Catalog | October 2020



EcoStruxure Machine SCADA Expert

EcoStruxureTM Machine SCADA Expert

Lite SCADA for line management





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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



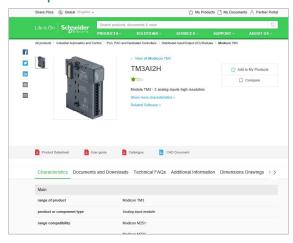


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 Connections and schemas, Performance curves
- Product image, Instruction sheet, User guide, Product certifications, End of life manual



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General contents

EcoStruxure™ Machine SCADA Expert

General presentation	. page 2
Saves time	. page 2
Cost-effective	. page 3
Good connectivity and data management	. page 3
Selection guide	. page 4
Presentation	. page 6
Software components	. page 6
Configuration	. page 7
Industrial Graphics Editor	page 7
Key features	. page 8
Companion products	. page 9
References	page 10
Product reference index	page 12

EcoStruxure™ Machine SCADA Expert

Lite SCADA for line management

EcoStruxure Machine SCADA Expert



EcoStruxure Machine SCADA Expert enables you to use the key features of Microsoft operating system and build a full-featured SCADA or HMI project for your industrial automation business.

EcoStruxure Machine SCADA Expert is designed in a modern, ribbon-based Windows interface to provide an integrated and user-friendly development environment.

EcoStruxure Machine SCADA Expert supports capabilities like scripting, animation, E-mail, recipes, security, tags database, multi-touch, alarms, trends, scalablity, multi-language, FDA traceability, PDF export, graphics and design tools, and so on.

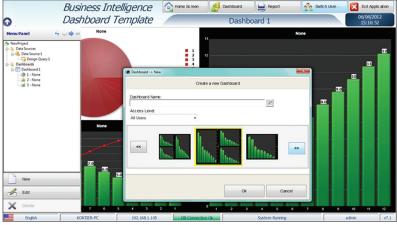
For applications ranging from complex machine control and monitoring to plant supervision and SCADA, EcoStruxure Machine SCADA Expert with Harmony iPC/Harmony GTU Open Box association makes industrial operations smooth and stress-free.



EcoStruxure Machine SCADA Expert

Saves time

- > Quick and easy installation on Harmony iPCs
- Fully tested and validated association means that testing and commissioning days can be saved
- > Build applications with ready-to-use PackML, Andon, and OEE templates
- > Generate automatically reports compliant with FDA CFR 21 Part 11
- ➤ Minimize migration time from FactoryTalk™ to EcoStruxure Machine SCADA Expert by automatically converting FactoryTalk ME/SE applications to EcoStruxure Machine SCADA Expert (graphical interface, communication interface, tags, etc.) using the Import Wizard
- > Information at a glance using Business Intelligence Dashboard Template



Business Intelligence Dashboard Template

EcoStruxure Machine SCADA Expert

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Cost-effective

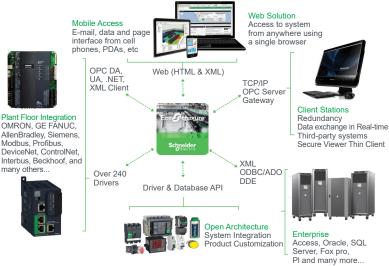
- Track and analyze the performance of your data with embedded EcoStruxure Machine SCADA Expert historian and OEE templates
- Single point of contact for hardware/software/operating system integration and support
- Access SCADA level software with its benefits at competitive cost/benefits ratio
- > Easy maintenance of machine with long-term hardware supply and availability
- With size-based license pricing, you can buy EcoStruxure Machine SCADA Expert as per your requirement



EcoStruxure Machine SCADA Expert Runtime environment

Good connectivity and data management

- Realize the power of the IoT with EcoStruxure Machine SCADA Expert's extensive IT and OT driver library and data management capabilities (connection between ERP, MES, third-party historians, and the plant floor)
- Supports over 250 native communication drivers for PLCs, temperature controllers, motion controllers, bar code/2D/RFID readers, and many more devices
- Native OPC interface, including OPC UA, OPC DA, OPC XML, and OPC .NET to communicate with OPC servers
- > With EcoStruxure Machine SCADA Expert Mobile Access, you can connect remotely with your tablet or smart phone



Open architecture

HMI Software

Touchscreen configuration software with UI design and gestures





Compatible products	Туре	Harmony STO Color Harmony ST6/STM6 Harmony GTU Premium Box Harmony iPCs Windows compatible computers		
——————————————————————————————————————		1		
	Operating system on terminals	Proprietary for Harmony STO Color, Harmony ST6/STM6 and Harmony GTU 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		
	Native library of graphic objects	Yes		
applications	Curves and alarms	Yes		
	Scripts	Block Script		
Communication between HMI application and PLCs		Via I/O drivers: Schneider Electric or third-party protocols (Mitsubishi, Omron, Rockwell Automation, Siemens)		
Uploading of applicatio	ns	-		
Simulation of HMI appli	cations	Yes		
Recipe management		Yes, up to 256 recipes, 600,000 ingredients in total		
Report and barcode printing		-		
Screen capture		Yes, for Harmony iPCs in PNG format		
Access security		Password protected		
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		
OS compatibility		Windows 7, Windows 8, Windows 8.1, Windows 10 (32-bit/64-bit)		
Software type		EcoStruxure™ Operator Terminal Expert		
Pages		For more information, please refer to the DIA5ED2140703EN catalog.		

- (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









For more information, please refer to the DIA5ED2130614EN catalog.

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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: Mits	ubishi, 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 of 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)
EcoStruxure™ Machine SCADA Expert	Vijeo Designer™



For more information, please refer to page 8

EcoStruxure™ Machine SCADA Expert

Lite SCADA for line management





Presentation

EcoStruxure Machine SCADA Expert is a powerful software suite for developing HMI, SCADA, and OEE/Dashboard projects that can be deployed anywhere. EcoStruxure Machine SCADA Expert associated with Harmony *i*PCs/Harmony GTU Open Box provides smart SCADA solutions. This software supports English, German, French, Chinese, and Japanese.

The EcoStruxure Machine SCADA Expert software project includes a project tags database to manage data, configurable drivers to communicate, animated human-machine interface (HMI) screens, overall equipment effectiveness (OEE) dashboards, and optional modules (alarms, events, trends, recipes, complete database interface, security system, etc.).

EcoStruxure Machine SCADA Expert supports numerous features for creating and managing projects for various industrial automation businesses, helping you to:

- Monitor machines, run VB scripts, generate reports (PDF, XML, HTML, etc.), receive alarm notifications, and follow trends without having to pay for a full SCADA
- Monitor applications remotely through a Web client or tablet and receive alarms via e-mail
- Save time by generating FDA CFR 21 Part 11 projects with traceability and e-signature
- Improve efficiency with built-in OEE dashboard
- Store production data in local databases (SQL)
- Protect information with database and overall redundancy
- Make use of the Windows environment with EcoStruxure Machine SCADA Expert compatibility
- Use the thin client function where screen monitoring from Web browser is based on HTML5/dedicated viewer
- Provide necessary tools to enable the user to create a dashboard based on the queries created
- Use the Industrial Graphics Editor in parallel or as an optional alternative with the native editor of EcoStruxure Machine SCADA Expert to provide a unified look and feel and user experience with AVEVA System Platform
- Make use of the modernized buildtime environment with new graphics, custom themes, shortcuts and other usability improvements
- Make use of MQTT SparkPlug B, which provides better compatibility with IIoT applications and use cases, allowing a richer standardized data model

EcoStruxure Machine SCADA Expert components

The EcoStruxure Machine SCADA Expert suite comprises several individual components that can be installed on various platforms to perform different functions. The architecture of the finished EcoStruxure Machine SCADA Expert project depends upon the components installed, where they have been installed, and how they are connected to each other. The following table lists the available components.

Software components				
Component	Features	Platforms		
EcoStruxure Machine SCADA Expert	 Project development environment Tag integration Remote management of project runtimes Project runtime Agent to allow remote management Project thin client 	 Windows Windows Server Windows Embedded Standard (1) 		
Database Gateway	Enables communication between the project runtime and external databases, including Historian and most ADO.NET-compatible databases.	■ Windows ■ Windows Server		
Mobile Access Runtime	Enables the project runtime to serve HTML5-enhanced project screens to tablets and smartphones	 Internet Information Services (IIS) for Windows Any CGI-enabled Web server (e.g. Apache) 		
Secure Viewer	Project thin client, as a standalone program	WindowsWindows ServerWindows Embedded Standard (1)		

(1) Supported by versions 8.0 and 8.1

EcoStruxure Machine SCADA Expert

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EcoStruxure Machine SCADA Expert Buildtime environment



Symbols library



EcoStruxure Machine SCADA Expert Runtime environment

Configuration

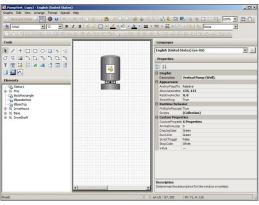
The complete EcoStruxure Machine SCADA Expert includes both the project development and the project runtime environments. EcoStruxure Machine SCADA Expert incorporates a modern, ribbon-based Windows interface to provide an integrated and user-friendly development environment.

The project development environment allows you to design, develop, troubleshoot, deploy, and maintain EcoStruxure Machine SCADA Expert projects. The user interface for the EcoStruxure Machine SCADA Expert development environment includes:

- 1 Project Explorer: Organizes all the screens, worksheets, and other items that comprise your project and presents them in an expandable tree-view.
- 2 Screen/Worksheet Editor: Uses the powerful object-oriented screen editor to create and edit a variety of screens and worksheets for the projects.
- 3 Watch Window: Debugging window that allows you to watch and force values to project tags, execute and test functions, and execute and test math expressions.
- 4 Output (LogWin): Displays additional information about the project.

The Symbols library is a visual browser for all the symbols that are available to be used in your project screens. The library includes the Project Symbols folder containing user-made symbols for the current project, and the System Symbols folder containing all the predefined symbols (sorted by type) that are installed with the EcoStruxure Machine SCADA Expert 2020 software.

The project developed can either be run locally on your development workstation or downloaded and run on a remote computer. The project runtime server processes I/O data from connected devices according to your project parameters and then responds, displays, and/or saves the data. The runtime environment runs the project, communicates with external databases and devices, and serves project screens to thin clients.



Industrial Graphics Editor screen



Graphic Toolbox

Industrial Graphics Editor

The Industrial Graphics Editor works as a companion to the native EcoStruxure Machine SCADA Expert graphic tools in Studio. It provides new features and options, allows you to reuse symbols that were created in other applications, and it increases interoperability across your entire automation solution.

The Industrial Graphics Editor is used to create industrial graphics from basic elements, such as rectangles, lines, and text elements. The interface includes a tools panel, canvas, elements list, language selector, properties editor, animation summary, and Symbol Wizard Editor. The Symbol Wizard Editor helps to create graphics containing multiple visual and functional configurations called Symbol Wizards. These graphics can also be embedded in other graphics enabling more complex graphics to be rapidly developed using common components. The created industrial graphics screens can be used in your projects during runtime.

Depending on the development requirements, you can select where and how to store industrial graphics:

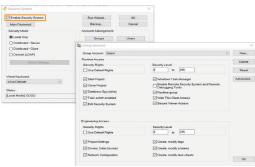
- Create and store graphics as a standard set that you can reuse, such as a generic valve graphic
- Store graphics as templates if you want to use the graphics in multiple instances during runtime
- Store graphics for use in a specific application

EcoStruxure Machine SCADA Expert

Lite SCADA software for line management



FDA traceability



Security system



Electronic signature



Mobile Access thin client

Key features

FDA traceability

With built-in FDA traceability and e-signature features, projects that fully comply with U.S. Food and Drug Administration regulations (FDA CFR 21 Part 11) can be created. These features are often used in food and pharmaceutical applications, but they can also be used in any application where traceability is required.

- Security system: The security system for the whole application can be enabled or disabled with the "Enable Security System" checkbox.
- Electronic signature (E-Sign): The objects and animations enable you to perform a task during runtime and checking the "E-sign" option will allow you to set an electronic signature (E-Sign) to execute the respective task.

Drivers

The EcoStruxure Machine SCADA Expert includes over 250 built-in communication drivers for most PLCs, temperature controllers, motion controllers, barcode/RFID readers, and other devices. These drivers enable the integration of multiple devices and systems from the plant floor to the ERP/Cloud in a seamless manner. Also, the Schneider Electric driver toolkits provide the flexibility to build your own drivers. These various drivers increase productivity and quality through native tag integration for tag-based devices.

OLE for Process Control (OPC)

As an alternative to the built-in drivers for direct communication with PLCs, several different versions of OLE for Process Control (OPC) can also be used to manage your devices. This software includes support for OPC DA (server or client), OPC HDA (server), OPC UA (server or client), OPC .NET (client), and OPC XML/DA (client).

Mobile Access thin clients

With this feature, you can remotely view project screens on several different types of thin client. The HTML5-enabled Mobile Access feature also allows you to access projects from almost any other computer or mobile device. A high level of security can be achieved on plant-floor stations using the standalone Secure Viewer.

Standards

Supports common industry standards for developing projects that are compatible with any format. TCP/IP, ActiveX/.NET, OPC (client and server), ODBC/ADO, COM/DCOM, OLE, DDE, XML, SOAP, and HTML are all supported.



Presentation (continued), references

EcoStruxure Machine SCADA Expert

Lite SCADA software for line management



Companion products (1)

EcoStruxure™ Secure Connect Advisor 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) over a secure central server (GateManager). With EcoStruxure 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.

References

EcoStruxure Machine SCADA Expert is compatible with Harmony *i*PCs and Harmony GTU Open Box. The software licensing and activation process is managed by e-mail as follows:

- 1 On purchase of the product, the EcoStruxure Machine SCADA Expert activation key is provided in paper format.
- 2 After installing the project development or runtime software, a unique site code will be generated.
- 3 You then need to send an e-mail with the activation key and site code to SiteKeyLicense.Support@schneider-electric.com requesting the site key, which will again be sent in an e-mail.
- 4 Input the site key on your computer or target device to activate the EcoStruxure Machine SCADA Expert.

EcoStruxure Machine SCADA Expert supports the following execution modes:

- Evaluate mode enables you to use all the engineering and runtime features of the product. When EcoStruxure Machine SCADA Expert is installed on the computer for the first time, the product runs for 40 hours in Evaluation mode and then automatically converts to Demo mode.
- Demo mode enables you to download projects to remote stations and run them for testing or demonstration. You can execute runtime tasks and use debugging tools, which will shut down automatically after running continuously for two hours.
- Licensed for Engineering only mode enables all development options for an unlimited time. You can execute runtime tasks and use debugging tools continuously for 72 hours. This license can be used for development and testing only.
- Licensed for Runtime only mode enables all runtime tasks and debugging tools for an unlimited time, but cannot create or modify screens/worksheets.

⁽¹⁾ For more information, please refer to the "EcoStruxure Secure Connect Advisor" catalog DIA5ED2190101EN.

EcoStruxure Machine SCADA Expert Lite SCADA for line management



EcoStruxure Machine SCADA Expert

EcoStruxure Machine SCADA Expert references			
Description	License type	Compatible with	Reference
USB references			
USB media drive containing downloadable software version 2020, without software license	USB media drive	HMIPEPOO, HMIPSOOO, HMIBMUOO, HMIBMPOO, HMIP6 (1), HMIG5U21 (2)	HMIEMSEUSB (3)
EcoStruxure Machine SCADA Expert USB hard key	USB dongle	-	HMIEMSEUSBL (4)

Paper license reference	es		
EcoStruxure Machine SCADA Expert for Supervision, 64,000 Tags	Buildtime license	HMIPEPOO, HMIPSOOO, HMIBMUOO, HMIBMPOO, HMIP6 (1), HMIG5U21 (2)	HMIVXLBT64KLV80
EcoStruxure Machine SCADA Expert for Line Management Plus, 32,000 Tags	Buildtime license		HMIVXLBT32KLV80
EcoStruxure Machine SCADA Expert for Line Management, 4,000 Tags	Buildtime license	-	HMIVXLBT4KLV80
EcoStruxure Machine SCADA Expert for Machine Control, 1,500 Tags	Buildtime license	-	HMIVXLBT1KLV80
EcoStruxure Machine SCADA Expert for Supervision, 64,000 Tags	Runtime license	-	HMIVXLRT64KLV80
EcoStruxure Machine SCADA Expert for Line Management Plus, 32,000 Tags	Runtime license	-	HMIVXLRT32KLV80
EcoStruxure Machine SCADA Expert for Line Management, 4,000 Tags	Runtime license	-	HMIVXLRT4KLV80
EcoStruxure Machine SCADA Expert for Machine Control, 1,500 Tags	Runtime license	-	HMIVXLRT1KLV80
PanelBuilder Import Wizard, PanelMate Import Wizard and FactoryTalk Import Wizard are included	Import Wizard licenses	-	HMIVXLTK
Thin Client License for Secure Viewer and Mobile Access	Thin Client License	-	HMIVXLTC

⁽¹⁾ Available as configure-to-order only and can be ordered using the Product Selector. For more information, refer to catalog <u>DIA5ED2140501EN</u>.

⁽²⁾ EcoStruxure Machine SCADA Expert version 8.1 supported, version 2020 will be supported in Q4 2020.

⁽³⁾ Available in Q4 2020.

⁽⁴⁾ Available in Q4 2020, and until then HMIVXLUSBL can be used.

EcoStruxure Machine SCADA Expert Lite SCADA for line management

EcoStruxure Machine SCADA Expert references				
Description	License type	Compatible with	Reference	
Paper license reference	es (continued)			
Upgrade Buildtime license from 32,000 tags to 64,000 tags	Upgrade license	HMIPEP●●, HMIPSO●●, HMIBMU●●, HMIBMP●●,	HMIVXLUG64KBT	
Upgrade Buildtime license from 4,000 tags to 32,000 tags	Upgrade license	HMIP6 (1), HMIG5U21 (2)	HMIVXLUG32KBT	
Upgrade Buildtime license from 1,500 tags to 4,000 tags	Upgrade license	-	HMIVXLUG4KBT	
Upgrade Runtime license from 32,000 tags to 64,000 tags	Upgrade license	-	HMIVXLUG64KRT	
Upgrade Runtime license from 4,000 tags to 32,000 tags	Upgrade license	-	HMIVXLUG32KRT	
Upgrade Runtime license from 1,500 tags to 4,000 tags	Upgrade license	-	HMIVXLUG4KRT	
Version up license for Supervision (Buildtime), 64,000 Tags	Version up license	-	HMIVXLVU64KBT	
Version up license for Line Management Plus (Buildtime), 32,000 Tags	Version up license	-	HMIVXLVU32KBT	
Version up license for Line Management (Buildtime), 4,000 Tags	Version up license	-	HMIVXLVU4KBT	
Version up license for Machine Control (Buildtime), 1,500 Tags	Version up license	-	HMIVXLVU1KBT	
Version up license for Supervision (Runtime), 64,000 Tags	Version up license	-	HMIVXLVU64KRT	
Version up license for Line Management Plus (Runtime), 32,000 Tags	Version up license	-	HMIVXLVU32KRT	
Version up license for Line Management (Runtime), 4,000 Tags	Version up license	-	HMIVXLVU4KRT	
Version up license for Machine Control (Runtime), 1,500 Tags	Version up license	-	HMIVXLVU1KRT	

⁽¹⁾ Available as configure-to-order only and can be ordered using the Product Selector. For more information, refer to catalog <u>DIASED2140501EN</u>.
(2) EcoStruxure Machine SCADA Expert version 8.1 supported, version 2020 will be supported in Q4 2020.

Product reference index

Н	
HMIEMSEUSB	10
HMIEMSEUSBL	10
HMIVXLBT64KLV80	10
HMIVXLBT32KLV80	10
HMIVXLBT4KLV80	10
HMIVXLBT1KLV80	10
HMIVXLRT64KLV80	10
HMIVXLRT32KLV80	10
HMIVXLRT4KLV80	10
HMIVXLRT1KLV80	10
HMIVXLTK	10
HMIVXLTC	10
HMIVXLUG64KBT	11
HMIVXLUG32KBT	11
HMIVXLUG4KBT	11
HMIVXLUG64KRT	11
HMIVXLUG32KRT	11
HMIVXLUG4KRT	11
HMIVXLVU64KBT	11
HMIVXLVU32KBT	11
HMIVXLVU4KBT	11
HMIVXLVU1KBT	11
HMIVXLVU64KRT	11
HMIVXLVU32KRT	11
HMIVXLVU4KRT	11
HMIVXLVU1KRT	11





Learn more about our products at www.schneider-electric.com/hmi

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