

Human/Machine Interface

Magelis™ STU and STO Small Panels

Catalog

March 2016



How can you fit a 6000-page catalog in your pocket ?

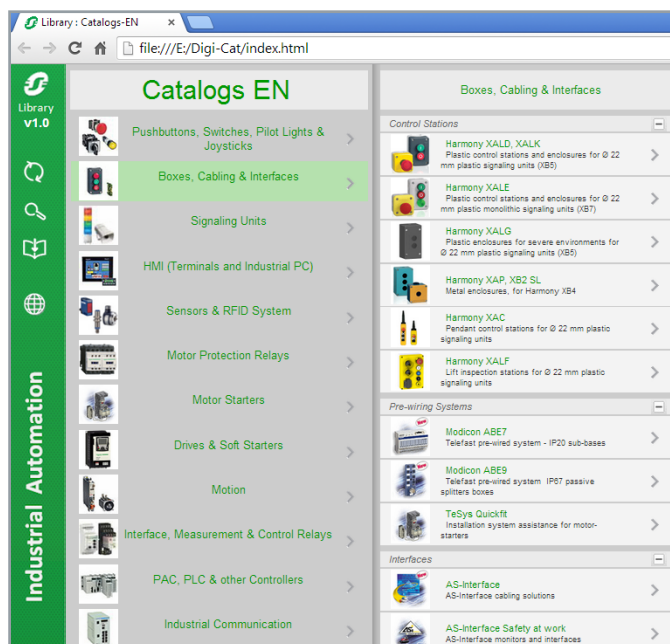
Schneider Electric provides you with the complete set of industrial automation catalogs all on a handy USB key for PC or in an application for tablets



Digi-Cat, a handy USB key for PC



- > Convenient to carry
- > Always up-to-date
- > Environmentally friendly
- > Easy-to-share format



Contact your local representative to get your own Digi-Cat



e-Library, the app for tablets

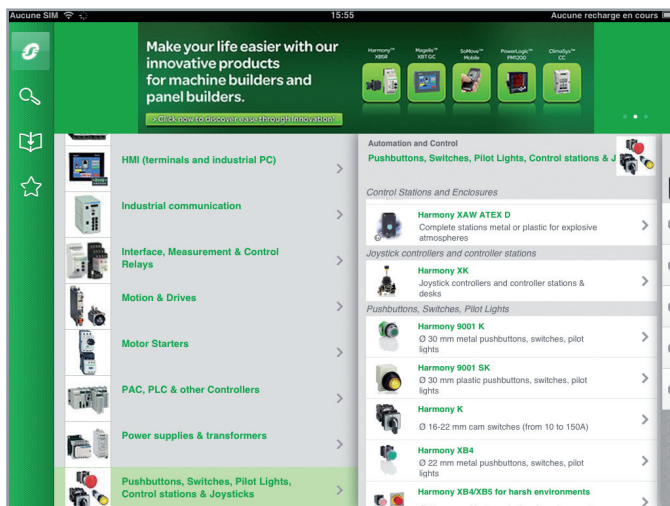
If you have an iPad®:

- > Go to the App Store and search for e-Library
- > or scan the QR code



If you have an Android tablet:

- > Go to the Google Play Store™ and search for eLibrary
- > or scan the QR code



General contents

Magelis™ STU and STO Small Panels

■ General Presentation	page 2
<i>Selection guide</i>	<i>page 4</i>
■ Presentation.....	page 6
■ Architecture	page 8
■ Description	
□ Magelis STO	page 10
□ Magelis STU	page 11
■ References	
□ Magelis STO, STU	page 12
□ Software	page 12
□ Separate components	page 13
- Replacement parts	page 13
- Accessories	page 14
- Connection to PCs and printers	page 14
- Cables for connecting Magelis terminals	page 15
■ Product reference index	page 16

<http://www.roc-electric.com/>

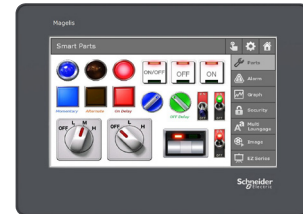
Magelis STU and STO Small Panels

Schneider Electric touch screen small panels offer greater efficiency and ease of use while retaining the inherent features of HMI.

Magelis STO and STU panels are compact open panels offering greater communication capabilities. The high resolution touch screens, clever mounting system, and HMI software make them ideal for machine manufacturer solutions in industry and infrastructure.



Magelis STU



Magelis STO

Magelis STU

High performance communication

With embedded Ethernet connection, communication is more open and faster with Magelis STU panels. In addition, multi-protocol RS-485/232 standard RJ45 ports and USB ports (mini and standard versions) make it easy to communicate with commercially available equipment without extra cost.



USB, Serial and Ethernet ports

Simplified installation

No panel cut-out is required to install a Magelis STU small panel. All you need to do is drill a hole measuring 22 mm in diameter - just like installing a pushbutton. The front module (comprising the screen) is connected to the rear module (comprising the terminals and connectors) via this 22 mm drilled hole.



Pushbutton hole mounting system

Magelis STO

Best-in-class display

With screen quality based on ppi similar to Magelis GTU, the Magelis STO7●● 4.3" color screens support crisp-clear visualization and a high quality display. This enables you to create more attractive and distinguished applications for industry.



Brilliant screen quality

+ Magelis STU/STO → For simple machine manufacturer solutions

Magelis STO (continued)

Panel adaptation fro backward compatibility

The unique design of Magelis STO7●● panels with optional adapter frame supports eight times more pixels and a 50 % larger screen size while keeping the same panel cut-out. This reduces the need for machine redesign or maintenance and also makes it backward-compatible.



Innovative mounting adapter

Tool-free installation

No tools are required to install Magelis STO5●● panels. Being more compact, they can be mounted directly on the machine frame or in an enclosure with spring-clip technology.



Quick and tool-free mounting with Spring clips



Vijeo Designer software



Vijeo XD software

HMI software for Magelis Small Panels

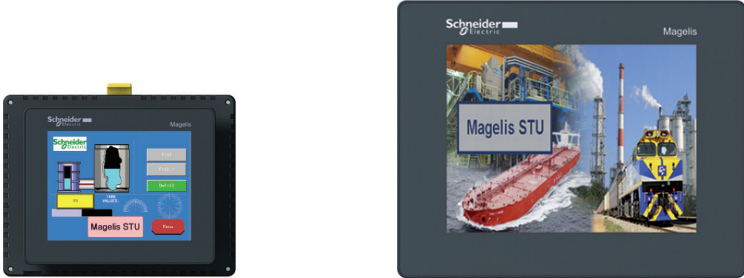
Vijeo Designer for Magelis STU and STO5●●

Magelis STU/STO5●● terminals are configured using Vijeo Designer software. Vijeo Designer software has an advanced user interface with multiple configurable windows, enabling operator dialogue projects to be developed quickly and easily. A complete set of drivers and function allows you to create everything you need for machine interaction tasks.

Vijeo XD for Magelis STO7●●

Magelis STO7●● terminals are configured using Vijeo XD, the innovative software that focuses on the user. The new navigation concepts combined with optimized graphics and animations make it easy to create an intuitive user interface and also provide flexibility in coping with existing HMI screen limitations, resulting in a high quality design experience.

Operator dialogue terminals
Magelis STU and STO Small Panels

Applications		Display of graphic pages	
Type of terminal		Small Panels with touch screen	
			
Display	Type	Color QVGA TFT LCD (320 x 240 pixels)	
	Capacity	3.5" color	5.7" color
Data entry		Via touch screen	
Memory capacity	Application	32 MB Flash	
	Expansion	–	
Functions	Maximum number of pages	Limited by internal FLASH EPROM memory capacity	
	Variables per page	Unlimited	
	Representation of variables	Alphanumeric, bitmap, bargraph, gauge, curves, buttons, LEDs	
	Recipes	32 groups of 64 recipes	
	Curves	Yes, with log	
	Alarm logs	Yes	
	Real-time clock	Access to the PLC real-time clock	
	Alarm relay	–	
	Buzzer	Yes	
Communication	Asynchronous serial link	RS-232C/RS-485	
	Downloadable protocols	Uni-TE, Modbus and for PLC brands: Allen-Bradley, Omron, Mitsubishi, Siemens	
	Printer link	USB for serial or parallel printer	
	USB ports	1 host Type A and 1 device Type mini-B	
	Networks	1 Ethernet TCP/IP port (10BASE-T/100BASE-TX)	
Development software		Vijeo Designer (on Windows XP Professional and Windows 7 Business 32-bit and 64-bit)	
Operating system		Magelis	
References		HMISTU655 HMISTU655W	HMISTU855 HMISTU855W
Page		12	

(1) Only HMISTO511/512.
(2) Only HMISTO501.
(3) Only HMISTO531/532.

Display of graphic pages	
Small Panels with touch screen	
	
Monochrome STN LCD (200 x 80 pixels), backlit - Green, orange and red, or - White, pink and red	Color TFT LCD (480 x 272 pixels)
3.4" monochrome	4.3" color
Via touch screen	
16 MB Flash	26 MB Flash
–	
Limited by internal FLASH EPROM memory capacity	
Unlimited	
Alphanumeric, bitmap, bargraph, gauge, curves, buttons, LEDs	
32 groups of 64 recipes	
Yes, with log	
Yes	
Access to the PLC real-time clock	Option: RTC battery set
–	
Yes	
RS-232C/RS-485 (1) RS-232C using Zelio protocol (2)	
Uni-TE, Modbus and for PLC brands: Allen-Bradley, Omron, Mitsubishi, Siemens	
USB for serial or parallel printer	
1 host Type A and 1 device Type mini-B	
1 Ethernet TCP/IP port (10BASE-T/100BASE-TX) (3)	
Vijeo Designer (on Windows XP Professional and Windows 7 Business 32-bit and 64-bit)	Vijeo XD (on Windows 7 and Windows 8)
Magelis	
HMISTO5●●	HMISTO7●5
12	



Magelis STU 3.5"



Magelis STU 5.7"



Magelis STO 3.4"



Magelis STO 4.3"

Presentation

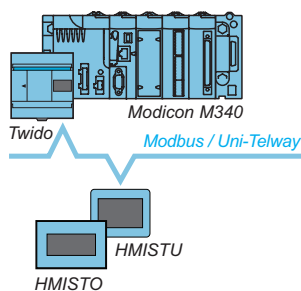
The Magelis small panels offer includes the following touch screen terminals:

- Magelis STU, with 3.5" and 5.7" TFT color screens
- Magelis STO, with 3.4" monochrome screen, available with 2 different types of backlighting:
 - Green, orange, red
 - White, pink, red
- Magelis STO, with 4.3" 64 K TFT color screen

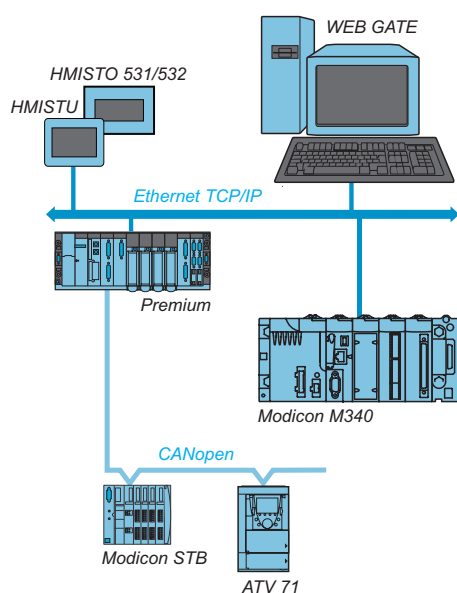
Operation

The features of Magelis STU and STO terminals draw on key technological innovations:

- All Magelis STU and STO models are equipped with:
 - 2 USB V2.0 ports for data transfer
- Magelis STU and STO 531/532/735 models feature:
 - 1 RJ45 port, enabling integration of an Ethernet TCP/IP network and the use of the services associated with this (in particular, the Web Gate function)
- The Magelis STO501 model features:
 - 1 RS-232C serial link port (9-way removable screw terminal block), enabling direct communication with the Zelio Logic SR2/SR3 range of controllers (see page 7)



Example of serial link architecture



Example of Ethernet TCP/IP network architecture

Communication

Magelis STO/STU terminals communicate with PLCs via an integrated serial link, using the following communication protocols:

- **Schneider Electric** (Uni-TE, Modbus)
- **Third-party**: Mitsubishi Electric, Omron, Allen-Bradley and Siemens

The Magelis STO501 terminal is dedicated exclusively to communication with the Zelio Logic SR2/SR3 range controllers. It communicates with these controllers via a direct connection cable SR2CBL09 (see page 15), using Zelio protocol, which is included in Vijeo Designer V6.1.

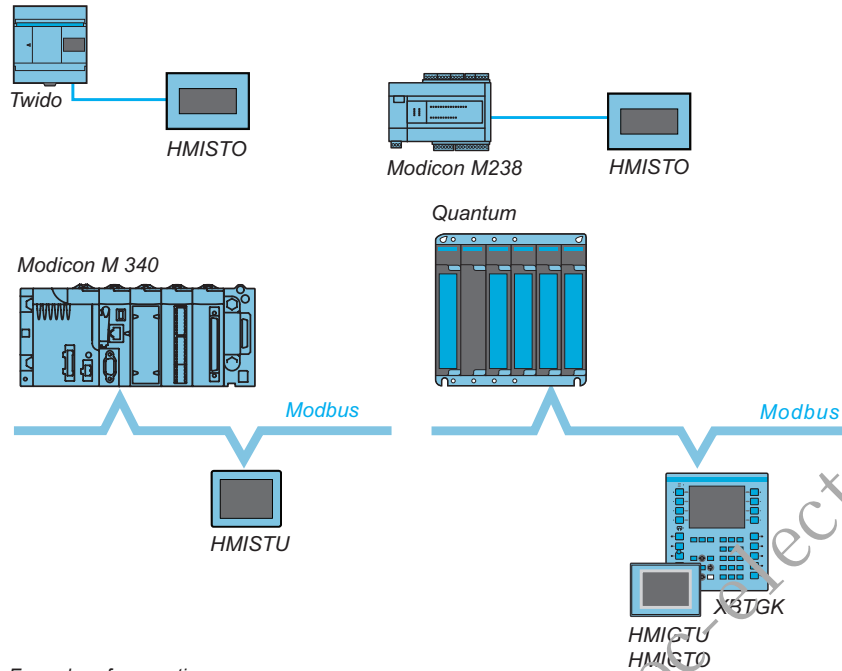
Magelis STU and STO 531/532/735 terminals are connected on Ethernet TCP/IP networks via Modbus TCP or a third-party protocol.

Presentation

Magelis operator dialogue terminals communicate with automation system equipment:

- Via serial link
- By means of integration in an Ethernet TCP/IP architecture

Communication via serial link



Examples of connections

All Magelis terminals feature an integrated RS-232 C or RS-422/485 asynchronous serial link.

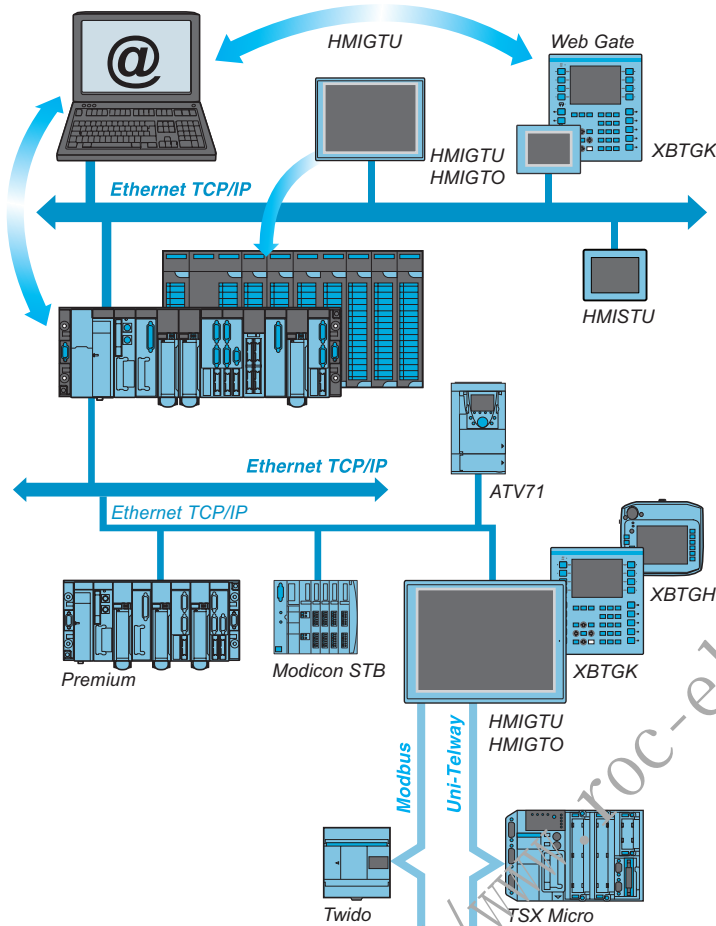
Use of the Uni-TE or Modbus protocol makes it easy to set up communication with Schneider Electric PLCs.

Third-party protocols enable connection to PLCs offered by major manufacturers on the market:

- DF1, DH485 for Allen-Bradley PLCs
- SysmacWay for Omron PLCs
- MPI/PPI for Siemens Simatic S7 PLCs
- Mitsubishi Melsec FX PLC

Presentation (continued)

Integration in an architecture with Ethernet TCP/IP network



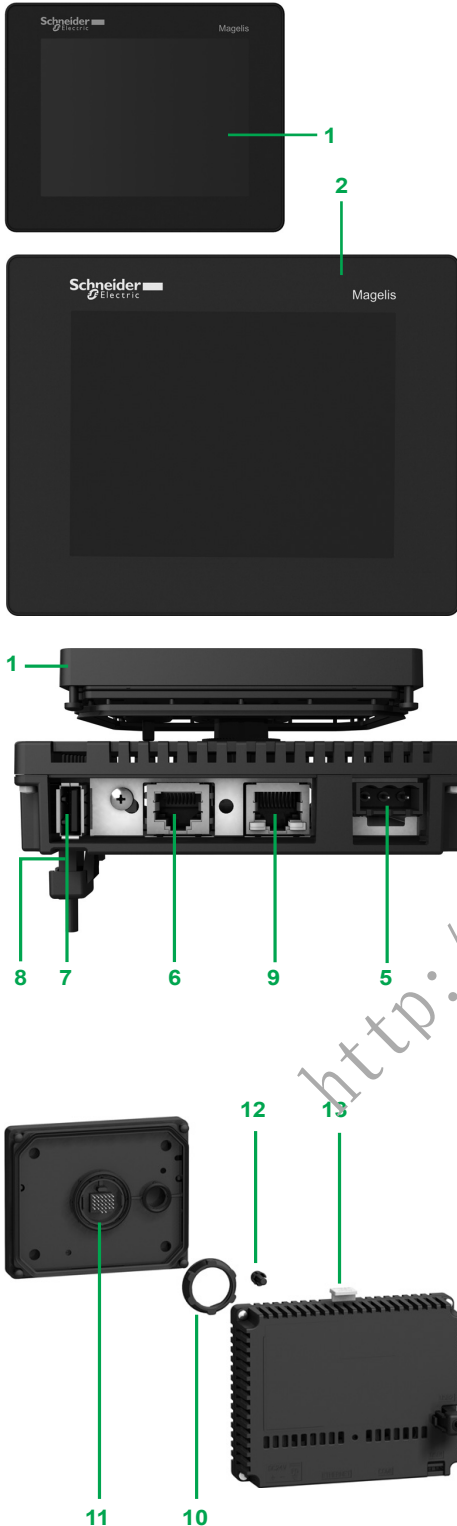
Automation platforms provide transparent routing of Uni-TE or Modbus messages from a TCP/IP network to a Uni-TE or Modbus network and vice versa.

The various services offered for the terminals are:

- **Modbus TCP/IP messaging** (for XBTGK, XBTGH, HMIGTU and HMIGTO, access with Ethernet TCP/IP Modbus protocol)
- **Browse function** with HMIGTU or standard PC
- **Web Gate function**: Diagnostics for remote control of the application
- **FTP server**: Transfer of data files to the terminal
- **Data Sharing function**: Data exchange on Ethernet between 8 terminals (maximum)
- **E-mail function**

Description

Magelis STU 3.5" and 5.7"



Front view

Magelis STU panels have the following on the front, depending on the model:

- 1 Magelis STU655: A touch screen for displaying synoptic views (3.5" color TFT)
- 2 Magelis STU855: A touch screen for displaying synoptic views (5.7" color TFT)
- 3 Magelis STU655W: STU655 touch screen (3.5" color TFT) without Schneider logo on front face
- 4 Magelis STU855W: STU855 touch screen (5.7" color TFT) without Schneider logo on front face

Rear view

Magelis STU panels have the following on the rear:

- 5 A removable screw terminal block for 24 V $\square$ power supply
- 6 An RJ45 connector for RS-232C or RS-485 serial link connection to PLCs (COM1)
- 7 A USB Type A host connector for:
 - ☐ Connection of a peripheral device
 - ☐ Connection of a USB memory stick
 - ☐ Application transfer
- 8 A USB Type mini-B device connector for application transfer (on the left-hand side)
- 9 An RJ45 connector for the Ethernet TCP/IP 10BASE-T/100BASE-TX link

Fixing system

A Magelis STU is made up of a front module (comprising the screen) and a rear module (comprising the CPU plus terminals and connectors). The two modules are fixed together via a hole measuring 22 mm in diameter. The fixing system contains the following elements:

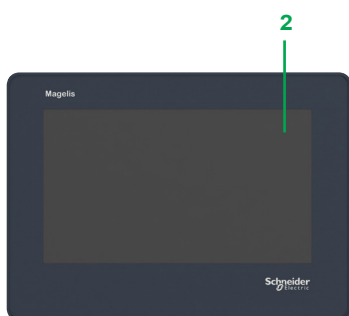
- 10 A fixing nut
- 11 A seal
- 12 An anti-rotation tee (can be used as an option)
- 13 A release mechanism: simply press to separate the two modules once they have been fixed together

Description (continued)

Magelis STO 3.4" and STO 4.3"



Magelis STO511/512/531/532 front view

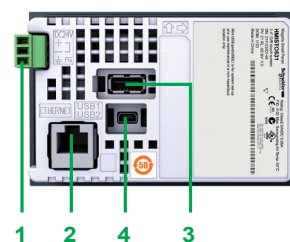


Magelis STO705 front view

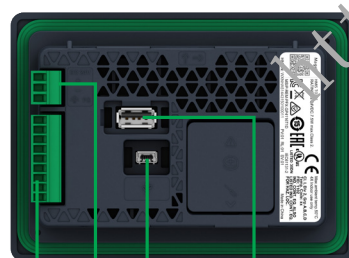
Front view

Magelis STO panels have the following on the front:

- 1 A touch screen for displaying synoptic views (3.4" backlit monochrome) with:
 - ☐ Green, orange or red backlighting for STO511, STO531 and STO501 terminals
 - ☐ White orange or red backlighting for STO512 and STO532 terminals
- 2 A touch screen for displaying synoptic views (4.3" color TFT)



Magelis STO511/512/531/532 rear view



Magelis STO705 rear view

Rear view

Magelis STO panels have the following on the rear:

- 1 A removable screw terminal block for the power supply:
 - ☐ 24 V $\overline{\text{---}}$ power supply for STO5●●
 - ☐ 12...24 V $\overline{\text{---}}$ power supply for STO7●●
- 2 A connector for connecting to PLCs or controllers, depending on the terminal model:
 - ☐ Magelis STO 511/512/715: An RJ45 (COM1) connector for RS-232C or RS-485 serial link
 - ☐ Magelis STO 531/532/735: An RJ45 (ETHERNET) connector for Ethernet 10BASE-T/100BASE-TX link
 - ☐ Magelis STO 501/705: A 9-way removable screw terminal block (COM1) for RS-232C serial link using Zelio protocol
- 3 A USB Type A host connector for:
 - ☐ Connection of a peripheral device
 - ☐ Connection of a USB memory stick
 - ☐ Application transfer
- 4 A USB Type mini-B device connector for:
 - ☐ Application transfer for STO5●●
 - ☐ Power supply for program transfer to STO7●●



HMISTU655



HMISTU855



HMISTO511



HMISTO715

Magelis STU

Type of screen	Number of ports	Application memory capacity	CFast memory	Embedded Ethernet	Reference	Weight kg/lb
3.5" color touch screen						
TFT	1 COM1 (1) 1 ETHERNET (2) 2 USB	32 MB	No	1	HMISTU655	1.000/ 2.205
Without logo on front face	1 COM1 (1) 1 ETHERNET (2) 2 USB	32 MB	No	1	HMISTU655W	1.000/ 2.205
5.7" color touch screen						
TFT	1 COM1 (1) 1 ETHERNET (2) 2 USB	32 MB	No	1	HMISTU855	0.615/ 1.356
Without logo on front face	1 COM1 (1) 1 ETHERNET (2) 2 USB	32 MB	No	1	HMISTU855W	0.615/ 1.356

Magelis STO

Type of screen	Number of ports	Application memory capacity	CFast memory	Embedded Ethernet	Reference	Weight kg/lb
3.4" monochrome touch screen						
STN Green, orange, red	1 COM1 (1) 2 USB	16 MB	No	No	HMISTO511	1.000/ 2.205
	1 ETHERNET (2) 2 USB	16 MB	No	1	HMISTO531	1.000/ 2.205
STN White, pink, red	1 COM1 (1) 2 USB	16 MB	No	No	HMISTO512	1.000/ 2.205
	1 ETHERNET (2) 2 USB	16 MB	No	1	HMISTO532	1.000/ 2.205
STN Green, orange, red	1 COM1 (3) 2 USB	16 MB	No	No	HMISTO501	1.000/ 2.205
4.3" color touch screen						
TFT	1 COM1 (1) 2 USB	26 MB	No	No	HMISTO705	0.220/ 0.485
TFT	1 COM1 (1) 2 USB	26 MB	No	No	HMISTO715	0.220/ 0.485
TFT	1 ETHERNET (2) 2 USB	26 MB	No	1	HMISTO735	0.220/ 0.485

Software

Configuration software

Description	Operating system	Reference	Weight kg/lb
Vijeo Designer	Windows XP Professional Windows 7 Business (32-bit and 64-bit)	HMISTU HMISTO monochrome panels	—
Vijeo XD	Windows 7 and Windows 8	HMISTO color panels	—

(1) RS-232C or RS-485 serial link.

(2) Ethernet 10BASE-T/100BASE-TX link.

(3) RS-232C serial link using Zelio protocol, for direct connection to Zelio Logic SR2/SR3 controllers.

Operator dialogue terminals

Magelis STU and STO Small Panels

Separate components



HMIZCLP1



HMIZCLP3



ZB5AZ905

Separate components (1)

Description	Description/function	Compatible with	Reference	Weight kg/lb
Accessory kit	Contains: ■ An anti-rotation tee ■ A USB Type A clamp ■ A USB Type mini-B clamp ■ A panel adapter for mounting on an enclosure 1 mm thick	HMISTU655 HMISTU655W HMISTU855 HMISTU855W	HMIZSUKIT	—
Protective sheets	5 peel-off sheets for protecting the screen	HMISTO5●●	HMIZS60	—
		HMISTU655 HMISTU655W	HMIZS61	—
		HMISTU855 HMISTU855W	HMIZS62	—
USB clamp	Holds the USB Type A connection in place	HMISTO5●●	HMIZSCLP1	—
	Holds the USB Type mini-B connection in place	HMISTO5●●	HMIZSCLP3	—

Replacement parts (1)

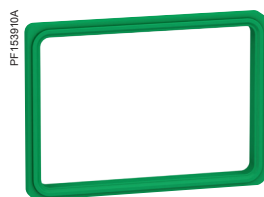
Description	Description/function	Compatible with	Reference	Weight kg/lb
Nuts	Set of 10 nuts, 22 mm (front module of the HMI STU is fixed to the enclosure using a 22 mm nut (see page 6))	HMISTU655 HMISTU655W HMISTU855 HMISTU855W	ZB5AZ901	—
Bezel key	Used to tighten the fixing nut	HMISTU655 HMISTU655W HMISTU855 HMISTU855W	ZB5AZ905	—
Seal	Ensures dust and damp proof connection between the front and rear modules of the HMISTO5●●	HMISTO5●●	HMIZS50	—
Front display	Front display for 3.5" screen	HMISTU655	HMIS65	—
	Front display for 3.5" screen without Schneider logo	HMISTU655W	HMIS65W	—
	Front display for 5.7" screen	HMISTU855	HMIS85	—
	Front display for 5.7" screen without Schneider logo	HMISTU855W	HMIS85W	—
Rear module	Rear module for Magelis STU product	HMISTU655 HMISTU655W HMISTU855 HMISTU855W	HMIS5T	—

(1) Non-exhaustive list: other separate components and replacement parts are listed from page 14 onwards.

Operator dialogue terminals

Magelis STU and STO Small Panels

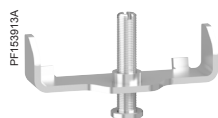
Separate components



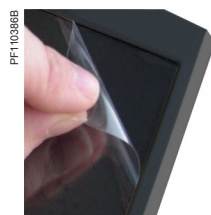
HMIZS501



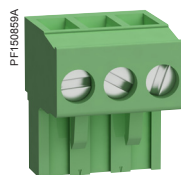
HMIZSRTC1



HMIZSFIX1



HMIZUV0W



HMIZSPWO

Accessories

Type	Description/function	Compatible with	Sold in lots of	Unit reference	Weight kg/lb
Installation gasket	Installation gasket for 4.3" screen	HMISTO	-	HMIZS501	-
Panel cut-out adapter	For mounting a 4.3" screen into a 3.4" STO panel cut-out	HMISTO	-	HMIZSADCO1	-
RTC battery set	For back-up of real time clock data during power-off	HMISTO	-	HMIZSRTC1	-
Installation fastener	For mounting the screen into a solid panel	HMISTO	2	HMIZSFIX1	-
Protection sheet	4.3" wide anti-UV screen protection sheet	HMISTO	1	HMIZUV0W	-
Spring clips (replacement parts)	Spring clip for STO5●● (also for STO7●● with panel cut-out adapter)	HMISTO	12	XBTZ3002	0.200/ 0.441
Power supply connector (replacement parts)	Power supply connector for all Magelis STO panels	HMISTO	5	HMIZSPWO	-
	Power supply connector for all Magelis STU panels	HMISTU	5	XBTZGPWS1	-

Connection to PCs and printers

Used	Compatible with	Length m/ft	Peripheral side connector	Reference	Weight kg/lb
USB cable for PC connection (1)	HMISTO/STU	2.5/ 8.20	USB Type A male	XBTZG935	-
	HMISTO/STU	1.8/ 5.91	USB Type mini-B male	BMXXCAUSBH018	0.230/ 0.507
Serial printer cables	HMISTO/STU	1.8/ 5.91	9-way male SUB-D	HMIZURS	-
USB host extension cable	HMISTO/STU	2/ 6.56	USB Type A male, dust and damp proof	XBTZGUSB	0.220/ 0.485
USB device extension cable	HMISTO/STU	2/ 6.56	USB Type mini-B male, dust and damp proof	HMIZSUSBB	-

(1) Adapter to be used with XBTZ925 cable.

Cables for connecting Magelis terminals

Type of PLC to be connected	Type of connector	Physical link	Protocol	Length m/ft	Reference	Weight kg/lb
Direct connection of HMI STO/STU terminals to Schneider Electric PLCs						
Twido, Modicon Nano, Modicon TSX Micro, Modicon Premium	Mini-DIN	RS-485	Modbus/Uni-TE	2.5/ 8.20	XBTZ9780	—
				10/ 32.81	XBTZ9782 (1)	—
Modicon M340	RJ45	RS-485	Modbus	2.5/ 8.20	XBTZ9980	—
				10/ 32.81	XBTZ9982 (1)	—
Direct connection of the HMISTO501 terminal to Zelio Logic SR2/SR3 controllers						
Zelio Logic SR2/SR3 (2)	Programming port (specifically for Zelio Logic)	RS-232C	Zelio	2.5/ 8.20	SR2CBL09	—
Direct connection of Magelis STO/STU terminals to Modicon STB i/c (3)						
Modicon STB	HE13 (NIM)	RS-232	Modbus	2.5/ 8.20	XBTZ9715	—
Direct connection of Magelis STO/STU terminals to Schneider Electric motor starters and drives (1)						
TeSys U, T ATV 312/32/61/71 variable speed drives ATS 48 starter Lexium 32, Preventa XPSMC	RJ45	RS-485	Modbus	2.5/ 8.20	XBTZ9980	—
Direct connection of Magelis STO/STU terminals to third-party PLCs (3)						
Allen-Bradley SLC5	9-way male SUB-D	RS-232	DF1	2.5/ 8.20	XBTZ9734	—
	Micro-logix	Micro-logix 1000	RS-232	DF1	2.5/ 8.20	XBTZ9733
Mitsubishi FX	8-way female mini-DIN	RS-232/ RS-422 converter	Melsec FX	2.5/ 8.20	XBTZ980 + (4)	—
Omron CPM1, CPM2, CJ1, CS1	9-way male SUB-D	RS-232	Sysmacway	2.5/ 8.20	XBTZ9743	—
Siemens S7 (PG)	9-way male SUB-D	RS-485	PPI	2.5/ 8.20	XBTZG9721	0.210/ 0.463
Bus and network connections for Magelis STO/STU terminals						
Type of bus/network	Tap-off units	Type of connector		Length	Reference	Weight kg/lb
Uni-Telway serial link	Connection box TSXPACC01	8-way female mini-DIN		2.5/ 8.20	XBTZ9780	0.180/ 0.397
Modbus serial link	8-port Modbus splitter box LU9GC3, Modbus tap-off, TWDXCAISO, TWDXCAT3RJ	RJ45		2.5/ 8.20	XBTZ9980	—

(1) For Magelis XBTN200/N400/R400/RT500, use a cable with **XBTZRTPW** adapter and a 5 V $\pm$ power supply.

(2) Cable included with 9-way removable screw terminal block.

(3) For **XBTRT500**, use a cable with **XBTZRTPW** adapter and a 5 V $\pm$ power supply.

(4) **XBTZG939** adapter to be used with cables with “ + (4) ” after the reference.

B

BMXXCAUSBH018	14
---------------	----

H

HMIS5T	13
HMIS65	13
HMIS65W	13
HMIS85	13
HMIS85W	13
HMISTO501	12
HMISTO511	12
HMISTO512	12
HMISTO531	12
HMISTO532	12
HMISTO705	12
HMISTO715	12
HMISTO735	12
HMISTU655	12
HMISTU655W	12
HMISTU855	12
HMISTU855W	12
HMIZS50	13
HMIZS60	13
HMIZS61	13
HMIZS62	13
HMIZS501	14
HMIZSADCO1	14
HMIZSCLP1	13
HMIZSCLP3	13
HMIZSFIX1	14
HMIZSPWO	14
HMIZSRTC1	14
HMIZSUKIT	13
HMIZSUSBB	14
HMIZURS	14
HMIZUV0W	14

S

SR2CBL09	15
----------	----

X

XBTZ980	15
XBTZ3002	14
XBTZ9715	15
XBTZ9733	15
XBTZ9734	15
XBTZ9743	15
XBTZ9780	15
XBTZ9782	15
XBTZ9980	15
XBTZ9982	15
XBTZG935	14
XBTZG9721	15
XBTZGPWS1	14
XBTZGUSB	14

Z

ZB5AZ901	13
ZB5AZ905	13

<http://www.roc-electric.com/>

<http://www.roc-electric.com/>

<http://www.roc-electric.com/>

Human Machine Interface



Schneider Electric Industries SAS

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

www.schneider-electric.com/hmi

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.

Design: Schneider Electric
Photos: Schneider Electric

DIA5ED2130607EN