



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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Life Is On

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References

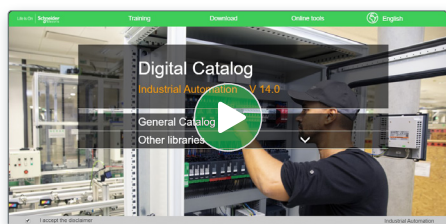
Modicon TM3
I/O expansion modules for Modicon controllers
Analog I/O modules

References	Modicon TM3 analog input modules	Number and type of channels	Input range	Output range	Resolution	Input format (Analog Input)	Reference	Weight (kg)
TM3AI2H	TM3AI2H	2 measurement inputs	-10...+10 VDC 0...+10 VDC 0...20 mA, 4...20 mA	12 000 or 12 000 or 12 000	10 bits or 10 bits or 10 bits	0000.2 0000.2 0000.2	TM3AI2H0 TM3AI2H1 TM3AI2H2	0.150 0.150 0.150
		4 measurement inputs	-10...+10 VDC 0...+10 VDC 0...20 mA, 4...20 mA	12 000 or 12 000 or 12 000	10 bits or 10 bits or 10 bits	0000.2 0000.2 0000.2	TM3AI40 TM3AI41 TM3AI42	0.150 0.150 0.150
TM3TA	TM3TA	4 differential temperature inputs (I, I, I, I, S, T, N, E, C)	Thermocouples (I, I, I, I, S, T, N, E, C)	10 000 or 10 000 or 10 000	10 bits or 10 bits or 10 bits	0000.2 0000.2 0000.2	TM3TA0 TM3TA1 TM3TA2	0.150 0.150 0.150
		4 differential temperature inputs (I, I, I, I, S, T, N, E, C)	Thermocouples (I, I, I, I, S, T, N, E, C)	10 000 or 10 000 or 10 000	10 bits or 10 bits or 10 bits	0000.2 0000.2 0000.2	TM3TA0 TM3TA1 TM3TA2	0.150 0.150 0.150
TM3TA	TM3TA	4 differential temperature inputs (I, I, I, I, S, T, N, E, C)	Thermocouples (I, I, I, I, S, T, N, E, C)	10 000 or 10 000 or 10 000	10 bits or 10 bits or 10 bits	0000.2 0000.2 0000.2	TM3TA0 TM3TA1 TM3TA2	0.150 0.150 0.150
		4 differential temperature inputs (I, I, I, I, S, T, N, E, C)	Thermocouples (I, I, I, I, S, T, N, E, C)	10 000 or 10 000 or 10 000	10 bits or 10 bits or 10 bits	0000.2 0000.2 0000.2	TM3TA0 TM3TA1 TM3TA2	0.150 0.150 0.150

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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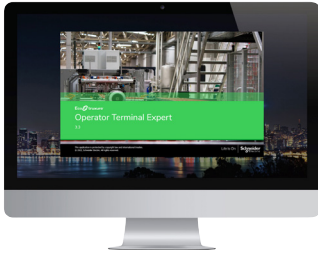
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EcoStruxure Operator Terminal Expert

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.

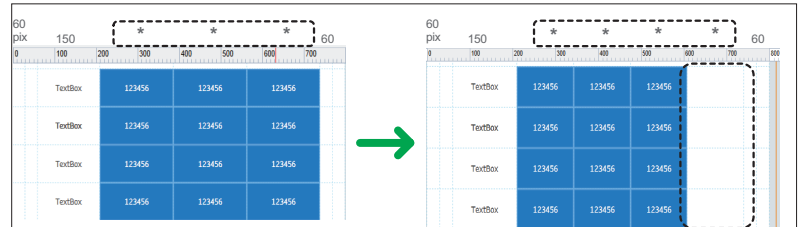
EcoStruxure Operator Terminal Expert features a modern and simple-to-use user interface, easy-to-access functions and information, and a multi-platform working environment. It also shortens design time by providing pre-made navigation framework.



EcoStruxure Operator Terminal Expert Demo screen

Faster design

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



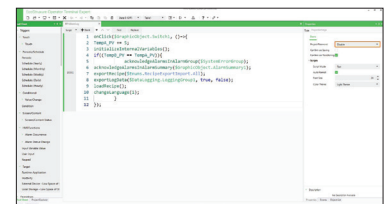
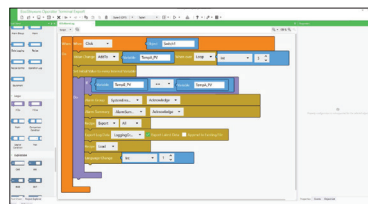
Automatic grid adjustment

- > 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.

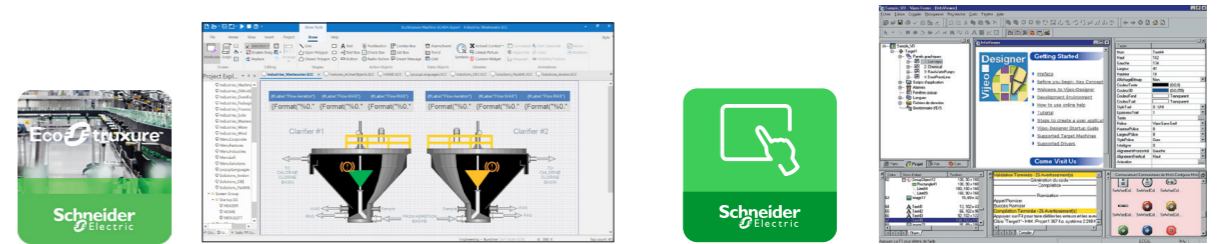
Applications Touchscreen configuration software with UI design and gestures



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 the 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**



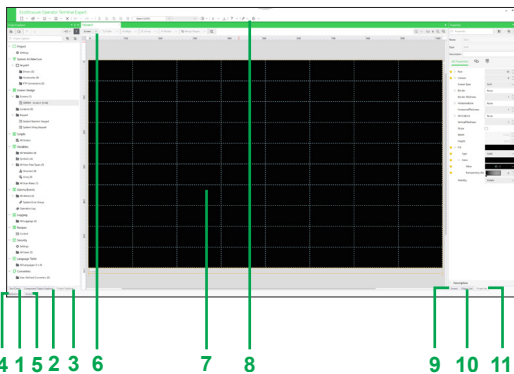
Harmony STM6 Edge Box HMI, Harmony iPCs Windows compatible computers	Harmony STU and Harmony GTO (1) Harmony GK/GTU (1)/GTUX and Magelis XBTGH (1) Harmony Panel PCs and Box PCs (HMIBMP, HMIBMU, HMIPSP, HMIPSO, and HMIPPEP) Harmony P6
1	32
Windows 10 IoT Enterprise 2019 LTSC 32-bit Harmony iPCs: Windows 8.1, Windows 10	Proprietary for Harmony STU/GTO, Harmony GK/GTU/GTUX, Magelis XBTGH
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
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)	-
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
VBScript, built-in scripting and QuickScript.NET	Java
Via I/O drivers: Schneider Electric or third-party protocols (over 250 drivers: Mitsubishi, Omron, Rockwell Automation, and Siemens)	
Yes	Yes
Yes	
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 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, and Harmony P6) 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 11, Windows Server 2012 R2, Windows Server 2016, Windows Server 2019, and Windows Server 2022	Windows 10 Professional and Windows 11
EcoStruxure™ Machine SCADA Expert	Vijeo Designer™
For more information, refer to the DIA5ED2171201EN catalog.	For more information, refer to the DIA5ED2130614EN catalog.

EcoStruxure Operator Terminal Expert

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EcoStruxure Operator Terminal Expert Demo screen



EcoStruxure Operator Terminal Expert window

Presentation

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

- Harmony GTU, GTUX
- Harmony STO7
- 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 or Windows 11 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/STO7/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
- Libraries, templates, and theme design selection
- Graphic configuration by Universe "System Architecture" view
- Windows 10 and Windows 11

Configuration

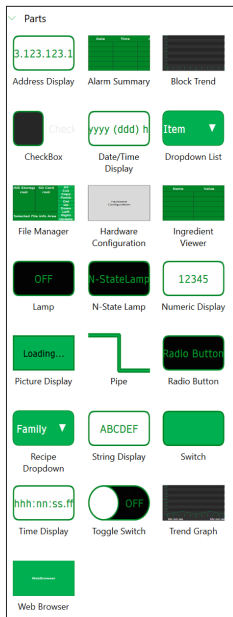
EcoStruxure Operator Terminal Expert is an intuitive configuration software that is used to process HMI projects quickly and easily:

1. Tool Chest
2. Compound Object Explorer
3. Project Explorer
4. References
5. Error Window and Feedback zone
6. Document toolbar
7. Editor or Document view
8. Application Tool bar
9. Event List
10. Object List
11. Properties

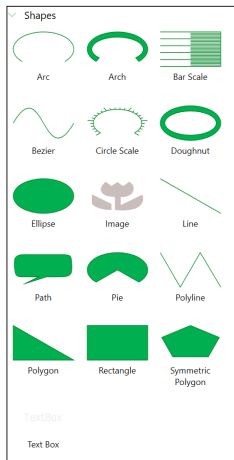
The software also offers a complete set of application management tools for:

- 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.

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



Parts



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.
- SVG compatibility

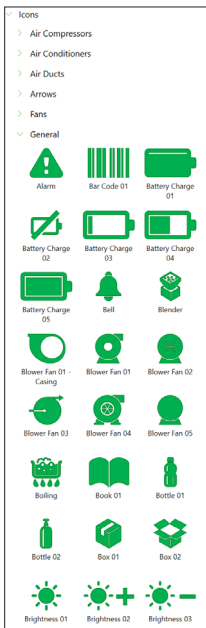
Object animations

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

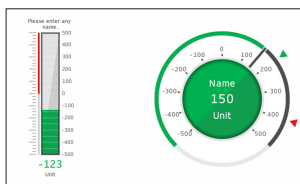
- Pressing the touch panel
- Changing of color
- Filling
- Movement
- Rotation
- Size
- Visibility
- Display of associated value
- Object redesign

Predefined icon, image, and compound object libraries

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



Predefined icons



Compound objects

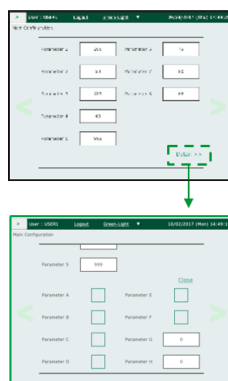
Compound Objects

- Easily create custom objects and libraries by using the compound object editor.
- Efficiently manage your workflow by copying, editing, importing, and exporting existing compound objects, ensuring you can easily reuse your unique creations.
- Experience fast and convenient sharing of unique compound objects across projects, colleagues, and customers.

NOTE: Creation and editing of compound objects are only supported by Professional Buildtime licenses but it functions on all runtime hardware.



Slide navigation



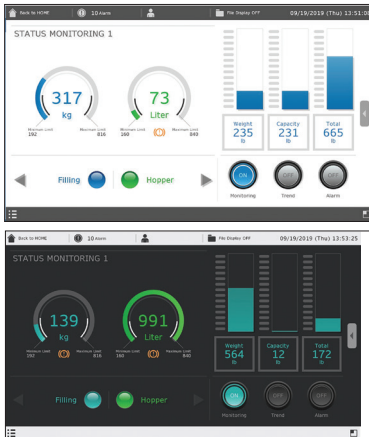
More information appears

Key features

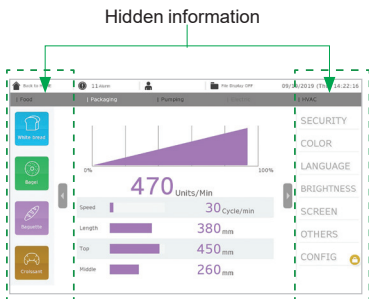
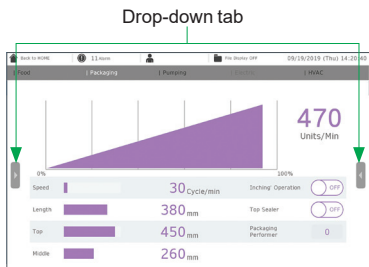
Runtime Navigation

- 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

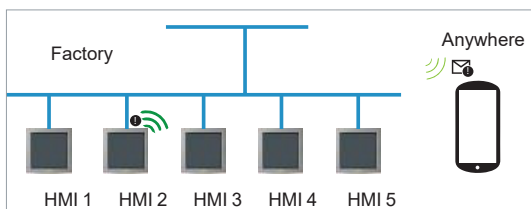
(1) Supported in Harmony GTU / iPCs.



Themes



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

PDF Viewer

PDF viewer available for Harmony iPC only

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)
- 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 licenses and applicable to all hardware with Ethernet port options

Communication protocols between HMI application and devices

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 Client and Server
- FTPs Client

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.

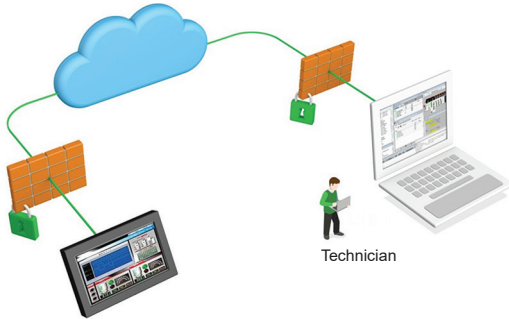
The direct I/O access authorizes access to hardware input and output registers.

Communication protocols between HMI application and devices (continued)

PLC symbols link (1)

EcoStruxure Operator Terminal Expert supports the following configuration tools:

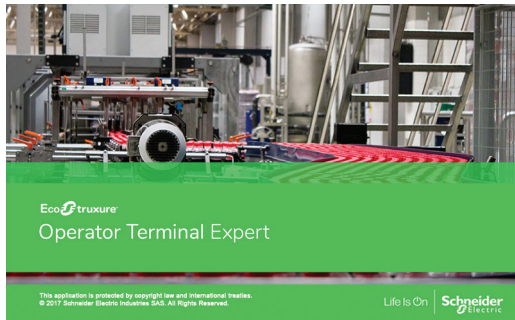
- Schneider Electric SA
 - Modbus SIOMaster(SMBP format)
 - PacDrive (XML format)
 - Modbus TCP Master(XVM/XSY format)
 - SoMachine Network
- OMRON Corporation
 - CS/CJ/NJ Series EtherNet/IP(TXT format)
- Rockwell Automation
 - EtherNet/IP(L5K/CSV Format)
- Siemens AG
 - TIA Portal Ethernet(AP format)



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 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

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

(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.

EcoStruxure Operator Terminal Expert

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

References (continued)				
Buildtime licenses				
Description	Subscription based	License type/No. of Stations	Compatible with	Reference
EcoStruxure Operator Terminal Expert Basic	1 Month	Single (1)	Harmony STO7 Harmony ST6	HMIEOTEBTB1SM
	1 Year	Single (1)	Harmony STM6	HMIEOTEBTB1SY
EcoStruxure Operator Terminal Expert Professional	1 Month	Single (1)	Harmony GTU/GTUX Harmony STO7	HMIEOTEBTP1SM
	1 Year	Single (1)	Harmony ST6 Harmony STM6	HMIEOTEBTP1SY
	1 Year	Group (3)	Harmony iPCs and other PCs	HMIEOTEBTP3SY
	1 Year	Team (10)		HMIEOTEBTP10SY
	1 Year	Entity (100)		HMIEOTEBTP100SY
Description	Perpetual	License type/No. of Stations	Compatible with	Reference
EcoStruxure Operator Terminal Expert Basic	-	Single (1)	Harmony STO7 Harmony ST6 Harmony STM6	HMIEOTEBTB1P
EcoStruxure Operator Terminal Expert Professional	-	Single (1)	Harmony GTU/GTUX Harmony STO7	HMIEOTEBTP1P
	-	Group (3)	Harmony ST6 Harmony STM6	HMIEOTEBTP3P
	-	Team (10)	Harmony iPCs and other PCs	HMIEOTEBTP10P
	-	Entity (100)		HMIEOTEBTP100P
Runtime license				
Description	Perpetual	License type/No. of Stations	Compatible with	Reference
EcoStruxure Operator Terminal Expert Runtime	-	Single (1)	Harmony iPCs and other PCs	HMIEOTERT1P

H	
HMIEOTEBTB1P	11
HMIEOTEBTB1SM	11
HMIEOTEBTB1SY	11
HMIEOTEETP100P	11
HMIEOTEETP100SY	11
HMIEOTEETP10P	11
HMIEOTEETP10SY	11
HMIEOTEETP1P	11
HMIEOTEETP1SM	11
HMIEOTEETP1SY	11
HMIEOTEETP3P	11
HMIEOTEETP3SY	11
HMIEOTERT1P	11

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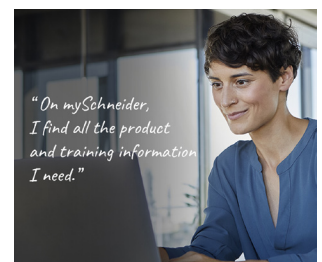
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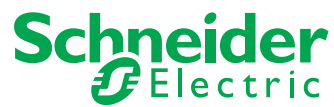
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