EcoStruxure Operator Terminal Expert

EcoStruxure™ Operator Terminal Expert

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

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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** Push Buttons and Switches
- **Harmony** HMI Operator Terminals, IPC and EdgeBox
- **Harmony** Signaling Devices
- **Harmony** Electrical Relays
- **Harmony** Safety

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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

Find your catalog
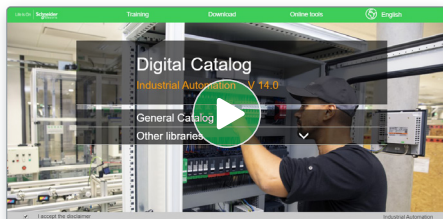
> With just 3 clicks, you can access the Industrial Automation and Control catalogs, in both English and French
> Consult digital automation catalogs at Digi-Cat Online

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General contents

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 (Premium and Open Box)/STO color/GTO *(1)*/ST6/STM6 terminals, and Harmony industrial PCs (Panel and Box).

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.
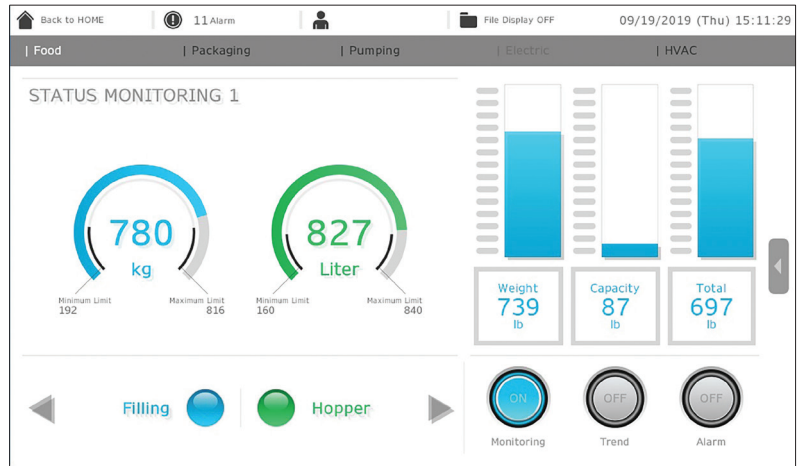
EcoStruxure Operator Terminal Expert Demo screen

Faster design
> Responsive grid design allows easy adaptation of the application irrespective of different screen resolutions
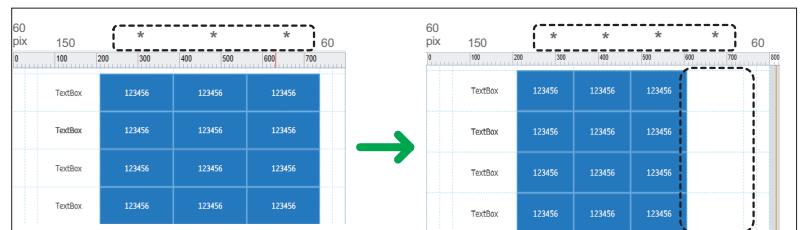
Automatic grid adjustment

> Scripting made easy for everyone using a graphical drag and drop editor
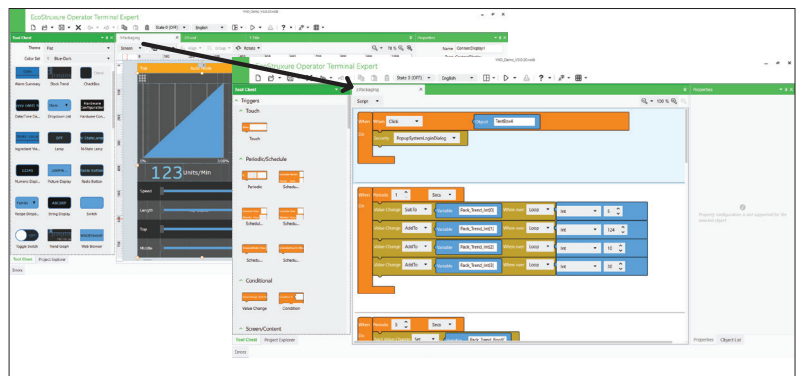
Block scripting

(1) Harmony GTO is supported only by software versions prior to V3.1 Service Pack 1.

EcoStruxure Operator Terminal Expert ➔ **Maximizes efficiency with modern functionalities and user-friendly features**

EcoStruxure Operator Terminal Expert
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Intuitive operation

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

Pinch to zoom out   Stretch to zoom in   Slide to scroll
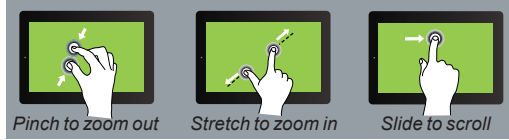
Touch screen gestures

> 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, Harmony iPC, and other PCs.

Applications	Touchscreen configuration software with UI design and gestures	Configuration software for data-intensive and complex visualization	Classic configuration software for the complete HMI range
Compatible products — Type	Harmony STO Color Harmony ST6/STM6 Harmony GTU (Premium and Open Box) Harmony *i*PCs Windows compatible computers	Harmony HMIG5U21 *(3)*, Harmony *i*PCs	Harmony STU and Harmony GTO *(1)* Harmony GK/GTU *(1)*/GTUX and Magelis XBTGH *(1)* Harmony Panel PCs and Box PCs (HMIBMP, HMIBMU)
Maximum number of targets	1	1	32
Operating system on terminals	Proprietary for Harmony STO Color, Harmony ST6/STM6 and Harmony GTU Windows operating system for Harmony *i*PCs	Harmony HMIG5U21 *(3)*: Windows 10 IoT Enterprise 2019 LTSC 32bit Harmony *i*PCs: Windows 8.1, Windows 10	Proprietary for Harmony STU/GTO, Harmony GK/GTU/GTUX, Magelis XBTGH
Functions — Reading/writing of PLC variables	Yes	Machine control: 1,500 tags Line management: 4,000 tags Line management plus: 32,000 tags Supervision: 64,000 tags	Yes, up to 8,000 internal and external variables
Display of variables	Yes	Yes, depending on the number of tags	Yes
Data processing	Yes	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)	Yes, with the Intelligent Data Service extension
Internationalization	16 languages supported by 26 font types	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	Yes, user customizable	Yes
Curves and alarms	Yes	Yes	Yes, with log
Scripts	Block Script	VB Script and built-in scripting	Java
Communication between HMI application and PLCs	Via I/O drivers: Schneider Electric or third-party protocols (Mitsubishi, Omron, Rockwell Automation, Siemens)	Via I/O drivers: Schneider Electric or third-party protocols (over 250 drivers: Mitsubishi, Omron, Rockwell Automation, Siemens)	
Uploading of applications	–	Yes	–
Simulation of HMI applications	Yes	Yes	
Recipe management	Yes, up to 256 recipes, 600,000 ingredients in total	Yes, built-in tools with local file or with SQL DB	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, for Harmony *i*PCs in PNG format	Yes	Yes, Harmony GTO/GTU, and Harmony Panel PCs and Box PCs (HMIBMP, HMIBMU) in JPEG format
Access security	Password protected	Linked to user profiles	
Interface languages	Screens in 9 languages: English, French, German, Italian, Portuguese, Spanish, Traditional Chinese, Simplified Chinese, and Korean and documentation in electronic format available in 4 languages: English, French, German, and Italian	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 7, Windows 8, Windows 8.1, Windows 10 (64-bit)	Windows 8.1, Windows 10 (64-bit)	Windows 8.1, Windows 10 Professional, Windows 7 Business (32-bit/64-bit)
Software type	**EcoStruxure™ Operator Terminal Expert**	**EcoStruxure™ Machine SCADA Expert**	**Vijeo Designer™**
Pages	For more information, please refer to page 11	For more information, please refer to the DIA5ED2171201EN catalog.	For more information, please refer to the DIA5ED2130614EN catalog.

(1) Magelis XBT and Harmony GTO/GTU terminals behave transparently on restoration of power.
(2) Depending on the compatible product.
(3) Supported by EcoStruxure Machine SCADA Expert V8.1 and later versions.
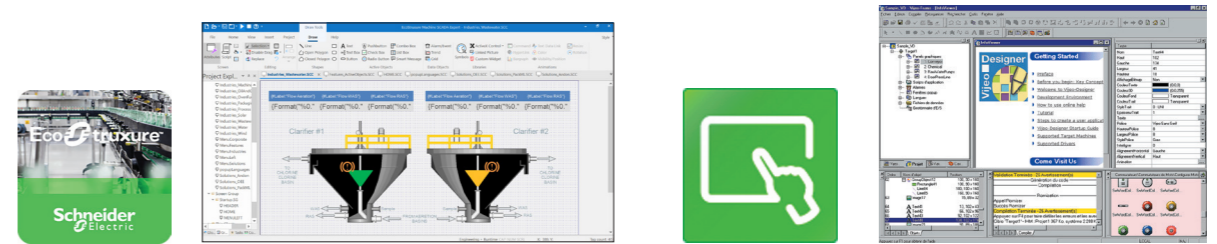
EcoStruxure Operator Terminal Expert
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Presentation

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

- Harmony GTU (Premium and Open Box)
- Harmony GTO *(2)*
- 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 Demo screen

EcoStruxure Operator Terminal Expert runs on any PC with Windows 7, Windows 8, Windows 8.1, or 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/STO color/GTO *(2)* /ST6/STM6 terminals or Harmony industrial PCs.
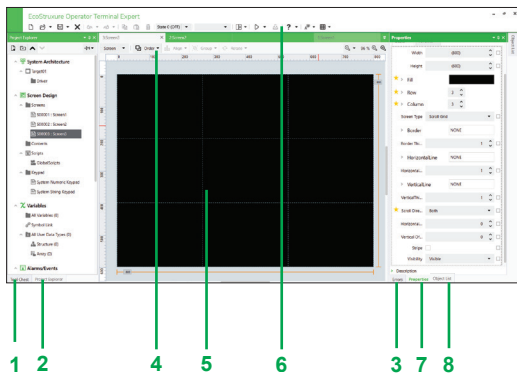
EcoStruxure Operator Terminal Expert supports features for creating and organizing HMI applications:

- 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 7 (64-bit), Windows 8/8.1 (64-bit), Windows 10 (64-bit) support

EcoStruxure Operator Terminal Expert window

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 256 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 TwidoSuite, PL7, Concept, ProWORX 32, and Unity Pro software

(1) What You See Is What You Get (on the screen of the target terminal).
(2) Harmony GTO is supported only by software versions prior to V3.1 Service Pack 1.

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EcoStruxure Operator Terminal Expert
Configuration software for Harmony ranges supporting gestures and intuitive user interface designs
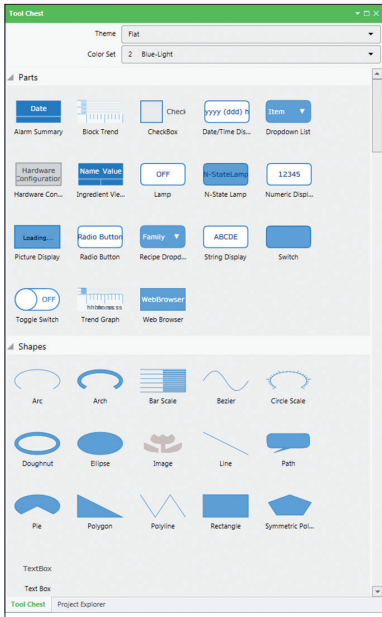
Parts and Shapes

Predefined Images

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
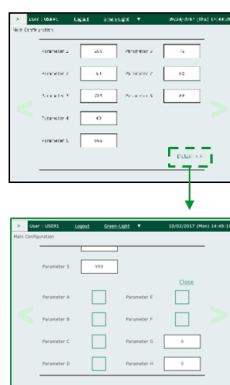■ Visibility
■ Display of associated value
■ Object redesign

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.

Slide navigation

More information appears

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

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(1) Supported in Harmony GTU / iPCs.

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

Themes

Drop-down tab
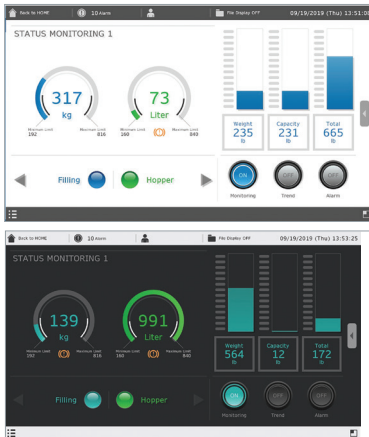
Hidden information

Layout Objects (DockPanel)

Factory

Anywhere

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

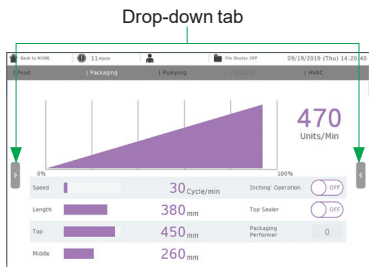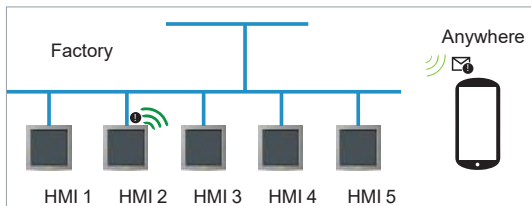### Web Viewer
■ Visualize and operate the HMI screen remotely with mirroring function
■ Runs on standard browsers like Chrome, Safari and Edge for devices (PC, Tablet, Smart phone)
■ Easy configuration and able to have up to 3 to 5 remote connections depending on hardware type
■ With Web Viewer and 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 (Premium and Open Box), 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

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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
  - EcoStruxure Augmented Operator Advisor
  - Machine Expert Network
  - Modbus SIO/TCP Master
  - Modbus TCP Master via USB
  - PacDrive
  - 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 seires 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

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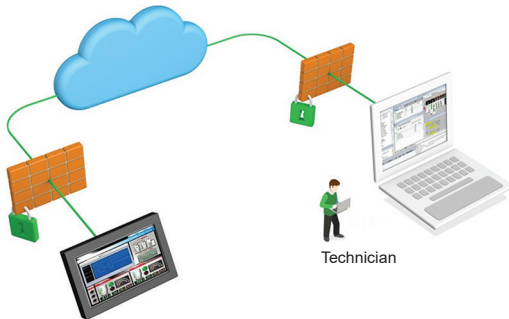words: Modbus (RTU and TCP/IP), Modbus Plus (GMU and USB), Uni-Telway,
Xway.

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

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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 format)
- Siemens AG
  - TIA Portal Ethernet(AP format)

Companion products *(2)*

EcoStruxure™ Secure Connect Advisor provide a secure connection between remote display units on the work site (via SiteManager Embedded) and computers or smart devices in the office (via LinkManager) over a secure central server (GateManager). With EcoSruxture Machine Secure Connect Advisor, 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.

Technician

EcoStruxure Secure Connect Advisor concept
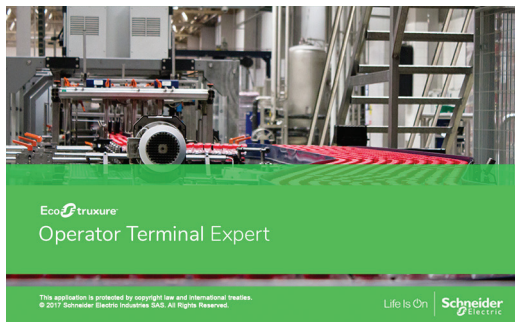
EcoStruxure Operator Terminal Expert

References

The EcoStruxure Operator Terminal Expert configuration software is compatible with Harmony GTU/STO7/GTO *(3)*/ST6/STM6 terminals and Harmony iPCs. The software *(4)* can be downloaded from our website www.se.com or purchased as USB Media Installer *(5)*.

EcoStruxure Operator Terminal Expert commercial licenses are available in two formats.
- Printed license: delivered by regular mail with ID authorization
- Digital license: ID authorization delivered via email to the email 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

A dedicated web portal www.se.com/licensing 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

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(1) Including import of structured variables such as UDTs and ARRAY (of UDT).
(2) For more information, please refer to "EcoStruxure™ Secure Connect Advisor catalog".
(3) Harmony GTO is supported only by software versions prior to V3.1 Service Pack 1.
(4) After installation, the trial version of the software is available for 42 days and will have to be activated with the commercial license.
(5) USB Media Installer is available for V3.2 only.

EcoStruxure Operator Terminal Expert
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References (continued)

Printed 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 Harmony GTO *(1)* Harmony STO7 Harmony ST6 Harmony STM6 Harmony *i*PCs and other PCs	**HMIPELCZLSPMZZ**
EcoStruxure Operator Terminal Expert Professional Group license	Group/3			**HMIPELCZLGPMZZ**
EcoStruxure Operator Terminal Expert Professional Team license	Team/10			**HMIPELCZLTPMZZ**
EcoStruxure Operator Terminal Expert Professional Entity license	Entity/100			**HMIPELCZLEPMZZ**
EcoStruxure Operator Terminal Expert Basic Single license	Single/1		Harmony STO7 Harmony ST6 Harmony STM6	**HMIEELCZLSPMZZ**

Digital Buildtime licenses *(2)*

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 Harmony GTO *(1)* Harmony STO7 Harmony ST6 Harmony STM6 Harmony *i*PCs and other PCs	**HMIPELCZLSPAZZ**
EcoStruxure Operator Terminal Expert Professional Group license	Group/3			**HMIPELCZLGPAZZ**
EcoStruxure Operator Terminal Expert Professional Team license	Team/10			**HMIPELCZLTPAZZ**
EcoStruxure Operator Terminal Expert Professional 3 months Single license	Fixed term Single/1			**HMIPEXCZLSRAZZ**
EcoStruxure Operator Terminal Expert Professional Entity license	Entity/100			**HMIPELCZLEPAZZ**
EcoStruxure Operator Terminal Expert Basic Single license	Single/1	_	Harmony STO7 Harmony ST6 Harmony STM6	**HMIEELCZLSPAZZ**

Printed Runtime license

Description	License type/No. of Stations	Application transfer cable		Reference
		PC side port	Terminal side	
EcoStruxure Operator Terminal Expert Runtime license for Windows	Single/1	USB/ Ethernet	Harmony *i*PCs and other PCs	**HMIRTWCZLSPMZZ**
EcoStruxure Operator Terminal Expert Web Viewer Runtime Single License	Single/1	_	Harmony GTU Harmony ST6 Harmony STM6 Harmony iPCs and other PCs	**HMIWRT001**
EcoStruxure Operator Terminal Expert Web Viewer Runtime Team License	Team/10			**HMIWRT010**
EcoStruxure Operator Terminal Expert Web Viewer Runtime Entity License	Entity/100			**HMIWRT100**

Digital 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 *i*PCs and other PCs	**HMIRTWCZLSPAZZ**

USB Media Installer *(3)*

Description	Reference
EcoStruxure Operator Terminal Expert USB Media Installer	**HMIBTUSB32**

(1) Harmony GTO is supported only by software versions prior to V3.1 Service Pack 1.
(2) Please contact Schneider Electric Customer Care Center to check if the digital licenses are distributed/ available in your country.
(3) USB Media Installer is available for V3.2 only.
Note: *The EcoStruxure Operator Terminal Expert Runtime installer uninstalls Vijeo Designer Runtime, but Vijeo Designer Runtime can be reinstalled again with EcoStruxure Operator Terminal Expert Runtime.*

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Learn more about our products at
www.se.com/EcoStruxure Operator Terminal Expert

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