



Moving from FREE Studio to FREE Studio Plus



FREE Studio Plus Features

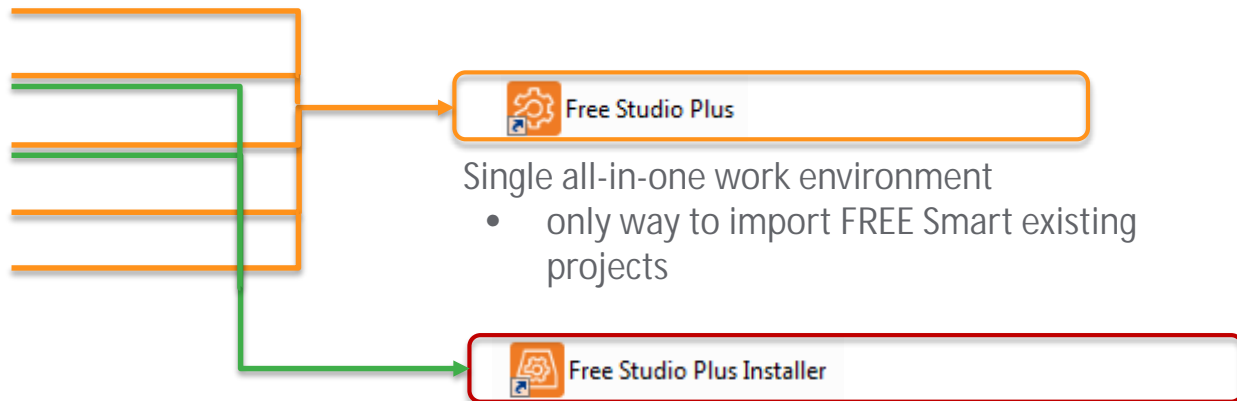
- 1 **New Executables & Software Structure**
- 2 **HowTo Import a Free Studio project**
- 3 **HowTo Create a “NEW” Project**
- 4 **New Graphic Style**
- 5 **Improved Software Features**

New software present into the installed folder

FREE Studio

- Ap** free Studio Application
- Co** free Studio Connection
- De** free Studio Device
- Si** free Studio Simulation
- UI** free Studio User Interface

FREE Studio Plus



Single all-in-one work environment

- only way to import FREE Smart existing projects

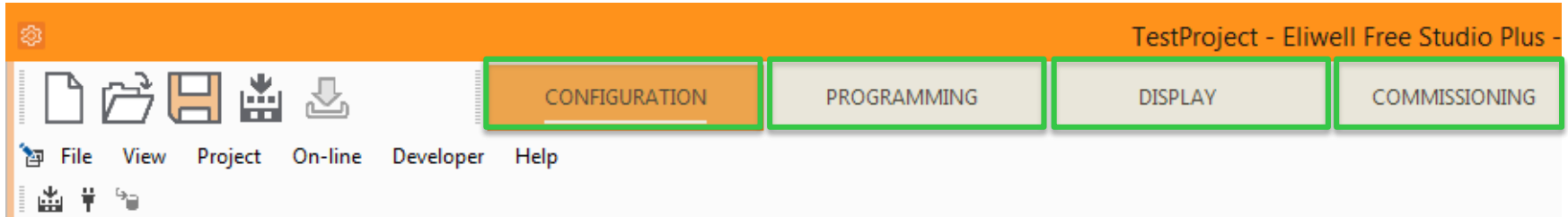
Installer:

- is the only way to import existing projects (except Free Smart)
- is used for software commissioning w/o source code
- is used to configure binding communication

FREE Studio Plus

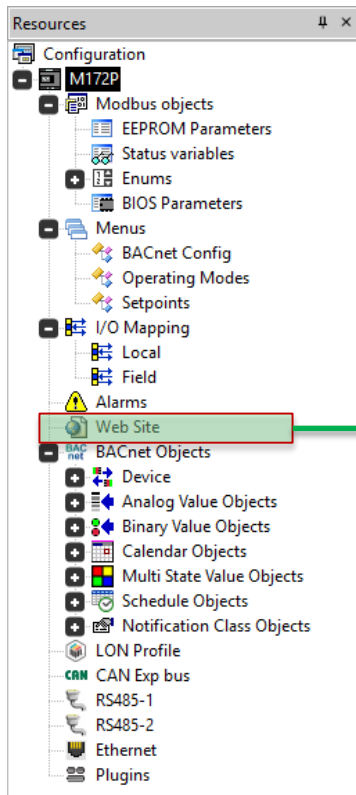


The new software structure is more user friendly (Configuration, Programming, Commissioning)



Configuration Perspective

Configuration of Programming variables and communication settings



'PAGE1' WEB TABLE PAGE

Enable build

Refresh (ms): (0=disable refresh) Password:

Page title: Filename:

Site template:

#	Name	Control	Label	Section	Text size	Img filename	Img X	Img Y	Enum values
1	St3	Text			10				
2	St4	Text			10				

> Easy Web Page creation:

- § Pick an existing Site template
- § Drag-and-drop variables to be shown on the page

Configuration Perspective

Configuration of Programming variables and communication settings

The image displays a software configuration interface with three main components:

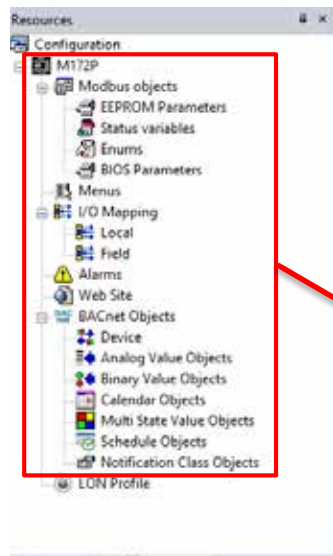
- Resources Panel (Left):** A tree view showing the project structure. The 'RS485-2' item is highlighted with a red box.
- RS485 CONFIGURATION (Top Middle):** A configuration window for the selected device. It includes:
 - Mode:** Radio buttons for 'Modbus Slave - BACnet MS/TP' and 'Modbus Master (for field)'. 'Modbus Master (for field)' is selected.
 - Baud rate:** Radio buttons for '9600 b/s', '19200 b/s', and '38400 b/s'. '38400 b/s' is selected.
 - Serial Mode:** A dropdown menu.
 - Catalog (Right):** A table listing available Modbus devices.
- GENERIC MODBUS NODE (Bottom Middle):** A configuration window for a generic Modbus node. It includes:
 - Settings:** Input fields for 'Name' (value: MODBUS_DEV1), 'Modbus address' (value: 1), and 'Node number' (value: 0).
 - Catalog (Right):** A table listing Modbus function codes.

Device name	Version	Descri...
ATV12	1	Modb...
ATV21	1	Modb...
ATV212	1	Modb...
ATV31	1	Modb...
ATV312	1	Modb...
ATV32	1	Modb...
ATV61	1	Modb...
ATV71	1	Modb...
EWHS3140/S	1	Modb...

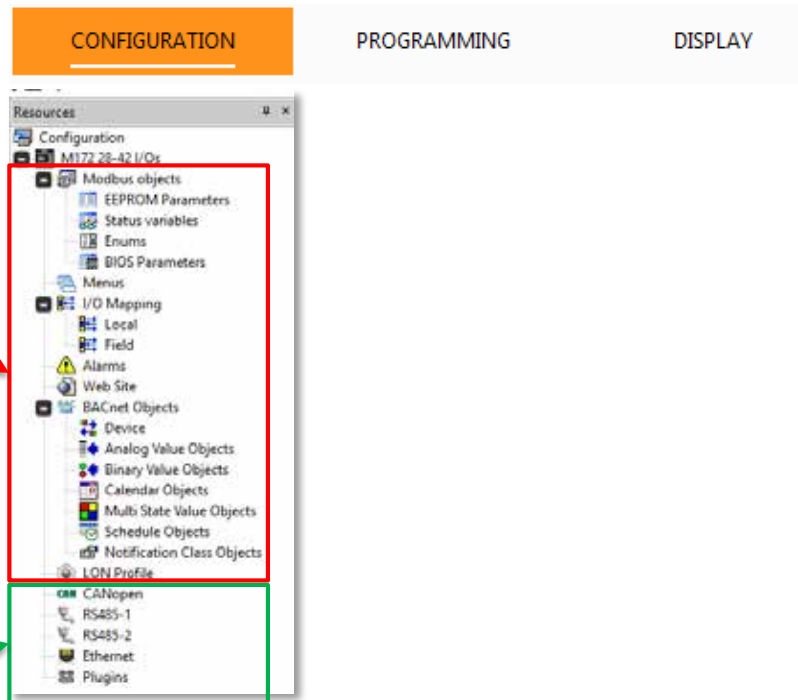
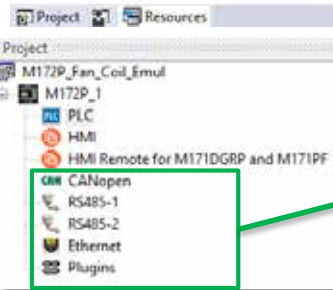
Device name	Version	Description
Modbus FC-01	1	Read Coils - Function 01 (0x01)
Modbus FC-02	1	Read Discrete Inputs - Function 02 (0x02)
Modbus FC-03	1	Read Holding Register - Function 03 (0x03)
Modbus FC-04	1	Read Input Registers - Function 04 (0x04)
Modbus FC-05	1	Write Single Coil - Function 05 (0x05)
Modbus FC-06	1	Write Single Register - Function 06 (0x06)
Modbus FC-15	1	Write Multiple Coils - Function 15 (0x0F)
Modbus FC-16	1	Write Multiple Register - Function 16 (0x10)

Comparison with FREE Studio

Application



Connection



Programming Perspective

The screenshot displays the SIMATIC Manager interface with several key components highlighted:

- PLC CODING:** The main workspace shows a ladder logic diagram with a function block call for `SetPoint_FF` and associated variables like `AVI_SetCoil` and `MDI_MSI_DefineM`.
- FUNCTION BLOCK PROPERTIES:** A window titled "Properties Window" is open for the `Function Block: SR (ver.1.0.0, IL)`. It shows:
 - Creation date: --
 - Last modified date: --
 - Bitstable, set dominant
 - Input table:

Name	Type	Description
s1	BOOL	Logic input
r	BOOL	Reset input
 - Output table:

Name	Type	Description
q1	BOOL	Bitstable output
 - Description: Bitstable, set dominant
 - Timing diagram showing signals Q1 (red), R1 (green), and S (blue) over time.
- LIBRARIES:** The "Library tree" on the right shows the project structure, with `UDINT as REAL` highlighted.
- WATCH (DEBUG):** A "Watch" window at the bottom right displays a list of variables and their values, such as `EVENT_STATE` (EVE...), `RELIABILITY` (REL...), and `LIMIT_ENABLE` (BOOK...).
- PROJECT RESOURCES:** The left sidebar shows the project configuration and resources, including `AVI_SetCoil` and `AVI_AmbTemp`.
- Live DEBUG & Breakpoints:** The top toolbar contains icons for debugging and breakpoints.

Live DEBUG & Breakpoints

New F / FB Properties Content

PLC CODING

LIBRARIES

WATCH (DEBUG)

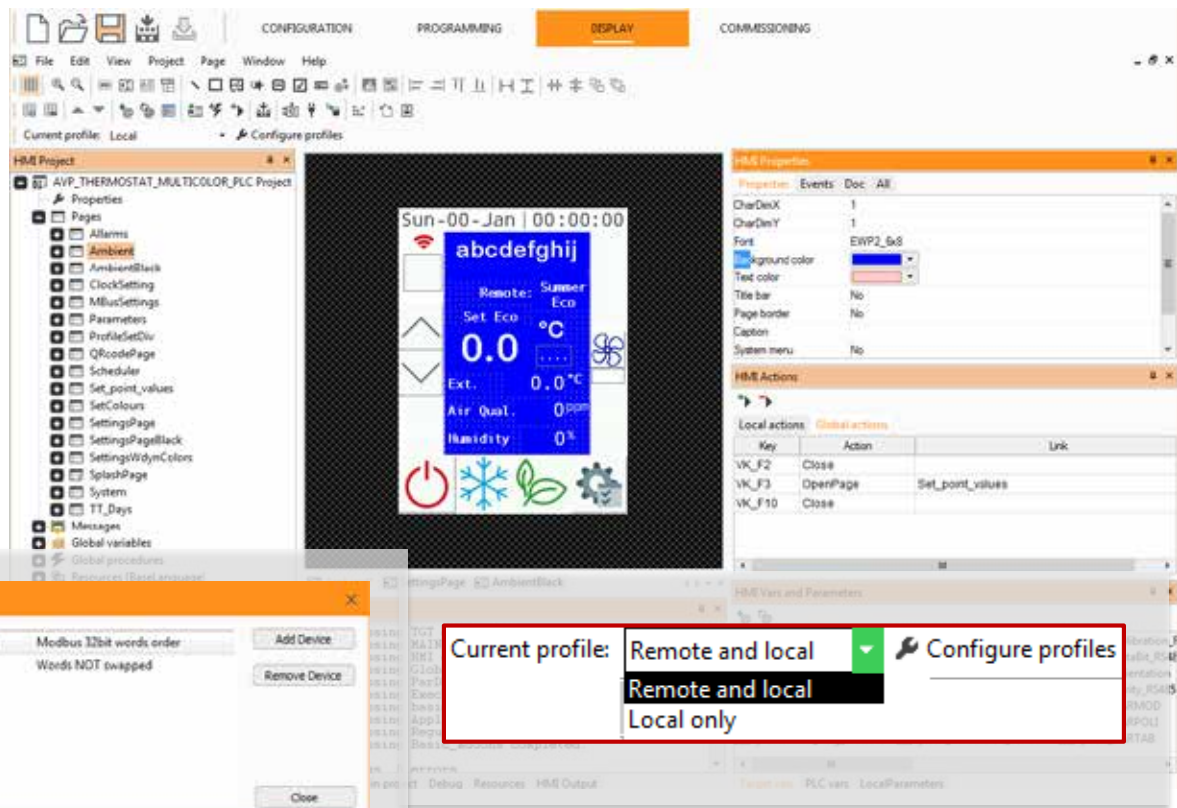
PROJECT RESOURCES



Display Perspective

HMI Design

- > **Single software** to design Local and Remote HMIs
- > **Full-integration w/ the software:** Configuration (EEPROM Parameters and Status Variables) automatically linked.
- > **Several minor improvements.**



Commissioning Perspective

> Parameters Settings

The screenshot displays the Commissioning Perspective software interface, which is used for configuring and commissioning industrial equipment. The interface is divided into several main sections:

- Commissioning Tree (Left):** A hierarchical tree view showing the project structure. The 'Setpoints' folder under the 'Application' section is currently selected.
- SETPOINTS Table (Center):** A table listing the configured setpoints. The table has columns for Address, Name, Type, Value, Uls, and Default.
- Commissioning Oscilloscope (Top Right):** A real-time monitoring tool showing a step function. The y-axis is labeled 'mV/div: 339.54' and ranges from 130 to 310. The x-axis shows time markers at 8/43.88 and 121.99.2.
- Resources (Bottom Center):** A window showing the status of the device's memory. It displays 'Used data space', 'Free data space', and 'Total data space' in both hexadecimal and kilobyte units. It also reports '0 warnings, 0 errors'.
- Commissioning Watch (Bottom Right):** A table that provides a summary of the current setpoint values for the selected device.
- Status Bar (Bottom):** Shows the current state of the device as 'CONNECTED' and provides buttons for 'EDIT MODE' and 'SOURCE OK'.

Address	Name	Type	Value	Uls	Default
16387	rSetpoint_DefSch	DINT	20		20
16386	iSetPoint	INT	25.0		21.0
16385	iDifferentiation	INT	1.0		1.0

Device	Name	Value	Uls
M172P	iDifferentiation	1.0	
M172P	iSetPoint	25.0	

Used data space: 1960h (6 KByte)
Free data space: 7E640h (505 KByte)
Total data space: 80000h (512 KByte)

0 warnings, 0 errors.

Commissioning Perspective

- > Parameters Settings
- > Recipes Management

The screenshot displays the Commissioning software interface. On the left is a tree view showing the project structure, with 'Recipe 1' selected under the 'Recipes' folder. The main area shows a table titled 'RECIPE 1' with the following data:

Address	Name	Value	Um	Recipe value	Min	Max	Description
8642	LED3	2=Blink	num	2=Blink	0	2	Led yellow
8720	BACKLIGHT	1=On	num	1=On	0	4	Display backlight
15726	Cfg_AI1	5=0+5V(Ratiometric)	num	0=NTC(NK103)	0	11	Type of analogue input AI1
15727	Cfg_AI2	4=0+10V	num	2=NTC(103AT)	0	11	Type of analogue input AI2
15728	Cfg_AI3	4=0+10V	num	1=DI	0	11	Type of analogue input AI3
15729	Cfg_AI4	1=DI	num	1=DI	0	11	Type of analogue input AI4
15730	Cfg_AI5	5=0+5V(Ratiometric)	num	5=0+5V(Ratiometric)	0	11	Type of analogue input AI5
15731	Cfg_AI6	5=0+5V(Ratiometric)	num	5=0+5V(Ratiometric)	0	11	Type of analogue input AI6
15766	Load_BACnet_E2_Defaults	False	flag	False	0	1	Load default values for BACnet p...

Below the table, there is an 'Output' window showing the following text:

```
Preprocessing Application completed.  
Preprocessing Communication completed.  
Preprocessing Pumping completed.
```

Commissioning Perspective

- > Parameters Settings
- > Recipes Management
- > Create USB Key
- > Command line download:
OEM production process
integration

CONFIGURATION PROGRAMMING DISPLAY **COMMISSIONING**

Target Options Help

Other operations

- BIOS download
- Open file browser
- Web site download
- Web site preview
- Generate XIF file
- Create USB programming files**

Resources *

Output

```
Build HMI Remote for KBD: OK
Build HMI Remote: OK
```

Name

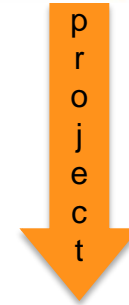
- Backup
- ChangeTargetBackup
- Download
- HMIRemote
- PreviousVersions
- USBPLC_28IO**
- USBPLC_42IO

Name

- BINDIN.PAR
- CONNEC.PAR
- HMIEC.COD
- HMIREM.KBD
- PARAM.BIN
- PARAM.DAT
- PARAM.RAW
- PLCIEC.COD
- UPLOAD.TXT

Importing FREE Studio projects

- Import a PLC only project
- Import Connection from Installer
- Opening from Application
- Updating BIOS



Importing an FREE Studio project

Selection of the import tool

Free Studio – Project Type	File Type	Tool to convert
PLC – Application Only	.plcprj	FREE Studio Plus
HMI – User Interface Only	.pajx	
Full Project	.cfn	FREE Studio Plus – Installer

Importing a full project

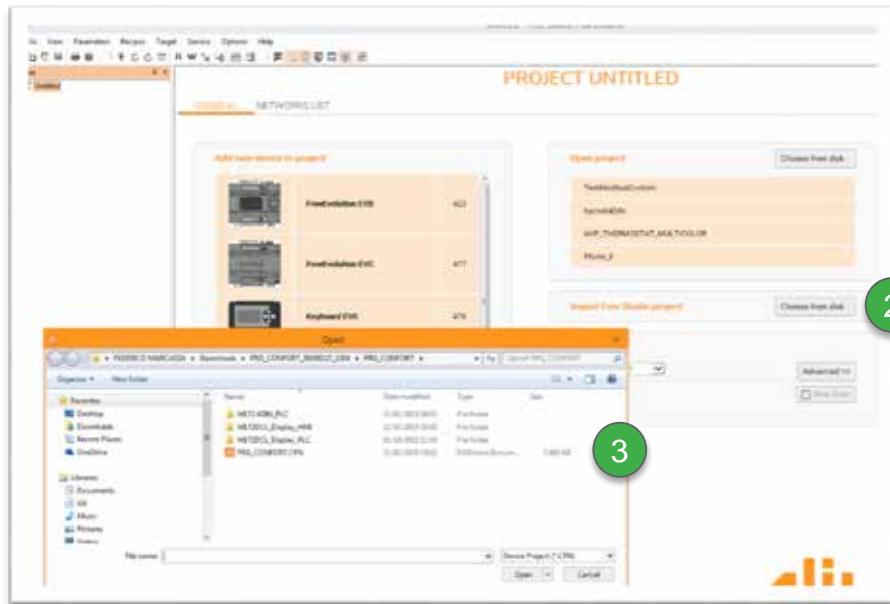
Source (from Free Studio)

Tool to convert

.cfn

Free Studio Plus - Installer

1. Before importing, it is strongly recommended to **make a BACKUP** of the project
2. Open “FREE Studio Plus - Installer“
3. Select the previous .CFN from “Import FREE Studio Project“



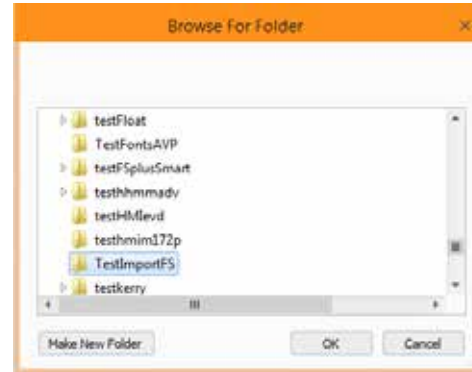
Name	Date modified	Type	Size
Free Studio Plus Installer	17/12/2018 08:51	Shortcut	2 KB
Free Studio Plus	17/12/2018 08:51	Shortcut	2 KB

Importing a full project (continue)

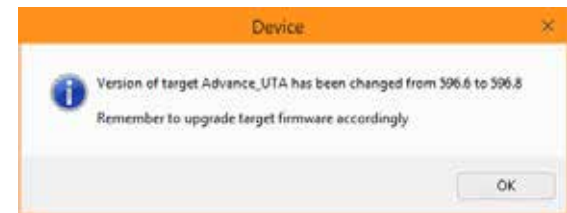
Converted project destination and BIOS target

- Select the folder for converted project output
- Conversion output

```
Output
Import procedure started
Parsing PLC project for target Mi72P_1
Parsing slave resources and configuration
Parsing HMI project for target Mi72P_1
Updating Device information for target Mi72P_1
Target upgrade to a compatible version
Version of target Mi72P_1 has been changed from 596.5 to 596.7
Remember to upgrade target firmware accordingly
```



- Upgrade BIOS reminder, for Auto target changing!



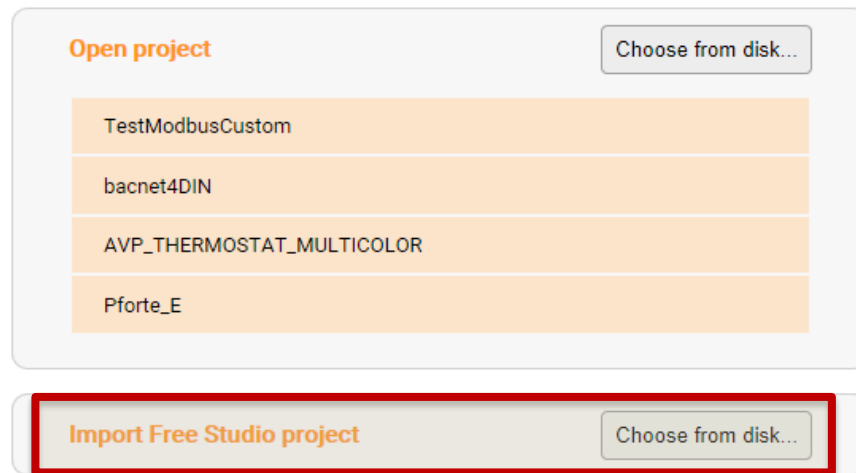
- Project Conversion completed



Importing just PLC (.plcprj) or HMI (.pajx)

Source (from FREE Studio)	Tool to convert
.plcprj (only Application)	FREE Studio Plus
.pajx (only HMI)	

1. Open “FREE Studio Plus“
2. Click “Import FREE Studio Project“ and select a *.plcprj or *.pajx file.
3. Pick the folder for converted project output

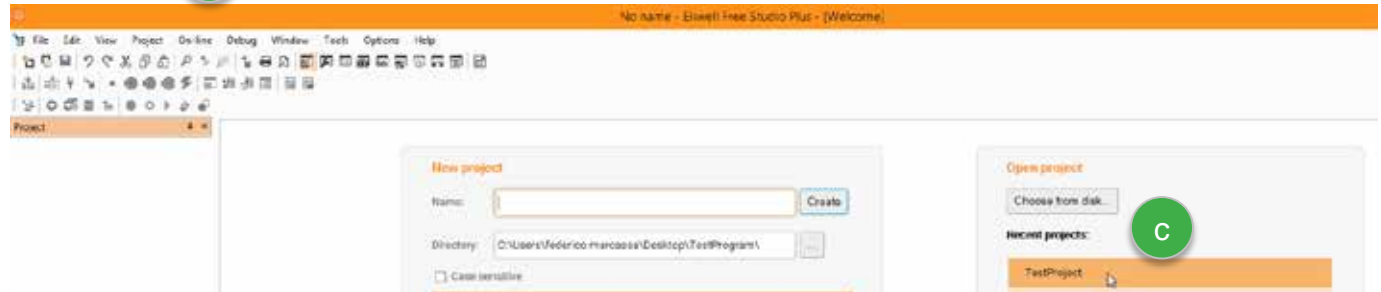
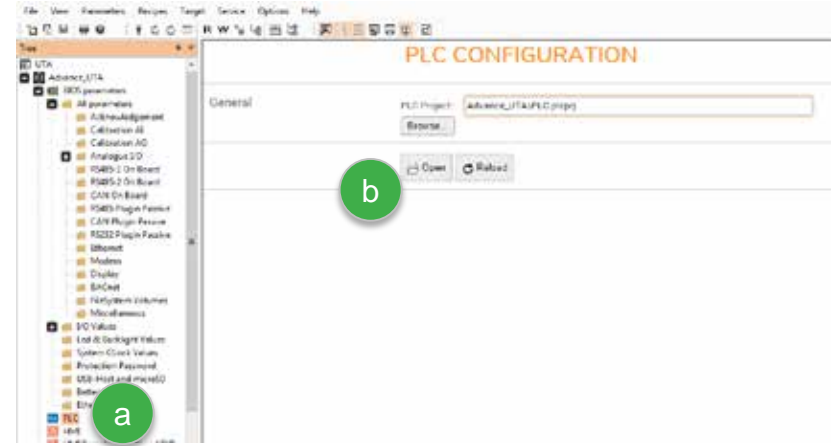


- Do not open the old project directly with the new software.

HowTo Open the converted Project

Several ways to open the converted project

- Two alternatives by using “FREE Studio Plus – Installer”:
 - § Right click on the entry with the blue PLC icon in the Project tree **a**
 - § If the PLC icon is selected, you can use the Open button **b**
- Using “FREE Studio Plus” **c**



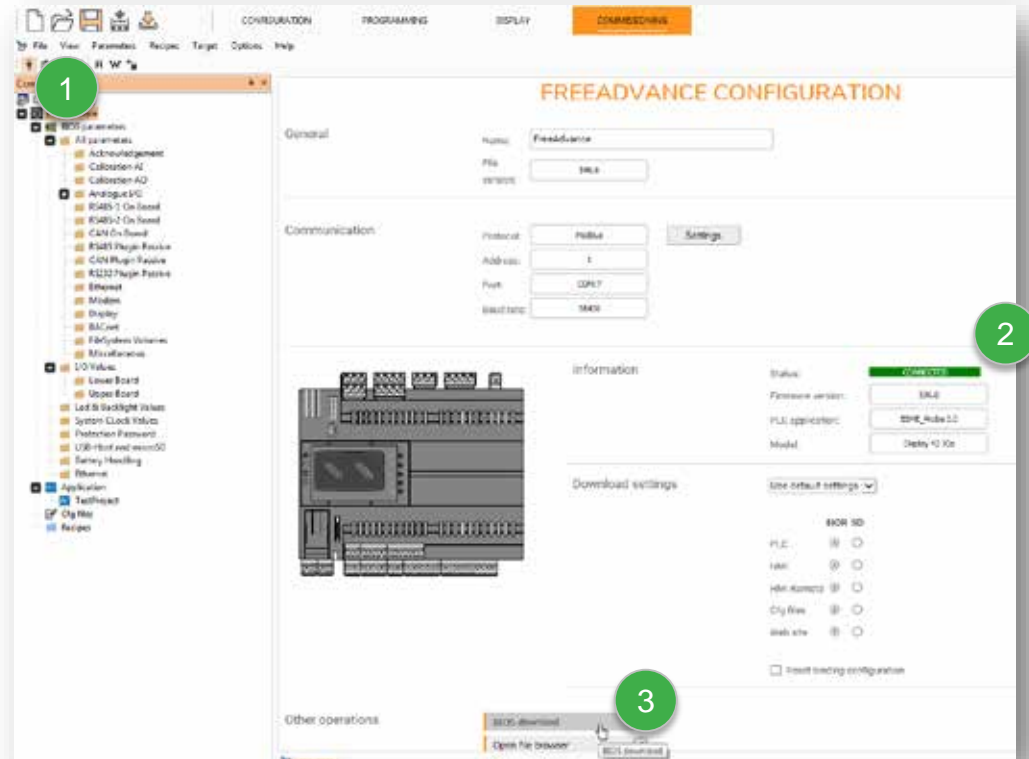
Upgrade your controllers to the latest BIOS release

BIOS upgrade procedure

FREE Studio Plus requires a BIOS upgrade of Evolution and Advance devices.

From the COMMISSIONING tab:

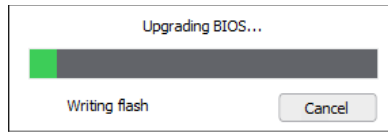
1. Connect to the controller
2. Check the connection
3. Toggle «BIOS download»



Upgrade your controllers to the latest BIOS release (continue)

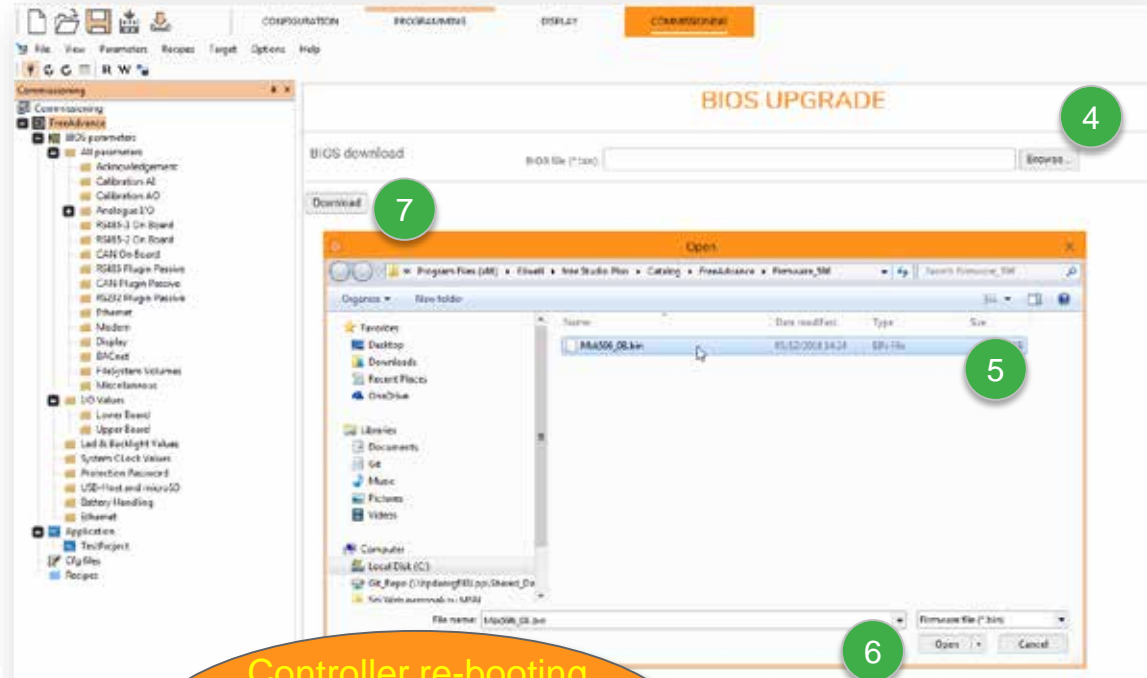
BIOS upgrade procedure

4. Click on the «Browse» button
5. Select the latest BIOS
6. Click on «Open»
7. Click on «Download»
8. BIOS upgrade in progress



9. Final output

Firmware upgrade has been completed successfully



Controller re-booting with error:
system fault
WDT:0

Improved Software Features

- New Appearance
- “User Interface” Improvements
- “Device” Improvements
- Operating Guide Improvements
- Quick Help / Tooltips
- Other Enhancements:
 - § Build Web Site Button
 - § Targets Order
 - § ModBUS Master Setup
 - § CANopen Master Setup
 - § Binding Setup
 - § Remote Displays Setup

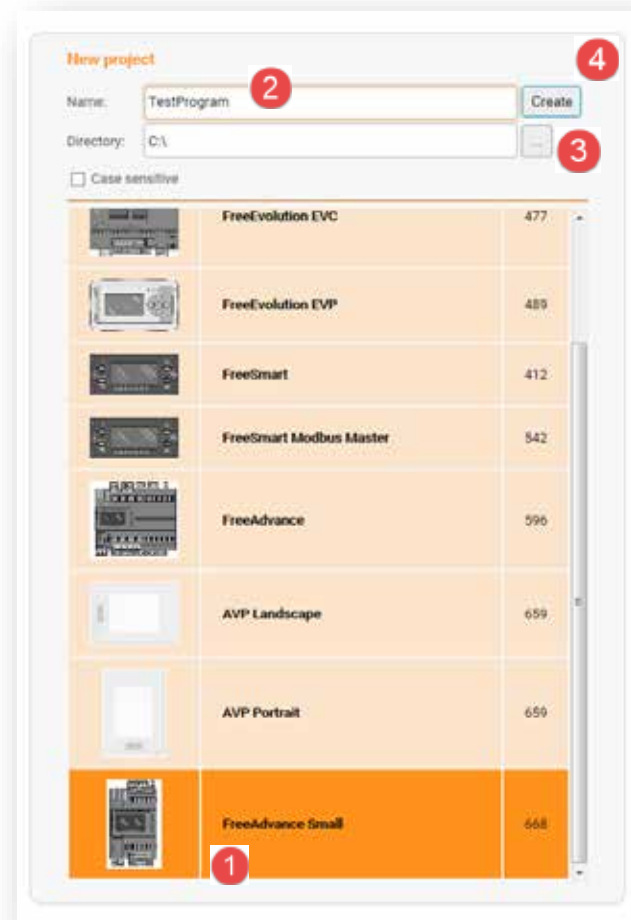


New project creation

Create button

To create a new project from “FREE Studio Plus”, there are two ways:

- Select controller **1**, insert the project name and select the folder **2** **3** and then click on the «Create» button **4**
- Insert the project name and folder **2** **3** and select the controller **1**. The project is automatically created without using the «Create» button.



FREE Studio Plus: Appearance

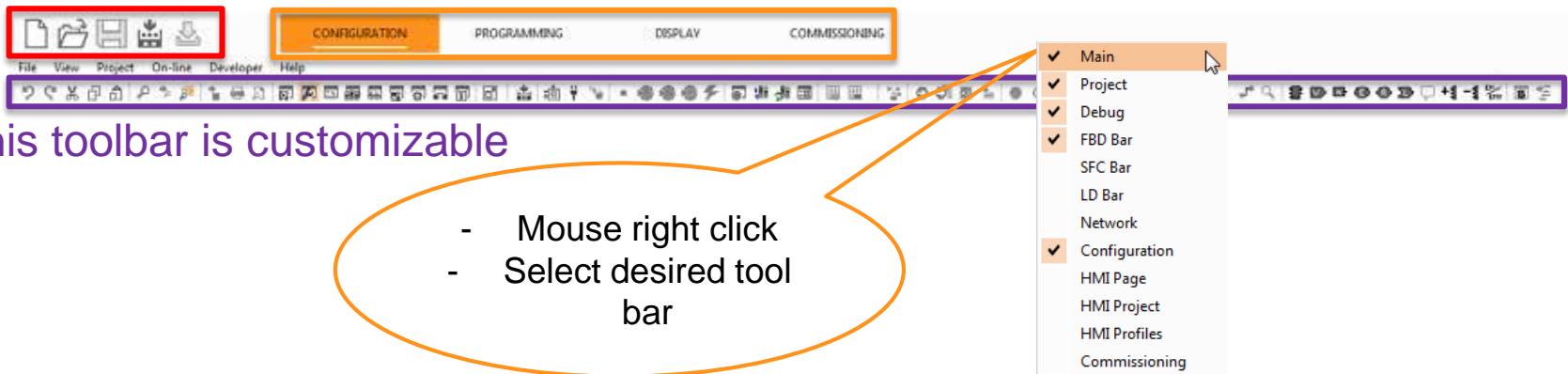
Fixed toolbar and customizable toolbar

This toolbar is fixed

TabSheet for Application, HMI, Parameters and Configuration

This toolbar is customizable

- Mouse right click
- Select desired tool bar



Each tabsheet will have a different toolbar composition

HMI improvement

New default template

- An empty page called «page1» is created as default in a new HMI project.
- There are by default actions assigned to the physical button keys of the display.
- EEPROM and Status Variables are automatically linked (.parx file) and refreshed after a *Build All* command or after a compilation in the programming side

The screenshot displays the HMI development software interface. The main workspace shows a new project with a default page named «page1» highlighted in a red box. The HMI Properties panel on the right shows the default settings for the page, including the name «page1», background color, and appearance. The HMI Actions panel, also highlighted in a red box, shows a table of local actions assigned to physical button keys:

Key	Action	Link
Enter	Exit	
Up	PrevField	
Down	NextField	

The Parameters management dialog box is open, showing a table of parameters:

ID	Name	DB address mode	Device protocol	Network address
0	LocalParameters	Modbus		

The Output window shows the compilation process, including the following messages:

```
Preprocessing: TGT completed
Preprocessing: MAIN completed
Preprocessing: Global objects completed
```

The status bar at the bottom indicates the device is in EDIT MODE and NOT CONNECTED.

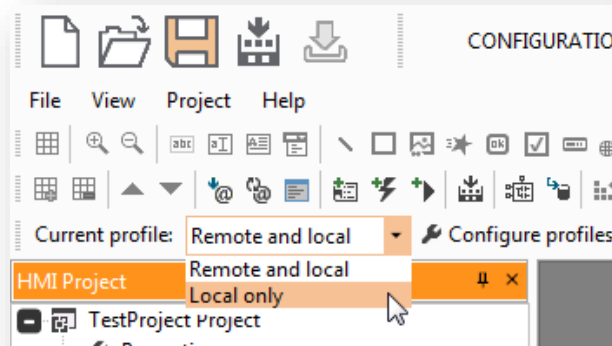
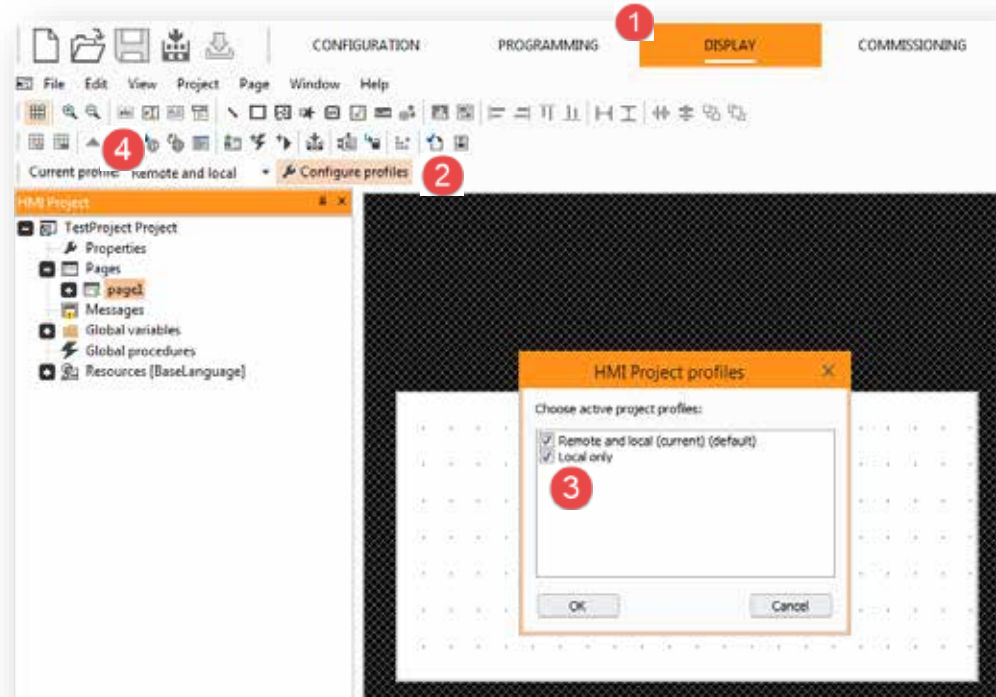
Local and Remote HMI

How to differentiate Local and Remote HMI

Default: HMI pages are for both local and remote displays

To differentiate local HMI from Remote:

- Configure profiles
- Select Local profile as current



Commissioning Improvements

Ethernet folder contains new Target variables for IP servicing

Always detect the current IP, current gateway and current DNS, also with active DHCP.

The screenshot shows the 'COMMISSIONING' tab in a software application. The left sidebar displays a tree view of parameters, with 'Ethernet' selected under 'I/O Values'. The main window displays a table titled 'ETHERNET' with columns: Address, Name, Value, Unit, Default, Min, Max, and Description. The table lists 20 parameters related to Ethernet configuration, including IP addresses, default gateways, net masks, and DNS servers.

Address	Name	Value	Unit	Default	Min	Max	Description
8764	ip_1_CURRENT	10	num	10	0	255	Ethernet IP address (1 st part)
8765	ip_2_CURRENT	0	num	0	0	255	Ethernet IP address (2 nd part)
8766	ip_3_CURRENT	0	num	0	0	255	Ethernet IP address (3 rd part)
8767	ip_4_CURRENT	100	num	100	0	255	Ethernet IP address (4 th part)
8905	DefGtwy_1_CURRENT	10	num	10	0	255	Default Gateway (1 st part)
8906	DefGtwy_2_CURRENT	0	num	0	0	255	Default Gateway (2 nd part)
8907	DefGtwy_3_CURRENT	0	num	0	0	255	Default Gateway (3 rd part)
8908	DefGtwy_4_CURRENT	1	num	1	0	255	Default Gateway (4 th part)
8909	NetMask_1_CURRENT	255	num	255	0	255	Net mask (1 st part)
8910	NetMask_2_CURRENT	255	num	255	0	255	Net mask (2 nd part)
8911	NetMask_3_CURRENT	255	num	255	0	255	Net mask (3 rd part)
8912	NetMask_4_CURRENT	0	num	0	0	255	Net mask (4 th part)
8913	PrDns_1_CURRENT	8	num	8	0	255	Primary DNS server (1 st part)
8914	PrDns_2_CURRENT	8	num	8	0	255	Primary DNS server (2 nd part)
8915	PrDns_3_CURRENT	8	num	8	0	255	Primary DNS server (3 rd part)
8916	PrDns_4_CURRENT	8	num	8	0	255	Primary DNS server (4 th part)
8917	SeDns_1_CURRENT	8	num	8	0	255	Secondary DNS server (1 st part)
8918	SeDns_2_CURRENT	8	num	8	0	255	Secondary DNS server (2 nd part)
8919	SeDns_3_CURRENT	4	num	4	0	255	Secondary DNS server (3 rd part)
8920	SeDns_4_CURRENT	4	num	4	0	255	Secondary DNS server (4 th part)

Commissioning Improvements

New print settings for the Commissioning tables

Print settings

Settings

- Print read-only parameters
- Print description
- Only print visible columns

Address range

From:

To:

Print menu

Current menu All menus

Print preview

All parameters

Address	Name	Value	Default	Min	Max	Um	Description
15713	Par_TAB	0	0	0	65535	num	Tab (map code)
15717	Par_PCU	1025	1025	0	65535	num	Polytrac table code
15719	Par_PUBMOD	True	True	0	1	flag	Parameter modified
15725	Temp_UM	0°C	0°C	0	1	num	Unit of temperature measurement
15726	Cfg_A1	2-NTC(183AT)	2-NTC(183AT)	0	11	num	Type of analogue input A1
15727	Cfg_A2	2-NTC(183AT)	2-NTC(183AT)	0	11	num	Type of analogue input A2
15728	Cfg_A3	2-NTC(183AT)	2-NTC(183AT)	0	11	num	Type of analogue input A3
15729	Cfg_A4	2-NTC(183AT)	2-NTC(183AT)	0	11	num	Type of analogue input A4
15730	Cfg_A5	2-NTC(183AT)	2-NTC(183AT)	0	11	num	Type of analogue input A5
15731	Cfg_A6	2-NTC(183AT)	2-NTC(183AT)	0	11	num	Type of analogue input A6
15740	Calibration_A1	0	0	-1000	1000	digit	Analogue input A1 differential
15749	Calibration_A2	0	0	-1000	1000	digit	Analogue input A2 differential
15750	Calibration_A3	0	0	-1000	1000	digit	Analogue input A3 differential
15751	Calibration_A4	0	0	-1000	1000	digit	Analogue input A4 differential
15752	Calibration_A5	0	0	-1000	1000	digit	Analogue input A5 differential
15753	Calibration_A6	0	0	-1000	1000	digit	Analogue input A6 differential
15774	Acc_RS485_00	1	1	0	255	num	RS485-2 On Board address
15775	Proto_RS485_2	3-MedbusRTU	3-MedbusRTU	2	4	num	Selected RS485-2 On Board protocol
15776	StatStt_RS485_0H	8	8	8	8	num	RS485-2 On Board status bit number
15777	StatStt_RS485_0B	1	1	1	2	num	RS485-2 On Board stop bit number
15779	Parb_RS485_0B	2-Even	2-Even	0	2	num	RS485-2 On Board parity protocol
15779	Proto_RS485_0B	2-38400	2-38400	0	5	num	RS485-2 On Board baud rate protocol
15780	Acc_CAN_00	1	1	1	127	num	CAN On Board address
15781	Basic_CAN_00	2-500 Kbit	2-500 Kbit	2	6	num	CAN On Board baud rate protocol
15782	Acc_RS485_P1	1	1	0	255	num	RS485 passive Plug-In address
15783	Proto_RS485_P1	3-MedbusRTU	3-MedbusRTU	2	4	num	Selected RS485 passive Plug-In protocol
15784	DataStt_RS485_P1	8	8	8	8	num	RS485 passive Plug-In Data bit number
15785	StatStt_RS485_P1	1	1	1	2	num	RS485 passive Plug-In stop bit number
15785	Parb_RS485_P1	2-Even	2-Even	0	2	num	RS485 passive Plug-In parity protocol
15787	Proto_RS485_P1	2-38400	2-38400	0	6	num	RS485 passive Plug-In baud rate protocol
15789	Acc_CAN_P1	1	1	1	127	num	CAN passive Plug-In address
15789	Basic_CAN_P1	2-500 Kbit	2-500 Kbit	2	6	num	CAN Passive Plug-In baud rate protocol
15790	Acc_RS232_P1	1	1	0	255	num	RS232 passive Plug-In address
15791	Proto_RS232_P1	3-MedbusRTU	3-MedbusRTU	2	3	num	Selected RS232 passive Plug-In protocol
15792	DataStt_RS232_P1	8	8	7	8	num	RS232 passive Plug-In Data bit number
15793	StatStt_RS232_P1	1	1	1	2	num	RS232 passive Plug-In stop bit number
15794	Parb_RS232_P1	2-Even	2-Even	0	2	num	RS232 passive Plug-In parity protocol
15795	Proto_RS232_P1	2-38400	2-38400	0	5	num	RS232 passive Plug-In baud rate protocol
15777	Port_FTP_P1	0	0	0	65535	num	FTP Port number, 0 is equal to default port 21. 65535 disable from remote FTP usage
15796	Port_HTTP_P1	0	0	0	65535	num	HTTP Port number, 0 is equal to default port 80. 65535 disable from remote HTTP service
15797	Port_ETH_P1	502	502	0	65535	num	TCP/IP Port number, 65535 disable from remote TCP/IP Modbus Slave
15798	Is_1_ETH_P1	10	10	0	255	num	Remote IP address (1st part)
15799	Is_2_ETH_P1	0	0	0	255	num	Remote IP address (2nd part)

Improvements of documentation and quick help

Function properties, documentation, tooltips and editor

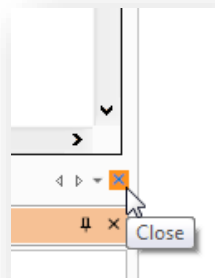
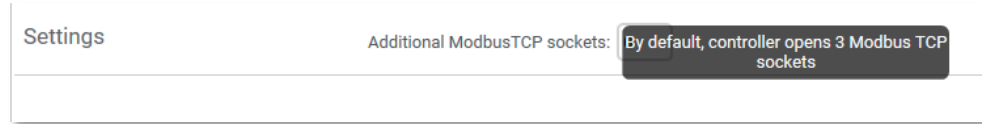
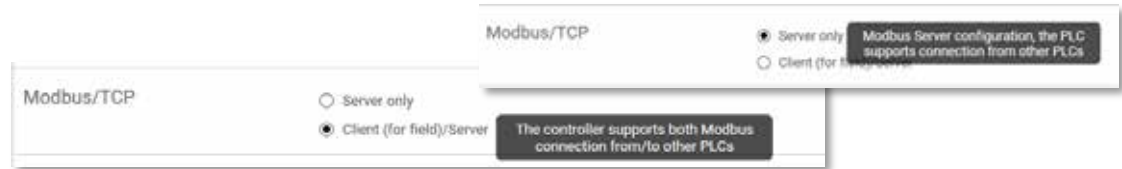
An improvement for the following functions:

- sysUART.... family functions

- Modbus TCP client/server tooltips

- Modbus TCP sockets tooltips

- Close button on document tab switcher

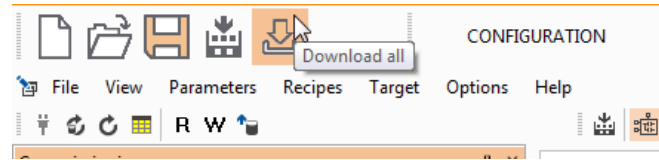


Improvements of documentation and quick help

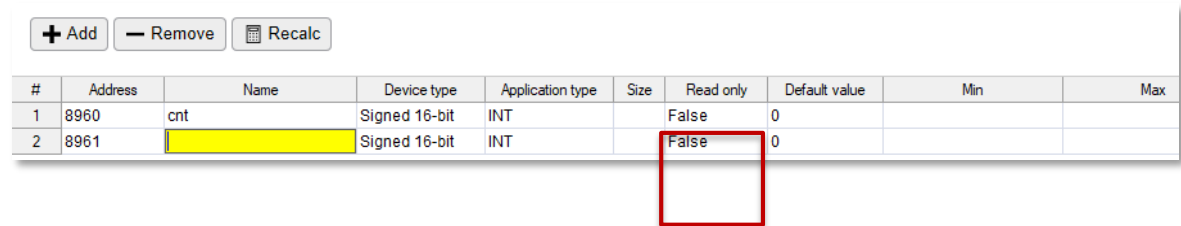
Simulator, Status variables

An improvement for following functions:

- In simulation mode, the “Download ALL” button is now available

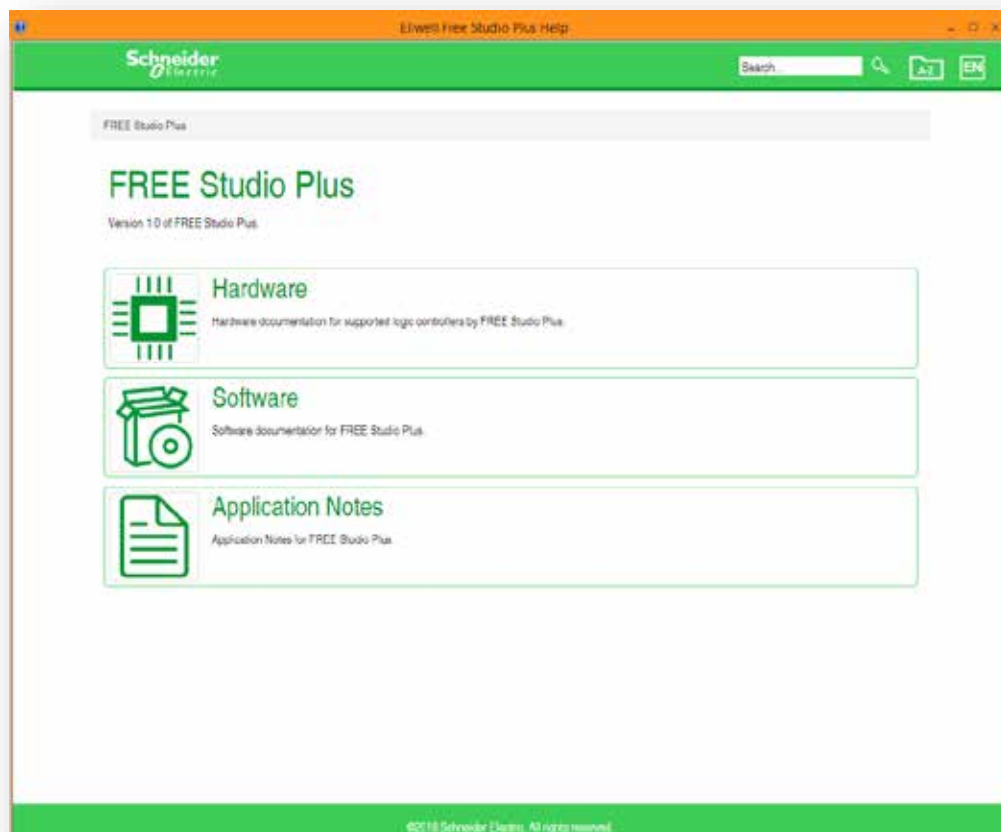


- For *Status Variables*, the “Read Only” column has been moved before the “Default Value” one and its default value is now FALSE



#	Address	Name	Device type	Application type	Size	Read only	Default value	Min	Max
1	8960	cnt	Signed 16-bit	INT		False	0		
2	8961		Signed 16-bit	INT		False	0		

New HTML Documentation



New HTML Documentation

Search tool – Global

The screenshot shows a search results page for 'Compressor' in the EcoStruxureTM Machine Expert HVAC V1.0 documentation. The page is divided into a left sidebar and a main content area.

Search Results: 37 result(s) found for "Compressor".

Function Block Description: CompMgmtV5 Function Block Description The CompMgmtV5 function block controls up to four compressor types. Operating hours are balanced using various methods. The CompMgmtV5 breakdown management function automatically commands a ne ...

Output Pin Description: Output Pin Description Output Pin Description Output Data Type Range Scaling/Unit Description unitState USINT 0..99 N/A Current state: 1: Idle 20: Run 21: Holding last compressor on (pump) ...

Pin Description: Pin Description Pin Description Pin Diagram The following picture presents the pin diagram of CompCtrl_Slider: Input Pin Description Input Data Type Range Scaling / Unit Description xEn BOOL ...

Pin Description: Pin Description Pin Description Pin Diagram The following picture presents the pin diagram of CompCtrl_V5: Input Pin Description Input Data Type Range Scaling / Unit Description xEn BOOL ...

Input Pin Description: Input Pin Description Pin Diagram The following picture presents the pin diagram of CompMgmtV5: Input Pin

Functional Overview:

Functional Description: The CompMgmt (Compressor Management) function block calculates the number of compressors required to control the water temperature or the refrigerant pressure. In a refrigeration machine, compressors need to be managed in a way to help prolong their proper operation and balance machine lifetime. The CompMgmt function block controls up to eight compressors and aims to manage the optimum functionality of compressors. For this purpose, CompMgmt provides features for compressor status management and to optimize operation. The CompMgmt must be used together with the function block CompCtrl_OnOff which controls the operation of a single compressor.

Why Use the CompMgmt Function Block?

The CompMgmt function block is used for the following purposes:

Purpose	Description
Water temperature control or refrigerant pressure control	<ul style="list-style-type: none">maintain a constant water temperature or a constant refrigerant pressurecalculates the required number of compressorscan be used in cooling mode or heating mode
Runtime optimization	<ul style="list-style-type: none">increase the control accuracybalance operating hoursavoid frequent On/Off switching of compressors
Status management	<ul style="list-style-type: none">switch off a compressor in case of a detected error and switch on another

Features of the CompMgmt Function Block:

The CompMgmt function block provides the following features:

- supports 1 to 8 compressors
- switches on and off the number of compressors required to control the water temperature, or the refrigerant low pressure.
- balances compressor operation time by using one of the 3 methods.

New Online Help

Improved FB Libraries Descriptions

Menu Bar

Overview

The Menu bar is composed by several menus:

- o [File](#)
- o [View](#)
- o [Project](#)
- o [On-line](#)
- o [Developer](#)
- o [Help](#)

File Menu

This menu gives access to features allowing you to manage your project:

Command	Icon	Key	Description
New project		-	Creates a new project.
Open project		Ctrl+O	Opens an existing project.
Save project		Ctrl+S	Saves the current open project.
Save project as...	-	-	Saves the current open project specifying new name, location and extension.
Close project	-	-	Closes the open project.
Options...	-	-	Opens the Program options dialog box.
Print...		Ctrl+P	Prints the document of the currently active window.
Print preview		-	Creates a preview of the document of the currently active window, ready to be printed.
Printer setup...	-	-	Opens the Printer setup dialog box.
..recent..	-	-	Lists a set of project file recently opened.
Exit	-	-	Closes EcoStruxure Machine Expert - HVAC.

Function block: SR (ver.1.0.0, IL)

Creation date: ...

Last modified date: ...

Bistable, set dominant

Input:

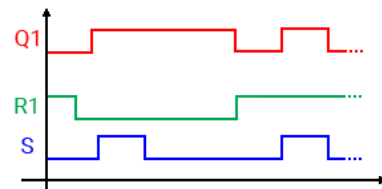
Name	Type	Description
s1	BOOL	Logic input
r	BOOL	Reset input

Output:

Name	Type	Description
q1	BOOL	Bistable output

Description:

Bistable, set dominant



Function block: TOF (ver.1.0.0, IL)



Creation date: ...

Last modified date: ...

Off-delay timer

Input:

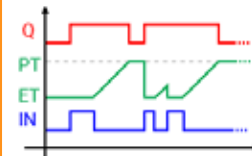
Name	Type	Description
IN	BOOL	Timer input source
PT	UDINT	Preset time value (ms)

Output:

Name	Type	Description
Q	BOOL	Timer output
ET	UDINT	Timer current value (ms)

Description:

The TOF block produces a delayed de-activation of the output Q with respect of the input IN. The delay time is expressed in milliseconds on the PT input.

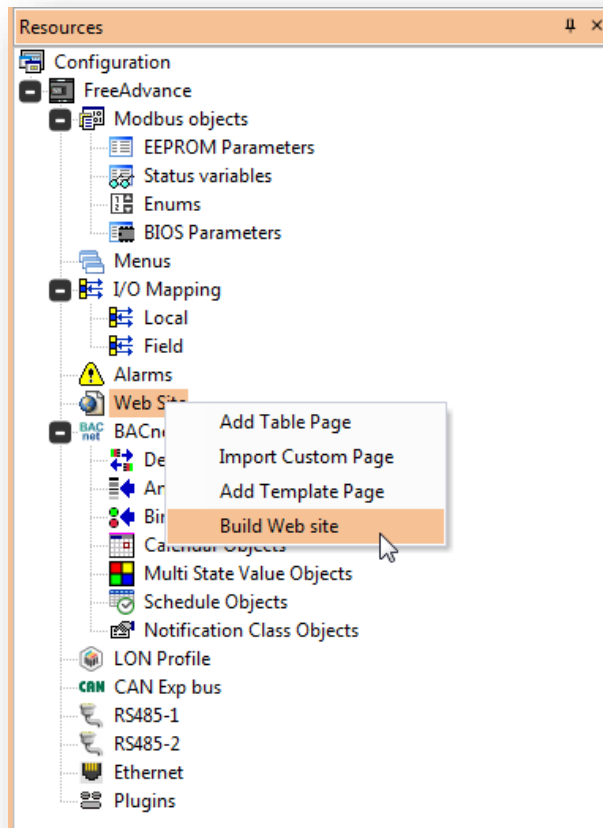


- if IN is TRUE then Q is TRUE
- Q becomes FALSE after PT milliseconds from IN becomes FALSE
- Q remains FALSE until IN remains FALSE

Build Web site

New position of command

To Build Web Site the command is in Configuration tabsheet, inside the tooltip menu clicking the right mouse button on WebSite folder of the resources tree.

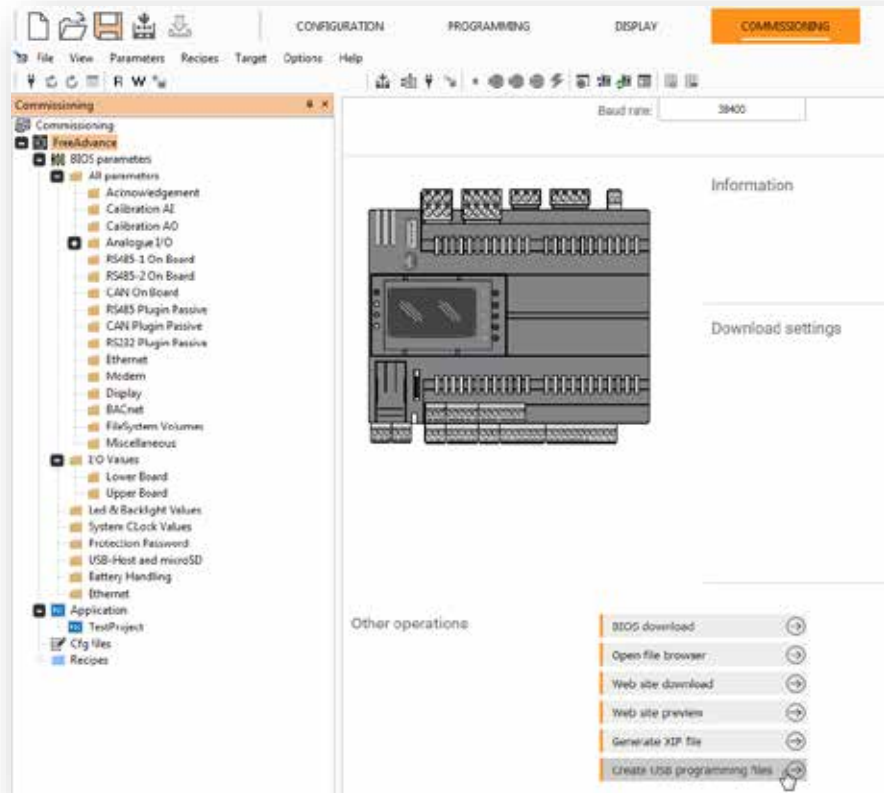
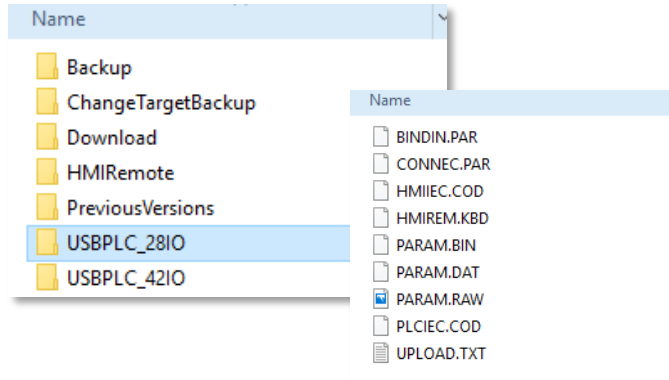


USB key creation

Tool to create an USB key for Advance

To Build USB key with program and parameters :

- 1) Build ALL
- 2) Launch “Create USB programming files” command
- 3) Copy the right folder into a USB key

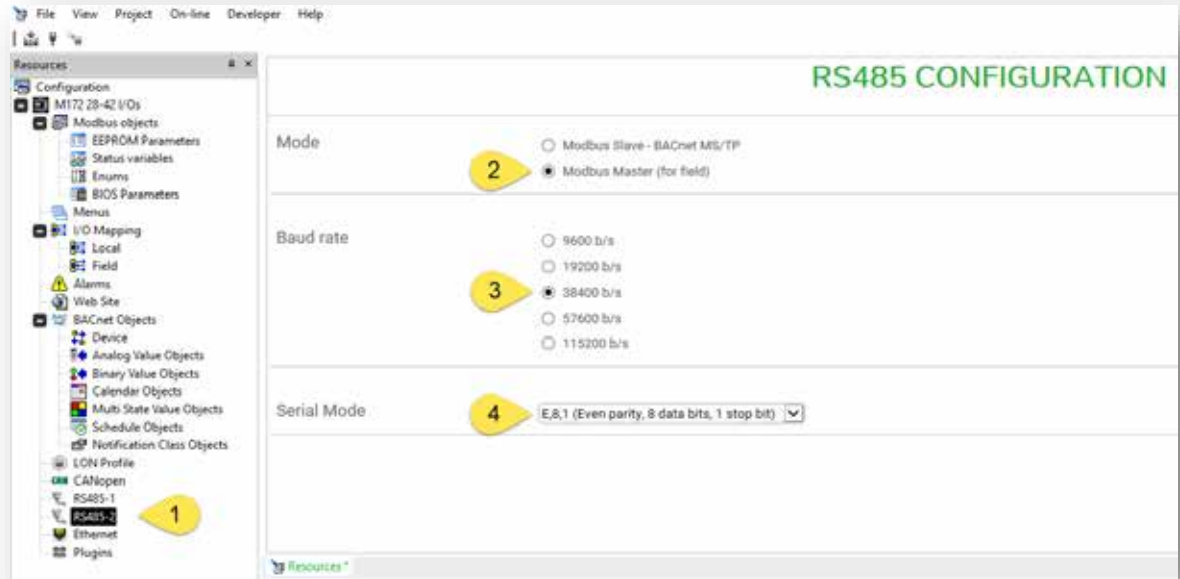


HowTo Set a ModBUS Master

Communication setting of RS485-2 like Modbus master

In Configuration part

- 1) Select RS-485-2 port
- 2) Modbus Master as Mode
- 3) Baud rate
- 4) Serial mode



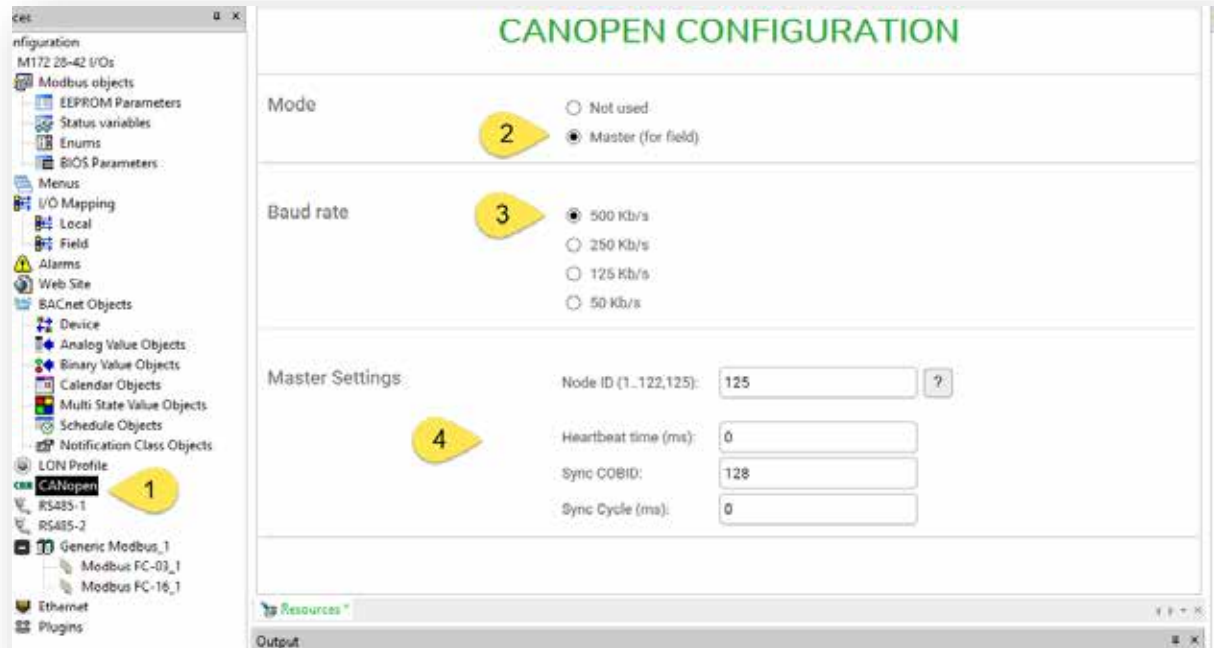
To add Node and commands the procedure doesn't change

HowTo Set a CANopen Master

Communication setting of CANopen

In Configuration part

- 1) Select CANopen port
- 2) Mode like Master
- 3) Baud rate
- 4) Master Settings



To add Expansion the procedure doesn't change

HowTo Set a ModBUS Master TCP

Communication setting of Modbus TCP

In Configuration part

- 1) Select Ethernet port
- 2) Master as Mode
- 3) Additional sockets (maximum 3)



To add Nodes and commands the procedure doesn't change

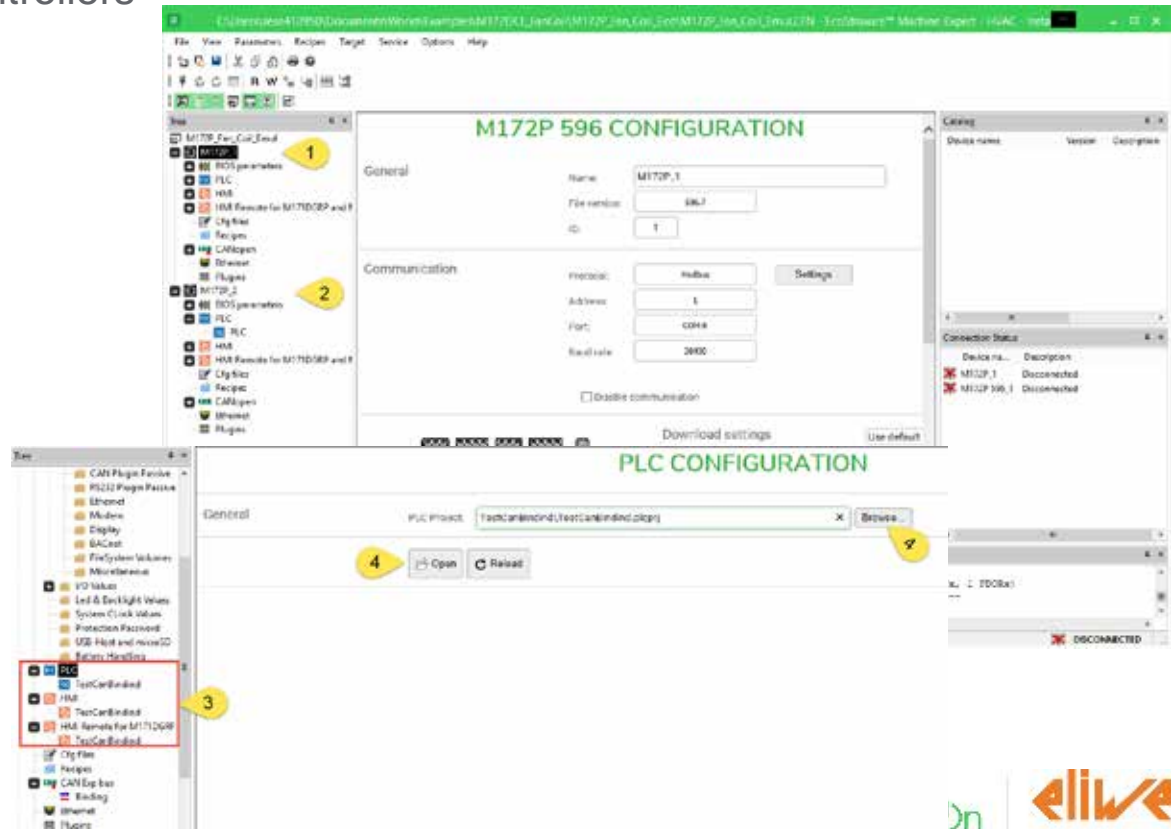
Communication in binding in CAN ADV_1 and Adv_2

Create a CFN file with both controllers

In Installer:

- Create a CFN with all controllers for binding communication
- Link for each controller the right PLC or HMI or HMI REMOTE
- Compile ALL

Note. In the example our CFN file has inside controller 1 and 2

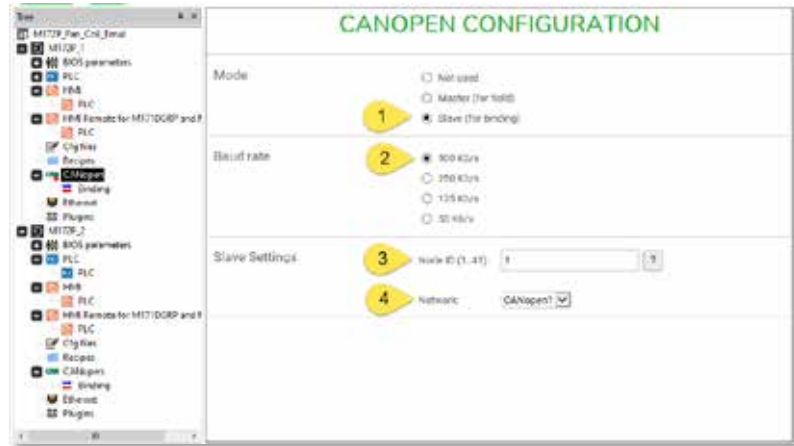


Communication in binding in CAN ADV_1 and Adv_2

Definition data communication for binding

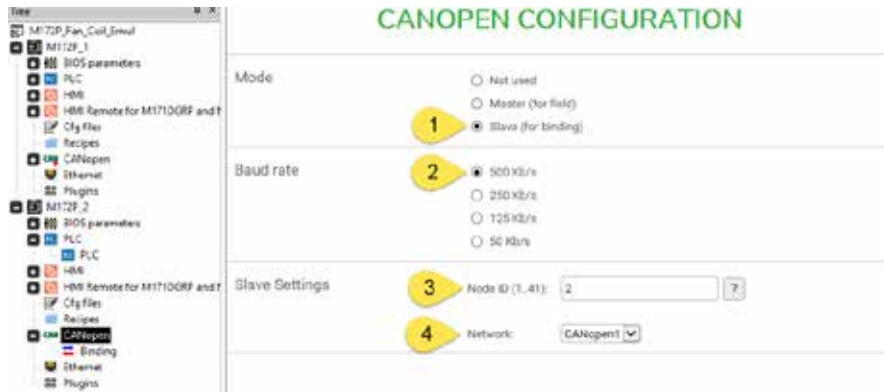
For ADV_1

- 1) Select CANopen port
- 2) Slave (for binding) Mode
- 3) Node ID in Slave settings -> 1
- 4) Network CANOpen1



For ADV_2

- 1) Select CANopen port
- 2) Slave (for binding) Mode
- 3) Node ID in Slave settings -> 2
- 4) Network CANOpen1

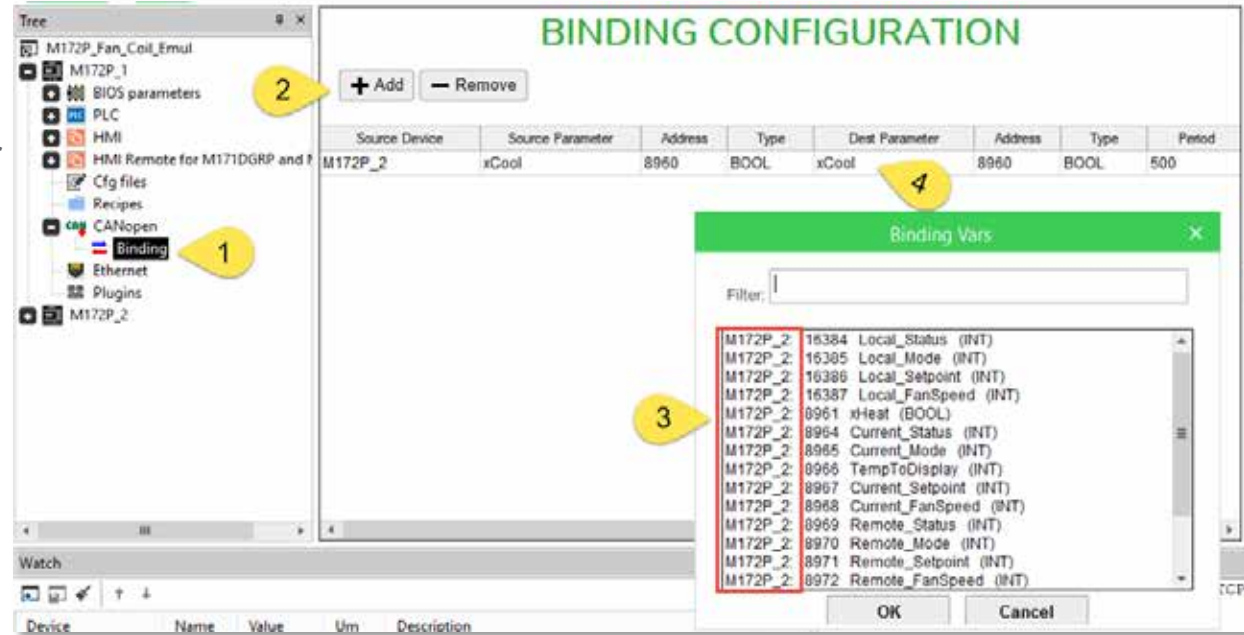


Communication in binding in CAN ADV_1 and Adv_2

Link registers in binding

For ADV_1

- 1) Add a Binding configuration from Catalog with right click or a drag&drop
- 2) Add one register
- 3) Select a register from controller 2
- 4) Select Destination register of controller 1
- 5) Compile project
- 6) Connect and Download All



Communication in binding in CAN ADV_1 and Adv_2

Link registers in binding

For ADV_2

- 1) Add a Binding configuration from Catalog with right click or a drag&drop
- 2) Add one register
- 3) Select a register from controller 1
- 4) Select Destination register of controller 2
- 5) Compile project
- 6) Connect and Download All
- 7) *For a bug it is possible that HMI not change after a download all command, repeat download from Display section*

BINDING CONFIGURATION

+ Add - Remove

Source Device	Source Parameter	Address	Type	Dest Parameter	Address	Type	Period
M172P_1	xHeat	8961	BOOL	xHeat	8961	BOOL	500

Binding Vars

Filter: |

M172P_1	16384	Local_Status (INT)
M172P_1	16385	Local_Mode (INT)
M172P_1	16386	Local_Setpoint (INT)
M172P_1	16387	Local_FanSpeed (INT)
M172P_1	8960	xCool (BOOL)
M172P_1	8964	Current_Status (INT)
M172P_1	8965	Current_Mode (INT)
M172P_1	8966	TempToDisplay (INT)
M172P_1	8967	Current_Setpoint (INT)
M172P_1	8968	Current_FanSpeed (INT)
M172P_1	8969	Remote_Status (INT)
M172P_1	8970	Remote_Mode (INT)
M172P_1	8971	Remote_Setpoint (INT)
M172P_1	8972	Remote_FanSpeed (INT)

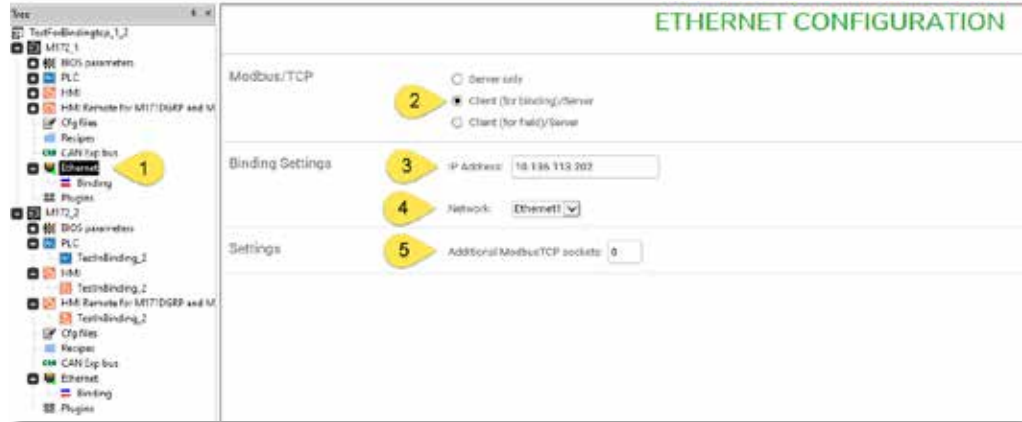
OK Cancel

Communication in binding in TCP ADV_1 and Adv_2

Definition data communication for binding TCP

For ADV_1

- 1) Select Ethernet port
- 2) Client (for binding) Mode
- 3) IP Address (**same** of controller)
- 4) Network Ethernet1
- 5) Set additional Socket



For ADV_2

- 1) Select Ethernet port
- 2) Client (for binding) Mode
- 3) IP Address (**same** of controller)
- 4) Network Ethernet1
- 5) Set additional Socket



Communication in binding in TCP ADV_1 and ADV_2

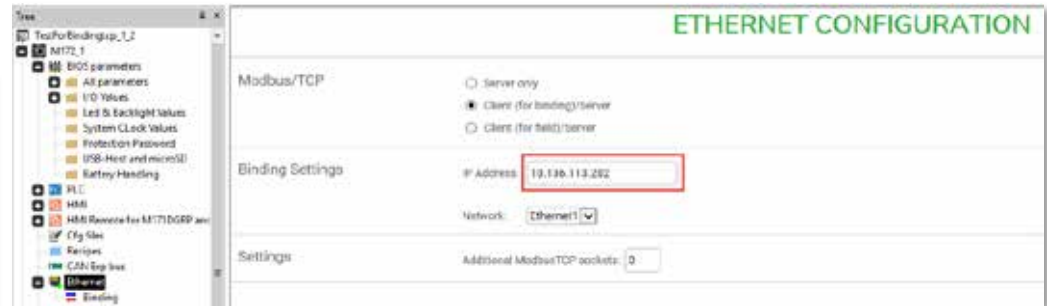
Binding IP writes during download

To link register follow same procedure for CAN binding, not changeFor ADV_1.

But pay attention of IP inserted into Binding settings to be the same of parameter controller, because IP specified in binding will be written in the controller during a download all process even if you don't download parameters.

```
Output
0 warnings, 0 errors.

--> Downloading to Mi72_1
Writing default values for BIOS parameters ...
4 parameter values to write
Writing parameters succeeded
Downloading file nor:0:/CONNEC.PAR ...
Download progress: 100% (103 / 103 bytes)
File download OK !
Downloading file nor:0:/BINDIN.PAR ...
Download progress: 100% (302 / 302 bytes)
File download OK !
Downloading file nor:0:/HMIREM.XBD ...
Download progress: 100% (7032 / 7032 bytes)
File download OK !
Mi72_1: Reloading PLC ...
Mi72_1: Reloading HMI ...
--> Downloading to Mi72_2
Writing default values for BIOS parameters ...
4 parameter values to write
Writing parameters succeeded
Downloading file nor:0:/CONNEC.PAR ...
Download progress: 100% (103 / 103 bytes)
```

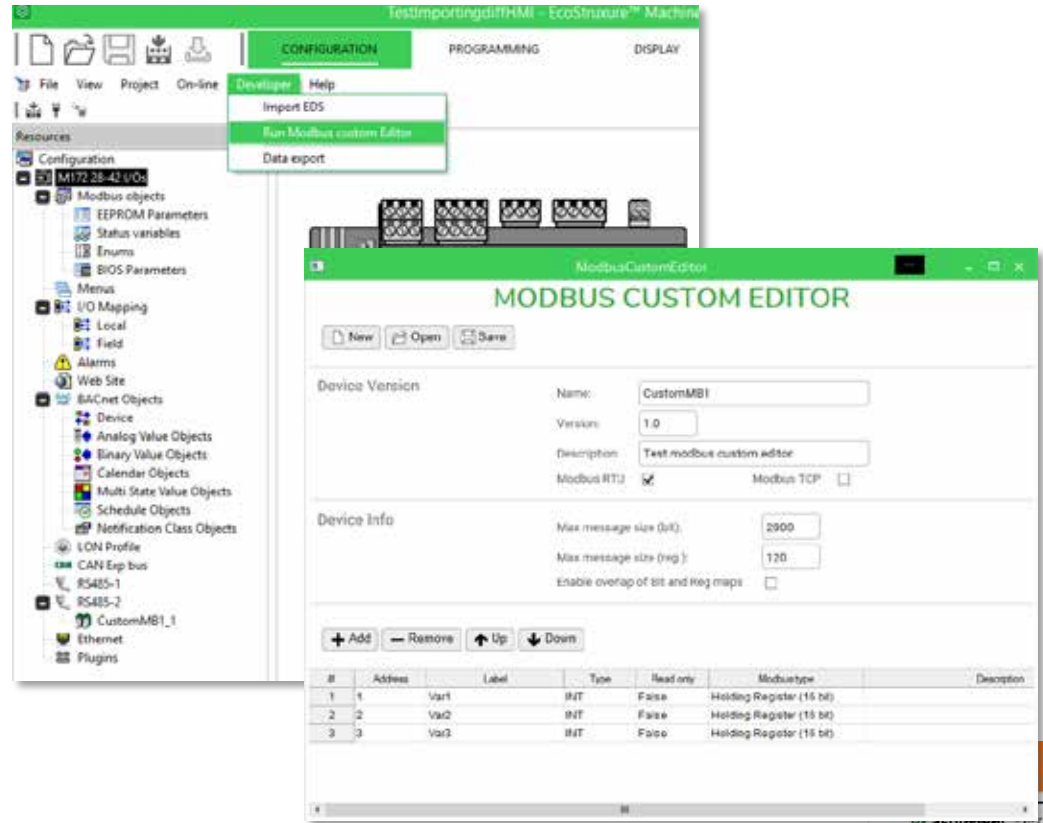


ModBUS Custom Editor

Improvement to manage a custom modbus

To create a Modbus custom

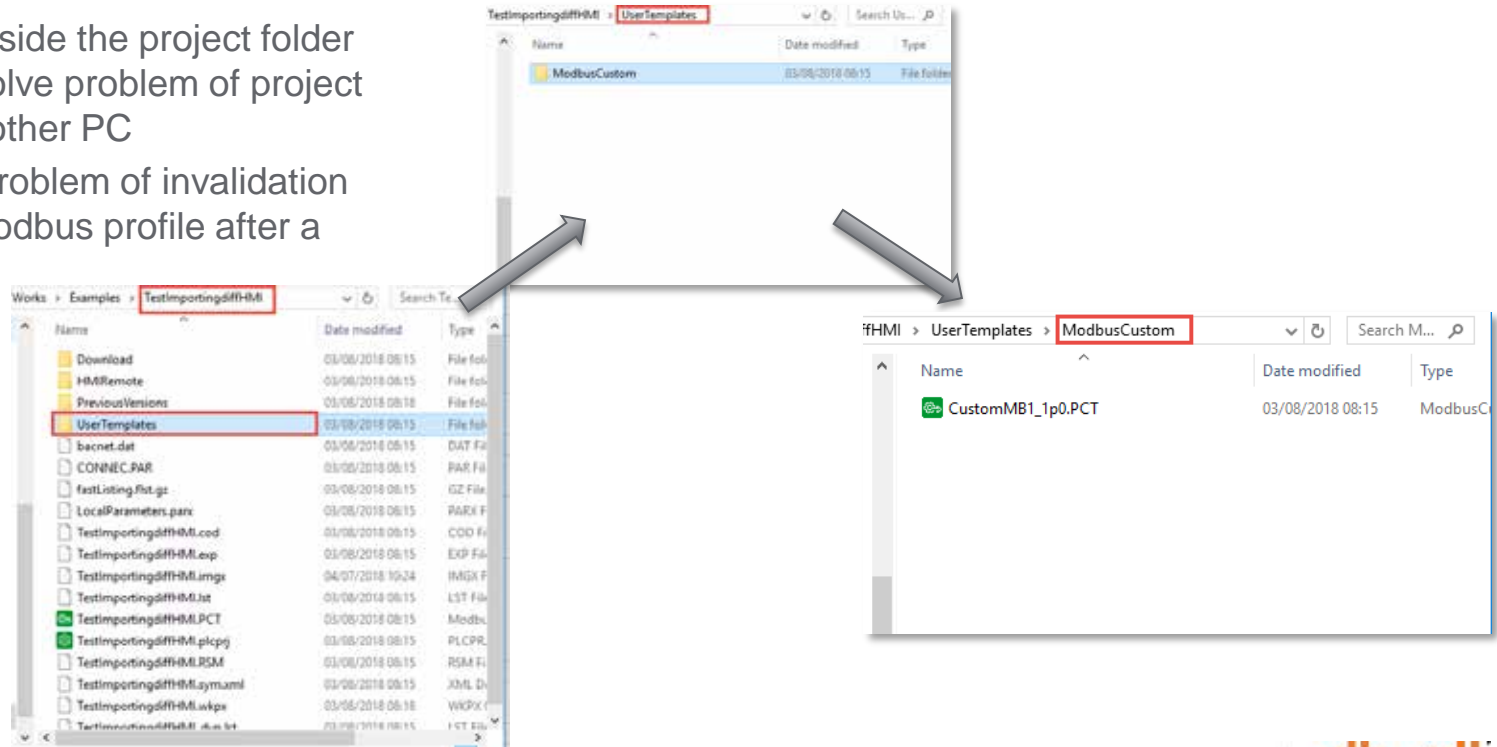
- Command is in **Configuration** under *Developer* menu
- Modbus custom editor form is similar to the last one
- Save button before close the tool
- *.PCT file is inside the project folder in order to solve problem of project move to another PC
- Solved the problem of invalidation of custom Modbus profile after a change



Modbus custom Editor

Improvement to manage a custom Modbus

- PCT file is inside the project folder in order to solve problem of project import to another PC
- Solved the problem of invalidation of custom Modbus profile after a change



New Hardware



New Release : Advance 8400 and 12600 vs Device Isolation

- With the new offer launch, the Advance 8400 and 12600 will have two part numbers per product: one related to the old offer (not isolated, no “I”) and one to the new offer (isolated, “I”).
The distinction between the current offer and new offer is indicated by the “I” at the end of the references.
- All the other devices are isolated in terms of power supply and RS485 (Free Advance Optimized 18, 28 and 42 I/Os, Free Advance Performance 7 and 18 I/Os) and have no “I” at the end of part number.



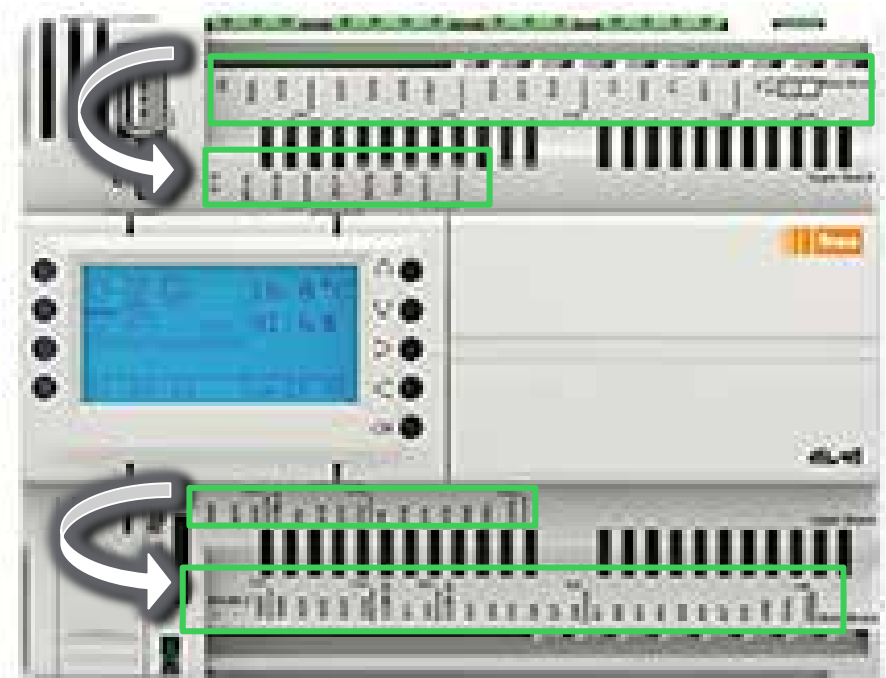
New Printings Positioning on isolated Advance

Printings will change position on the controller plastics

- The printings of the connectors label are currently positioned in a way that is not very intuitive.

The long one (related to the bottom connectors) is just right above the short row of connectors (top connectors) and it might be misleading.

- The printings of the new part numbers will be modified as follows:
 - The labels related to the top connectors will be reported just right above them.
 - The labels related to the bottom connectors will be reported close to the HMI and also, in a shorter form, just right above the bottom connectors.
 - This is in line with the positioning already present in the Advance 7 and 18 I/Os.



A man with glasses on his head, wearing a light purple shirt, is smiling and looking to his left. He is sitting at a desk with a laptop in front of him. In the background, there is a blue filing cabinet and some office supplies. The text "THANK YOU." is overlaid in white on the image.

THANK YOU.