIB-2428	MultiBelt/MultiBeltModule library: Under certain conditions, after stop and warmstart of a *MultiBelt* module, the *ET_DiagExt* message *TrainMovesBackward* is displayed.
OEM00074810 / IECLIB-1739	Unwinder library, precontrol movement by an external master (bobbin radius changes): The *Setpos* value for this movement is incorrect if *DRV_WinderRight. Direction = left*.
OEM00075899 / IECLIB-2444	MultiBelt/MultiBeltModule library: The *q_xHomeOk* bit of all trains is set to TRUE in homing mode *HomeOnTp*, even if the homing procedure was stopped due to missing TouchProbe signals.
OEM00076350 / IECLIB-1883	Unwinder/UnwinderModule library: A basic load is required when the unwinder is empty. The basic load value is replaced by the calculated value but the calculated value should be added to the basic load value.
OEM00076417 / IECLIB-2448	MultiBelt/MultiBeltModule library: Under certain conditions, a train starts moving backwards after a coldstart, but is stopped immediately. An error message is displayed.
OEM00074744 / LMCFW-2010	SystemInterface library: Calling the *FC_TPEdge* triggers the diagnostic message *8902 Software error (page fault)* in the RTP (Real Time Process) task, and the controller displays a hardware watchdog message.
OEM00077150 / IECLIB-2031	TcpUdpCommunication library: At first startup after firmware update, the certificate store is not ready. An application that includes TLS communication needs a second startup.
OEM00078797	Writing a nameplate by use of `FB_InitMachineEncoder` results in high tracking deviation. **Workaround**: Restart Sercos bus after the nameplate is written.
OEM00078768 / IECLIB-2231	Leaving multibelt `OpMode` and restarting to automatic mode by executing a warm start may trigger a `page fault`.
OEM00078541 / ROB-94	Robotic: The EcoStruxure Machine Expert installation does not include the library `ARMIO`.

Software Information

Version Identification

Description	Version
Machine Expert Installer	11.19.16801
Diagnostics	18.1.1.0
Controller Assistant	18.1.1.0
Device Assistant	18.1.1.0
DiffViewer	18.1.1.0
Gateway	18.1.1.0
Launcher	18.1.1.0
OPCServer	3.5.12.70
SoftSPS	3.5.12.80
SVN	4.2.4.0
Logic Builder(1)	1.1
Vijeo-Designer	6.2.8.4008
CoDeSys	V3.5 SP12 Patch8 HF2
SQL Gateway	18.0.1.0
Motion Sizer	4.1.0.0
(1) If using a virtual machine, the download of the online help operates correctly only if the option **Accelerate 3D graphics** is deactivated in the VM settings.	

Compatibility EcoStruxure Machine Expert

Overview

EcoStruxure Machine Expert can be installed in parallel to other Schneider Electric software products, such as SoMachine and SoMachine Motion.

For general information on compatibility of EcoStruxure Machine Expert, refer to the Compatibility and Migration Guide (see EcoStruxure Machine Expert Compatibility and Migration, User Guide).

EcoStruxure Machine Expert V1.1 SP1 updates the existing EcoStruxure Machine Expert V1.1 installation.

Mitigated Anomalies

Controller Assistant

ID	Description
OEM00078093 / SI-4431	The command line from the Controller Assistant did not support a command to list the available Sercos slave versions.

EcoStruxure Machine Expert

ID	Description
OEM00078173 / TES-152	EcoStruxure Machine Expert did not stop monitoring from variables in online mode even if the variable was not visible. In some cases, this caused high memory load and slow down of online monitoring in specific or huge projects.
OEM00078040 / OEM00077799 / LMCFW-1302 / SI-4379	If **Execute program** was selected as the behavior for outputs in Stop mode and an exception occured in the controller (e.g. a division by 0), the communication between EcoStruxure Machine Expert and the controller stopped if the POUs for implicit checks were active in the project and a new Application download was executed.
OEM00078036 / OEM00077749 / TES-152	In the event of some specific or huge projects it could happen that EcoStruxure Machine Expert freezed periodically every few minutes. In these cases the used RAM from the EcoStruxure Machine Expert went from 6 GB to 4 GB.
OEM00077971 / OEM00077799 / SI-4379	The communication between EcoStruxure Machine Expert and the controller stopped with an error detected in `GlobalInit` if the function block input was assigned via direct addressing (AT%).
OEM00077962 / OEM00077791 / TES-152	In big projects expanding an array in online mode (watchlist, declaration editor) EcoStruxure Machine Expert could freeze for up to 10 seconds.
OEM00077833 / TES-152	It was not possible to execute an online change after modifying a variable of an FBD program which contains structs, arrays, etc.
OEM00076607 / OEM00077711 / TES-152	When modifying the trace configuration (insertion, deletion, display / hiding) of variables, the cursor went to the beginning of the configuration.
OEM00075276 / CDSYS-256	When a trace was shown in Logic Builder, the values were not displayed properly and the next value on the left-hand side was displayed. It was necessary to select the variable itself to see the exact value from the cursor.
OEM00077734 / OEM00074209 / PLAT-98	When using direct addressing in the EcoStruxure Machine Expert project, an advisory message was displayed everytime you performed a build (F11) of the project. This dialog box had to be confirmed by pressing Alt + F.
OEM00078553 / SI-4555	The sub-objects (Methods, Properties, ...) were locked in SVN when the parent object (POU) was modified.
OEM00078290 / SI-4457	The project update changed the offline parameter value of `ControlMode`.
SI-4261	Sometimes an unhandled exception occured (...HWND...) in combination with DTMs.

ID	Description
SI-4514	EcoStruxure Machine Expert shell did sporadically not work with controllers in simulation mode (unsuccessful login).
SI-4652 / OEM00078509	EcoStruxure Machine Expert opened the SLC Remote Controller example instead of the Quick Motion Programming.
OEM00077162 / SI-3909	A CSV export did not contain all data in case of a 2-dimensional array of DUT.
OEM00078358 / SI-4571	`LibDoc` scripting transformation is not working
IECLIB-2187	Function Template for HttpClient has been implemented

Known Operational Anomalies

EcoStruxure Machine Expert

ID	Description
OEM00064709 / MS-1900	Motion Sizer: The torque/speed curve of the SH205/30360 with an external fan is calculated incorrectly.
OEM00067341 / MS-1898	Motion Sizer: The performance of the Motion Sizer with large projects is slow while entering axis names and descriptions (slow refreshing).
OEM00072759 / MS-1910	Motion Sizer: It is not possible to add Lexium 62 ILM drives of different sizes to the same connection module. The rounding operation for the cycle time does not provide suitable values.
OEM00069953 / BOC-550	To display different comments for libraries you can enter the key *LibDocContent*. Using *LibDocContent* with *DocsOnly* or *CommentsAndDocs*, the same results are displayed.
OEM00073945 / BOC-547	Accessing a variable name of the TM5 module I/O mapping is not possible with Python scripting using an ARRAY.
OEM00075351 / BOC-544	You log in to a project (FBD code) and put the focus on a network (which is not the last one) in an action/program. If you log out and log in again, the focus will be on the last network in the action/program. The same behavior is shown up, if you switch between two actions.
OEM00075726 / LMCFW-2016	A Cam switch task sporadically triggers the diagnostic message *8317 Program cycle time overrun*, although the Cam switch task is configured with a higher prior than the RTP (Real Time Process) cycle.
OEM00063214 / BOC-90	TCP socket communication is delayed sporadically when the programming software is connected to the controller.
SI-3439	While converting a device during **Update Project**, you may be asked to delete internal data of persistent variable lists. Depending on the number of devices to be converted, this question may occur several times. Confirming it will avoid asking again for devices of the same controller.
SI-3971	When you convert a controller, for example, an M262L20 to an M262M35, the module configuration of the TM5/TM7 interface is not converted and is no longer available after conversion. Workaround: 1. Export and remove the TM5_Interface before the conversion. 2. Start the conversion. 3. Import the TM5_Interface after the conversion.
SI-3727	For ATV-DTM with activated control panel, the **Disconnect** command does not have any effect when the motor accelerates (ACC), turns constantly (RUN) or decelerates (DEC). To stop the motor, press the **Stop** button. Nevertheless, the control panel is not updated and still displays the state that was active before. You can execute the **Online > Logout** command, but this may have the effect that EcoStruxure Machine Expert is being closed.
OEM00076442 / SI-3505	Context sensitive help (F1) is not available for POUs declared with namespace.
–	If you are using a Virtual Machine (VM) you must deactivate the option **Accelerate 3D graphics** in the VM settings before downloading the online help.
SI-4244	ATV340: The DTM is not available.

EcoStruxure Machine Expert - Safety

ID	Description
OEM00078801	Exchanging data between an M262 controller and an SLC is not operable if not both directions are configured. **Workaround**: Configure at least one exchange data in both directions, then the data exchange becomes operable.

Documentation - Mitigated Anomalies

Documentation

The online help is updated with the following documentation:

- M262 Diagnostics Library Guide
- M262 Logic/Motion Controller - Programming Guide
- M262 Logic/Motion Controller - Hardware Guide
- TM3 Expert Modules - Hardware Guide
- TMS Expansion Modules - Hardware Guide

ID	Description
OEM00077576 / BOC-276	M262 documentation of cloning procedure wrongly said that the ERR Led flashes at the end of successful cloning procedure.
OEM00077931 / BOC-288	Incorrect encoder transmission speed list and default value in M262 documentation.
OEM00077981 / BOC-291	M262 documentation must inform that the network name modification is applied at next power ON.
OEM00077984 / BOC-292	M262 industrial plug and work documentation did not include the information that the **locate** button must be used to well identify the target device.
OEM00077991	M262 documentation did not include an explanation on how to remove user rights using a script with command **format**.
OEM00078056 / BOC-297	M262 Programming Guide: Incorrect link to Modicon M262 Logic/Motion Controller Sercos Configuration.
OEM00078083 / BOC-298	TM3 Expert I/O Modules Hardware Guide: Incorrect description of LEDs state when a TM3X•HSC• module is not configured.
OEM00078297 / BOC-305	M262 Programming Guide contained several minor incorrect descriptions.
OEM00078298 / BOC-306	Incorrect ISO standard reference for CAN characteristics of the TMSCO1 module.
OEM00072944 / BOC-199	M262 documentation did not contain the information that **Reset origin** command makes the web visu files erased.

Documentation - Known Operational Anomalies

Documentation

ID	Description
OEM00032469	Detailed information required for WD (watchdog) of the logic motion controller LMC •01. Documentation needs to be enhanced.
OEM00045026	Some dimension values provided by the hardware guides and the CAD files on the Schneider Electric homepage are slightly different for LXM 52 drives, LXM 62 drives and LMC Eco Motion Controllers. Documentation needs to be enhanced.
OEM00058892	In the Online Help, the chapter *TM5 / TM7 System - Load Breaking* (*TM5/TM7 System Planning and Installation Guide*) needs to be enhanced.
OEM00071212	The Online Help for the TM5SEAISG module (*Modicon TM5, Expansion Modules Configuration, Programming Guide*) provided incorrect ranges for the analog input register.

ID	Description
OEM00076210 / BOC-243	The information on the TM5SPS1 power supply module needs to be enhanced in the Online Help.
OEM00077834	Lexium 62 Plus: The encoder output frequency is limited to 1 MHz, interpolation factor is set to 16 increment cycles per Sinus/Cosinus period of the analog encoder.
—	PLCopen MC part 1: The following text and warning need to be added to the library documentation. If the position value of the master leaves the defined cam position range, the cam signals that the end of the cam profile has been reached. This implies that a buffered job is activated, regardless of whether the master has left the cam position range in a positive or a negative direction. The master can also leave the cam position range as a result of jitter if the master is at a standstill at a position sufficiently close to the positive or negative limit of the cam position range. See important safety information at the end of this table.
—	PLCopen MC part 1: A hazard message needs to be added to the library documentation. See important safety information at the end of this table.
OEM00077826 / BOC-285	Remove in the online help the statement that for the `AccelerationTorqueLimit` and `DecelerationTorqueLimit` parameters the value zero deactivates the torque limit.
OEM00078341 / BOC-315	Maximum number of files in the Message Logger must be documented.

⚠WARNING

UNINTENDED EQUIPMENT OPERATION

Implement all measures required to ensure that a job is only buffered if a sufficient distance from the position value to the end of the cam position range can be respected.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

⚠WARNING

UNINTENDED EQUIPMENT OPERATION

Implement a filter for the master velocity and acceleration if you have an axis that follows a feedback axis master.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

EcoStruxure Machine Expert V1.2

Hardware/Firmware Information

Version Identification

Description	Firmware Version
M241	5.0.8.4
M251	5.0.8.4
M262	5.0.4.7
TMSES4	1.0.0.8
TM3BCEIP	1.3.1.2
TM3BCSL	1.0.15.11
TM3•HSC202•	2.0

Description	Firmware Version
TM3DI16	2.0
TM3DI16G	2.0
TM3DI16K	2.0
TM5NEIP1	1.07
TM5NS31	2.74
LXM32S•••M2 drive	V1.10.01
LXM32S•••M2 Sercos	V1.10.03
LXM32S•••N4 drive	V1.10.01
LXM32S•••N4 Sercos	V1.10.03
LXM52••••C•••••	1.54.26.0
ILM••••••••••••	1.54.26.0
LXM62••••C•••••	• 1.62.07.0 for hardware revision RS1• • 1.54.27.0 for hardware revision RS0•
LXM62••••D•••••	• 1.62.07.0 for hardware revision RS1• • 1.54.27.0 for hardware revision RS0•
LXM62••••E•••••	1.54.27.0
LXM62••••F•••••	1.54.27.0
LXM62••••G•••••	1.62.07.0
LMC Eco	V1.62.05.07
LMC Pro	V1.62.05.07
LMC Pro2	V1.62.05.07
ATV340S	• Drive firmware: OPAL_V1.4IE09_B06 • Copla firmware: Sercos3_ A1.2IE01_B00

Description	Safety-Related Firmware Version
LXM62••••E•••••	1.2.4.0
LXM62••••F•••••	1.2.4.0
VW3E702200000 safety option module	1.2.4.0
TM5CSLC100FS	2.52
TM5CSLC200FS	2.52
BWU2984 SWID	134253
BWU2984 Safe CPU A	135115
BWU2984 Safe CPU B	135116
ASIMON360	3.2.6.7

Contact your local Schneider Electric representative in case you need specific information for your intended machine architecture.

New Features

TM3 EtherNet/IP Bus Coupler

For TM3BCEIP use firmware V1.3.1.2 and later versions.

TM3 Serial Line Bus Coupler

TM3 Serial Line Bus Coupler is a distributed architecture solution. It allows you to create distributed islands of industrial TM3 I/O modules managed by a master controller M241, M251, or M262 via Modbus Serial Line fieldbus.

New features:

- Support of TM3 and TM2 I/O modules:
  - Up to 14 TM3 I/O modules.
  - Up to 7 TM2 I/O modules.
  - Up to 7 TM2 I/O modules mixed with TM3 I/O modules.
- Embedded webserver supporting:
  - User rights management
  - Bus coupler maintenance such as speed configuration, firmware upgrade, and diagnostics logs.
  - Island I/O monitoring and control.
- Isolated RJ45 ports to support daisy chaining.

Limitations:

- The latch feature is not supported by TM3DI16, TM3DI16G, TM3DI16K.
- TM3 expert I/O modules are not supported.
- Only a single user can modify the firmware update or write values through the embedded webserver.
- The number of TM3 I/O modules is validated by the software. Depending on the number of analog I/O and/or safety modules used, the maximum number of TM3 I/O modules allowed may be reduced.
- Slave addresses are valid from 1...127.

TM5 EtherNet/IP Bus Coupler

TM5 EtherNet/IP Bus Coupler is a distributed architecture solution. It allows you to create distributed islands of industrial TM5/TM7 I/O modules managed by a master controller M241, M251, M262, or LMC controllers via Ethernet fieldbus.

New features:

- Support of TM5 and TM7 I/O modules.
- Embedded webserver supporting:
  - User rights management
  - DHCP, fixed IP configuration
  - Bus coupler firmware update
- Embedded switch with isolated RJ45 ports to support daisy chaining.
- ODVA (Open DeviceNet Vendors Association) certification

Limitations:

The following TM5 / TM7 modules are not supported:

- All TM5/TM7 safety I/O modules.
- TM5SE1RS2 RS232 Serial interface module
- TM5SE1MISC20005 Encoder output module
- TM5SDM8DTS 4DI/4DO Timestamp module

Plug&Work (Machine Assistant)

- PW2-4 Machine Instance Name: The controller name can be modified from the Machine Assistant. The IP address of the controller can be modified from the Machine Assistant.
- PW2-13 One Cable: You can create temporary routes to devices under another interface from the Machine Assistant.
- PW2-33 Bonjour Service: The M262 controller can be discovered using Apple devices.

PacDrive LMC Eco/PacDrive LMC Pro/Pro2 Cybersecurity Implementation

In PacDrive LMC Eco/PacDrive LMC Pro/Pro2 controllers IP forwarding is disabled using firewall settings.

NOTE: To help keep your Schneider Electric products secure and protected, it is in your best interest that you implement the cybersecurity best practices as indicated in the *Cybersecurity Best Practices* document provided on the Schneider Electric website.

PacDrive LMC Eco/PacDrive LMC Pro/Pro2 - ATV340S

It is a good practice not to connect more than the following number of ATV340S to the PacDrive LMC controllers:

PacDrive LMC controller	Maximum number of ATV340S
PacDrive LMC Eco	15
PacDrive LMC Pro/Pro2	25

M241 / M251 Logic Controllers

Support for the new TM3 high-speed counter modules:

- TM3XHSC202
- TM3XHSC202G

M262 Motion Controllers

- Encoder enhancements:
  - New object for LXM32S onboard PTI (Pulse Train In) encoder to be used as feedback axis with motion function blocks.
  - New object for LXM32S encoder option module (analog and digital) to be used as feedback axis with motion function blocks.
  - Filter parameter available for the encoder objects.
  - *DeadTimeCompensation* parameter available for the encoder objects.
- New object for direct support of ATV340S.

–	M262-15			M262-25			M262-35		
Sercos cycle time	1 ms	2 ms	4 ms	1 ms	2 ms	4 ms	1 ms	2 ms	4 ms
Total maximum number of Sercos devices allowed	8	16	16	12	16	24	16	24	40
Number maximum devices: TM5NS31 (TM5 range), TM5CSLCx00 safety controller, third-party devices	4	12	12	8	8	16	8	8	24
Number maximum devices: LXM32S, ATV340S	4	4	4	4	8	8	8	16	16

M262 Cybersecurity Implementation

In order to meet cybersecurity requirements, the Modicon M262 Logic/Motion Controller has been designed in accordance with the standard IEC 62443. As this standard constantly evolves, the Modicon M262 Logic/Motion Controller is compliant with a part of the 2019 standard.

To be compliant with the standard, the following modifications are implemented by default on the Modicon M262 Logic/Motion Controller:

Dialog box / Issue	Default setting / Solution
MyController > Ethernet Services > IP Routing	IP forwarding is disabled.
MyController > Ethernet _1 or **MyController > Ethernet _2**	Only the secured protocol is active.
The first access by webserver / FTP is denied.	Modify the default user name and password by using EcoStruxure Machine Expert.

NOTE: To help keep your Schneider Electric products secure and protected, it is in your best interest that you implement the cybersecurity best practices as indicated in the *Cybersecurity Best Practices* document provided on the Schneider Electric website.

M262: TMSES4 Support

The capability to manage three TMSES4 modules on the left bus is embedded in version 5.0.4.7 of the following M262 platforms:

- M262L20MESE8T
- M262M25MESS8T
- M262M35MESS8T
- M262L10MESE8T
- M262M15MESS8T

NOTE: A maximum of three Ethernet or CANopen TMS modules is supported.

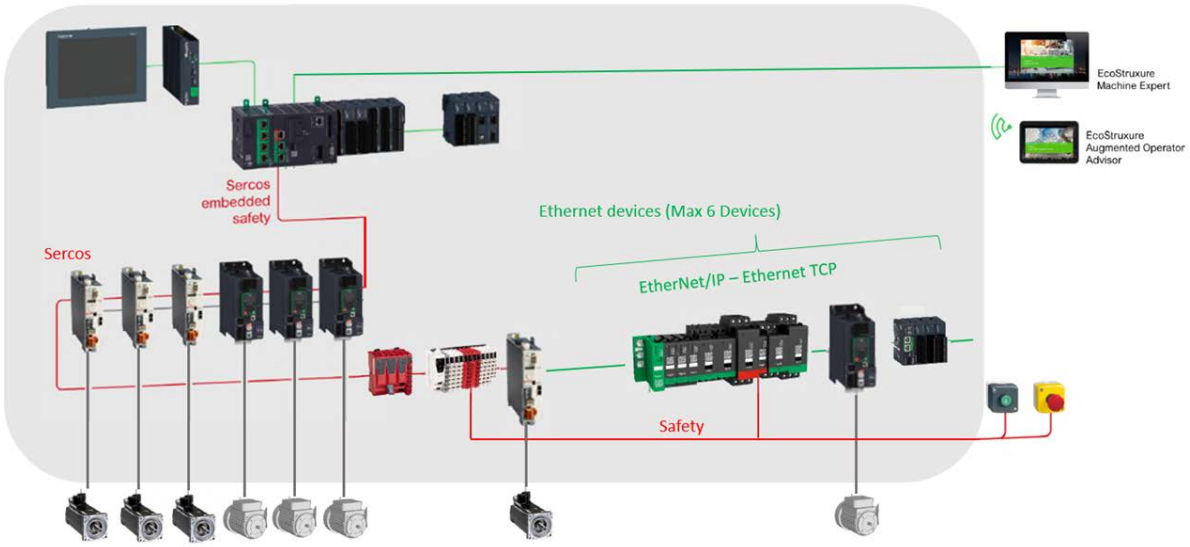
Examples:

- 2 TMSES4 modules and 1 TMSCO1 module
- 3 TMSES4 modules
- A maximum of one TMSCO1 module is supported.

M262: Single Wiring Coexistence (SWC) Architecture

In addition to real-time and safety-related data exchanged via Sercos, Sercos allows to transmit other Ethernet protocols, such as EtherNet/IP and TCP/IP in parallel.

The SWC architecture allows you to manage Sercos devices and EtherNet/IP or TCP/IP devices via a single cable.



An additional gateway is not required. Configuration is performed in EcoStruxure Machine Expert. Place the Ethernet device after the last Sercos device. The last Sercos device is used as a gateway. It must provide two Sercos connectors.

Considerations:

- Connect the Ethernet devices after the last Sercos device.
- Connect a LXM32S or ATV340S as last device on the Sercos bus.
- Connect a maximum of six Ethernet devices.
- Ethernet communication is operational when the Sercos bus is in phase 4.

  NOTE: It is a good practice to stop the Ethernet communication when the Sercos bus is not in phase 4. To stop the EIP / TCP scanner, use the function blocks in the IEC application.

M262 Modifying the Default IP Address of the USB Port

By default, the IP address of the USB port is 192.168.200.1. Customers expressed the need to alter this address as it may conflict with their internal addressing schemes for existing Ethernet industrial networks. You are now able to change this address in the case that this IP address conflicts with the existing network configuration by modifying the address through the post configuration functions. Contact you local Schneider Electric service representative for more information on this expert topic.

Lexium 62 Servo Drives

Support of SH3 servo motors with Hiperface DSL-encoder and OneMotorCable connectivity.

Mitigated Anomalies

HMISCU Controllers

ID	Description
OEM00046432	HMISCU controller Panels: Sporadically, the communication between the HMI and the controller was interrupted without displaying an error message. You had to restart the HMISCU to re-establish the communication.

M241/M251 Controllers

ID	Description
OEM00072152 / PLAT-488	The termination of Modbus TCP connections was not handled correctly when the controller was acting as a Modbus TCP client.
OEM00077994 / PLAT-567	Using fast output operations in first application MAST cycle sometimes resulted in an exception.
OEM00070503 / PLAT-466	Sporadically, an error on a Modbus TCP IO scanner channel was not detected when the last one was not in error state.
PEP0541743R	Ethernet frames smaller than 60 bytes were not null byte padded.
PEP0545408R / BOC-350	Default range for M251 Ethernet port 1 and M241 TM4ES4 IP address has been changed to 10.11.x.y (x and y 5th and 6th bytes of interface MAC address) with a mask of 255.255.0.0.
OEM00074965	M251: Reading the *PLC_R* structure via the **Symbol Configuration** triggered a system watchdog error message.
OEM00075411 / PLAT-536	M251MESC: For Modicon M251MESC Logic Controllers, the cloning operation to an empty SD memory card (and other scripts like upload and download) did not operate.
OEM00078373 / PLAT-574	Insufficient session ID length in cookie.
OEM00078372 / PLAT-573	Sensitive information stored in cookie.

ID	Description
OEM00078369 / PLAT-572	Session password was transmitted in clear text.
OEM00078368 / PLAT-571	Webserver was vulnerable to cross-site request forgery attack.
PLAT-597	Entering incorrect credentials in the webserver was leading to a controller exception.

LXM32S

ID	Description
SER-VO00002939 / SERVO-251	The device MAC address was incorrectly displayed when read over the associated Sercos parameter.
SER-VO00002905	Position capture was not working when trigger was configured to record it on both signal edges.

Lexium 32

ID	Description
MK-733	Using the LXM32S did not map more than 6 additional IDNs to the cyclic data. **NOTE:** Lexium32S TouchProbe is counted as 4 IDNs and diagnostic message *S-0-0390* is counted as 2 IDNs.

M262

ID	Description
OEM00076809	M262 Motion Controllers did not support the EtherNet/IP Scanner if used on the same port as the Sercos devices.
OEM00073473	TM5NS31 required the firmware version 2.74 or greater.
OEM00072876 / BOC-302	NVL/GVL (Network Variable List/Global Variable List) only worked if an Ethernet cable was plugged in the Ethernet port 1.
OEM00074106	TM5NS31 scan time on the TM5 bus was only taken into account after the next power cycle of TM5NS31.
OEM00076657	M262: When a network scan was performed, the EtherNet/IP connection to the Modicon M262 Logic/Motion Controller was sporadically disconnected without any message indicating the loss of connection.
OEM00076721	M262: If a Modicon M262 Logic/Motion Controller was connected via a USB interface, a restart was required to allow a connection to the controller after a network scan had been performed.
OEM00077207	M262: If an M262 was used as an EtherNet/IP Scanner and as an EtherNet/IP Adapter simultaneously, some devices could be temporarily disconnected.
OEM00077940	When OPC UA was configured in the application, the application had to be downloaded using the menu command **Online > Login** (instead of the menu command **Online > Download**).
M262- 4336	An anomaly was reported with the delivery of the Firmware V1.1 SP1 - V5.0.3.2. After every 24 days of consecutive operation of the controller, the controller would reboot automatically and restart as if without an application loaded. The issue, now resolved, required a work-around of cycling controller power prior to the expiration of the 24 day period.

PacDrive LMC Controls & I/Os

ID	Description
OEM00072576 / LMCFW-916	Both EtherNet/IP adapters are now operational when C2C master is enabled by default.
OEM00078575 / LMCFW-2076	C2C sometimes reported `sync failed` in combination with safety and a large number of Sercos slaves.

Known Operational Anomalies

ATV340S

ID	Description
GE-DEC00240596	When using PacDrive LMC Pro2 and ring topology, ring healing performed after the Sercos ring has been broken can result in the Sercos communication phase switching to phase 11 (error detected). **Workaround**: To be able to switch to phase 4, perform a `DiagQuit`.
GE-DEC00266016	In case ring healing is performed after the Sercos ring has been broken, the connection between the EtherNet/IP slaves and the master can be interrupted for a few seconds (communication state **No Connection**).

Lexium 32

ID	Description
SER-VO00002953 / SERVO-258	Sporadically, the drive advisory code is delayed from one Sercos cycle. The entry in the device logger displays `0x0000` instead of the drive advisory code.
SER-VO00002913 / SERVO-229	Sporadically, reading/writing manufacturer-specific parameters via SVC (Service Channel) leads to a timeout (error 0x7016). **NOTE:** The issue is solved with Sercos3 module hardware having FPGA firmware V1.20.

Lexium 52 / 62 / 62 ILM

ID	Description
SERVOD-261	Lexium 62 Plus: If a download is not executed successfully and another attempt is performed by executing a firmware update, a misleading error message is displayed.
LMCFW-1616	Lexium 62 Plus: A parameter has been renamed in function *FC_BrakeCheckSet*.
SERVOD-163	Lexium 62 Plus: LEDs indicate that an error has been detected in communication phase CP0. Use case with Lexium BMP synchronous motor: Motor type plate to be configured in LXM62 drive.
SERVOD-147	Lexium 62 Plus: It is not possible to modify parameters of type *ES*. After an online change of the parameters, phase down and phase up is performed in different topology.
SERVOD-152	Lexium 62 Plus: Sporadic error is detected during phase up *0x2000B*: Phase up is not executed and machine operation is not possible.
LMCFW-1817	Lexium 62 Plus: Sercos phase up is not possible if devices are addressed with **Identification mode** = **Application type**.

M241/M251

ID	Description
OEM00079046	When a TM3 HSC is be used together with TM2 modules, the system performances are impacted. When a **Freewheeling** task is defined, the task duration is increased. When the **Cyclic** mode is active, increase the MAST cycle time. Otherwise, a CPU load exception can occur. It is a good practice to configure a minimum MAST cycle time of 30 ms (or more), depending on the application size.
OEM00079107	On connecting using **Connection mode** = **IP Address**, the user is prompted to enter the credentials. **Workaround**: 1. Use the **Connection mode** = **IP address via NAT (Remote TCP)**. 2. Enter the controller IP address into the **NAT Address** field. 3. Click the **Refresh** button. 4. Double-click the controller from the controller list to establish a connection.
OEM00070134 / PLAT-459	Sporadic loss of controller IP address when power cycling the controller.

M262

ID	Description
OEM00079151	Webvisualizaton: Each refresh of variable manages a communication access if the user rights are validated, a password will be requested for these actions. Username and password are requested each time a page refresh / online change/ application download is performed by the webvisualizaton.
OEM00076931	In case an SLCx00 or TM5NS31 is the last Sercos device in the SWC architecture, the PhaseUp may be not possible.
OEM00079179 / PLAT-588	The content of the object type ARRAY read for an *ETH_R* structure is not correct when displayed on an HMI. **Workaround**: Copy the value to an intermediate variable (not accessing *ETH_R* directly).
OEM00079052 / PLAT-585	The content of elements (*i_byFirmVersion*, *i_byFirmVersion*) in the *PLC_R* data structure is not correct when displayed on an HMI. **Workaround**: Copy the value to an intermediate variable (not accessing *PLC_R* structure elements directly).
OEM00079223	An error is detected when rebooting projects with 4 KB retain variables.
SI-4694	The download may be unsuccessful and the message `TLS_IO_Communication` is displayed. **Workaround**: Deselect the option **Encrypted Communication** in the **Communication Settings** tab in controller selection mode of the EcoStruxure Machine Expert Logic Builder.

M262 - Motion

NOTE: The Modicon M262 Logic/Motion Controller does not support Advanced Message Queuing Protocol (AMQP).

TM3 Bus Coupler Serial Line TM3BCSL

ID	Description
OEM00078558	When bus ownership is held by the webserver, the controller is blocked from retaking bus ownership but there is no notification of the reason in EcoStruxure Machine Expert. **Workaround**: Make sure that the bus ownership is released by the webserver before restarting operation between the controller and the TM3BCSL.
OEM00079152	In EcoStruxure Machine Expert, setting the **Monitoring Timeout** of the TM3BCSL to 0 also effectively prevents the webserver from taking bus ownership. There is no notification of this reason on the webserver. **Workaround**: Configure a **Monitoring Timeout** value that is appropriate for the intended system behavior.
OEM00078760	In EcoStruxure Machine Expert, you can manage a maximum of 10 TM3 safety-related modules on the same TM3 bus, either behind the M262 or the bus coupler.

Library Information

Version Identification

Description	Version
ApplicationLogger	1.1.2.0
AsyncManager	1.0.5.0
AutoTune	1.3.14.0
Booster Pumping	5.0.0.5
CommonMotionTypes	1.0.1.0
CrankModule	1.3.4.0
EMailHandling	2.0.4.0
EtherNetIP Explicit Messaging	1.1.8.0
EtherNetIP Remote Adapter	1.0.10.0
FileFormatUtility	1.3.5.0
FtpRemoteFileHandling	1.3.0.0
GMC Independent Altivar	1.2.4.0
GMC Independent Lexium	1.1.7.0
GMC Independent PLCopen	1.2.3.0
Hoisting	5.0.0.1
HttpHandling	1.1.4.0
M262 Encoder	1.0.3.2
M262 PLCSystem	1.0.0.19
M262Diagnostics	V1.0.3.0
MotionInterface	1.1.75.21
MqttHandling	2.0.8.0
PackML	1.2.3.0
PD_AxisModule	1.6.2.0
PD_EDesignAxisModule	2.3.2.0
PD_EdesignCore	2.2.6.0
PD_EdesignCrankModule	1.5.2.0
PD_ETest	1.4.1.0

Description	Version
PD_GlobalDiagnostics	1.3.1.0
PD_MultiBelt	1.4.4.0
PD_MultibeltModule	1.4.1.0
PD_PacDriveLib	1.9.3.0
PD_SmartInfeed	1.4.4.0
PD_SmartInfeedModule	1.3.1.0
PD_SoMotionGenerator	1.5.1.0
PD_Template	1.6.1.0
PLCopen MC part 1	1.2.77.21
PreventaSupport	1.1.1.0
Robotic	2.14.0.0
RoboticModule	2.10.0.0
RoboticsAutoTune	2.0.0.0
SchneiderElectricRobotics	2.10.0.0
SchneiderElectricRobotics Parameters	2.11.0.0
SchneiderElectricRobotics Toolbox	1.5.0.0
SercosCommunication	1.0.1.0
SercosDriveUtility	1.1.1.0
SercosMaster	1.2.79.21
SlcRemoteController	1.3.6.0
SnmpManager	1.2.1.0
SqlRemoteAccess	2.0.1.0
TcpUdpCommunication	2.0.15.0
TeSys island	1.1.0.0
TimeSync	1.1.2.0
Toolbox	3.0.1.0
TwidoEmulationsupport	1.2.2.0
Unwinder	1.2.4.0
UnwinderModule	1.1.0.0
UserMotorTypePlate	1.3.9.0
UserTorqueFeedForward	1.2.2.0

Version Identification Safety Libraries

Description	Version
EnableSwitch_SE_SF	V0.99 from 10/28/15
PLCopen_SF	V1.00 from 09/14/07
Preventa_SafeMotion	V0100.0100 from 02/08/16

New Features

HttpHandling

New methods available:

- *Put*
- *Head*
- *Delete*

FileFormatUtility

The new function block *FB_XmlItemsUtility* provides a comprehensive set of utilities to get information from the data or to modify them. In addition, it is provided to create a complete new data set.

FtpRemoteFileHandling

The FTP client functionality supports asynchronous execution.

SqlRemoteAccess

The new function block *FB_SqlDbRequest* is used for secured/unsecured communication between the library and the SQL Gateway.

NOTE: Secured communication is only supported by M262 controllers.

TcpUdpCommunication

- The new method *SockOpt_EnableKeepAliveExtended* is used to configure the keep alive for TCP client and server to help detect communication interruption on M262 controllers.
- The *Close* procedure is processed in *Closing* state also by calling the method *State*.

RoboticsAutoTune

The RoboticsAutoTune library allows you to tune the Schneider Electric P-Series robot.

Hoisting

New function block *HoistDutyRating* collects run time data and calculates the actual mechanical class corresponding to the usage. This data can be used to identify whether the crane is being used according to its specification.

New function block *AdvancedPositionSync* can synchronize multiple linear axes with identical or different motors, gears, and encoders. The block can retain information about positions of synchronized axes and their synchronization status when the machine is switched off.

New function block *OperatingAreaRestrictionIC* helps to prevent a physical contact between the suspended load and obstacles located within the operating area of the crane. The restricted areas are defined in Cartesian coordinates. The function block supports definition of polygonal restricted areas.

Mitigated Anomalies

Libraries

ID	Description
OEM00078224 / IECLIB-2142	When disabling the MultiBelt in certain situations, a **Set position** command on the axis of a train was executed during the warm start. This resulted in an offset of the mechanical position of the train.
OEM00077558 / OEM00077938 / IECLIB-2121	SmartInfeed: During the correction movement of a SeriesBelt, an unintended error with *q_etDiag = Unexpected program behavior*, *q_etDiagExt = UnknownFeedback*, and *q_sMsg = 'NoJobWhileAxisMoving'* could be triggered.

ID	Description
OEM00071749 / IECLIB-2312	*PDL.FB_HomeAbs* and *PDL.FB_HomeSetPos* work correctly if a fraction of *UserPeriod* and *EncoderPeriod* cannot be represented exactly as a binary break.
OEM00073767 / IECLIB-2326	TcpUdpCommunication library: Method *SockOpt_EnableKeepAliveExtended* to configure the keep alive for the TCP client and server to detect communication interruption on the M262 controller.
OEM00067842 / IECLIB-2163	UserTorqueFeedForward: The function block *FB_ TorqueFeedForwardConfigured* works correctly in case the SLC is on the first Sercos topology address.
OEM00077914 / PLAT-102	TcpUdpCommunication library: If more than one secured (Transport Layer Security) TCP server was active at the same time, a system watchdog could occur due to a higher system load. Therefore, only one instance of a secured (TLS) TCP server was allowed to be active.
–	Hoisting library: Function block *GrabControl*: Corrected close speed calculation during closing on stack. Calibration status information is kept in the status output even if the function block is disabled. Torque scaling is active even in disabled (cable change) state.

Known Operational Anomalies

Libraries

No known operational anomalies detected for EcoStruxure Machine Expert V1.2.

Software Information

Version Identification

Description	Version
Machine Expert Installer	12.20.01401
Diagnostics	19.0.11.0
Controller Assistant	19.0.11.0
Device Assistant	19.0.11.0
DiffViewer	19.0.11.0
Gateway	19.0.11.0
Launcher	19.0.11.0
OPCServer	3.5.12.83
SoftSPS	3.5.12.80
SVN	4.2.5.0
Logic Builder(1)	1.2
Vijeo-Designer	6.2.9.1008
CoDeSys	V3.5 SP12 Patch8 HF3
SQL Gateway	1.2.0.0
Motion Sizer	4.2.0.0
(1) If using a virtual machine, the download of the online help operates correctly only if the option **Accelerate 3D graphics** is deactivated in the VM settings.	

New Features for Machine Expert Installer

Machine Expert Installer

- Reduced Machine Expert Installer size.
- Faster installation.

- New improved user interface.
- Online help can be downloaded during standard installation.
- Select installation path.
- Improved offline medium.

New Features EcoStruxure Machine Expert

Motion Design Object

- New graphical interface to parametrize an axis.
- Displays the actual state of the axis.
- Support for M262.

SQL Gateway

- New with secured communication.
- Permitted clients (whitelist for controllers).

Cybersecurity Improvement

- Username and password for the controller mandatory.
- Controller Assistant, Diagnostic, and EcoStruxure Machine Expert extended user rights operations.

  NOTE: To help keep your Schneider Electric products secure and protected, it is in your best interest that you implement the cybersecurity best practices as indicated in the *Cybersecurity Best Practices* document provided on the Schneider Electric website.

Code Analysis

- New Metric FBD Halstead Complexity (difficulty, length, max, consistency, average).

Python

- New functions, such as online change memory, user rights management.

New Project Dialog

- Search by controller or by example.

Browse Cross References

The contextual menu of a selected structured variable (`myVar.Elem`) now contains two commands below the **Browse** command:

- **Browse > Cross References** `<myVar.Elem>`: Searches for all usages of the variable instance. (This is the existing command that is also executed by default when selecting a variable when the **Cross Reference** dialog box is open.
- **Browse > Cross References** `<DUT.Elem>`: Searches for all usages of `<DUT.Elem>`, where `Elem` is the subelement of the structured type DUT of the variable `myVar`.

New Features for EcoStruxure Machine Expert - Safety

Overview

- **Machine Safety Set** selection in Machine Expert Installer now automatically installs the components needed to program safety-related applications.
- Support for LXM62 Standard Plus Safety drives in PacDrive systems.
- Enhancements performed on the safety-related user guides and the help management. Updated offline safety-related help.
- Diagnostic: Safe logger time stamp harmonization in accordance with IEC format.
- Cybersecurity feature support improved (user management, licensing, IP forwarding).
- Quality improvements.
  NOTE: To help keep your Schneider Electric products secure and protected, it is in your best interest that you implement the cybersecurity best practices as indicated in the *Cybersecurity Best Practices* document provided on the Schneider Electric website.

Cybersecurity Information for Safety-Related Use Cases

User management activation on standard controllers (non-safety-related controllers) sometimes needs/requests login credentials also for some safety-related use cases.

With the new M262 default setting for IP forwarding (disabled) and the new LMC default setting for firewall management, a connection to the SLC (Safety Logic Controller) can no longer be established without dedicated user interactivity.

To establish a connection to an SLC during a commissioning phase by using the EcoStruxure Machine Expert - Safety programming tool, for example, for application download, the IP forwarding/firewall have to be configured accordingly on the related standard controller. Refer to the PacDrive LMC Eco, PacDrive LMC Pro/Pro2, M262 Programming Guides for further information.

In general, it is a good practice to disable IP forwarding / enable firewall on standard controllers for the machine operation phase.

The *SLCremotelibrary* functions for SLC control are not impacted by the enhanced cybersecurity mechanisms.

Compatibility EcoStruxure Machine Expert

Overview

EcoStruxure Machine Expert V1.2 can be installed in parallel to EcoStruxure Machine Expert V1.1 or V1.1SP1.

EcoStruxure Machine Expert can be installed in parallel to other Schneider Electric software products, such as SoMachine and SoMachine Motion.

For general information on compatibility of EcoStruxure Machine Expert, refer to the Compatibility and Migration Guide (see EcoStruxure Machine Expert Compatibility and Migration, User Guide).

Compatibility EcoStruxure Machine Expert - Safety

Overview

Former SoSafe Programmable versions cannot be started from EcoStruxure Machine Expert environment anymore and can only be installed and used if the related SoMachine Motion version is installed.

However, the former SoSafe Programmable projects - starting from V2.1 - can be imported, re-used, and updated in EcoStruxure Machine Expert - Safety V1.2.

In almost all cases, the update works without impact on the overall safety application and the resulting project CRC (cyclic redundant checksum) value stays the same and there is no recertification needed.

However, EcoStruxure Machine Expert - Safety does not support reusing a project built on EcoStruxure Machine Expert - Safety with LMCx system to EcoStruxure Machine Expert - Safety with M262 system or vice-versa.

Identified Incompatible Project Updates

The CRC of the safety project done before SoSafe Programmable V2.21 is changed if the old project contains the following safety devices:

- TM5SAI4AFS
- TM5STI4ATCFS

In this case, the safety project must be compiled again and downloaded to the TM5CSLCx00FS and the related safety function must be validated and recertified.

It is still possible to install former SoSafe Programmable versions in parallel to EcoStruxure Machine Expert - Safety as long the compatible SoMachine Motion package is available on the PC. Thus, you can maintain old projects using previous compatible engineering tool chains.

Overview of the validated EcoStruxure Machine Expert - Safety version with the appropriate safety-related firmware.

Device	**Safety-related firmware version for EcoStruxure Machine Expert - Safety version**	
	1.1	**1.2**
TM5CSLC100FS	2.52	2.52
TM5CSLC200FS	2.52	2.52
TM5SAI4AFS	322	322
TM5SDC1FS	302	302
TM5SDI20DFS	305	305
TM5SDI2DFS	305	305
TM5SDI4DFS	305	305
TM5SDM4DTRFS	305	305
TM5SDM8TBFS	305	305
TM5SDO2DTRFS	300	300
TM5SDO2TAFS	280	280
TM5SDO2TFS	280	280
TM5SDO4TAFS	280	280
TM5SDO4TFS	280	280
TM5SDO6TBFS	295	295
TM5SPS10FS	320	320
TM5STI4ATCFS	322	322
TM7SDI8DFS	305	305
TM7SDM12DTFS	305	305

For a list of safety-related firmware versions for SoSafe Programmable legacy versions, refer to the Release Notes History chapter, page 74.

Mitigated Anomalies

EcoStruxure Machine Expert

ID	Description
OEM00072313 / SI-4994	Project user management: Drag and drop from navigators of one project to another did not follow cut/copy permissions (of the source project).
OEM00078934 / CDSYS-255	Trace: For the case of a pinned cursor, variable values were not displayed correctly (value of the previous time stamp was displayed) when the cursor was dragged from left to right.
OEM00078819 / CDSYS-252	OPC DA server: For a variable that was registered for data-change callbacks but was deactivated the following occurred: In case of writing the variable followed by activating it, the previous written value was sent to the client before sending the present value. (This use case is only possible for some special OPC DA clients.)
OEM00075185	When you attempted to upload a Harmony ZBRN1 DTM running under **Modbus TCP IO Scanner**, EcoStruxure Machine Expert was no longer operational.
OEM00077196 / HMI-21	Vijeo-Designer: The communication between an M262 controller and the Vijeo-Designer HMI was interrupted after several days.
OEM00070927 / SI-1087 / SI-1088	Depending on the circumstances, when the project was connected to SVN, it was no longer possible to save (autosave included). The message **the process cannot access the file...because it is being used by another process** appeared.
OEM00078357 / IECLIB-1707	Control_ATV - Drive moved on if controller was in stop.
OEM00078790 / SI-4745	Machine Expert Installer closed unexpectantly during modification of an existing installation. The modification was not completed.
OEM00078543 / CDSYS-247	When searching for an element of the structure, the `CrossReferenceList` did not search in the complete project.
OEM00079022	When DTM components are installed, Logic Builder prompted for importing the installed DTMs. Sometimes Logic Builder stopped operating during this import procedure.
SI-5043	Exporting an imported cam diagram resulted in an exception from EcoStruxure Machine Expert. The export was canceled.
OEM00078812 / SI-4732	EcoStruxure Machine Expert stopped operating when modifying the IEC structure of a cam diagram in specific projects.
OEM00078386 / SI-4429	**Update Device**: It is no longer allowed to update an interface device (such as Ethernet Network, Serial Line) or a protocol manager (such as Industrial Ethernet Manager) into a device of another type.
OEM00076949 / MS-1927	Motion Sizer: When exporting a cam diagram into an .asc file, the starting point was missing. It was added to the end of the points table.
OEM00077970 / PLAT-565	**OPC UA Configuration** editor: When opening a project where this editor had been open before the project was closed, variables from Global Variables Lists (GVL) were not always displayed consistently.
OEM00062678 SI-605	Issue has been solved with the new feature implemented in Machine Expert Installer allowing to select the installation path.

EcoStruxure Machine Expert - Safety

ID	Description
OEM00078219 / SSP50-4519	For TM7SDI8DFS and TM5SDI20DFS It was not possible to map a variable for *SafeTwoChannelOkxxyy* channel from EcoStruxure Machine Expert Logic Builder to EcoStruxure Machine Expert - Safety. If the variable was added in Logic Builder, the **Safe Configuration Change** window was displayed in EcoStruxure Machine Expert - Safety but the variable was not displayed in the parameter grid after the confirmation.
OEM00074304 / SSP50-4508	**Project Compare** in EcoStruxure Machine Expert - Safety did not display a message when an attempt was made to compare a safety-related with a non-safety-related project.

ID	Description
OEM00078024 / SSP50-4503	Floating license server configuration that was not fully cleaned up caused a long start time (>30 min) of EcoStruxure Machine Expert - Safety.
OEM00066284 / SSP50-6928	The online help did not provide information about the maximum configurable amount of variables for LMC2SLC or SLC2LMC.

Known Operational Anomalies

EcoStruxure Machine Expert

ID	Description
OEM00069862 / MS-1969	Motion Sizer: While displaying a **Crank** mechanic with Motion Sizer, the position curve is incorrect (different to EcoStruxure Machine Expert). The label of the curve is also incorrect.
OEM00076614 / MS-1967	Motion Sizer: A cam profile (.asc file) exported from Motion Sizer has one cam point less than the exported file from ECAM.
OEM00070100 / MS-1963	Motion Sizer: With special mechanical parameters and a BMH1903P + LXM32xD85N4 bundle, the maximum required motor speed is 2250 rpm. Motion Sizer indicates the incorrect message that the maximum motor limit has been exceeded.
OEM00079146 / MS-1960	Motion Sizer: Input of a negative mechanic parameter for **Crank** is not possible.
OEM00078318 / MS-1947	Motion Sizer: ILM140 motor and drive type do not match.
OEM00071717 / MS-1946	Motion Sizer: Not possible to select a minimum supply voltage for ILM.
OEM00078190 / MS-1944	Motion Sizer: Torque characteristics are not updated.
OEM00076612 / MS-1943	Motion Sizer: Incorrect jerk is displayed for motion law **mod sin**.
OEM00071728 / MS-1938	Motion Sizer: Projects that contain a calculated cycle time that is not an INTEGER value cannot be reopened.
OEM00064125 / MS-1902	Motion Sizer: If only Lexium 62 ILM servo drives are included in a power circuit, the limits of the power supply for the maximum DC bus current and the effective DC bus current are not evaluated.
OEM00064415 / MS-1901	Motion Sizer: Power calculations do not consider the limits from the connection module.
–	Motion Sizer: Incorrect motion profile for motion **Dwell** when the Y values of the startpoint and endpoint are equal and **m** and **k** are not zero.
OEM00077539 / MS-1945	Motion Sizer: After creating a new motor, an error exception was detected.
SI-3117	When a library is only referenced by another library, the referenced library is not updated during a project update. **Workaround**: Execute the automatic update in the **Library Manager**.
SI-5150	Machine Expert Installer: After an update from EcoStruxure Machine Expert V1.1 to EcoStruxure Machine Expert V1.2, the ATV320 DTM is displayed as not imported and is not available. **Workaround**: Remove and reinstall the ATV320 DTM by using the **Modify Installed Software** option of the Machine Expert Installer.
SI-4893	Motion Sizer: When you open the **Help > About** dialog box, open the system explorer, select a system project, and click **Add current project**, then an exception can occur in the Motion Sizer.
OEM00078429 / BOC-558	**Relocation Table**: The **Length** of ARRAY variables containing structures with elements of type DATE, TIME, DATE_AND_TIME is not correctly displayed.

EcoStruxure Machine Expert - Safety

ID	Description
OEM00079205 / SSP50-6903	The message logger of an M262 controller can be flooded with a lot of messages in case an optional safety-related module configured in the system becomes defective. **Workaround**: Consult the message logger and replace the defective module that has been identified.
OEM00078271 / SSP50-4523	The TM5SPS10FS module does not differentiate if the user parameter **centralcontrol** is set to **Central** or **Direct**. In both cases you must set the parameter for the output in addition to the safety-related parameter in the SLC to get the output powered.

Documentation - Mitigated Anomalies

Documentation

ID	Description
OEM00077321 / BOC-264	Event Task: A remark was needed that only internal IEC variables and values of onboard touchprobes and digital inputs (controller) are permitted.
SI-4252	The project update with HMI has been changed, as some HMI devices are not supported by Machine Expert.
IECLIB-2162	HttpHandling library guide: An example was needed on how to send an HTTP `Get` request using the property `State` as state variable of the state machine.
OEM00074603 / IECLIB-1713	TcpUdpCommunication library guide: An example was needed on how to implement UDPmulticast with FB `Method JoinMulticastGroup` in the TcpUdpCommunication library.
OEM00078342 / BOC-316	M262 Programming Guide: Incorrect information for **Reset origin** command. It removes part of the system logs.
OEM00078593	M262 Hardware Guide: Contained a not accurate graphic: the size of M262 controller was different to TM3 size.
OEM00078594	M262 Hardware Guide: Missing link to the TM5 fieldbus interface Hardware Guide.
OEM00078595	M262 Hardware Guide: Incorrect link for SetRTCDrift documentation.
OEM00078598	M262 Hardware Guide: Incomplete description of Run/Stop sources.
OEM00078607	M262 Hardware Guide: Incorrect links to I/O status LEDs.
OEM00078608	M262 Hardware Guide: No description about LED of SL yellow blink.
OEM00078610	M262 Hardware Guide: Incorrect links for Ethernet 1 and Ethernet 2 ports of TM262M15MESS8T/TM262M25MESS8T/TM262M35MESS8T.
OEM00078629	The memory size of M262 was different between Programming Guide and Hardware Guide.
OEM00078630	M262 Programming Guide: Item 4 was not included in **Files Transfers in Memory** graphic.
OEM00078691 / BOC-327	Missing note on TMSES4 not to interconnect embedded Ethernet port and TMSES4 (or interconnect TMSES4 module).

Documentation - Known Operational Anomalies

Documentation

ID	Description
OEM00079053 / BOC-351	Incorrect module size of the TM3AQ2/TM3AQ2G in the *TM3 Analog I/O Modules Hardware Guide*: • Incorrect: 14.6 mm • Correct: 18 mm
TM3BC-556	Incorrect graphic in the section *Ethernet Port* of the *TM3 Bus Coupler Hardware Guide*: The orientation of the RJ45 plugs must be reverted.

EcoStruxure Machine Expert V1.2.1

Hardware/Firmware information

Version Identification

Description	Firmware Version
TM3BCCO	1.0.16.1

New Features

TM3 CANopen Bus Coupler is a distributed architecture solution. It allows you to create distributed islands of industrial TM3/TM2 I/O modules managed by a master controller M241, M251, or M262 via CANopen fieldbus.

- Support of TM3 and TM2 I/O modules:
  - up to 14 TM3 I/O modules
  - up to 7 TM2 I/O modules
  - up to 7 TM2 I/O modules mixed with TM3 I/O modules
- Embedded webserver supporting:
  - user rights management
  - bus coupler maintenance such as speed configuration, firmware upgrade, and diagnostics logs
  - island I/O monitoring and control
- Isolated RJ45 ports to support daisy chaining

Limitations

- The latch feature is not supported by TM3DI16, TM3DI16G, TM3DI16K.
- TM3 expert I/O modules are not supported.
- Only a single user can modify the firmware update or write values through the embedded webserver.
- HMISCU is not supported as CANopen Master for TM3BCCO.

Known Operational Anomalies

There are no known anomalies with this release.

EcoStruxure Machine Expert V1.2.2

Hardware/Firmware information

Version Identification

Description	Firmware Version
TM5NS31	2.75

Description	Safety-Related Firmware Version
TM5CSLC100FS	2.53
TM5CSLC200FS	2.53

NOTE: The other firmware versions remain as documented in the Release Notes History, page 113.

Quality Improvement for TM5 Sercos Bus Coupler and TM5 Safety Controllers

- TM5 Sercos Bus coupler (TM5NS31)
  - Cybersecurity: Unused Ethernet services are disabled
- TM5 Safety Controllers (TM5CSLC•00)
  - Cybersecurity: Unused Ethernet services are disabled

NOTE: For updating existing TM5NS31 and TM5CSLC•00 devices in your M262 and PacDrive system use the Device Assistant tool as usual. For more information refer to the M262 Embedded Safety - Integration Guide and the M262 Logic/Motion Controller - Programming Guide.

If you are using in PacDrive systems the Fast Device Replacement (FDR) function, then you have to create a new LMC controller flash card with exchanged firmware files with the Controller Assistant tool. Thereby you have new firmware releases for TM5CSLC•00 and/or TM5NS31 available on the controller to execute the FDR function correctly. For more information refer to the LMC Pro Device Objects and Parameters Guide.

Software Information

Version Identification

Description	Firmware Version
Machine Expert Installer	12.20.08301

New Features for EcoStruxure Machine Expert - Safety

The Safety offline help was updated with small corrections and additional translations.

Mitigated Anomalies - Machine Expert Installer

ID	Description
BOC-628 / SI-5608	Connection to Schneider Electric server is not possible in case default system proxy server with credentials (user and password) is configured.

Known Operational Anomalies - EcoStruxure Machine Expert

ID	Description
SI-5692	Working with DTM device editors can cause an error message “Invalid window handle” occurs and the application crashes. This is caused by a combination of Windows .NET Framework and a custom scale factor in Windows **Display settings**. Workaround: On a Windows 10 PC go to **Display settings** and click on **Turn off customs scaling and sign out**. If this does not solve the issue modify the setting **Change the size of text, apps and other items** to 100%. Sometimes you have to change the **Display resolution** to a lower size to reach the goal. Then sign out the user if not done before.

EcoStruxure Machine Expert V1.2.3

Hardware/Firmware Information

Version Identification

Description	Firmware Version
M262	5.0.4.75
TM5NEIP1	3.10

New Features

Quality Improvement for TM5 Ethernet/IP Bus Coupler

- Cybersecurity: Unused Ethernet services are disabled.
- Enable/Disable webserver through Machine Expert configuration.

M262 - OPC UA Client

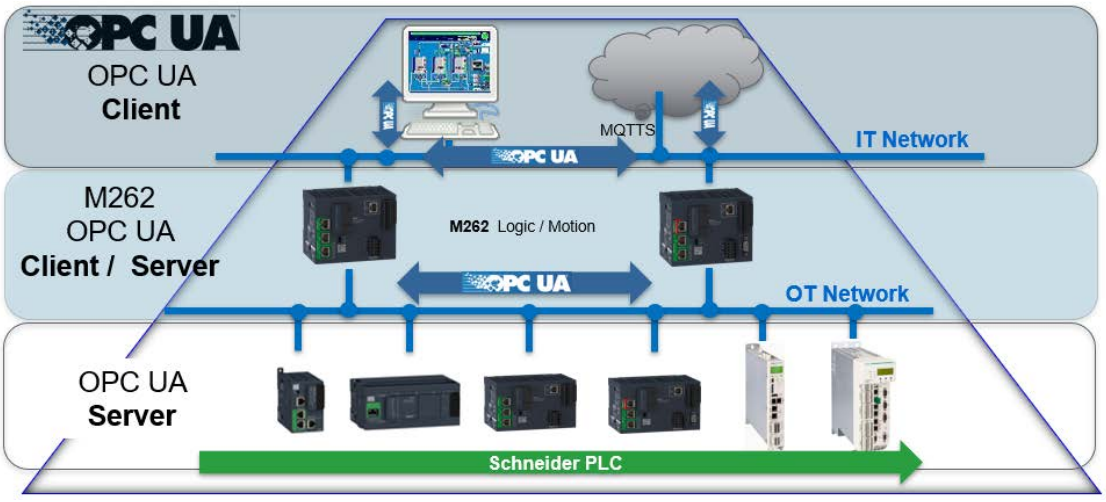
OPC Unified Architecture (OPC UA) is a vendor-independent communication protocol for industrial automation applications.

The client / server OPC UA capability of the following M262 controllers:

- M262L20MESE8T
- M262M25MESS8T
- M262M35MESS8T

The server OPC UA capability of the following M262 controllers:

- M262L10MESE8T
- M262M15MESS8T



OPC UA data exchange is performed using function blocks that are compliant with the PLCopen specification *PLCopen OPC-UA Client for IEC61131-3 version 1.1* and provide the following functions:

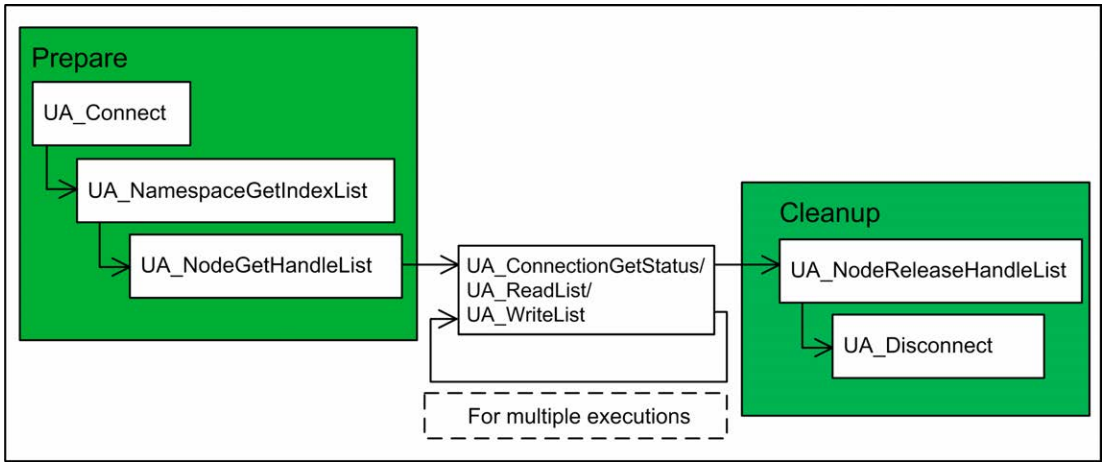
- Read/write of multiple items
- Diagnostics

The following function blocks are supported:

- *UA_Connect*
- *UA_ConnectionGetStatus*
- *UA_Disconnect*
- *UA_NamespaceGetIndexList*
- *UA_NodeGetHandleList*

- *UA_NodeGetInformation*
- *UA_NodeReleaseHandleList*
- *UA_ReadList*
- *UA_WriteList*

The graphic provides an example for managing the read/write list:



The table lists the OPC UA performance:

Performance	M262
Number of servers supported	5
Number of clients supported	1
Numbers of variables / connections	5,000
Numbers of variables / connections (total)	15,000

Mitigated Anomalies

M262

ID	Description
OEM00077237	User rights: You were asked twice to enter the default administrator credentials at activation.
OEM00079079	NVL did not start when `ETH1` was not exchanging data.
M262-4953	M262 incorrectly displayed the error message “Values cannot be retrieved”.

Known Operational Anomalies

M262 - Motion

ID	Description
MK-992	The Scaling library is removed. As a result, customer projects including this library (EcoStruxure Machine Expert V1.1) cannot be converted to EcoStruxure Machine Expert V1.1 SP1 or greater without the error message “Unhandled exception has occurred in your application”. Workaround: Either do not convert or copy the application content instead of converting it.
MK-974	While enabling a vertical axis, a small drop of the axis can be observed. This results from the gravity effect on the motor load for the time it takes between requesting the enable and finalizing it.

Library Information

Version Identification

Description	Firmware Version
SqlRemoteAccess	2.0.2.0
TeSys island	2.0.3.0
OpcUaHandling	1.0.13.0

New Features

OpcUaHandling

- New library provides the OPC UA client functionality in order to exchange data with other devices through an independent communication protocol using the server - client model for M262.

TeSys island

- Added new function block supporting the new device avatars:
  - `SwitchSILStopWCat3and4`
- Added new function blocks supporting the new load avatars:
  - `MotorOneDirectionSILStopWCat3and4`
  - `MotorTwoDirectionsSILStopWCat3and4`
  - `MotorTwoSpeedsSILStopWCat3and4`
  - `MotorTwoSpeedsTwoDirectionsSILStopWCat3and4`
- Added new function blocks supporting the new application avatars:
  - `Pump`
  - `ConveyorOneDirection`
  - `ConveyorOneDirectionSILStopWCat1and2`
  - `ConveyorTwoDirections`
  - `ConveyorTwoDirectionsSILStopWCat1and2`
- Added new function blocks to read and set the system time of the bus coupler:
  - `SystemTimeGet`
  - `SystemTimeSet`
- Added new outputs supporting the new process variables of the avatars:
  - `MotorOneDirection`
  - `MotorTwoDirections`
  - `MotorTwoSpeeds`
  - `MotorTwoSpeedsTwoDirections`
  - `MotorYDOneDirection`
  - `MotorYDTwoDirections`
- Changes:
  - Changed the order of the function blocks inputs and outputs.
  - Moved the outputs `q_iMotorTemperature` and `q_usiSILGroup` from the dedicated control function blocks to the `EnhancedStatus` function block.
  - Added the output `q_wPredictiveAlarmsStatus` to the `EnhancedStatus` function block.
  - Added the outputs `q_uiVRMSL1L2`, `q_uiVRMSL2L3` and `q_uiVRMSL3L1` to the `SystemVoltageBasic` function block.

- Renamed the term safety into SIL (Safety Integrity Level) on the elements of the library.
- Renamed the term warning in alarm on the elements of the library.
- Renamed the term error in event on the elements of the library.

Project Example

- Added OPC UA client project example for M262.
- Update of the Machine Advisor project example with management of user rights and secure access to the web visualization server.

Mitigated Anomalies

ID	Description
IECLIB-2556	SqlRemoteAccess: Limitation issue after 9999 read or write execution is solved.

Known Operational Anomalies

ID	Description
M262-5106	Changing the cycle time of a task might cause an exception during download of the application using OPC UA.
M262-5092	Downloading large and complex applications may cause an exception during download of the application.
M262-5080	While rebooting, the controller may detect an error if the cycle time of the application is too low.
M262-5072	Using multiple OPC UA clients and a large number of nodes may result in a long execution time and consequently in a watchdog exception.
M262-4248	OPC UA client: `UA_ReadList` using a pointer in persistent variables may lead to an exception error. An advisory is already present during the build: “Do not use POINTER in persistent variables, since addresses will change at download.”

Software Information

Version Identification

Description	Firmware Version
SQL Gateway	1.2.3.0

New Features

SQL Gateway

- It is possible to protect the configuration/user interface from the Gateway via a password.
- Usability improvement for client certificates: The handling of permitted client certificates has been simplified by showing received but rejected certificates. These rejected certificates can be used to simply add them to the permitted certificates.
- Cybersecurity improvements such as encrypted configuration file.

TeSys island DTM

- Update of avatars with process variable inputs and advanced control modes. See also the section Library Information, page 122.
- Added predictive alarms for avatars.
- Upstream voltage detection is improved.

- Custom avatar configurations can be saved for re-use in individual DTM libraries.
- Factory reset allowed in any system state.
- Dynamic port mapping guide added to ease wiring of digital and analog inputs and outputs.
- Support of PTC binary sensor added.
- Predictive alarms data exchange with EcoStruxure Machine Expert added.

Mitigated Anomalies

EcoStruxure Machine Expert

ID	Description
OEM00076873 / SI-5770	During convert from a M241, the ATV320 DTM was deleted.
BOC-741 / SI-5743	Controller Assistant: Writing image to flash disk was unsuccessful with message “Formatting failed”.
SI-5741	SQL Gateway: After importing the configuration, the content of permitted clients lists was not updated.
SI-5736	Import of DTMs may render Machine Expert inoperable.
SI-5718	Controller Assistant reports that a version of Machine Expert is already installed on a clean system after program start.
SI-5717 / BOC-395	Calling online help via F1 button is inoperable when using function block name space.
SI-5716 / SI-3684 / SI-5710	Conversion of ATV32 leads to deletion of I/O mapping.
SI-5715	Controller Assistant: Issue on resetting user rights when writing image to M262.
SI-5713	It is not possible to synchronize more than one cam diagram between Motion Sizer and Machine Expert.
SI-5711 / BOC-36	When using the Chinese character set in the Windows operating system, the button inside the user cyclic data configuration is not visible if the screen size is > 100%.
SI-5708	Device Assistant: Incorrect DSM-FW for LXM62+ is displayed.

EcoStruxure Machine Expert - Safety

ID	Description
SSP50-7148 / BOC-763	For new safety projects created with Machine Expert - Safety V1.2, V1.2.1 and V1.2.2, it is not possible to use POUs with structured text (ST) language. Machine Expert - Safety is closed immediately after inserting a POU for ST programming. Workaround: Projects created with these versions and which use ST in a POU have to be recreated with V1.2.3 to avoid this issue. **NOTE:** Projects upgraded from any version before V1.2 to the mentioned versions are not impacted and can add and use POUs with structured text without re-creation.

Known Operational Anomalies

EcoStruxure Machine Expert

ID	Description
SI-5714 / BOC-467	CamEditor: Editor view allows to configure an invalid value for the “C” parameter for motion profile ModAccTr or ModSin.

EcoStruxure Machine Expert V1.2.4

Hardware/Firmware Information

Version Identification

Description	Firmware Version
M262	5.0.4.81
TM3BCEIP	2.1.50.2
TM3BCSL	2.0.50.2
TM3BCCO	2.0.50.2
TM3DI8	2.0
TM3DI8G	2.0
TM3DI32K	2.0
TM3DM8R	2.0
TM3DM8RG	2.0
TM3DM24R	2.0
TM3DM24RG	2.0

New Features

Lexium LXM28S

The device LXM28S is available in the **Hardware** catalog. It can be used to control the drive LXM28S.

Modicon TM3 Bus Coupler

- TM3 CANopen Bus Coupler (TM3BCCO) is supported by Harmony SCU HMI Controller.
- Support for the new Modicon TM3 I/O modules with the filter and fallback function:
  - TM3DI8
  - TM3DI8G
  - TM3DI32K
  - TM3DM8R
  - TM3DM8RG
  - TM3DM24R
  - TM3DM24RG

Modicon TM3 Standard I/O

New hardware revisions for TM3DI8, TM3DI8G, TM3DI32K, TM3DM8R, TM3DM8RG, TM3DM24R and TM3DM24RG.

> **NOTE:** The new features are available only with the new firmware provided with EcoStruxure Machine Expert V1.2.4.

These new TM3 I/O modules are supported by M241, M251, M262 and TM3 Bus Couplers, and support new features:

- Configurable input filter
  - The input acquisition time filter can be adjusted to allow fast input signals (0.3 - 12 msec.).
- Input latch function
  - The input latch function allows to capture input signals with short durations and memorize the state till the next controller task execution.
  - This feature is not supported by the TM3 Bus Couplers.

- Output fallback function
  - The output of the TM3 I/O modules will apply fallback values configured by user after an elapsed delay, when the I/O bus is lost.
- Firmware upgrade
  - The firmware of the TM3 I/O modules can be updated by the controller. (New features only configurable with modules of software version 2 or greater.)

M262 - Motion

- Cam slave start mode Absolute
  - Mode Absolute is now available, which can be chosen as an alternative to the already existing slave start modes Relative and RampIn when starting a cam.
  - Mode Absolute starts the new cam directly at the position, velocity and acceleration according to the new cam profile (like Relative/unlike RampIn) and without performing any ramp-in movement (unlike RampIn).
  - Mode Absolute cannot be started on a slave axis configured to modulo. This will result in the error output of `MC_CamIn` function block being set.
- Interpolated cam (straight/poly5)
  - As an alternative to using segment-defined cam profiles, a cam profile can now also be interpolated between a list of points.
  - Up to 10,000 points are supported. In the case of straight interpolation, these points are Y coordinates, which are equidistant on the X axis. Interpolation between two points is straight (same as straight cam segment law).
  - Alternatively, a 5th degree polynomial interpolation can be used between the given points. In this case, the user also has to input slope and curvature in addition to the corresponding slave position.
- Real-time Task
  - The real-time task is a task for the user application that synchronized with the fieldbus and the internal motion calculation. This task will be scheduled to be executed after motion calculation and data transfer from/to devices. Please ensure that this task is executed immediately by setting its priority to the highest priority (lowest number) in your application.
  - The intended use case is to read inputs or axes positions as soon as they are available, create branch logic based on them, trace, etc.
  - Be aware that it is not intended for Motion function blocks.
  - Be aware that digital outputs set in this task will only be sent to the device after 2 cycles.

Documentation

The online help is updated with the following new documentation:

- How to Configure the Firewall for PacDrive LMC Controllers

Mitigated Anomalies

M262

ID	Description
M262-5074	WebVisualization: Credential page is reloading on an Apple iPad. Allow Apple iPad for WebVisualization.
M262-5218	OPC UA server is able to read the M580 certificate.
M262-5230	OPC UA server: The display name of variables has been modified in order to provide a “Flat” view of the array’s structure. The view is modified to show the complete node name of the variable.
M262-5233	M262: The LED is aligned with the state of the output when the default value is requested.

M262 - Motion

ID	Description
MK-939	An unnecessary ramp-in movement no longer occurs, when an `MC_CamIn` function block is executed with slave start mode RampIn but no ramp-in movement is necessary because the axis already starts in the correct position according to the cam profile definition.
MK-967	Discrete motion jobs no longer finish with the final axis position merely very close to the commanded target position (e.g. 10^{-32} instesad of 0.0), but instead with the axis exactly in the target position.
MK-975	Resolved an issue whereas Sercos on M262 Logic controller stops working and the drive displays error B103, or that on a subsequent attempt M262 Logic controller crashes, when executing any Motion Control FB in buffered mode while it is already active.
MK-1005	An unnecessary ramp-in movement, leading to a jump in axis velocity, no longer occurs when an `MC_CamIn` function block is executed with slave start mode RampIn and buffer mode Aborting, with identically parameterized cam profile as the previously running cam. Linked to MK-939.
MK-1017	A very high velocity and acceleration of the drive shortly before reaching the target, caused by a sudden jump in axis position for one cycle, no longer occurs after `MC_MoveAbsolute` function block with jerk has been used to abort itself with a new target position further away.
MK-1021	Configuring the axis with a position resolution of 1.0 no longer leads to an unexpected sudden jump from zero velocity to target velocity. Instead the axis now accelerates with the defined ramp, as expected.
MK-1033	The value of an axis `stMotionOfMaster.lrPosition` is no longer set to zero for one cycle when the active cam is changed (buffered or aborted) and the new cam is started with slave start mode RampIn. Instead, this property now shows the expected value.

Known Operational Anomalies

M262

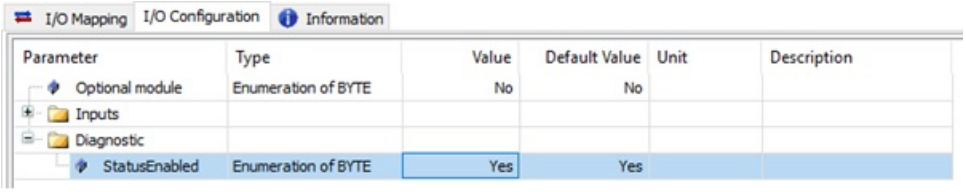
ID	Description
BOC-537	Sercos bus: Unable to disable/enable the TM5 slices of Sercos III via IEC program with the M262 Logic Controller.
BOC-751	Modbus serial: Serial IO scanner sends FC15 while FC05 is configured.
M262-5137	`SysTimeRtcSet`: After a power OFF the real time clock (RTC) of the controller get lost if it is set by the `SysTimeRtcSet` function. Workaround: Set the real time clock by the software.

M262 - Motion

ID	Description
MK-1016	Online status of bit *InvertDirection* is not displayed in the encoder configuration window. The pre-configured value is shown instead.
MK-1048	SLC remote controller shows phase -1 when trying to set Sercos phase to 0 and it shows phase 0 when trying to set Sercos phase to -1.
MK-1073	Real-time task configuration - Watchdog precision cannot be set to microseconds.

Modicon TM3 Bus Coupler

ID	Description
M262-5335	When in a distributed architecture, with TM3BCEIP, if the diagnostic for the analog modules TM3AQ2 and TM3AQ4 is disabled, **CPU exception occur**, after the download of the application. Workaround: The diagnostic is activated by default - do not change the diagnostic setting for these both modules: TM3AQ2 and TM3AQ4.
-	Always use the value **Yes** for the variable **StatusEnabled** in the analog modules, see screenshot below. When it is set to **No** the values of the analog inputs will make a shift in the read data buffer, causing wrong data value read in the software or controller.



Library Information

Version Identification

Description	Version
CommonMotionInterface	1.4.1.0
CommonToolbox	1.0.1.0
Mathematics	1.0.0.0
PD_PacDriveLib	1.9.4.0

New Features

Project Example

Update of the Safety Logic Controller (SLC) project template for PacDrive 3 to allow connection between EcoStruxure Machine Expert - Safety and TM5CSLC•00FS.

CommonToolbox

The new library provides a collection of additional functions and function blocks:

- `FC_CloseSlcCommunication`: Deactivates the standard port rules for the controller firmware which allow a connection from the programming tool to the TM5CSLC•00FS through the controller.
- `FC_LrealToString`: The function converts any numerical value to a STRING with freely defined format.
- `FC_MultiConcat`: The function concatenates the 4 input strings according to their sequence.
- `FC_OpenSlcCommunication`: Activates the required port rules for the controller firmware to allow a connection from the programming tool to the TM5CSLC•00FS through the controller.
- `FB_HeatingControl`: Function block for monitoring and controlling heating systems.
- `FB_RandomGenerator`: This function creates a random number.
- `FB_RuntimeMeasurement`: Runtime measurement of program code.

Mathematics

- `ST_Vector3D`: Represents a Cartesian vector in a three-dimensional space.

Mitigated Anomalies

There are no additional mitigated anomalies with this release.

Known Operational Anomalies

NOTE: If you are using templates and examples which are not updated with the update of EcoStruxure Machine Expert V1.2.4, you may be presented the **Update Project** dialog. If you are opening an example or template for the first time, you should update to have the correct and corresponding libraries and other necessary support.

Software Information

Version Identification

DTMs

Description	Version
Advantys OTB	11.1.0.0
ATV320	1.2.6.0
ATV340	1.7.0.0
ATV6xx	2.5.1.0
ATV9xx	2.2.1.0
Harmony XB5R	1.0.41
Lexium 28 A	1.6.00.07
Lexium 28 S	1.6.12.00
Lexium 32 A	1.20.02.01
Lexium 32 C	1.20.02.01
Lexium 32 i	1.20.02.01
Lexium 32 M-S	1.20.02.01
Modbus Serial Communication DTM	2.6.12
Modbus TCP Communication DTM	2.6.12
TeSys island	2.2.1.0
TeSysT	2.12.0.0
TeSysU	2.8.0.0
TM5-7 CANopen Interface DTM	1.1.8
TM5-7 Expansion Module DTM	1.1.8

New Features

Quality improvement for Lexium 32 DTM

- Cybersecurity: No UMAS transfer for MotionSequenceMode download.

EcoStruxure Machine Expert - Safety

- Safety System communication management improvement. New standard controller firmware handling functions available. For details see chapter Library Information, page 128.

Mitigated Anomalies

DTMs

ID	Description
LXM32DTM-4	Resolution of the issue with the downloading of an old SoMove file into a new LXM32 drive.
190220	TeSys island: Could not select 22 kW power rating from combo box.

Known Operational Anomalies

There are no additional known anomalies with this release.

EcoStruxure Machine Expert V1.2.5

Hardware/Firmware Information

Version Identification

Description	Firmware Version
TM258LD42DT	5.0.4.11
TM258LD42DT4L	5.0.4.11
TM258LF42DT	5.0.4.11
TM258LF42DT4L	5.0.4.11
TM258LF66DT4L	5.0.4.11
TM258LF42DR	5.0.4.11
LMC058LF42	5.0.4.11
LMC058LF424	5.0.4.11

New Features

Modicon M258 Logic Controllers and Modicon LMC058 Motion Controllers

- Support of Codesys 3.5 SP12
- Migration of a project from SoMachine V4.3 to Machine Expert V1.2.5 (with the limitation of devices in Machine Expert)
- User Right password has to be changed at first login to the controller
- Default administrator password change on first login

Mitigated Anomalies

ID	Description
PLAT-718	M258: High Speed Counter (HSC) in **Period Meter Mode** with resolution = 0.1 µs is available.
PLAT-730	M258: Function blocks with the input of type ANY are not generating an internal error anymore.
PLAT-901	M258: Size of Union variables is correctly sized when variables are mapped to a **Relocation Table**.
BOC-319 / PEP0533758R	Documentation: Maximum frequency of Expert I/O is 200 kHz instead of 100 kHz.
BOC-507 / CDSYS-191 / PLAT-879	LMC058: The Modicon LMC058 Motion controller was stopped during an online change with some projects.
BOC-512 / CDSYS-55 / PLAT-879	M258: We triggered an issue if `MC_GearIn.RaionNumerator` = 0 was used and during this state `MC_SetPosition` on the Master drive was executed.
BOC-514 / CDSYS-40	LMC058: `SMC_Limitdynamics` did not limit Z-axis with some G-code files.

ID	Description
BOC-515 / CDSYS-34	LMC058: There was a jump in position on quick stop.
BOC-517 / CDSYS-14	LMC058: `SMC_Limitdynamics` did not limit the acceleration and deceleration values in some G-code files.
BOC-518 / CDSYS-11	LMC058: Using M-functions inside a G-code file the interpolator output containing the M-function number showed sometimes incorrect values (65533 and 65534).
BOC-519 / CDSYS-8	LMC058: If `SMC_Interpolator2Dir` was started (set `bExecute`=TRUE), then the output “busy” of this function block remains FALSE (but should become TRUE).
BOC-520 / CDSYS-6	LMC058: `SMC_BlockSearch` to restart a aborted CNC G-code file from a specific point did not start correctly in certain situations.
BOC-521 / CDSYS-17 / PLAT-879	LMC058: In a special case of G-code, the ToolCorrection did not work correctly (there occurs a jump on the path and target position was not correct.
BOC-557 / SI-5735	LMC058: Input parameter from `MC_GearIn` was too small and is changed to DINT and UDINT.
BOC-588 / CDSYS-364	LMC058: CNC decoder did not detect syntax error.
BOC-590 / CDSYS-366	LMC058: `MC_GearInpos` did not behave correctly when changing the ratio in negative direction. If the ratio was changed from -1/1 to -1/2 then a full turn in opposite direction was executed.
BOC-592 / CDSYS-367	LMC058: When the master was in standstill, `MC_GearIn` was started correctly, but if then `MC_GearOut` was started, axis reported an error “Axis not ready for motion”.
BOC-594 / CDSYS-368	LMC058: When velocity ramp type of slave axis was set to Quadratic and the `MC_GearIn` was executed with `Jerk`=0 (FB input), then the controller stopped with exception.
BOC-597 / CDSYS-370	LMC058: If tappets are defined in a CAM, the CAM application needs about 3 times more CPU power (measured in MotionTask) than the same application without tappets in the CAM. Additionally, when CAM tappets are configured, the `MC_CamIn` was demonstrating an incorrect behavior after one running CAM cycle.
BOC-599 / CDSYS-371	LMC058: In a LMC058 CNC application, the reset of H-functions by programming “H-2 L-10” did not work.
BOC-913 / PLAT-1090	TM2/TM3: When using a TM2 analog module, it was not possible to edit the minimum/maximum of the scope.
CVE-2019-13532	Security update for CODESYS V3 web server
CVE-2019-13548	Security update for CODESYS V3 web server

Known Operational Anomalies

ID	Description
PLAT-943	LMC058/M258: When migrating a project from SoMachine V4.3 to Machine Expert V1.2.5, default value of input/outputs of TM5 are lost. Default value must be re-affected.
PLAT-958	M258: Embedded, local and remote TM5 on M258/LMC058 cannot be directly duplicated on a TM5 bus coupler.
PLAT-1007	M258: In simulation mode, the icon of **Can0** and **Can1** is green instead of red. No CAN traffic will be generated.
PLAT-1025	M258: In case of converting a controller application from M258 to M241, the WebVisualization protocol option is reset. Verify the option in your converted application.
PLAT-1089	LMC058/M258: In case of an upgrade from a firmware version older than 4.0.3.6 or 2.0.31.40 having “option bit(s)” activated, the migration to this newer version will deactivate them.

ID	Description
PLAT-1194	LMC058/M258: When using LMC058•••S0 (legacy hardware version of LMC058), downloading the application via USB key is not functional. Using Machine Expert solves this anomaly.
PLAT-1217	LMC058/M258: After changing the alarm output configuration and downloading the new configuration, perform a reset warm to ensure the alarm output is correctly set.
PLAT-1229	LMC058/M258: When deleting CAN motion configuration from CAN1 when CAN0 is also configured may lead to spurious error on CAN0 when generating code. Perform a **Clean all** in order to remove these spurious errors.
PLAT-1257	LXM28A: When homing is interrupted by limit switch, LXM28A drive state does not change to error stop. Workarounds to clear error AL015: • Execute P0-01 (CANopen object 4001h) by CANopen communication. • Execute reset command on SoMove or on board HMI. • Execute `MC_ReinitDrive` (error AL015 still reports), then execute `MC_Reset`. • Reset LMC058 controller (error changes to AL3E1), then execute `MC_Reset` (AL3E1 is cleared), then execute `MC_Enable` (error AL015 is reported again), then execute `MC_Reset`.
PLAT-1259	LXM28A: Executing `MC_Touchprobe` will automatically set trigger edge to rising edge. Workaround: Reconfigure the touch probe signal in the drive after executing the FB (setting execute to TRUE): P5-39 (16#4527).
SI-6608	LMC058/M258: The SoftMotion version is not automatically updated after an project update from SoMachine to Machine Expert. This leads to missing libraries in some project. Workaround: The SoftMotion version has to be set manually in the **Project Settings > SoftMotion**.

Library Information

Version Identification

Description	Version
LMC058 Expert IO	1.0.2.3
LMC058 Motion	1.0.2.1
LMC058 PLCSystem	1.0.3.6
M258 Expert IO	1.0.2.3
M258 PLCSystem	1.0.3.6
FtpRemoteFileHandling	1.3.3.0

Mitigated Anomalies

There are no additional mitigated anomalies with this release.

Known Operational Anomalies

ID	Description
IECLIB-2909	FtpRemoteFileHandling: On LMC058 and M258 the LIST command for servers which sends the data in several frames sometimes does not work correctly if the `FB_FtbClient` was previously connected to another FTP server.

NOTE: If you are using templates and examples which are not updated with the update of EcoStruxure Machine Expert V1.2.5, you may be presented the **Update Project** dialog. If you are opening an example or template for the first time, you should update to have the correct and corresponding libraries and other necessary support.

Software Information

Version Identification

Description	Version
Controller Assistant	19.2.3.0

New Features

Documentation

The online help is updated with the documentation for:

- SoftMotion (the included chapter for Robotics is not valid as EcoStruxure Machine Expert V1.2.5 do not support this feature)
- Modicon LMC058 Motion Controller
- Modicon M258 Logic Controller

Mitigated Anomalies

ID	Description
CVE-2020-11896	Treck IP stack (Ripple 20)
CVE-2020-11898	Treck IP stack (Ripple 20)
CVE-2020-7520	URL redirection to untrusted site
CVE-2020-7523	Modbus serial driver
BOC-310	Documentation: CTS Inversion was described with “Insert CTS (Clear To Send) level” and is corrected with “Invert CTS (Clear To Send) level” in the TM5 Programming Guide.
BOC-311	TM5 Strain Gauge IoDrvTM5SEAISG Library Guide: In the Related Documents table the incorrect part numbers of the TM5 Programming Guide are corrected.
PLAT-704	Translation of the module TM5SDM12DT description is corrected: 8DO 4DO (incorrect) -> 8DI 4DO (correct)
BOC-326 / HMI-45	Documentation: Legacy information about ModbusTCPSlave was visible in the help.
BOC-488 / SI-6501 / SI-5766	TcpUdpCommunication.library was generating spurious compiler warnings.
BOC-586 / CDSYS-362	**Online change** was triggered after reopen of a project with G-code.
BOC-638 / SI-6365 / SI-5565	Sporadically it was not possible to create an image from the **Project** menu (**Build > Create image...**)
BOC-732 / SI-6364 / SI-6597	The retain file was deleted with a compatible update of the LMC image in the controller assistant.
BOC-772 / SI-5809	The **Customize** menu was deleted with a Logic Builder update or reinstallation.
BOC-777 / SI-6345 / SI-5803	The Controller Assistant is sometimes not able to format the CF card of a PacDrive M controller (Win10).
BOC-782 / SI-5847	Documentation: There was an translation error for QUERYINTERFACE in the Machine Expert Programming Guide.
BOC-799 / SI-6361 / SI-5884	Sometimes the **Device tree** was deleted after an convert from TM241CE40T to TM251MESE.

ID	Description
BOC-873 / SI-6354 / SI-5944	Machine Expert was losing user-defined repository path information on closing.
BOC-854 / PLAT-981	A call from the method `generate_code` which has no arguments was generating an error.
BOC-888 / SI-6353 / SI-6106	The **Project update** dialog was updating the device version unnecessarily.
BOC-902 / ROB-111	Documentation: RoboticAutoTune library help was not included with the application libraries.
BOC-936 / PLAT-1107	The connection path from some EthernetIP.eds files was marked as invalid.
BOC-1029 / IECLIB-2905	Documentation: The variable from the SmartInfeed product generation simulation was xProductLenghtVariance instead of xProductLengthVariation in the Online Help.
SI-6031	Documentation: The firmware function `FC_MAreaCommunicationServiceEnable` was not documented.
SI-6248	Documentation: The error message 8342 “On/OffPos inverted (On/OffDelay ok?)” was not listed in the online help.

Known Operational Anomalies

ID	Description
BOC-861 / SI-5984	ApplicationLogger: The text size of the Applicationlogger filter is not sufficient to read the complete text.
BOC-945 / SI-6329	Trace editor buffer size for **Device Trace** cannot be changed. Trace recording time limited to 01h 11min.
BOC-946 / IECLIB-2840	Using the SmartInfeed outside PacDrive templates and using functions/methods from the `IF_Infeed` results in a PageFault if AutoRunning is not active, respectively the `FB_Infeed` is not in the state “Working”.
BOC-971 / SI-6376	Smpb file is proposed as supported file, but when opening such a file an error occurs.
BOC-980 / CDSYS-529	Generate code leads to an AssertionFailed exception in some projects using function blocks which use arrays with a variable size.
BOC-982 / IECLIB-2873	Exception 8105 - Encoder Signal out of Range does not reset the flag HomeOk for an axis in the template.
BOC-992 / CDSYS-527	Array online monitoring range does not work properly and allow more than 1000 REFERENCE TO ARRAY elements for online monitoring.
BOC-1000 / SI-6472	The communication parameters of a Profinet device are not displayed correct in the PDI file.
BOC-1002 / SI-6473	Converted an LMC Pro to an LMC Eco, the **PLC Settings** were changed unintenionally.
BOC-1003 / SI-6474	No messages are shown about changed library version after converting a controller.
BOC-1017 / SI-6542	Device addressing in the popup menu points an incorrect PacDrive controller.
BOC-1072 / CDSYS-552	Smart coding does not work on alias from a library of type ARRAY OF STRUCTURE.
SI-5988	No information at start up when the new installed version/addon contains new Device Type Managers (DTMs).
SI-6029	When using the function **Save As Function Template** a negative value for a numeric parameter is not possible. The minus is not considered as part of the value.
SI-6125	When using the command **Show update dialog** it is always shown, that an upgrade for the project version is needed.
SI-6483	Performance issue in CompileMessage convention with some big projects.
SI-6443	Generic Ethernet/IP object is available for PacDrive, but it does not work.
PLAT-991	Reopening a just saved project may lead to non real build errors on serial line. Perform a **Clean all** in order to remove these spurious errors.

EcoStruxure Machine Expert V1.2.6

Hardware/Firmware Information

Version Identification

Description	Firmware Version
M262	5.0.4.83

Modicon M262 Motion Controller

The Modicon M262 Motion Controller supports the Robotic library. For details see the section Library Information, page 136.

OPC UA Client

NOTE: The OPC UA Client is usable only if the OPC UA Server is enabled. For that, open in Machine Expert the **MyController** window, then **OPC UA Server Configuration > General settings** and select **OPC UA Server** enabled.

Mitigated Anomalies

M262 Motion

ID	Description
MK-1106	Axis jumped on `MC_CamIn` - rampin - positive or negative direction.

Known Operational Anomalies

M262 Motion

ID	Description
MK-1118	Robotic - Variables of ARRAY OF PDL.ST_Vector3D marked as undefined.
MK-1109	`MC_MoveAbsolute` - with modulo axis and small ramps.
MK-1097	Negative velocity `MC_MoveAdditive`.

Library Information

Version Identification

Description	Version
FileFormatUtility	1.4.15.0
FtpRemoteFileHandling	1.3.6.0
Robotic (PacDrive)	2.16.0.0
Robotic (M262)	3.0.3.0
RoboticModule	2.12.0.0
SchneiderElectricRobotics	2.10.0.0
SchneiderElectricRobotics Parameters	2.13.0.0
SchneiderElectricRobotics Toolbox	1.5.0.0
RoboticsAutoTune	2.0.0.0

New Features

FileFormatUtility

Added new function block `FB_JsonUtilities` supporting the parsing of JSON formatted data.

Robotic

For limitations with M262 refer to the *Robotic Library Guide*.

Mitigated Anomalies

ID	Description
BOC-1122 / IECLIB-3436	FtpRemoteFileHandling required TcpUdpCommunication library V2.0.17.0 which was not available.

Known Operational Anomalies

ID	Description
IECLIB-3417	FileFormatUtility: Precompiler error C0358 occurs if an ENUM `ET_JsonValueType` is been used for verifying “Type of Selected” property.
BOC-1107 / IECLIB-3420	`MC_Power` timeout is insufficient when used with an LXM32M with 3rd party motor.
BOC-1117 / IECLIB-3437	The function block `MC_Power` does not enable the power stage in combination with Lexium_IL•2 drives.
BOC-1118 / IECLIB-3438	Motion Control Library Guide: It is not clearly described which stop ramp is used by the function block `MC_Stop`.
BOC-1119 / IECLIB-3440	CrankModule Library: The crank module warm start can be executed before the transformation is active.
BOC-1120 / IECLIB-3439	`MC_ReadAxisInfo`: The outputs `LimitSwitchPos` and `LimitSwitchNeg` are not correct when Safe Torque Off (STO) inputs are FALSE.
BOC-1123 / ROB-124	In case of an emergency stop (E-Stop) the use of the variable `rstRefOrientationTCP` inside of `FB_AdditionalTransformationTCP` triggers a watchdog.

NOTE: If you are using templates and examples which are not updated with the update of EcoStruxure Machine Expert V1.2.6, you may be presented the **Update Project** dialog. If you are opening an example or template for the first time, you should update to have the correct and corresponding libraries and other necessary support.

Software Information

Mitigated Anomalies

There are no additional mitigated anomalies with this release.

Known Operational Anomalies

ID	Description
BOC-1086 / SI-5669	The functionality of **Add function from Template** does not take over the used IP address from the template to the device.
BOC-1089	The PreCompiler creates an error if a project with M262M controller is used where the ARRAY OF PLCO.MC_CAM_ID is used in the code.
BOC-1100 / CDS-64615	An application with two function blocks `FB_1` and `FB_2` where `FB_1` has two methods that it provides to `FB_2`. A call of `FB_2` generates the advisory message C0298 “Calculation of stack usage incomplete because of recursive calls: `SR_Main () -> FB_2 () -> FB_1.METH_1 () -> FB_1.METH_2 () -> FB_1.METH_2 ()`”.

ID	Description
BOC-1103 / PLAT-1278	The Download App macro does not contain the command to download the WebVisualization files.
BOC-1109 / SI-4922	Activation of Code Analysis trial is unsuccessful.

Index

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As standards, specifications, and design change from time to time, please ask for confirmation of the information given in this publication.

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