

EcoStruxure Operator Terminal Expert

EcoStruxure™ Operator Terminal Expert

Configuration software for Harmony ranges supporting gestures and intuitive user interface designs



Harmony

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Advanced operator interface and industrial relays

Harmony operator interface and industrial relays enhance operational efficiency and equipment availability across industrial and building applications. Harmony includes intelligent connected products and edge terminals that visualize, gather and process data, enabling informed operator decisions

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- [Harmony HMI Operator Terminals, IPC and EdgeBox](#)
- [Harmony Signaling Devices](#)
- [Harmony Electrical Relays](#)
- [Harmony Safety](#)

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Quick access to product information

Get technical information about your product

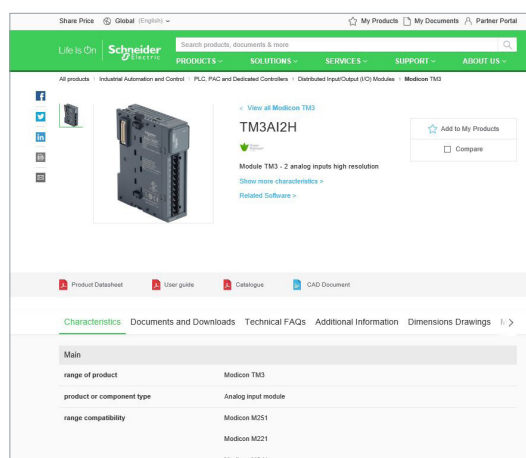
References

Modicon TM3
I/O expansion modules for Modicon controllers
Analog I/O modules

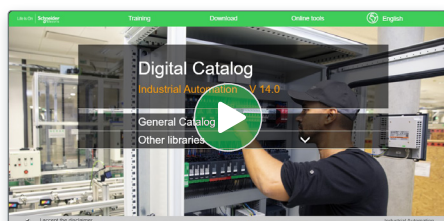
References	Output range	Resolution	Input terminal block (T) (terminal block)	Reference	Weight (kg)
2 voltage/current inputs	-10...+10 VDC 0...+10 VDC 0...20 mA / -20 mA	16 000 or 10 000 + sign	0 500.2	TM3A01	0.150
4 voltage/current inputs	-10...+10 VDC 0...+10 VDC 0...20 mA / -20 mA	12 000 or 11 000 + sign	0 500.2	TM3A02	0.200
4 voltage/current or temperature inputs (I, K, R, S, E, T, N, E, C)	Thermocouple (I, K, R, S, E, T, N, E, C) or temperature inputs (I, K, R, S, E, T, N, E, C) (PT100, PT1000) or -10...+10 VDC or 0...20 mA / -20 mA	16 000 or 10 000 + sign	3 510.15	TM3A03	0.200
4 differential temperature inputs (I, K, R, S, E, T, N, E, C)	Thermocouple (I, K, R, S, E, T, N, E, C) or temperature inputs (I, K, R, S, E, T, N, E, C)	16 000 or 10 000 + sign	3 510.15	TM3A04	0.200
4 voltage/current	-10...+10 VDC	12 000 or	0 500.2	TM3A05	0.200

Each commercial reference presented in a catalog contains a hyperlink. Click on it to obtain the technical information of the product:

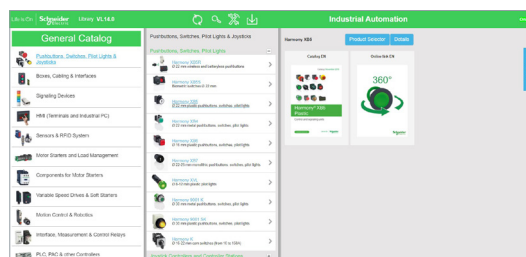
- Characteristics, Dimensions and drawings, Mounting and clearance, Connections and schemas, Performance curves
- Product image, Instruction sheet, User guide, Product certifications, End of life manual



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- > Consult digital automation catalogs at [Digi-Cat Online](#)

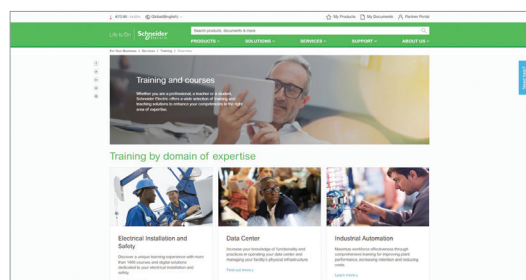


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- > Locate the training center with the selector tool, using this [link](#)



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Schneider Electric

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EcoStruxure Operator Terminal Expert

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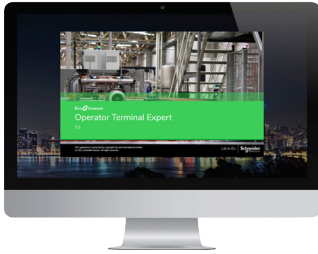
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EcoStruxure Operator Terminal Expert

Configuration software for Harmony ranges supporting gestures and intuitive user interface designs

EcoStruxure Operator Terminal Expert



EcoStruxure Operator Terminal Expert allows you to create and edit application screens that control automation systems for Harmony GTU/GTUX/STO/ST6/STM6 terminals, Harmony industrial PCs (Panel and Box), and other PCs.

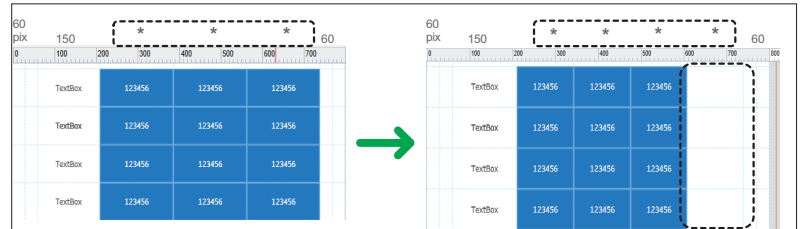
EcoStruxure Operator Terminal Expert features a modern and simple-to-use user interface, easy-to-access functions and information, and a multi-platform working environment. It also shortens design time by providing pre-made navigation framework.



EcoStruxure Operator Terminal Expert Demo screen

Faster design

- > Responsive grid design allows easy adaptation of the application irrespective of different screen resolutions



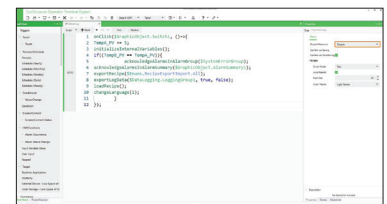
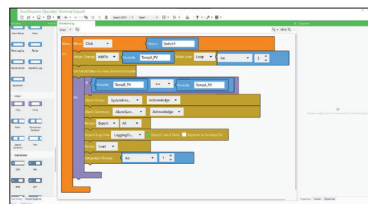
Automatic grid adjustment

- > Scripting made easy with 2 interactive modes to suit different needs



Blockly Based Script

Text Based Script



Intuitive operation

- > Multi-touch zoom in/zoom out, slide, pinch, and stretch options similar to smartphones for enhanced user experience (1)



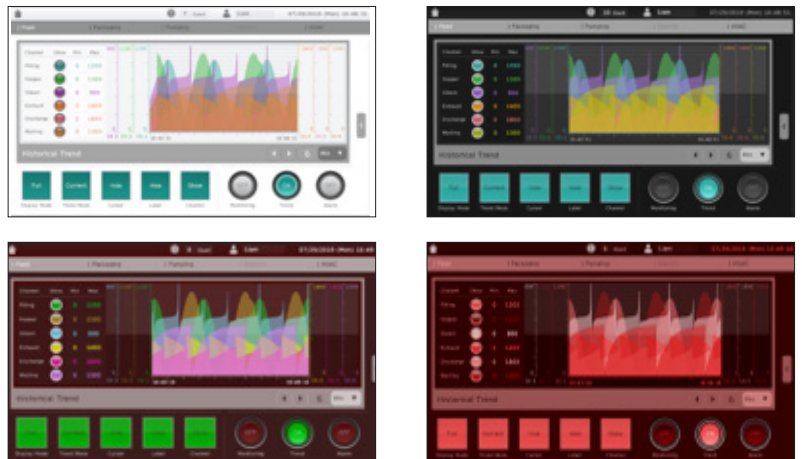
Touch screen gestures

- > Multiple screens displaying various information can be viewed in a single screen



Multi-Screen

- > High quality graphics and quick adaptation of themes



Themes

(1) Available on supported Harmony GTU, GTUX, Harmony iPC, and other PCs that support touch gestures.

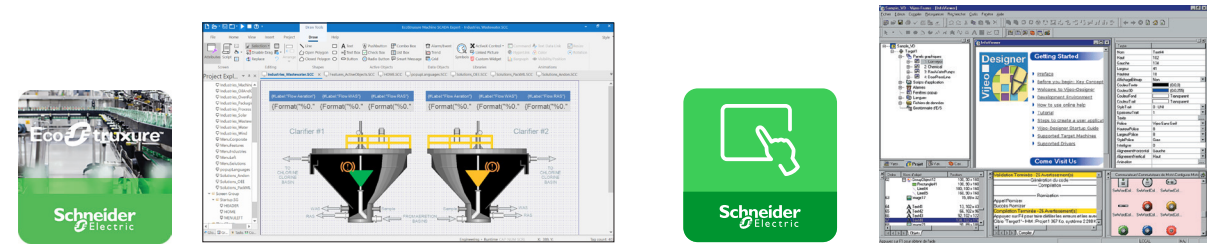
Applications Touchscreen configuration software with UI design and gestures



Compatible products	Type	Harmony STO Color Harmony ST6/STM6 Harmony GTU, GTUX Harmony iPCs Windows compatible computers
	Maximum number of targets	1
	Operating system on terminals	Proprietary for Harmony STO Color, Harmony ST6/STM6, and Harmony GTU/GTUX Windows operating system for Harmony iPCs
Functions	Reading/writing of PLC variables	Yes
	Display of variables	Yes
	Data processing	Yes
	Sharing of variables between HMI applications	-
	Saving of variables to external database	-
Internationalization		16 languages supported by 26 font types
Development of graphic applications	Native library of graphic objects	Yes
	Curves and alarms	Yes
	Scripts	Block Script, Java Script
Communication between HMI application and PLCs		Via I/O drivers: Schneider Electric or third-party protocols (Mitsubishi, Omron, Rockwell Automation and Siemens)
Uploading of applications		-
Simulation of HMI applications		Yes
Recipe management		Yes, up to 2048 recipes, 600,000 ingredients in total (2)
Report and barcode printing		-
Screen capture		Yes, for Harmony iPCs in PNG format
Access security		Password protected
Interface languages		Development in 9 languages: Chinese (China), Chinese (Taiwan), English, French, German, Italian, Korean, Portuguese, and Spanish Online and off-line manuals in 8 languages: Chinese, English, French, German, Italian, Korean, Portuguese, and Spanish
OS compatibility		Windows 10 (64-bit)
Software type		EcoStruxure™ Operator Terminal Expert
Pages		For more information, please refer to page 11 .

(1) Magelis XBT and Harmony GTO/GTU terminals behave transparently on restoration of power.
(2) Requires EcoStruxure Operator Terminal Expert version 3.5 or later.

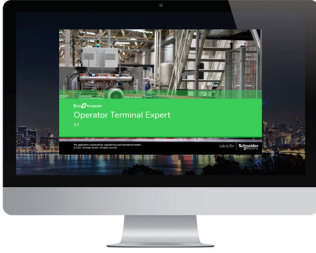
Configuration software for data-intensive and complex visualization **Classic configuration software for the complete HMI range**



Compatible products	Type	Harmony STM6 Edge Box HMI, Harmony iPCs Windows compatible computers	Harmony STU and Harmony GTO (1) Harmony GK/GTU (1)/GTUX and Magelis XBTGH (1) Harmony Panel PCs and Box PCs (HMIBMP, HMIBMU, HMIPSP, HMIPSO, and HMIPPEP) Harmony P6
	Maximum number of targets	1	32
	Operating system on terminals	Windows 10 IoT Enterprise 2019 LTSC 32-bit Harmony iPCs: Windows 8.1, Windows 10	Proprietary for Harmony STU/GTO, Harmony GK/GTU/GTUX, Magelis XBTGH
Functions	Reading/writing of PLC variables	Embedded/Windows Basic 500 tags Embedded/Windows Machine Control 1,500 tags Embedded/Windows Line Management 4,000 tags Windows Line management plus: 32,000 tags Windows Supervision: 64,000 tags	Yes, up to 8,000 internal and external variables
	Display of variables	Yes, depending on the number of tags	Yes
	Data processing	Yes, with VBScript or built-in scripting	Yes, using expression editor or Java programming
	Sharing of variables between HMI applications	Yes, via TCP/IP, OPC, driver or database	Up to 300 variables between 8 terminals, without router PLC Proprietary protocol above TCP/IP
	Saving of variables to external database	Yes, with relational database (any SQL Database, MS Access and Excel CSV file)	-
Internationalization		Multi-language (depending on the OS)	Up to 15 languages supported by 34 Western alphabets, 4 Asian alphabets, and 2 Middle Eastern alphabets embedded in the application
Development of graphic applications	Native library of graphic objects	Yes, user customizable	Yes
	Curves and alarms	Yes	Yes, with log
	Scripts	VBScript, built-in scripting and QuickScript.NET	Java
Communication between HMI application and PLCs		Via I/O drivers: Schneider Electric or third-party protocols (over 250 drivers: Mitsubishi, Omron, Rockwell Automation, and Siemens)	
Uploading of applications		Yes	Yes
Simulation of HMI applications		Yes	
Recipe management		Yes, built-in tools with local file or with database	Yes, up to 32 groups, 1,024 ingredients for 256 recipes per group, proprietary or CSV format, complete multilingual support for labels and ingredients
Report and barcode printing		Report is a built-in function that executes the specified Report worksheet and sends the output to hard disk, printer, or PDF.	On the fly alarms, log data. Up to 9,999 active alarms, records, or logs Main USB barcode supported for Harmony with Windows OS and main serial barcode supported for other Harmony.
Screen capture		Yes	Yes, Harmony GTO/GTU, and Harmony Panel PCs and Box PCs (HMIBMP, HMIBMU, and Harmony P6) in JPEG format
Access security		Linked to user profiles	
Interface languages		Screens and user interface available in 5 languages: English, German, French, Chinese, and Japanese	Screens, online help, and documentation in electronic format available in 7 languages: English, French, German, Italian, Portuguese, Simplified Chinese, and Spanish
OS compatibility		Windows 8.1, Windows 10 (64-bit), Windows 11, Windows Server 2012 R2, Windows Server 2016, Windows Server 2019, and Windows Server 2022	Windows 10 Professional and Windows 11
Software type		EcoStruxure™ Machine SCADA Expert	Vijeo Designer™
Pages		For more information, refer to the DIA5ED2171201EN catalog.	For more information, refer to the DIA5ED2130614EN catalog.

EcoStruxure Operator Terminal Expert

Configuration software for Harmony ranges supporting gestures and intuitive user interface designs



Presentation

The cross-platform EcoStruxure Operator Terminal Expert can be used to create HMI applications that control automation systems for:

- Harmony GTU, GTUX
- Harmony STO (Color)
- Harmony ST6/STM6
- Harmony industrial PCs (Panel and Box PCs)
- Windows compatible computers

EcoStruxure Operator Terminal Expert supports English, French, German, Italian, Portuguese, Spanish, Japanese, Traditional Chinese, Simplified Chinese, and Korean languages and provides access to new application types.

EcoStruxure Operator Terminal Expert runs on any PC with a Windows 10 operating system. This supports WYSIWYG (1) of the developed application and the PLC variables (I/O, internal bits and words), and also helps ensure that the application runs securely on Harmony GTU/GTUX/STO color/ST6/STM6 terminals or Harmony industrial PCs.

EcoStruxure Operator Terminal Expert supports features for creating and organizing HMI applications:

- Intuitive and simple-to-develop user interface
- Gesture experience by multi-touch, zoom in/zoom out, slide, and stretch
- Templates and theme design selection
- Graphic configuration by Universe “System Architecture” view
- Windows 10 (64-bit) support



EcoStruxure Operator Terminal Expert Demo screen

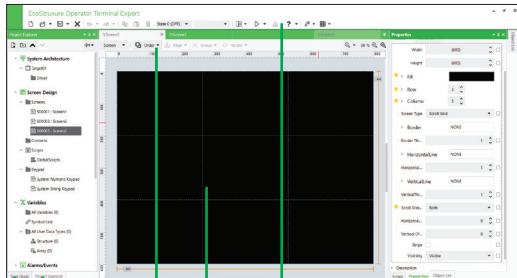
Configuration

EcoStruxure Operator Terminal Expert is an intuitive configuration software that is used to process HMI projects quickly and easily using the 8 configurable windows:

- 1 Tool Chest
- 2 Project Explorer: HMI Content Design, Data Management, Scripts and Actions, System Architecture
- 3 Error window or Feedback zone
- 4 Generic command or Document toolbar
- 5 Editor or Document view
- 6 Application tool bar
- 7 Properties
- 8 Object List

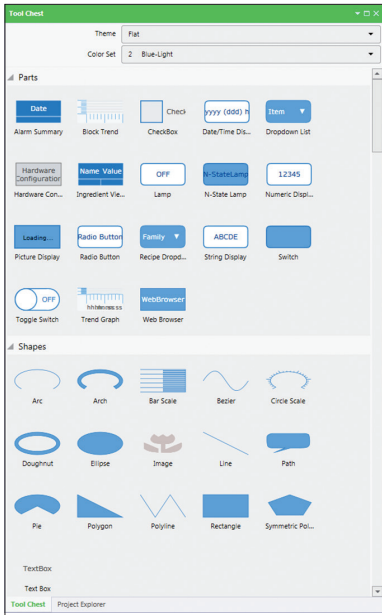
The software also offers a complete set of application management tools for:

- Up to 2048 recipes with 600,000 ingredients in total
- Full simulation mode for testing the application from the design office
- Retrieval of symbol files for PLC variables generated by:
 - OMRON Corporation
 - Rockwell Automation, Inc
 - Schneider Electric SA
 - Siemens AG.



EcoStruxure Operator Terminal Expert window

(1) What You See Is What You Get (on the screen of the target terminal).



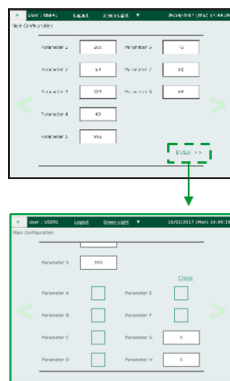
Parts and Shapes



Predefined Images



Slide navigation



More information appears

Graphics editor

The graphics editor offers interface consistency for simple and more sophisticated objects. This helps application developers to easily create views based on:

- Parts:
 - switches (toggle, radio, selector), lamps
 - text or number fields
 - alarm, trends, recipe ingredient viewer, web browser (1), etc.
- Shapes to be configured:
 - lines, rectangles, ellipses, arcs
 - polylines, polygons, Bézier curves, scales
 - text and images, etc.

Object animations

9 types of graphic-object animations support the rapid creation of animated mimics on the basis of:

- Pressing the touch panel
- Changing of color
- Filling
- Movement
- Rotation
- Size
- Visibility
- Display of associated value
- Object redesign

Predefined Images library

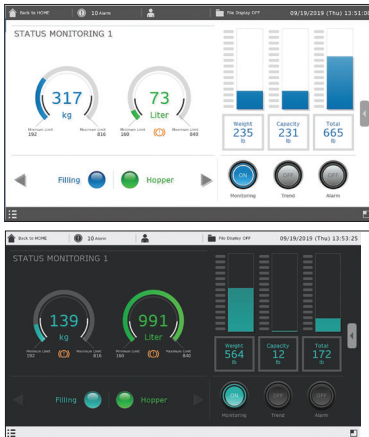
The graphic objects library contains objects for efficiently organizing around the business segments. Using the simple “drag and drop” method, images can be positioned with the mouse on the mimic being created.

Key features

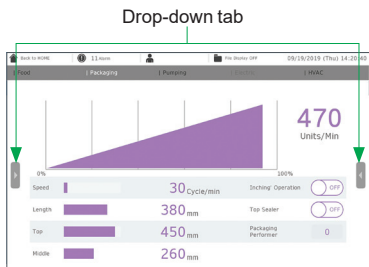
Runtime Navigation

- Automatic menu generation
- Efficient usage of space: permanent or hidden menus, scroll within the menu that is independent of the rest of the screen
- Less engineering: all information on one screen, free of hierarchies
- More intuitive operation: Icons instead of text, dynamic update of an icon representing the page in the menu

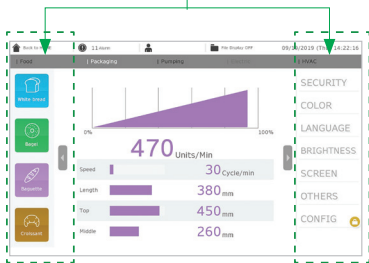
(1) Supported in Harmony GTU / iPCs.



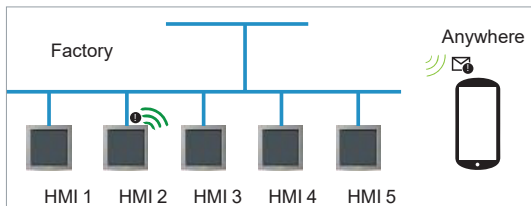
Themes



Hidden information



Layout Objects (DockPanel)



Web Server API

Key features (continued)

Themes and Color set

- Theme (Studio/Flat themes) and color (10 sets) to preset design
- Quick customization and design consistency between themes
- Product differentiation

Layout Objects (DockPanel)

- Embed several pages in one screen and navigate independently in each section
- Screens are automatically resized to fit into the frame
- Frame sizes can be dynamically changed to show different content

Web Viewer

- Visualize and operate the HMI screen remotely with mirroring function
- Runs on standard browsers like Chrome, Safari and Edge for devices (PC, Tablet, Smart phone)
- Easy configuration and able to have up to 3 to 5 remote connections depending on hardware type
- With Web Viewer and Harmony STM6 Gateway Box, the HMISTM6 display panel can become a Faceless HMI for applications that doesn't need a full time operator screen
- Supported by Harmony ST6/STM6/GTU/GTUX, Harmony iPCs and other PCs

Web Server API

- Interface for browsers, both desktop and mobile:
 - Enables delivery of information independent of time and place to any HTML5 browser
 - Enables fast HMI agnostic development of specific customer/use case tailored UI
- WebSockets for subscription based notifications (events) like alarm notifications, system error notifications, etc.
- User Management support (user name/password)
- Supported only by Professional Buildtime license and applicable to all hardware with Ethernet port options

Communication protocols between HMI application and PLCs

Communication is established between the HMI application and the connected control equipment using a communication protocol (driver) that is selected when creating the application in EcoStruxure Operator Terminal Expert.

Communication protocols

EcoStruxure Operator Terminal Expert supports the following protocols:

- Schneider Electric SA
 - Modbus SIO/TCP Master
 - Modbus TCP Master via USB
 - PacDrive
 - Machine Expert Network
 - Uni-Telway
 - Zelio Logic Smart Relays
- Siemens AG
 - SIMATIC S7 Ethernet/MPI Direct
 - TIA Portal Ethernet
- Rockwell Automation Inc.
 - EtherNet/IP
 - DF1
 - DH-485
- Mitsubishi Electric Corporation
 - Various series controllers
- OMRON Corporation
 - Various series controllers
- Emerson
 - Industrial Automation/Control Technique Modbus SIO/TCP Master
 - Process Management ROC Plus Ethernet/SIO
- CAN in Automation
 - CANopen Slave
- PROFIBUS International
 - PROFIBUS DP Slave
- Crouzet Automation
 - Millenium 3 FBD
- Modbus Organization SIO/TCP Master/Slave
- OPC Foundation
 - OPC UA Server

All Schneider Electric drivers provide IEC access to input bits/words and output bits/words: Modbus (RTU and TCP/IP), Modbus Plus (GMU and USB), Uni-Telway, Xway.

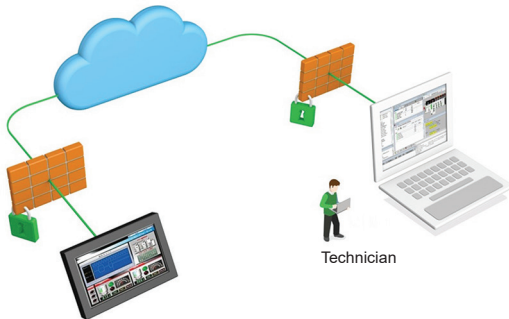
The direct I/O access authorizes access to hardware input and output registers.

Communication protocols between HMI application and PLCs (continued)

PLC symbols link (1)

EcoStruxure Operator Terminal Expert supports the following configuration tools:

- Schneider Electric SA
 - Modbus SIOMaster(SMBP format)
 - PacDrive (XML format)
 - Modbus TCP Master(XVM/XSY format)
 - SoMachine Network
- OMRON Corporation
 - CS/CJ/NJ Series EtherNet/IP(TXT format)
- Rockwell Automation
 - EtherNet/IP(L5K/CSV Format)
- Siemens AG
 - TIA Portal Ethernet(AP format)



EcoStruxure Secure Connect concept

Companion products (2)

EcoStruxure Secure Connect provides a secure connection between remote display units on the work site (via SiteManager Embedded) and computers or smart devices in the office (via LinkManager or LinkManager Mobile) over a secure central server (GateManager). With EcoStruxure Secure Connect, maintenance personnel can access Schneider Electric software and update it remotely and securely via the HMI, PLC, and other connected devices as if they were on site. Troubleshooting and repair can also be performed remotely upon request.



EcoStruxure Operator Terminal Expert

References

The EcoStruxure Operator Terminal Expert configuration software is compatible with Harmony GTU/GTUX/STO7/ST6/STM6 terminals, Harmony iPCs and other PCs. The software (3) can be downloaded from our website www.se.com.

EcoStruxure Operator Terminal Expert commercial licenses are available as digital licenses. ID authorization is delivered via e-mail to the e-mail address registered while ordering the license.

All EcoStruxure Operator Terminal Expert licenses comprise:

- User documentation in electronic format, including:
 - [Online help](#) for the software
 - User Manual for the supported targets
 - Setup Manual for the different protocols supported
- Supported communication protocols

[mySchneider](#) Software Management is available for easy registration and management of software licenses that allows more control over your license(s).

- Instant license activation and easy account management
- Online view of license status from anywhere

(1) Including import of structured variables such as UDTs and ARRAY (of UDT).

(2) For more information, please refer to "[EcoStruxure Secure Connect catalog](#)".

(3) After installation, the trial version of the software is available for 42 days and will have to be activated with the commercial license.

References (continued)				
Buildtime licenses				
Description	License type/No. of Stations	Application transfer cable		Reference
		PC side port	Terminal side	
EcoStruxure Operator Terminal Expert Professional Single license	Single/1	USB/ Ethernet	Harmony GTU/GTUX Harmony STO7 Harmony ST6 Harmony STM6 Harmony iPCs and other PCs	HMIPELCZLSPAZZ
EcoStruxure Operator Terminal Expert Professional Group license	Group/3			HMIPELCZLSPAZZ
EcoStruxure Operator Terminal Expert Professional Team license	Team/10			HMIPELCZLSPAZZ
EcoStruxure Operator Terminal Expert Professional Entity license	Entity/100			HMIPELCZLSPAZZ
EcoStruxure Operator Terminal Expert Professional 3 months Single license	Fixed term Single/1			HMIPEXCZLSRAZZ
EcoStruxure Operator Terminal Expert Basic Single license	Single/1	—	Harmony STO7 Harmony ST6 Harmony STM6	HMIEELCZLSPAZZ
Web Viewer licenses				
Description	License type/No. of Stations	Compatible with		Reference
		PC side port	Terminal side	
EcoStruxure Operator Terminal Expert Web Viewer Runtime Single License	Single/1		Harmony GTU, GTUX Harmony ST6	HMIWRT001A
EcoStruxure Operator Terminal Expert Web Viewer Runtime Team License	Team/10		Harmony STM6 Harmony iPCs and other PCs	HMIWRT010A
EcoStruxure Operator Terminal Expert Web Viewer Runtime Entity License	Entity/100			HMIWRT100A
Runtime license				
Description	License type/No. of Stations	Application transfer cable		Reference
		PC side port	Terminal side	
EcoStruxure Operator Terminal Expert Runtime Single license for Windows	Single/1	USB/ Ethernet	Harmony iPCs and other PCs	HMIRTWCZLSPAZZ

H	
HMI EELCZLSPA ZZ	11
HMI PELCZLEPA ZZ	11
HMI PELCZLGPA ZZ	11
HMI PELCZLSPA ZZ	11
HMI PELCZLTPA ZZ	11
HMI PEXCZLSRA ZZ	11
HMIRTWCZLSPA ZZ	11
HMIWRT001A	11
HMIWRT010A	11
HMIWRT100A	11

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Schneider Electric Industries SAS

Head Office
35, rue Joseph Monier - CS 30323
F-92500 Rueil-Malmaison Cedex
France

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