

EcoStruxure Control Expert V15.3 - Release Notes

February 2023

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1. What's New in Control Expert V15.3

1.1 New Features



New supported Windows Operating Systems

In addition to Windows 10 and Windows Server 2019, now Control Expert supports Windows 11 and Windows Server 2022



M580 Processor 4.10 Firmware

Platform integration

- NTP V4, SNMP V3, HTTPS services



Modicon Switch Diagnostics

Platform integration – Configuration & Diagnostic

Predefined configuration files for Modicon Switches are available in Windows Menu > EcoStruxure Control Expert > Extras > Config DRS > MCSESM

To Monitor your network devices with consistent attributes names from your controller application, please do the following :

- Open DTM Browser > Right Click on EtherNet/IP master
- Select EtherNet/IP Protocol and choose your network device
- Select your part number and click Add DTM button
- Diagnostic object is created ready to use in your application

Note : To use this feature activate EtherNet/IP Protocol



Modicon Redundancy Switch Diagnostic

Platform integration – Diagnostic Improvement

Necessary to realize your redundant network. You will find Modicon Redundancy Switch in the Network device catalog.

To diagnose a MCSESR device, follow the same procedure as for Modicon switches.



Support BMXDDO3202(H) (12/24VDC trans discrete Output Module)

Platform integration

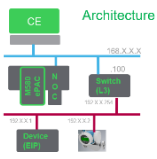
The new BMXDDO3202(H) module supports 12 and 24 VDC, connects using a 40-pin terminal block, is a positive logic (source) module with 32 channels and supports up to 0.5A per channel.

The new version comes in a standard and robust version.

High density discrete outputs with different voltage ranges (12/24V DC) allow this new module to easily accommodate a variety of actuators.

The increased channel current and improved control capability (0.5 A) will facilitate the upgrade of the Quantum modernization (same number of channels, same voltage range and same terminal block wiring).

An improved diagnostic function (open wire detection) will increase the efficiency of system maintenance and troubleshooting.



EtherNet/IP devices can be used in routed networks

Architecture Evolution

EtherNet/IP devices connected via BMENOC301/311 can be used in routed networks. The IP gateway now accepts a different logical network than the BMENOC301/311. This feature is supported with BMENOC301/311 firmware version of ≥ 2.21 .

Title bar can display only project file name

Usability Improvement

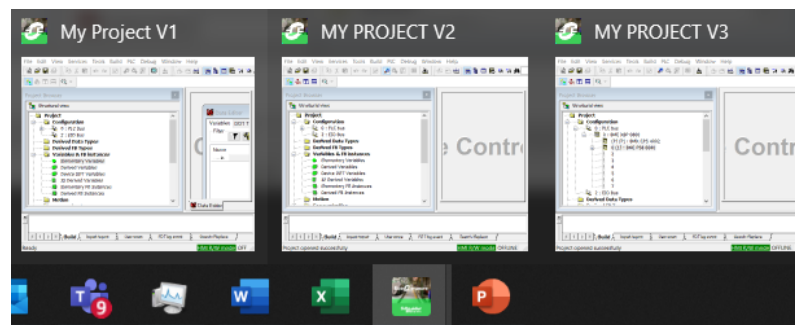
Improve readability when multiple Control Expert project files are open. New option “display the full project name in the title bar”

To adjust Menu Tools > Options > General

Options Management



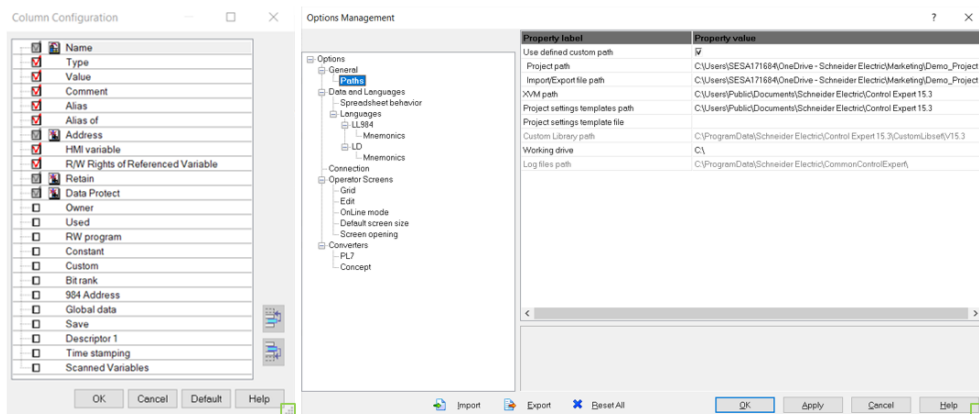
Property label	Property value
Auto incrementation of project version	<input checked="" type="checkbox"/>
Auto completion of the variable name	<input checked="" type="checkbox"/>
Display errors / messages	Message box
Contextual Restore at project opening	<input checked="" type="checkbox"/>
Display list of modified sections before build	<input checked="" type="checkbox"/>
Display the full project name in the title bar	<input type="checkbox"/>



Save window size

Usability Improvement

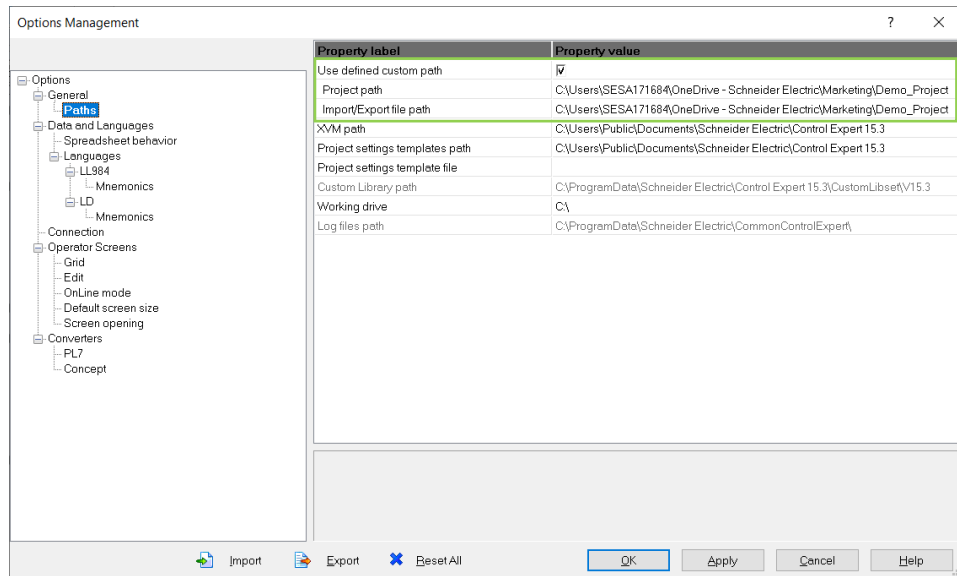
Improve readability by saving size of the following windows: Project Settings, Options and Column Configuration (used to customize Data Editor) windows.



Save the last path used or define a custom path option Usability Improvement

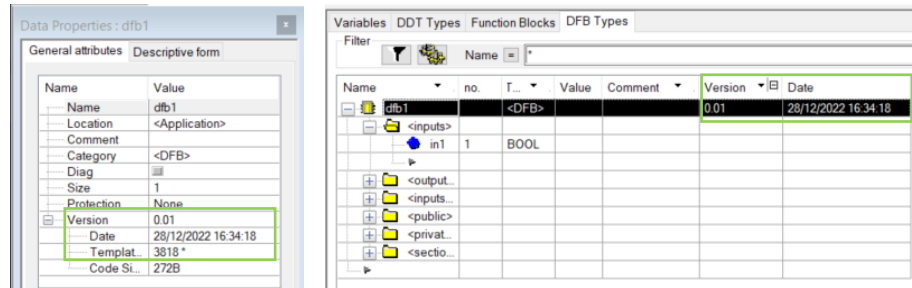
With new option “Use defined custom” path when enabled (default value), project open / save operations and Import/Export file path will use the customized path. When this option is disabled, the last path used is saved and reused.

To adjust Menu Tools > Options > General > Paths



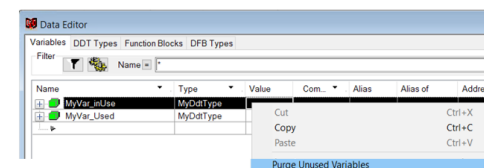
Display Version and Date properties of DFB / DDT in Data Editor column Usability Improvement

The Data Editor is customizable with Version and Date of DFB / DDT by right clicking in Data editor > Customize Columns...



Extend Purge Unused Variable command to Derived Data Type Usability Improvement

Purge Unused Variables command in Data Editor is now adapted to Derived Data Type (DDT)
This feature provide an easier way to clean up your application project





Optimize time of binary transfer

Performance Improvement

User can save time up to 25% during the Build Changes performed on M580 controller (PEP1026275R) by reducing the size of data to download.

To adjust do the following in Tools menu :

- General > Project autosaving on download > enable save STA only
- General > PLC embedded data > Upload information management set to On user request

If an error occurs during the transfer, a recovery mechanism to remain equal is available based on save the files in the directory of the project files. Backup files are .STA or .BAK extensions.

Note: at the disconnection, a popup remind you to update your upload PLC Menu > Update upload info. Without this action, transfer from controller will not be possible. (PLCTEC-728)

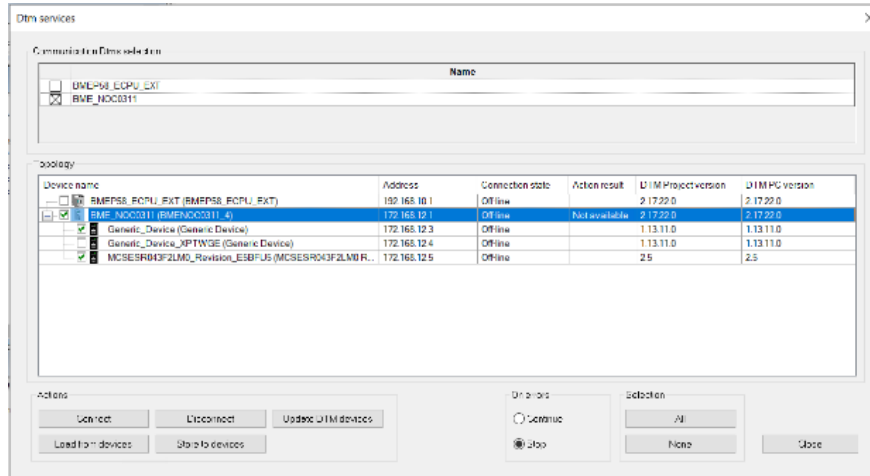
Update Application project with newer device DTM version

Device Management – Control Expert Classic & Topology Manager

User can compare device DTM version used in the opened Project with device DTM version present in the PC.

Update of one or several devices DTM is possible by doing the following actions :

- Select DTM Brower > Right Click on Host PC > DTM Service...
- Select Device to update using check box
- Click Update DTM devices button



The topology manager also offers this new feature:



Note 1: only one version of a Device DTM is installable on a computer. So if you decide to not update your devices with the same version, when you will open device and save the device will be automatically saved with the PC installed DTM version.

Dtm Audit Tool Option

Device Management – Control Expert Classic & Topology Manager

In case of backward compatibility is not supported, you have the possibility to hide this Dtm Audit Tool by checking the option “Don’t show this window again if backward compatibility is not supported”



Dtm Audit Tool

Choose file No file selected

Device Name / Vendor	Device Version in Project	Device Version on PC	DTM Name / Vendor	DTM Version in Project	DTM Version on PC	Project can be opened

Don't show this window again if backward compatibility is not supported.

Centralized User Management

Overview of new feature from Security Editor

Teams with multiple engineers involved in authentication will need to use the Security Editor to administer access to Control Expert.

This software tool, simplifies the configuration of Control Expert user access control and supports a centralized architecture with the following features:



- Client/server architecture supported via:
 - ✓ Secure proprietary protocol for users without IT authentication infrastructure
 - ✓ Lightweight Directory Access Protocol (LDAP): it is recommended to use Microsoft Active Directory as the LDAP server
- Manage trusted certificates
- Generate certificate
- Centralized security database

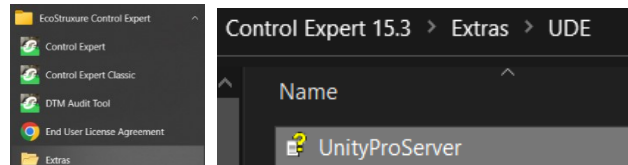
This feature is an initial step to provide controller authentication in the next version of Control Expert and M580 firmware.

The Control Expert API (UDE: Unity Developer Edition) documentation is installed with the setup.

Openness & library

User wants to automate engineering actions will access an up to date documentation of the UDE (Unity Developer Edition).

This documentation is delivered in the Extra folder of Control Expert:



General Purpose Library is now delivered with the setup. Openness & library



This library is delivered in the Extra folder of Control Expert.
Read the release note of the latest version of GPL:

- Select EcoStruxure Control Expert > Extras
- Read Modicon Libraries 2022 V2 Release Notes.pdf in Extras\General Purpose Library\GPLV2

More info about Modicon Libraries [here](#)

Enhance the Monitoring mode in Topology Manager Topology Manager - Diagnostic Improvements



Control Expert
Topology Manager



Display the rack viewer from controller's web server when in Monitoring mode with Topology Manager

EcoStruxure Control Engineering software suite integration Topology Manager - Federate software

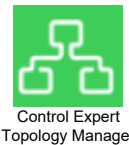


Control Expert
Topology Manager

The user will need to create or connect to their Control Engineering license to run the tools:

- With Control Engineering – Verification: the user can launch a static analysis of their Control Expert application
- With Control Engineering – Documentation: the user can reverse-engineer their application to view control and data flows in a simple, abstract manner

Import STA archive in Topology Manager Topology Manager – Simplify project import



Control Expert
Topology Manager

Import of STA archive file is now possible in addition to the export file (ZEF).

Note: after the import, build the application in Topology Manager will be required

1.2 Hot fix Integrated

The following hotfixes are implemented in Control Expert V15.3

Hot Fixes
ControlExpert_V151_HF010 SAID value changes after Rebuild all project (TÜV)
ControlExpert_V151_HF012 DTM NOC (TÜV)
ControlExpert_V152_HF001 RESTORE DATA
ControlExpert_V152_HF002 Code generation failure

ControlExpert_V152_HF003 Identity Check missing
ControlExpert_V152_HF004 MC80 - MDI
ControlExpert_V152_HF005 BMXDDO3202 (TÜV)
ControlExpert_V152_HF006 BMENOR2200H SV3.03
ControlExpert_V152_HF007 Data Base limitation
ControlExpert_V152_HF008 variable name project

1.3 List of Enhancement

The following enhancements are implemented in Control Expert V15.3

Id #	Title
PEP0615229R	Display the audit project name in event viewer
PEP0657433R	Support REF_TO_ANYBOOL for MC80 controller
PEP1006741R	Add Monitoring mode for protected DFB online
PEP1008175R	Adjust the gateway IP for any Ethernet IP device below NOC301/311
PEP1009099R	Be able to address bit for variable type DWORD, DINT, UDINT
PEP1016682R	Save the context of the column size (S M and L option)
PEP1019201R	CYB - SNMPv1 cannot be disabled for NOE modules
PEP1020463R	Dissociate ECE syslog and M580 syslog messaging
PEP1026275R	Improve duration of build changes : optimize bin transfer
PEP1027409R	DTM Audit Tool window offer the ability to open a sta file silently
PEP1029328R	In Control Expert to change 171CBU9809x Ethernet Environment setting
PEP1030128R	Display all primary and standby IP addresses of NOC0321
PEP1031811R	Purge command is now applicable to unused DDTs in Data Editor
PEP1031812R	Show DDT/DFB properties in Data Editor
PEP1031826R	Save windows size for Project Settings, Options and Column Configuration windows
PEP1031827R	Title bar can displays only project file name
PEP1033808R	Add new eds files from Pilz devices (CIP Safety)
PEP1039372R	The hyperlinks can be opened with most internet browsers
PEP1035827R	Save the last path used or define a custom path option

1.4 List of Fixed Issues

The following known issues are fixed in Control Expert V15.3

Id #	Title
PEP0550978R	Unity14-Need doc to explain what was fixed in different libsets

PEP0565208R	E&H Promag400 physically disconnected still marked as connected
PEP0579393R	Control Expert v14.1 network manager
PEP0620554R	CYB Unsigned DLLs - DTM DLLs
PEP0651843R	CE 15 project's comment
PEP0652740R	BMXDRA0815 Power consumption inconsistence with help
PEP0658670R	Improve Pop-up message related to SAFE change
PEP0660990R	ECE V14_1 and V15, when generating documentation - Memory error
PEP0668213R	CE15.SP1:Data dict not updated after renaming variable inside DDT
PEP0669409R	ECEV14.1 V15 - Build error disappear after insert & remove empty line
PEP0676646R	ECEV15,15SP1,14 - Variable animation not able on indexed stuct array
PEP0676833R	CE v15.0 - Save DTX not working on a folder with '.' ex. C:\1.data
PEP1005708R	Safety Processor Halt on S_SHL_WORD
PEP1008071R	CE v14.1 - Error after Rebuilt and restore .DTX file
PEP1008833R	CE V15 SP1 Online Building Issue
PEP1009047R	IFM gateway IO scan issue under M580
PEP1010000R	CE V15 SP1 - DTM Audit tool issue
PEP1012421R	CE15,SP1-Variable names is not printed when using mixed topological
PEP1014583R	Ce 15 SP1 Safety memory protect option
PEP1014601R	CE v15 SP1 - Behaviour of REF_TO_EBOOL is different in Quantum
PEP1016584R	CEX V15 - Code generation failure
PEP1016844R	CE 15.1 Ethernet network manager BMENOC gateway
PEP1017962R	Floating license manager - does not count licence / terminal sessions
PEP1018502R	CE 15.1 - Cannot increment the Major, Minor, and Build version
PEP1018953R	EXT - CE V15.1 - email authentication issue
PEP1019422R	CE15.1-Attched ST logic gives different results on different CPU's.
PEP1020521R	CEV14.1-CCOTF operation not possible on M580 safety system
PEP1020561R	CE15.1 : NOP IO mapping update to CE quite slowly
PEP1020845R	CE - M580 HSBY safety locked in wait state
PEP1022364R	CE15.1 - Loss of initial value for REF_TO variables of Device DDT
PEP1023521R	CEV151 - Random SEL bloc issue
PEP1023967R	ECE V15.1 - No IOScann for Generic modbus DTM version 1.2.5.0
PEP1025906R	ECE V15.1 - Open STU > invalid file format
PEP1028686R	CE15.1-Purging Unused variables deletes variables used in a POU.
PEP1029087R	CE v15 SP1 - Error while opening .STU file

PEP1030374R	CE v15.1 - Cannot analyse project and build project
PEP1030486R	CE V15.1-Import TXT not possible on PROCESS and SAFE group
PEP1032726R	CE15.1-Adding DTM device does not always update the Data Editor
PEP1033772R	CE V15.1- problem in generic CIP safety DTM leading to CE crash
PEP1033987R	CE15.1-Select all in Animation table and force not work on all EBOOL
PEP1034186R	CE15.1-Attached project can be opened with CE14.1 and 15 but not 15.1
PEP1034188R	CE15.1-Restore Data from File to controller not working.
PEP1035607R	Controller crashes (3 RED LED) after deploy data
PEP1035912R	CE15.2 :failed to open sta
PEP1038595R	M580 Safety - Maintenance mode protected by the Safety password
PEP1041375R	CE- SFC multi token default activated option
PEP1041376R	On build changes, nested DFB instance may not be well exchanged in M580 HSBY controller
PEP1038730R	DTM adaptation for CE V15.2 and EAE V21.2 DTM compatibility
PEP1041993R	CE15.12-Transfer of project starts and then fails
PEP1042749R	ECE V15.0 - DFBs template signature change while *.sta import is done
PEP1045871R	CE V15.2 , DTM browser, DTM addresses sorting
PEP1046529R	CE15.2-crashes if a EBOOL is assigned to a SFC and IO as alias
PEP1046995R	Control Expert 15.2 Rebuild All "Object Analyze Failure" error
PEP1049773R	CEV15.2 - Crashes when we use Teams copy function

1.5 Vulnerabilities fixed in V15.3

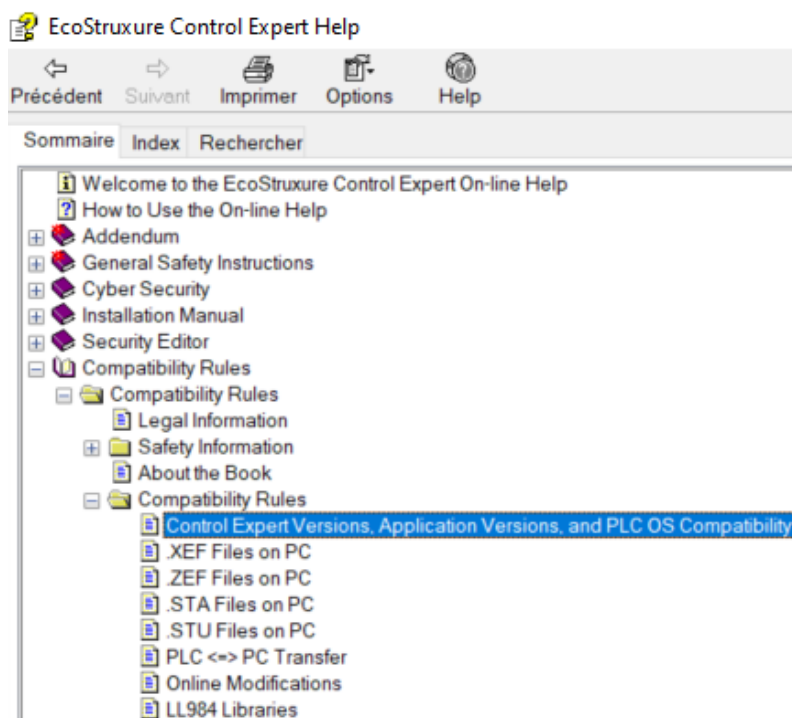
CVE#	Id#	VMT#	Description
CVE-2018-7240	PEP0648886R	VMT-4237	CYB - CE v15 Reinforce message on FTP (always disable when not in use)
CVE-2022-45788	PEP1035216R	VMT-6433	CYB - ControlExpert PLC simulator improper check for Unusual or Except
CVE-2021-22789	PEP1035928R	VMT-4362	CYB - Update ControlExpert Catalog for fix of VMT-4362/63/73/74
-	PEP1022501R	VMT-6337	CYB - Control Expert v15.1 Simulator Uncaught Exception

2 Compatibility Rules

2.1 Compatibility Table for Control Expert Application Versions & Controller firmware

Please find the compatibility table in the online help of the Control Expert for:

- Firmware version of controller
- XEF and ZEF Files on PC
- STA Files on PC
- STU Files on PC
- Controller <=> PC Transfer
- Online Modification



Note: Before upgrading your software, please make sure that you have saved your projects in .STA and ZEF or XEF formats. It is also recommend that you copy these to a suitable backup location.

2.2 LL984 Libraries

See Control Expert Version, Application Version and Controller Compatibility

2.3 DTM Version Matrix

DTM name	Control Expert Version								
	14.0	14.0 Hotfix	14.1	14.1 Hotfix	15.0	15.0 SP1	15.1	15.2	15.3
BME NOC 03x1.x	2.12.20	2.12.23	2.13.36	2.13.37	2.14.23	2.14.48	2.15.72	2.16.29	2.17.24
BME H58 x040	2.12.20	2.12.23	2.13.36	2.13.37	2.14.23	2.14.48	2.15.72	2.16.29	2.17.24
BME P58 x0x0	2.12.20	2.12.23	2.13.36	2.13.37	2.14.23	2.14.48	2.15.72	2.16.29	2.17.24
BME H58 x040S	2.12.20	2.12.23	2.13.36	2.13.37	2.14.23	2.14.48	2.15.72	2.16.29	2.17.24
BME P58 x040S	2.12.20	2.12.23	2.13.36	2.13.37	2.14.23	2.14.48	2.15.72	2.16.29	2.17.24
NOC 78x00	2.12.7	2.12.7	2.13.32	2.13.32	2.14.11	2.14.26	2.15.24	2.16.12	2.17.11
NOC 78x00.2	2.12.7	2.12.7	2.13.32	2.13.32	2.14.11	2.14.26	2.15.24	2.16.12	2.17.11
M_NOG 0402	3.12.7	3.12.7	3.13.34	3.13.34	3.14.11	3.14.28	3.15.26	3.16.12	3.17.11
Advanced_Generic_EDS	1.8.5	1.8.5	1.9.32	1.9.32	1.10.11	1.10.24	1.11.23	1.12.12	1.13.11
Generic_Device	1.8.5	1.8.5	1.9.32	1.9.32	1.10.11	1.10.24	1.11.23	1.12.12	1.13.11
Modbus_Device	1.2.5	1.2.5	1.2.5	1.2.5	1.2.5	1.2.14	1.3.2	1.4.0	1.5.0
BME CXM 0100	1.00.0003	1.00.0003	1.00.0003	1.00.0003	1.00.0003	1.00.0004	1.00.0007	1.00.0008	1.00.0008
PME Generic DTM	1.0.32	1.0.32	1.0.32	1.0.32	1.0.32	1.0.32	1.0.37	1.0.37	1.0.37
BME AHI 0812	1.1.7	1.1.23	1.1.7	1.1.7	1.1.9	1.1.12	1.1.20	1.1.20	1.1.20
BME AHO 0412	1.1.7	1.1.23	1.1.7	1.1.7	1.1.9	1.1.12	1.1.20	1.1.20	1.1.20
BME NOR 2200	NA	NA	NA	1.0.061	1.0.087	2.1.20353.1	3.0.22049.1	3.0.22055.1	3.0.22308.1
ModbusPlaceHolder	NA	NA	NA	NA	1.0.9	1.0.18	1.0.22	1.0.22	1.0.22
EIPPlaceHolder	NA	NA	NA	NA	1.0.9	1.0.18	1.0.22	1.0.22	1.0.22

2.4 Incompatible Device DTMs

Customer using KROHNE DTM will find their Control Expert stuck when they try to open the corresponding DTM equipment.

3 Additional information

This chapter describes new behaviors or recent limitations that are not yet documented in the Control Expert user manual.

Most of the following behaviors will be solved in the next versions.

3.1 FAQ

Additional information may be available on Schneider-electric.com ([Support / FAQ Frequently Asked Questions](#))

3.2 Limiting the length of the installation path

Installation path with more than 110 characters can lead to errors during installation or launching control expert.

(PLCCE-xxx)

3.3 Required to launch License Manager as stand alone

License Manager cannot be started from Control Expert until License Manager has been opened in standalone mode for the first time.

(PLCCE-xxx)

3.4 Configure Topology Manager in client/server with Security Editor

To connect Control Expert to a remote server PC, in the Security Editor of the client PC the certificate of the remote server PC must be whitelisted as described below:

Step	Action
1	Perform <i>one</i> of these actions when the corresponding radial button is active: <ul style="list-style-type: none"> • Enter the IP address of the server IP port in the Port field. • Enter the name of the host server in the Name field.
2	Click the Verify Certificate button to query the certificate. This sends a fetch request from the server and adds the retrieved certificate to the whitelist upon the confirmation by the <i>SecurityAdmin</i> .
3	Save and close the Security Editor and launch the Control Expert software.

When Control Expert connects to a remote server, the security database used is always that of the server.

It is why, in Security Editor on the Login Policies tab, the *Authentication Mode* and the *Centralized Protocol* are ignored except for LDAP.

(PLCCE-3808)

3.5 Clear the Security Editor Database

In case of loss of password of the SecurityAdmin, proceed with the following steps:

- Close Security Editor
- Delete files in the directory C:\ProgramData\Schneider Electric\CommonControlExpert\Security
- Launch repair from Control_Expert_Setup.iso file
- Start security editor and login using default SecurityAdmin credential

3.6 READ_REMOTE, WRITE_REMOTE, SET_VAL have to be used in MAST task only

READ_REMOTE, WRITE_REMOTE (and also SET_VAL which is using same Data Dictionary system entry point) have to be used in MAST task only :

"If READ_REMOTE and WRITE_REMOTE EFBs are used in a section of the MAST task these EFBs must not be used in a section of another task (FAST, AUX, etc.)."

To solve this problem, the M580 and M340 firmware must be modified.

(PLCCE-3932)

3.7 Security Database Migration

Follow these steps to migrate a security database.

NOTE: Throughout this procedure, accept any on-screen prompts to proceed with the migration.

Step	Action
1	Launch the tool with one of these methods: <ul style="list-style-type: none"> • Type Security Database Migration Tool in the Windows search box. • Double-click the executable file for the tool (SecDBConv.exe) in your downloaded Control Expert program folder.
2	When prompted, log in to the previous database by entering the access credentials for the SecurityAdmin account on the Security Database Migration Tool login page. NOTE: In legacy versions of Control Expert (earlier than version 15.3), use the credentials for the Supervisor (super user) account, as discussed in the description of the administrator role migration
3	Click the Login button and accept any prompt to log in to the current database.

4	Enter the access credentials for the same administrative user as above on the Security Database Migration Tool login page.
5	Click the Login button and wait for a confirmation that the previous data are migrated to the current database.

NOTE: You can confirm that the database is migrated by verifying that the appropriate data appears on the tabs in the Security Editor.
(PLCCE-3838)

3.8 Documentation files available on se.com

The following technical documentation update are available on se.com. Latest version is not yet included in the HTML help of the software.

Document Title	Link on se.com
Modicon Controllers Platform Cyber Security Reference Manual	https://www.se.com/en/download/document/EIO0000001999/
Controlling Application Execution on Computers	https://www.se.com/en/download/document/EIO0000004778/
Modicon M580 PAC Firmware Installation Guide	https://www.se.com/en/download/document/EIO0000004992/
Control Expert Addendum in PDF format	https://www.se.com/en/download/document/EcoStruxureControlExpert_V15.3
Controlling Application Execution on Computers - Cybersecurity Application	https://www.se.com/ww/en/download/document/EIO0000004778/