



Harmony FT6

Human Machine Interfaces
Stainless-steel HMI for pharmaceuticals
and food industries



Harmony

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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** HMI Operator Terminals, iPC and EdgeBox
- **Harmony** Signaling Devices
- **Harmony** Electrical Relays
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References

Modicon TM3

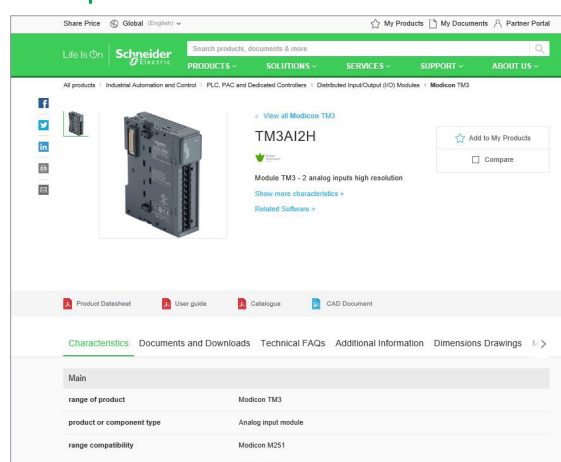
I/O expansion modules for Modicon controllers

Analog I/O modules

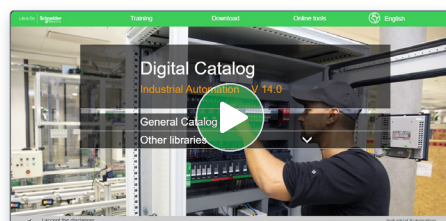
References						
	Modicon TM3 analog input modules	Input range	Resolution	Input terminal block (V)	Reference	Weight (kg)
2 voltage/current inputs	-10...+10 VDC	10 bits or	16 000	16 000	0.110	0.26
	0...10 VDC	10 bits + sign	10 000	10 000	0.110	0.26
	0...20 mA, 4...20 mA	10 bits or	16 000	16 000	0.110	0.26
4 voltage/current inputs	-10...+10 VDC	12 bits or	16 000	16 000	0.110	0.270
	0...10 VDC	12 bits + sign	10 000	10 000	0.110	0.270
	0...20 mA, 4...20 mA	12 bits or	16 000	16 000	0.110	0.270
4 voltage/current inputs	Thermocouples (E, J, K, N, S, T, U, R, C)	10 bits or	16 000	16 000	0.110	0.270
	RTDs (PT100, NI1000, PT100, PT1000)	10 bits or	16 000	16 000	0.110	0.270
	-10...+10 VDC	10 bits or	16 000	16 000	0.110	0.270
	0...10 VDC	10 bits + sign	10 000	10 000	0.110	0.270
	0...20 mA, 4...20 mA	10 bits or	16 000	16 000	0.110	0.270
4 differential temperature inputs	Thermocouples (E, J, K, N, S, T, U, R, C)	10 bits or	16 000	16 000	0.110	0.260
	RTDs (PT100, NI1000, PT100, PT1000)	10 bits or	16 000	16 000	0.110	0.260
	-10...+10 VDC	10 bits or	16 000	16 000	0.110	0.260
8 voltage/current inputs	-10...+10 VDC	12 bits or	16 000	16 000	0.110	0.280
	0...10 VDC	12 bits + sign	10 000	10 000	0.110	0.280
	0...20 mA, 4...20 mA	12 bits or	16 000	16 000	0.110	0.280

Each commercial reference presented in a catalog contains a hyperlink. Click on it to obtain the technical information of the product:

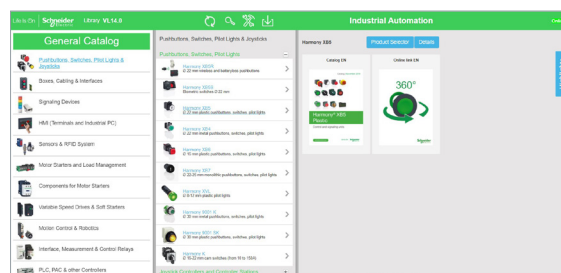
- Characteristics, Dimensions and drawings, Mounting and clearance, Connections and schemas, Performance curves
- Product image, Instruction sheet, User guide, Product certifications, End of life manual



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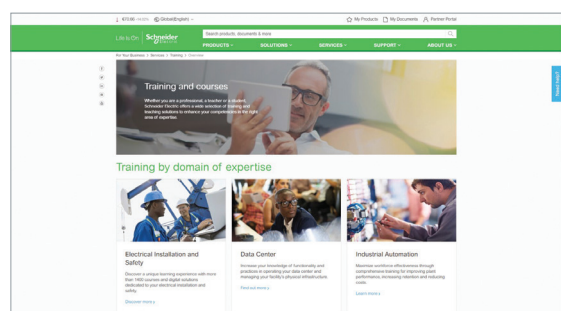


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Harmony FT6 Stainless-steel HMI for pharmaceuticals and food industries

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Human Machine Interfaces

Harmony FT6

Stainless-steel HMI for pharmaceuticals and food industries

Applications		Display of text messages, graphic objects, and synoptic views			
Type of display module		Control and configuration of data			
		Stainless HMI panels			
					
Display	Touch screen size	7" W	10.1" W	12.1" W	15.6" W
	Resolution (pixels)	800 x 480 pixels, 16 million colors	1,024 x 600 pixels, 16 million colors	1,280 x 800 pixels, 16 million colors	1,366 x 768 pixels, 16 million colors
	Type	TFT Color LCD, single-touch analog resistive			
Degree of protection		IP66K			
Functions	Brightness control	16 levels (adjusted with touch panel or software)			
	Backlight service life	50,000 hours or more (continuous operation at 25 °C/77 °F) before backlight brightness decreases to 25%			
Memory	System memory	1,024 MB Main Drive (operating system, project data, and other data)			
	Backup memory	16 GB Secondary Drive; 512 KB NVRAM			
Dimensions	External W × H × D mm/in.	212 x 157 x 45/8.35 x 6.18 x 1.77	277 x 207 x 47/10.91 x 8.15 x 1.85	317 x 239 x 50/12.48 x 9.4 x 1.97	416 x 272 x 50/16.38 x 10.71 x 1.97
	Cut-out W × H mm/in.	190 x 135/7.48 x 5.31	255 x 185/10.04 x 7.28	295 x 217/11.61 x 8.54	394 x 250/15.51 x 9.84
Weight	kg/lb	1.0/2.2	1.7/3.75	2.2/4.85	3.3/7.28
Supply voltage		24 VDC (19.2 V...28.8 V ~)			
Environment		Ambient air temperature 0...50 °C/32...122 °F			
Communication	Asynchronous serial link	RS-232C (COM1), RS-485/RS-422 (COM2)			
	USB ports	1x USB 2.0 (Type A), 1x USB 2.0 Micro-B			
	Buses and networks	2x Ethernet TCP/IP (10BASE-T/100BASE-TX)			
RTC		Yes			
Conformity to standards and certifications		CE, UL/CSA, UL/CSA Class I, Division 2 Hazardous Locations, CCEx/IECEX zones 2/22, China/EU RoHS, REACH, WEEE (2)			
Development software		Vijeo Designer Basic (1)			
Terminal reference		HMIFT6450	HMIFT6550	HMIFT6650	HMIFT6750
Pages		9			

(1) Requires Vijeo Designer Basic V2.0 or later version. Click on this link to download Vijeo Designer Basic software.

(2) The certifications and standards listed in the selection guide may include those that still need to be acquired for this product. For the latest certifications and standards that this product has acquired, please check the product marking or visit our site www.se.com.

Stainless-steel HMI for pharmaceuticals and food industries



Harmony FT6 is a range of stainless-steel touch screen panels. It's available in four screen sizes with wide formats 7" W, 10" W, 12" W, and 15" W. The FT6 panels are designed by following the EN1672-2 hygiene requirements and provide advanced features to allow users developing the applications to be compliant with 21 CFR Part 11 regulation. All models of the FT6 have dual Ethernet ports for isolatable OT/IT connectivity and a built-in 16GB second drive for a big volume of local data storage.

Hygienic design

Harmony FT6 panels come with smooth surface, fewer grooves, and angled bevel design, which makes it easy for disinfection cleaning. Its design follows:

- EN1672-2, hygiene requirements of food processing machinery
- FDA 21 CFR 177:2006, indirect food additives: polymers

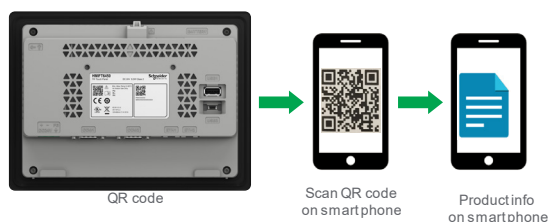
21 CFR Part 11 compliance

Allows users to develop the applications to be compliant with 21CFR Part 11 regulations related to:

- Electronic records
- Electronic signature
- Access control with advanced user security features of password strength management

Easy to use

- Product information via QR code scanning
- External storage free, thanks to 16GB built-in drive for longtime data storage
- Dual Ethernet ports allow to connect with both OT and IT networks easily
- Easy to set up and use with simplified and intuitive programming software (Vijeo Designer Basic) and an illustrated Online help for self-guided training



Default coating

Robustness

- Designed with isolated power supply and enhanced protection on serial communication port for better EMC performance in harsh industrial environments.
- Designed with protection for reverse power connection against negligent miswiring
- PCBA default coating to be sustainable in harsh environment with high humidity



7" Wide and 10" Wide Harmony FT6 touch screen panels



Example of project configuration

Presentation and applications

The range of Harmony FT6 stainless-steel touch screen panels have been designed mainly for pharmaceuticals and food industries, including:

- Pharmaceuticals
- Biotechnology-based food and medicine
- Medical devices
- Cosmeceuticals
- Food processing

Operation

The range of Harmony FT6 stainless-steel touch screen panels support interfaces required for communication & configuration in the pharmaceuticals and food industries, like:

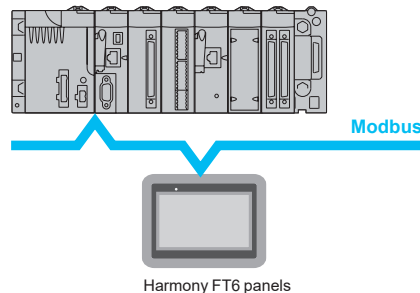
- Essential level of communication (serial multilink, USB downloading port)
 - High level of communication (embedded Ethernet multilink) (1)
 - External data storage (on a USB memory stick) for storing production data and backing up applications (1)
 - Management of peripheral equipment: printers, barcode readers, etc. (1)
- These panels offer an excellent level of technical performance and are designed for use by both OEM and EU customers

Configuration

Harmony FT6 touch screen panels are configured using Vijeo Designer Basic software (1) in Windows 10 (32-bit and 64-bit) environments. This simplified configuration software boasts an intuitive user interface with many configurable windows, enabling projects to be developed quickly and easily.

Communication

Automation platform or logic controller



Harmony FT6 touch screen panels can communicate with various PLCs via the integrated serial links or Ethernet links, using the following communication protocols:

- Schneider Electric (Modbus)
- Third-party: Mitsubishi Electric, Omron, and Siemens

(1) Requires Vijeo Designer Basic version 2.0 or later.

Functions

Harmony FT6 touch screen panels with Vijeo Designer Basic offer the basic functions:

- Display of animated mimics with 8 types of animation (pressing the touch panel, color changes, filling, movement, rotation, size, visibility, and value display)
- Control, modification of numeric and alphanumeric values
- Display of date and time
- Real-time curves and trend curves with log
- Alarm display, alarm log, and management of alarm groups
- Multi-window management
- Page calls initiated by the operator
- Multilingual application management (10 languages simultaneously)
- Recipe management
- Data processing via Java Script
- Application and logs stored on external application memory card in USB stick format
- Management of printer and barcode reader

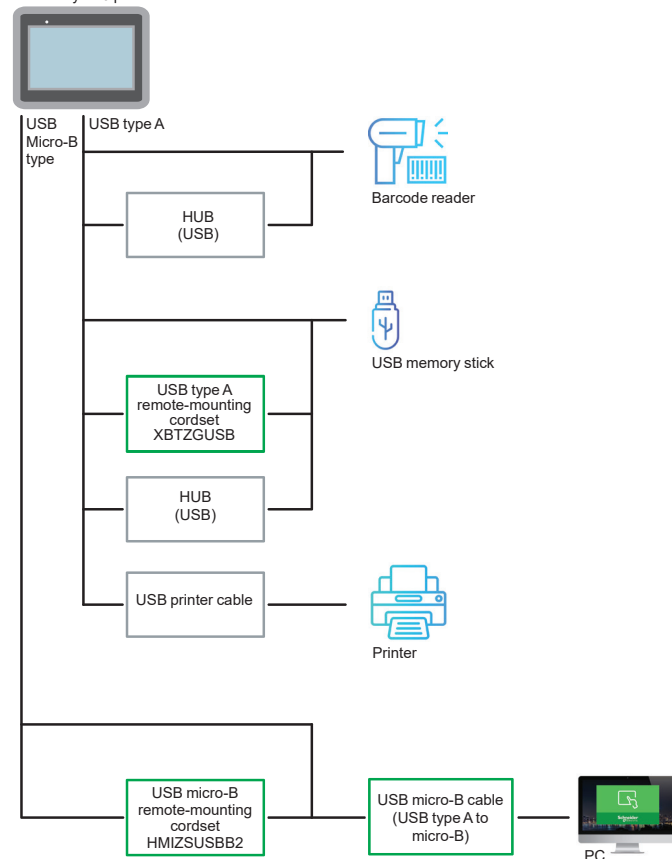
Harmony FT6 panels also offers advance functions to be compliant with GMP/ 21 CFR Part 11 regulations:

- Project revision history management for change tracking
- Password strength management for advance user security
- Electronic records with checksum (support batch-oriented data logging)
- Electronic signature (support second signature for verifying inputs by senior user)
- Records archive and export
- PC LogViewer tool for records viewing, sorting, printing and alteration checking

Operating modes for Harmony FT6 touch screen panels

Edit mode

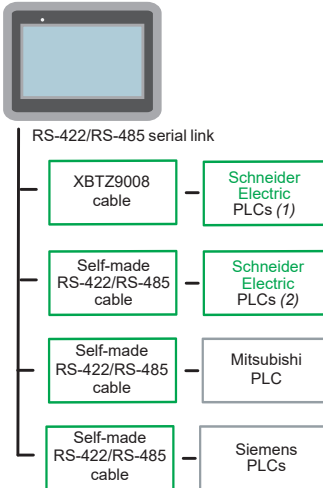
Harmony FT6 panel



Operating modes for Harmony FT6 touch screen panels (continued)

Communication with RS-422/RS-485 serial link mode

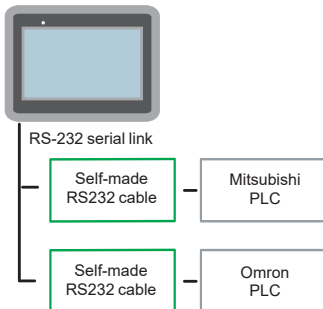
Harmony FT6 panels



Examples of connection to RS-422/RS-485 serial port (3)

Communication with RS-232C serial link mode

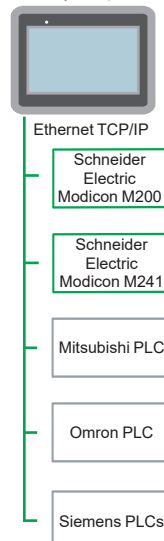
Harmony FT6 panels



Examples of connection to RS-232C (3)

Communication with Ethernet mode

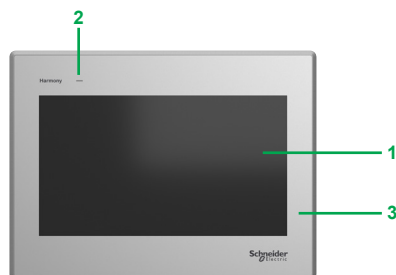
Harmony FT6 panels



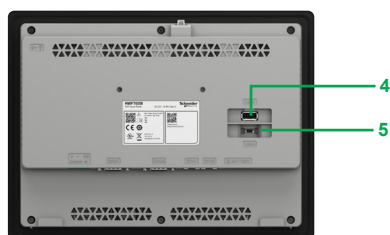
(1) M218/M221/M241/M251/M258/M262 logic controllers.

(2) M100/M200 logic controllers. For all other products, contact our Customer Care Center.

(3) Non-exhaustive examples; contact our Customer Care Center for more information.



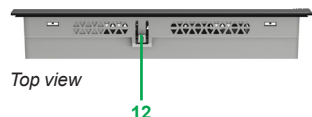
Front view



Rear view



Underside view



Top view

Harmony FT6 ETH touch screen panels

Front view

- 1 Single-touch resistive screen for displaying synoptic views
- 2 Multi-color status indicator (green, orange, and red) showing the panel's operating mode
- 3 Stainless-steel front panel providing IP66K protection when mounted on panel or enclosure door

Rear view

- 4 A USB type A port for external storage with USB memory stick
- 5 A USB micro-B port for screen data downloading

Underside view

- 6 A sliding slot containing a replaceable battery to support embedded real-time clock (the location of the battery is different for each screen size)
- 7 An Ethernet port (ETH2), 10/100Base-Tx type
- 8 An Ethernet port (ETH1), 10/100Base-Tx type
- 9 A 9-way male SUB-D connector for RS-422/RS-485 serial link (COM2 port)
- 10 A 9-way male SUB-D connector for RS-232C serial link (COM1 port)
- 11 A 24 V DC power supply connector supplied with the terminal

Top view

- 12 Hook to hold panel in position during installation

Human Machine Interfaces

Harmony FT6

Stainless-steel HMI for pharmaceuticals and food industries

ETH touch screen panels and Vijeo Designer software



HMIF6750

Harmony FT6 ETH touch screen panels (1)(2)

Screen size and type	Number of ports	Memory capacity		Reference	Weight kg/lb
		For application	For backup		
7" wide, 800 x 480 pixels, color TFT screen	1x COM1 (RS-232C), 1x COM2 (RS-422/485)	1024 MB Flash	512 KB NVRAM, 16 GB second drive	HMIF6450	0.61/1.34
10" wide, 1,024 x 600 pixels, color TFT screen	1x USB micro-B, 1x USB Type A, 2x 10/100 Base-Tx			HMIF6550	0.99/2.18
12" wide, 1,280 x 800 pixels, color TFT screen				HMIF6650	1.62/3.57
15.6" wide, 1,366 x 768 pixels, color TFT screen				HMIF6750	2.52/5.56

Configuration software

Description	Used for	Reference
Vijeo Designer Basic (4)	Harmony FT6 models	(3)



Vijeo Designer Basic

- (1) Panels supplied with fixing screws, power supply connector, and QR code flyer. Setup documentation for Harmony FT6 panels is included in electronic format with the Vijeo Designer Basic configuration software.
- (2) Comprehensive information relating to Harmony FT6 panels is available on our website www.se.com/HarmonyFT6.
- (3) Click on this [link](#) to download Vijeo Designer Basic software.
- (4) Requires software version 2.0 or later. The USB download cable for transferring application from PC to Harmony FT6 panels (standard USB micro-B cable), to be ordered separately from consumer market.

Human Machine Interfaces

Harmony FT6

Stainless-steel HMI for pharmaceuticals and food industries

Spare parts, connection accessories and cables

ST6_65770_CPWF518011A



HMIEZHAF1

GTU_61981_CPSC17102



HMIEZHWG6W1`

ETD_3084681_CPSPH21002



HMIZSUSBB2

105872



XBTZGUSB

Cable_RJ45_SUDB09



XBTZ9008

109038_SE



LU9GC3

DA673208



TWDXCAISO

Spare parts

Description	Used for	Sold in lots of	Reference	Weight kg/lb
Installation fastener	Used to install all the models into a solid panel	2 pieces/set	HMIEZHAF1	—
Replacement battery	Primary battery for time data backup (RTC)	1 piece/set	HMIZSBA1	—
Installation gasket	Installation gasket for 7" wide screen	1 piece/set	HMIEZHWG4W1	—
	Installation gasket for 10" wide screen	1 piece/set	HMIEZHWG5W1	—
	Installation gasket for 12" wide screen	1 piece/set	HMIEZHWG6W1	—
	Installation gasket for 15.6" wide screen	1 piece/set	HMIEZHWG7W1	—

Connection accessories

Designation	Description	Length m/ft	Reference	Weight kg/lb
USB (micro-B) front cable	Extension cable that attaches USB interface to HMI front panel	1.8/5.91	HMIZSUSBB2	0.230/0.507
USB (Type A) front cable	Extension cable that attaches USB interface to front panel	1/3.28	XBTZGUSB	0.507/1.118

Cable for connecting Harmony FT6 panels to Schneider Electric PLCs

Type of automation product	Type of connector (automation product end)	Protocol	Type of Harmony FT6 panels	Physical link (panels port)	Length m/ft	Reference	Weight kg/lb
Modicon M580 Modicon M262 Modicon M340 Modicon M218 Modicon M258 Modicon M221 Modicon M241 Modicon M251	RJ45	Modbus	All models	RS-485	2.5/8.20	XBTZ9008	—

Connecting Harmony FT6 panels via Modbus serial link

Type of bus/network	Tap-off units	Connector (tap-off unit end)	Type of Harmony FT6 panels	Length m/ft	Reference	Weight kg/lb
Modbus serial link	8-port Modbus splitter box LU9GC3 2-port tap junction TWDXCAISO TWDXCAT3RJ	RJ45	All models	2.5/8.20	XBTZ9008	—

H	
HMIZSBA1	10
HMIEZHAF1	10
HMIFT6450	9
HMIFT6550	9
HMIFT6650	9
HMIFT6750	9
HMIZSUSBB2	10
HMIEZHWG4W1	10
HMIEZHWG5W1	10
HMIEZHWG6W1	10
HMIEZHWG7W1	10
X	
XBTZ9008	10
XBTZGUSB	10

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DIA5ED2230402EN
January 2024 - V2.0