

EcoStruxure Operator Terminal Expert

# EcoStruxure™ Operator Terminal Expert

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



# Harmony

## Discover Harmony

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.

## Explore our offer

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

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**Schneider**  
Electric

# Quick access to product information

## Get technical information about your product

References

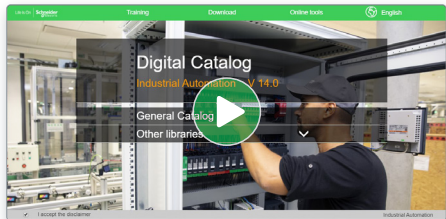
**Modicon TM3**  
I/O expansion modules for Modicon controllers  
Analog I/O modules

Number and type of channels	Input range	Resolution	Input format (internal)	Reference	Weight (kg)
2 voltage/current inputs	-15...+10 VDC 0...20 mA, 4...20 mA	16,385 or 10,000 + sign	16-bit 16-bit	TMA3A2H TMA3A2HG	0,110 0,100
4 voltage/current inputs	-15...+10 VDC 0...20 mA, 4...20 mA	12,285 or 10,000 + sign	12-bit 12-bit	TMA3A4 TMA3A4G	0,100 0,090
4 voltage/current or temperature inputs (I <sub>1</sub> , I <sub>2</sub> , S, T, A, N, C, I, O)	-15...+10 VDC 0...20 mA, 4...20 mA	16,385 or 10,000 + sign	16-bit 16-bit	TMA3A4H TMA3A4HG	0,110 0,100
4 differential temperature inputs (I <sub>1</sub> , I <sub>2</sub> , S, T, A, N, C, I, O)	-15...+10 VDC 0...20 mA, 4...20 mA	16,385 or 10,000 + sign	16-bit 16-bit	TMA3A4H TMA3A4HG	0,110 0,100
8 voltage/current	-15...+10 VDC	12,285 or 10,000 + sign	12-bit 12-bit	TMA3L8 TMA3L8G	0,100 0,090

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](#)

- Up-to-date catalogs
- Embedded product selectors, 360° pictures
- Optimized search by commercial references

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

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# EcoStruxure Operator Terminal Expert

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## EcoStruxure™ Operator Terminal Expert



EcoStruxure Operator Terminal Expert allows you to create and edit application screens that control automation systems for Harmony GTU (Premium Box)/STO color/GTO (1)/ST6/STM6 terminals, and Harmony industrial PCs (Panel and Box).

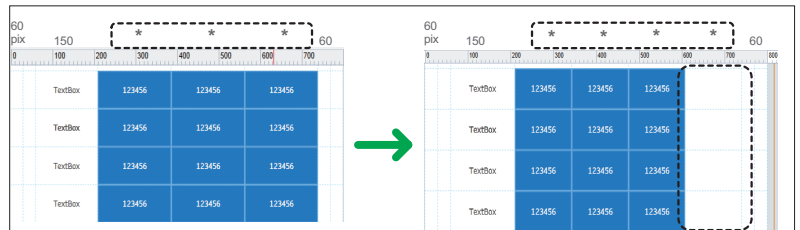
EcoStruxure Operator Terminal Expert features a modern and simple-to-use user interface, easy-to-access functions and information, and a multi-platform working environment. It also shortens design time by providing pre-made navigation framework.



EcoStruxure Operator Terminal Expert Demo screen

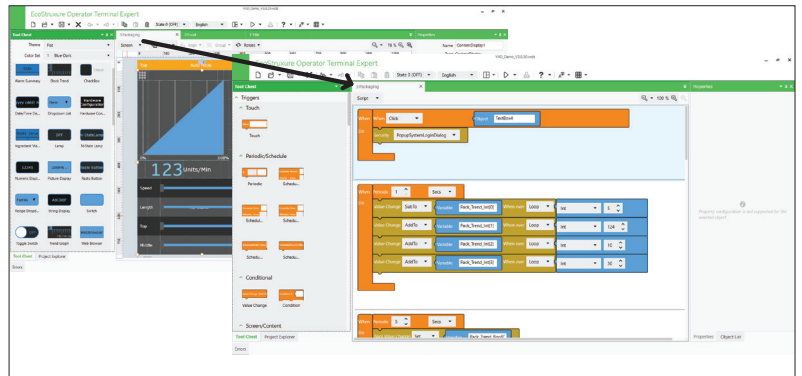
### Faster design

- > 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



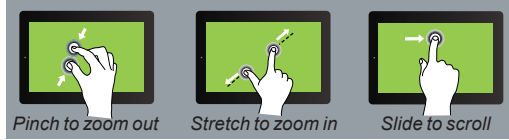
Block scripting

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



### Intuitive operation

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



Touch screen gestures

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



Multi-Screen


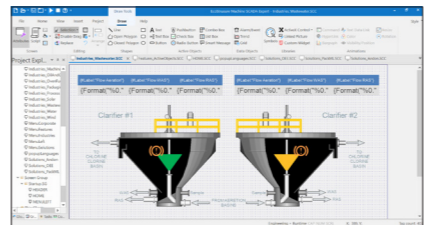

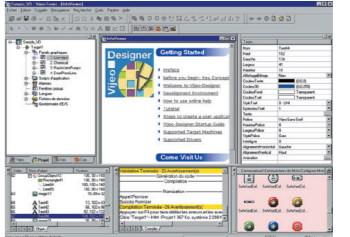
- > High quality graphics and quick adaptation of themes



Themes

Applications		Touchscreen configuration software with UI design and gestures
		 
<b>Compatible products</b>	Type	Harmony STO Color Harmony ST6/STM6 Harmony GTU Premium Box 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 Windows operating system for Harmony iPCs
<b>Functions</b>	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	–
<b>Internationalization</b>		16 languages supported by 26 font types
<b>Development of graphic applications</b>	Native library of graphic objects	Yes
	Curves and alarms	Yes
	Scripts	Block Script
<b>Communication between HMI application and PLCs</b>		Via I/O drivers: Schneider Electric or third-party protocols (Mitsubishi, Omron, Rockwell Automation, Siemens)
<b>Uploading of applications</b>		–
<b>Simulation of HMI applications</b>		Yes
<b>Recipe management</b>		Yes, up to 256 recipes, 600,000 ingredients in total
<b>Report and barcode printing</b>		–
<b>Screen capture</b>		Yes, for Harmony iPCs in PNG format
<b>Access security</b>		Password protected
<b>Interface languages</b>		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
<b>OS compatibility</b>		Windows 7, Windows 8, Windows 8.1, Windows 10 (32-bit/64-bit)
<b>Software type</b>		<b>EcoStruxure™ Operator Terminal Expert</b>
<b>Pages</b>		For more information, please refer to <a href="#">page 6</a>

(1) Magelis XBT and Harmony GTO/GTU terminals behave transparently on restoration of power.  
 (2) Depending on the compatible product.  
 (3) EcoStruxure Machine SCADA Expert version 8.1 supported, version 2020 will be supported in Q4 2020.

Configuration software for data-intensive and complex visualization	Classic configuration software for the complete HMI range
 	 
Harmony HMIG5U21 (3), Harmony iPCs	Harmony STU and Harmony GTO (1) Harmony GK/GTU (1)/GTUX and Magelis XBTGH (1) Harmony Panel PCs and Box PCs (HMIBMP, HMIBMU)
1	32
Harmony HMIG5U21 (3): Windows 10 IoT Enterprise 2019 LTSC 32bit Harmony iPCs: Windows 8.1, Windows 10	Proprietary for Harmony STU/GTO, Harmony GK/GTU/GTUX, Magelis XBTGH
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
Yes, depending on the number of tags	Yes
Yes, with VBScript or built-in scripting	Yes, using expression editor or Java programming
Yes, via TCP/IP, OPC, driver or database	Up to 300 variables between 8 terminals, without router PLC Proprietary protocol above TCP/IP
Yes, with relational database (any SQL Database, MS Access and Excel CSV file)	Yes, with the Intelligent Data Service extension
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
Yes, user customizable	Yes
Yes	Yes, with log
VB Script and built-in scripting	Java
Via I/O drivers: Schneider Electric or third-party protocols (over 250 drivers: Mitsubishi, Omron, Rockwell Automation, Siemens)	
Yes	–
Yes	
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 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.
Yes	Yes, Harmony GTO/GTU, and Harmony Panel PCs and Box PCs (HMIBMP, HMIBMU) in JPEG format
Linked to user profiles	
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
Windows 8.1, Windows 10 (64-bit)	Windows 8.1, Windows 10 Professional, Windows 7 Business (32-bit/64-bit)
<b>EcoStruxure™ Machine SCADA Expert</b>	<b>Vijeo Designer™</b>
For more information, please refer to the <a href="#">DIA5ED2171201EN</a> catalog.	For more information, please refer to the <a href="#">DIA5ED2130614EN</a> 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 (Premium Box)
- Harmony GTO (3)
- 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.

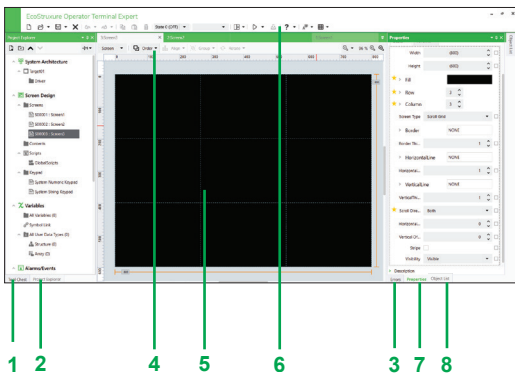


EcoStruxure Operator Terminal Expert Demo screen

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 (3) /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 (32/64-bit), Windows 8/8.1 (32/64-bit), Windows 10 (32/64-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:

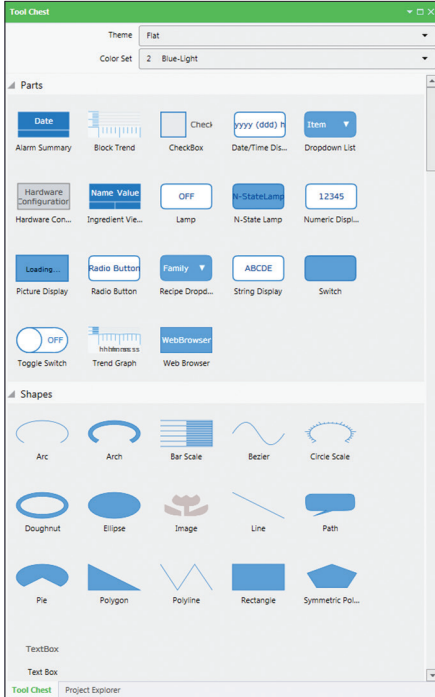
- Up to 256 recipes with 600,000 ingredients in total
- Full simulation mode for testing the application from the design office
- Retrieval of symbol files for PLC variables generated by TwidoSuite, PL7, Concept, ProWORX 32, and Unity Pro software (2)

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

(2) DDT structured types and “unlocated” variables are not supported in this version.

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





Parts and Shapes

## Graphics editor

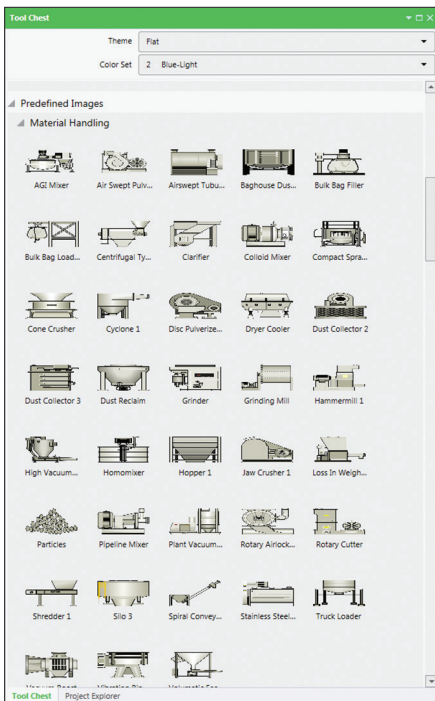
The graphics editor offers interface consistency for simple and more sophisticated objects. This helps application developers to easily create views based on:

- 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

## Predefined Images library

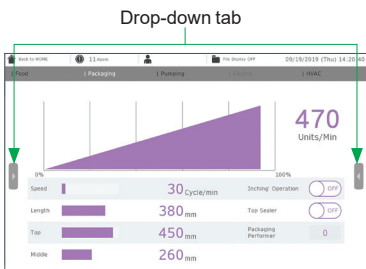
The graphic objects library contains objects for efficiently organizing around the business segments. Using the simple “drag and drop” method, images can be positioned with the mouse on the mimic being created.

(1) Supported in Harmony GTU / iPCs.



Slide navigation

More information appears

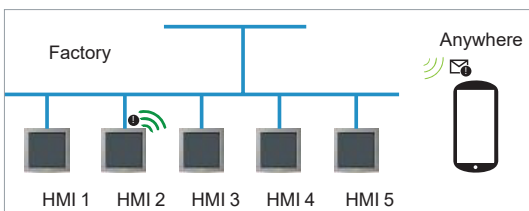


Drop-down tab

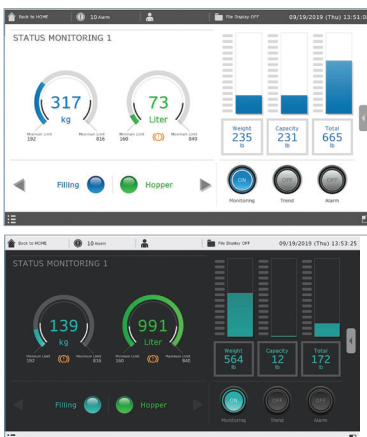
Hidden information



Layout Objects (DockPanel)



Web Server API



Themes

## 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

### 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 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)

### Themes and Color set

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

## 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.

### Schneider Electric protocols

EcoStruxure Operator Terminal Expert supports the following protocols:

- Schneider Electric SA
  - MODBUS TCP Master
  - MODBUS TCP Master USB Equipment
  - MODBUS SIO Master
  - MODBUS SIO Master CT Equipment
  - Uni-Telway
  - PacDrive Ethernet Cx00 - (Codesys V3.5)
  - PacDrive Ethernet LMC x00C - (Codesys V3.5)
  - MODBUS TCP Slave
  - MODBUS SIO Slave
  - MODBUS SIO ASCII Master
  - Zelio Logic
  - EcoStruxure Augmented Operator Advisor
- Siemens AG
  - SIMATIC S7 MPI Direct
  - SIMATIC S7 MPI Direct - 12M (CoPla)
  - SIMATIC S7 Ethernet (LOGO!8 support)
  - TIA Portal Ethernet
- Rockwell Automation
  - EtherNet/IP (Symbol link)
  - DF1
  - DH-485
- Mitsubishi Electric Corporation
  - Q/QnA Series Ethernet
  - Q Series CPU Direct
  - Q/QnA Series Serial
  - FX Series CPU Direct
  - FX Series Ethernet
  - FX Series Computer Link
  - Q Series QnU CPU Ethernet
  - iQ-R/F Series Ethernet
  - A Series Ethernet
- OMRON Corporation
  - CS/CJ Series HOST Link
  - CS/CJ Series Ethernet
  - CS/CJ/NJ Series EtherNet/IP (Symbol link)
  - NX Series Controller NX1P, NX1 and NX7 via Ethernet/IP
- Emerson Process management v Modbus SIO Master
  - ROC Plus SIO
  - ROC Plus Ethernet
- CAN in Automation
  - CANopen Slave (CoPla)
- PROFIBUS International
  - PROFIBUS DP Slave (CoPla)
- Crouzet Automation
  - Millenium 3

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)

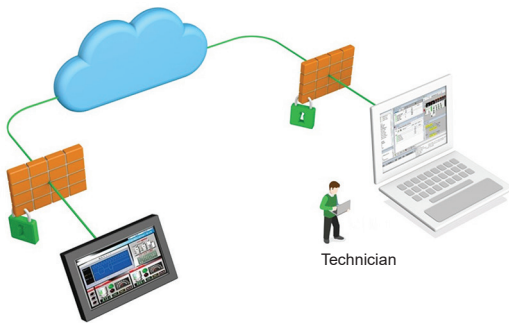
### PLC symbols link (1)

EcoStruxure Operator Terminal Expert supports the following protocols:

- Schneider Electric SA
  - SoMachine Basic (SMBP format)
  - SoMachine (XML format)
  - SoMachine Motion (XML format)
  - Unity Pro (XVM/XSY format, unallocated variables supported)
- OMRON Corporation
  - Sysmac Studio (NJ format)
- Rockwell Automation
  - RSLogix 5000 (L5K 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 EcoStruxure 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.



EcoStruxure Secure Connect Advisor concept

## References

The EcoStruxure Operator Terminal Expert configuration software is compatible with Harmony GTU Premium Box/STO7/GTO (3)/ST6/STM6 terminals and Harmony iPCs. The software (4) can be downloaded from our website [www.schneider-electric.com](http://www.schneider-electric.com) or purchased as DVD (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 listed below 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.schneider-electric.com/licensing](http://www.schneider-electric.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

(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) DVD available for V3.1 only.



# EcoStruxure Operator Terminal Expert

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



EcoStruxure Operator Terminal Expert

## 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 Premium Box Harmony GTO	<a href="#">HMIPELCZLSPMZZ</a>
EcoStruxure Operator Terminal Expert Professional Group License	Group/3		(1) Harmony STO7 Harmony ST6	<a href="#">HMIPELCZLGP MZZ</a>
EcoStruxure Operator Terminal Expert Professional Team license	Team/10		Harmony STM6 Harmony iPCs and other PCs	<a href="#">HMIPELCZLTPMZZ</a>

EcoStruxure Operator Terminal Expert Basic license	Basic/1		Harmony STO7 Harmony ST6 Harmony STM6	<a href="#">HMIEELCZLSPMZZ</a>
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### 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 iPCs and other PCs	<a href="#">HMIRTWCZLSPMZZ</a>

### 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 Premium Box Harmony GTO	<a href="#">HMIPELCZLSPAZZ</a>
EcoStruxure Operator Terminal Expert Professional Group license	Group/3		(1) Harmony STO7 Harmony ST6	<a href="#">HMIPELCZLGP AZZ</a>
EcoStruxure Operator Terminal Expert Professional Team license	Team/10		Harmony STM6 Harmony iPCs and other PCs	<a href="#">HMIPELCZLTPAZZ</a>
EcoStruxure Operator Terminal Expert Professional Fixed Term license 3 months	Fixed Term/1			<a href="#">HMIPEXCZLSRAZZ</a>
EcoStruxure Operator Terminal Expert Basic license	Basic/1	—	Harmony STO7 Harmony ST6 Harmony STM6	<a href="#">HMIEELCZLSPAZZ</a>

### Digital 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 iPCs and other PCs	<a href="#">HMIRTWCZLSPAZZ</a>

### DVD (3)

Description	Reference
EcoStruxure Operator Terminal Expert DVD Software 3.1	<a href="#">HMIPEDCZ31</a>

(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) DVD available for V3.1 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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<a href="#">HMIEELCZLSPAZZ</a>	11
<a href="#">HMIEELCZLSPMZZ</a>	11
<a href="#">HMIPEDCZ31</a>	11
<a href="#">HMIPELCZLGPAZZ</a>	11
<a href="#">HMIPELCZLGPMZZ</a>	11
<a href="#">HMIPELCZLSPAZZ</a>	11
<a href="#">HMIPELCZLSPMZZ</a>	11
<a href="#">HMIPELCZLTPAZZ</a>	11
<a href="#">HMIPELCZLTPMZZ</a>	11
<a href="#">HMIPEXCZLSRAZZ</a>	11
<a href="#">HMIRTWCZLSPAZZ</a>	11
<a href="#">HMIRTWCZLSPMZZ</a>	11

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Learn more about our products at  
[www.schneider-electric.com/EcoStruxure Operator  
Terminal Expert](http://www.schneider-electric.com/EcoStruxure Operator Terminal Expert)

The information provided in this documentation contains general descriptions and/or technical characteristics of the performance of the products contained herein. This documentation is not intended as a substitute for and is not to be used for determining suitability or reliability of these products for specific user applications. It is the duty of any such user or integrator to perform the appropriate and complete risk analysis, evaluation and testing of the products with respect to the relevant specific application or use thereof. Neither Schneider Electric nor any of its affiliates or subsidiaries shall be responsible or liable for misuse of the information contained herein.

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DIA5ED2140703EN  
November 2020 - V9.0