Operator Interface Products

ELC Graphics Panel

HM*i* Operator Interface

XV Operator Interface

XP Operator Interface

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Learn Online

Product and Software Selection Guides

Operator Interfaces and Programming Software Selection Guide

Description	ELC-GP Graphics Panel	HMI Operator Interface
	Page V7-T5-5	**Page V7-T5-13**
Screen size	Two-line and four-line	3.5-inch, 5.7-inch, 7.0-inch, 8.0-inch and 10.4-inch
Screen options	Monochrome	65k color TFT
Interface	Keypad only	Resistive touchscreen only or touchscreen and keypad
Communication ports	2 serial	3 serial; USB; Expansion port for Ethernet or Local I/O, onboard Ethernet VU models
Simultaneous protocols	1	3 or 4
Ethernet drivers	—	Yes
Upload/download	Serial cable	Serial, Ethernet, and/or USB
Operating system	Proprietary	Proprietary
Third-party software support	—	—
Screen saver	—	Yes

Operator Interfaces and Programming Software Selection Guide, continued

Description	XV Operator Interface	XP Operator Interface
	Page V7-T5-23	**Page V7-T5-30**
Screen size	3.5-inch, 5.7-inch, 7.0-inch, 8.4-inch and 10.4-inch	8.4-inch, 10.4-inch, 12.1-inch, 15.0-inch and blind node (no screen)
Screen options	Color TFT, 64k colors; resolutions from QVGA (320 x 240) to WVGA (800 x 480)	Color TFT, 16 million colors; resolutions from SVGA (800 x 600) to UVGA (1600 x1200)
Interface	Resistive touchscreen	Infrared, non-reflective safety glass
Communication ports	Ethernet, RS-232 and/or RS-485, USB; CANopen or PROFIBUS DP, SmartWire-DT, USB and RS-485 on CoDeSys models	2 serial; 2 Ethernet; removable CompactFlash; 4 USB; VGA
Simultaneous protocols	3 on Visual Designer, varies for Galileo and XSoft-CoDeSys-2	5 or 8
Ethernet drivers	Yes	Yes
Upload/download	Serial, Ethernet, USB	Serial, Ethernet, USB
Operating system	Windows CE 5.0 Professional	Windows XP Embedded (protected)
Third-party software support	—	Yes
Screen saver	Yes	Yes

Software Product Selection Guide

Description	Visual Designer	XSoft-CoDeSys-2 ①	Galileo	HMI*i*Soft	ELCSoftGP
Overview	Feature-rich software package with SCADA functionality and Web serving capabilities that can be run on XV, XP, ePro PS operator interfaces or personal computers	Feature-rich software package with integrated logic and visualization that can be run on specific XV operator interface models	Intuitive visualization tool. Use Galileo on XV-102-H_ units or on XV units running CoDeSys when a stronger visualization package is needed	Use **HMI*i*** Soft to create, edit, upload and download applications to the **HMI*i*** family of operator interfaces	Use ELCSoftGP to create, edit, upload and download applications to ELC Graphics Panels
Catalog ID					
Development software seat license	VISUALDCE (CE hardware) VISUALDXP5 (5-pack of VISUALDXP) VISUALDCE5 (5-pack of VISUALDCE) VISUALDXP (PCs, XPe, and CE hardware)	SW-XSOFT-CODESYS-2-S ② SW-XSOFT-CODESYS-2-M ③	SW-GALILEO-S SW-GALILEO-M	HMISOFT	ELCSOFTGP
Runtime software for a PC	VISUALRTPC	N/A	•	N/A	N/A
Time-Saving Editor Features					
Online and offline simulation	•	•	•	•	—
Macro capability	•	•	•	•	—
VB scripting	•	—	—	—	—
Multi-language	•	•	•	•	—
System/internal variables	•	•	•	•	—
Auto-scale application to different resolution/screen size	•	•	•	•	—
Scripting (IF, THEN, ELSE, GOTO)	•	•	•	•	—
Graphics library	•	—	•	•	—
Master pages	• Screen groups	• One	• Screen groups	• Base screen	—
User-created controls	•	•	•	•	—
Customizable application symbols	•	•	•	—	—
Full math evaluation	•	•	• With macros	• With macros	—
Reusable controls, images and pages	• Via indirect tag and/or PLC assignments	•	•	—	—
Advanced search and replace	•	•	•	—	—
Advanced context sensitive help	•	•	•	—	—
Conversion of legacy PanelMate™ configurations	•	—	—	—	—
Optional PanelBuilder™ conversion utility	•	—	—	—	—
Online configuration/editing	•	•	—	—	—

Notes

① See the logic section of the catalog for details on the logic features in the XSoft-CoDeSys-2 software package.
② Includes XSoft-CoDeSys-2 software for developing applications, runtime software for the XV Series. Single User License.
③ Includes XSoft-CoDeSys-2 software for developing applications, runtime software for the XV Series. Multi User License.

Software Product Selection Guide, continued

Description	Visual Designer	XSoft-CoDeSys-2 ①	Galileo	HMiSoft	ELCSoftGP
Runtime Features					
Clock synchronization with controller	•	• Configured via visualization screens	•	•	•
Sound actions or control	•	—	•	•	•
Security	• Advanced multi-level	•	•	• Multi-level	•
Pop-up screens	• And group screens	—	•	•	—
Animated graphics	•	•	•	•	—
Real-time trending	•	•	•	•	—
Recipes	•	•	•	•	—
Report generation	•	—	•	•Using Excel and VU Server	—
Timer scheduling	•	•	•	•	—
Calendar scheduling	•	•	—	—	—
Notification of data and events via e-mail/text messaging	•	•	—	—	—
Data archiving	•	•	•	•	—
Archive to shared network drive	•	•	No (–)	—	—
Alarm and event archiving	•	•	•	•	—
Historical trending	•	•	•	•	—
Import/export from XML or CSV	•	•	•	—	—
Database interface	• ADO.net compliant	• DDE	—	•	—
Vision system interfaces	•	—	•	—	—
Secure document and Web network browser	•	• With user created passwords	—	—	—
Webserver—viewing and control	•	•	—	—	—
Automatic scaling of Web clients	•	—	—	—	—
Remote desktop	• VNC and RemoteClient	• VNC and RemoteClient	• VNC and RemoteClient	• VU Remote	—
Launch/control third-party applications	•	—	—	—	—
Embedded PLC logic	—	•	—	—	—

Note

① See the logic section of the catalog for details on the logic features in the XSoft-CoDeSys-2 software package.

ELC Graphics Panels

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Drawings Online

An Eaton Green Solution

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Product Description

ELC Graphics Panels are simple to program and easily connect to ELC products. ELC graphics panels make modifying an application quick and easy. With more than 30 objects that can be placed anywhere on the display, these tough panels also communicate to other major controllers. These graphics panels have two serial ports that can be used simultaneously to communicate. Transfer applications to or from these graphics panels using the handy transfer module. Ten programmable functions keys on the outdoor rated display provide easy-to-change pages, input numeric values, enter alpha-numeric passwords, set, reset and more. Create alarms, password protect, import bitmaps and use many different fonts.

Features

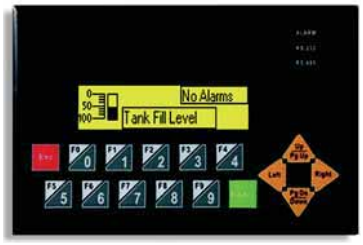
Protocols

Supported Protocols

Protocol
Eaton ELC
Eaton D50/D32LT, D320
Eaton MVX ASCII
Eaton MVX RTU
Modbus ASCII
Modbus RTU
Allen-Bradley DF1
Mitsubishi FX Series
Mitsubishi FX2N Series
Koyo K-Sequence
LG 200S
OMRON C-Series
Siemens S7-200 Series
ASCII Slave Mode

And more...

ELC Graphics Panel Features



Item	ELC-GP02	ELC-GP04
Display screen		
Screen	STN-LCD	STN-LCD
Color	Monochromatic	Monochromatic
Backlight	The backlight automatic turn off time is 1–99 minutes (0 = do not to turn off) (backlight life is 50 thousand hours at 25°C)	The backlight automatic turn off time is 1–99 minutes (0 = do not to turn off) (backlight life is 50 thousand hours at 25°C)
Resolution	160 x 32 pixels	128 x 64 pixels
Display range	72 mm (W) x 22 mm (H)	67 mm (W) x 32 mm (H)
Contrast adjustment	15-step contrast adjustment	10-step contrast adjustment
Language font	ASCII: characters (including European fonts) Taiwan: (BIG 5 code) traditional Chinese character font China: (GB2324-80 code) simplified Chinese character font	ASCII: characters (including European fonts) Taiwan: (BIG 5 code) traditional Chinese character font China: (GB2324-80 code) simplified Chinese character font
Font size (ASCII)	5 x 8, 8 x 8, 8 x 12, 8 x 16	5 x 8, 8 x 8, 8 x 12, 8 x 16
ALARM indication LED	1. Power-on indication (flash three times) 2. Flash for communication error or other alarm 3. Special indication by user programming	1. Power-on indication (flash three times) 2. Flash for communication error or other alarm 3. Special indication by user programming
RS-232 LED (yellow)	Flashes when communicating	Flashes when communicating
RS-485 LED (green)	Flashes when communicating	Flashes when communicating
Program memory	256 KB flash memory	256 KB flash memory
External interface		
Serial communication port RS-232 (COM1) 9 PIN D-SUB male	Data length: 7 or 8 bits Stop bits: 1 or 2 bits Parity: None/Odd/Even Baud rate: 4800 bps–115,200 bps	Data length: 7 or 8 bits Stop bits: 1 or 2 bits Parity: None/Odd/Even Baud rate: 4800 bps–115,200 bps
Extension communication port RS-485 (COM2) 5-pin removal terminal (RS-485 or RS-422)	Data length: 7 or 8 bits Stop bits: 1 or 2 bits Parity: None/Odd/Even Baud rate: 4800 bps–115,200 bps	Data length: 7 or 8 bits Stop bits: 1 or 2 bits Parity: None/Odd/Even Baud rate: 4800 bps–115,200 bps
Extension slot	The slot for program copy card	The slot for program copy card
Power	24 Vdc input	24 Vdc input

Standards and Certifications

- UL 508
- cUL (CSA C22.2 No. 14)
- CE (Low Voltage Directive); Class 1 Div 2 Groups A, B, C, D
- RoHS

Catalog Number Selection

ELC-GP Graphics Panel

ELC-GP

ELC-GP 02

Series	Display
ELC-GP = ELC Graphics Panel	**02** = Monochromatic, two-line **04** = Monochromatic, four-line

Product Selection

ELC-GP04

Graphics Panels

Description	Catalog Number
Panels	
160 x 32 pixels, 10 function keys, monochrome	**ELC-GP02**
128 x 64 pixels, 10 function keys, monochrome	**ELC-GP04**
Spare Parts Kit	
Includes several power connectors, battery doors, gaskets, mounting clips, etc.	**ELC-GPSPKIT**

Software and Accessories

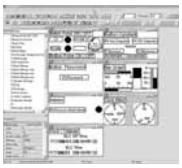
ELCSoftGP Programming Software

System Requirements

- Operating Systems—Windows 2000, Windows XP

ELCSoftGP Programming Software configures all ELC graphic panels. With ELCSoftGP, applications can be created, edited, downloaded and uploaded. Move programs from one controller to a different one with ease.

ELCSoftGP



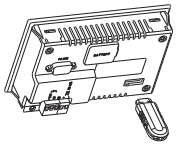
ELCSoftGP Editing Environment

Description	Catalog Number
Programming software for GP units	**ELCSOFTGP**

ELC-GPXFERMOD Program Transfer Module

The ELC-GPXFERMOD is a multifunction device that provides the ability to back up an application already loaded onto one of the ELC-GP units. It will store all system settings such as baud and ID, as well as passwords and the application itself. Once stored in the module, the application and settings can be transferred to another ELC-GP unit of the same model number.

ELC-GPXFERMOD



ELC-GPXFERMOD

Description	Catalog Number
Program transfer module	**ELC-GPXFERMOD**

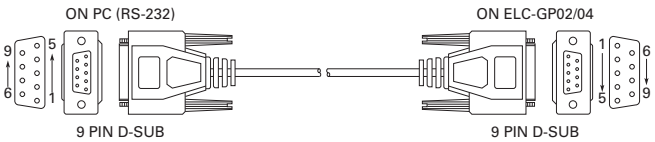
ELC-CBPCELC_

Description	Catalog Number
1 meter cable to connect between the **HMi** and Eaton Logic Controller (ELC)	**ELC-CBPCELC1**
3 meter cable to connect between the **HMi** and Eaton Logic Controller (ELC)	**ELC-CBPCELC3**

ELC-CBPCGP3 Cable

Use this cable to download or upload applications between a PC and the ELC-GP graphics panels. This cable can also be used to transfer a program from an ELC-GP to another ELC-GP.

Pin definition of 9 PIN D-SUB RS-232:



PC COM Port 9 PIN D-SUB Female				GP02/04 COM Port 9 PIN D-SUB Female
Rx	2	⟷	3	Tx
Tx	3	⟷	2	Rx
GND	5	⟷	5	GND

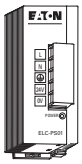
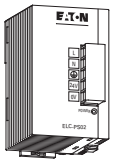
PC to ELC-GPxx Cable

Description	Catalog Number
Cable, PC to ELC-GP, 9.8 ft (3m)	**ELC-CBPCGP3**

Power Supplies

All ELC modules operate from 24 Vdc. These power supplies provide a convenient way to provide robust DC voltage.

ELC Power Supplies

	Description	Catalog Number
ELC-PS01	Power supply, 24 watt, 1 amp	**ELC-PS01**
		
ELC-PS02	Power supply, 48 watt, 2 amp	**ELC-PS02**
		

Technical Data and Specifications

ELC Graphics Panels

Description	Specification
Environmental	
Transportation and storage	
Temperature	–4° to 140°F (–20° to 60°C)
Operating	
Temperature	32° to 122°F (0° to 50°C)
Humidity	20–90% RH (noncondensing)
Communication interface	COM1: RS-232; COM2: RS-485/RS-422
Vibration	0.5 mm displacement, 10–55 Hz, X, Y, Z three directions and two hours for each direction
Impact	10G, 11 ms, from X, Y, Z three directions and three times for each direction
Weight	0.53 lbs (0.24 kg)
Cooling method	Natural air cooling
Electrical/EMC Approvals	
Electrostatic discharge immunity	EN61000-4-2/1995
Radiated immunity	EN61000-4-3/1995
Electrical fast transient	EN61000-4-4/1995
Radiated emission	CISPR22, Class A
Other Approvals	
Waterproof class of front panel	UL Type 4X outdoor rated
UV resistant	UL 746C

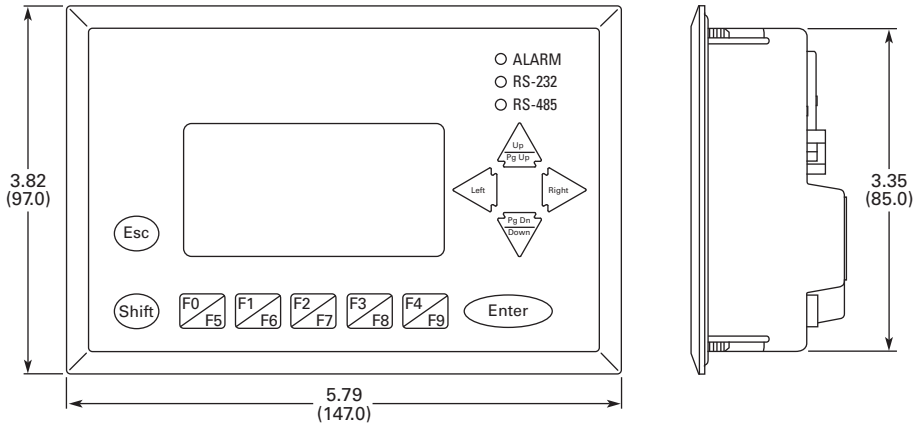
ELC Power Supply

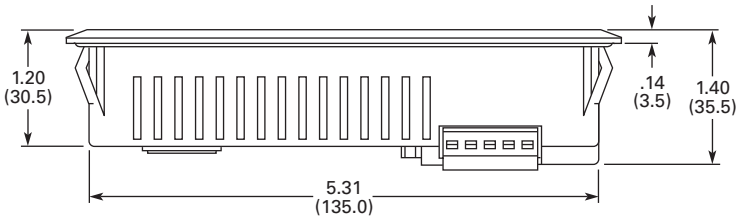
Item	ELC-PS01	ELC-PS02
Dimensions W x H x D in inches (mm)	1.44 x 3.54 x 2.36 (36.5 x 90 x 60)	2.17 x 3.54 x 2.36 (55 x 90 x 60)
Input power	100–240 Vac 50/60 Hz	100–240 Vac 50/60 Hz
Output volts	24 Vdc	24 Vdc
Output current (A)	1A	2A
Watts	24	48

Dimensions

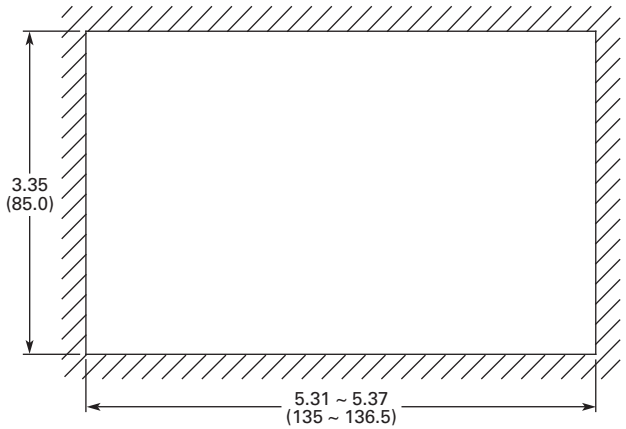
Approximate Dimensions in Inches (mm)

ELC-GP04





Cut-Out Dimensions



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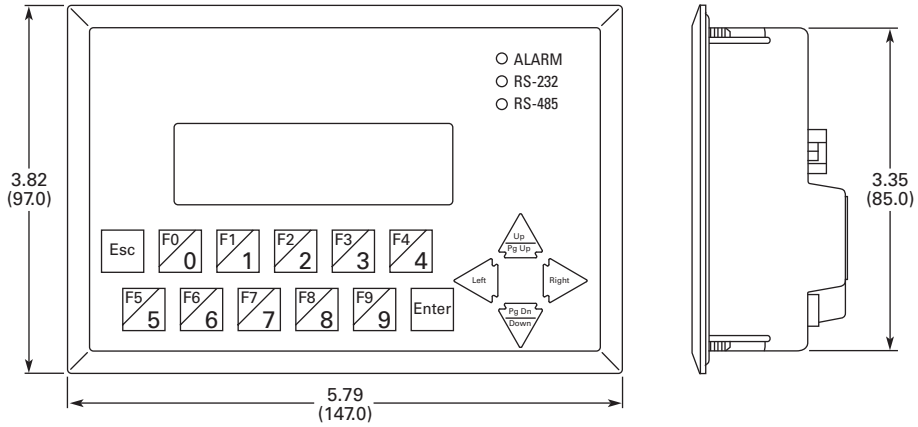
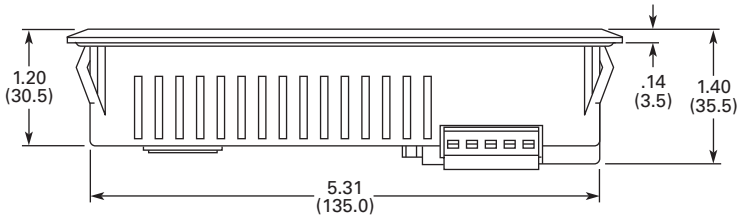
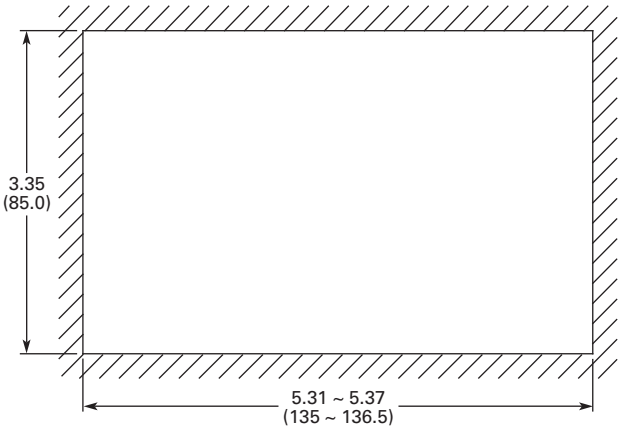
Approximate Dimensions in Inches (mm)

ELC-GP02

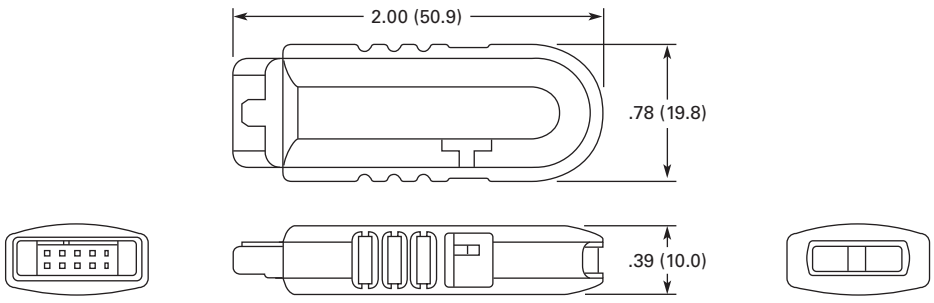




Cut-Out Dimensions



ELC-GPXFERMOD



HM*i* Operator Interface

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Drawings Online

An Eaton Green Solution

Product Description

Positioned between the ELC graphics panels and the XV series of operator interfaces, **HM*i*** is the workhorse of the industry. Ideal for machinery OEMs, the **HM*i*** series provides the most value with the latest technology and advanced feature set in an economical hardware and software package. All units offer RS-232, RS-485 and RS-422 communications. The 7-, 8- and 10-inch units also offer Ethernet communication options.

Features

- Auto-scale application from 10 to 4 inches
- Screen and backlight saver
- Pop-up screens
- Animated graphics
- Conditional visibility
- Application lock for IP protection
- Data archiving
- Multi-language
- Eight levels of security
- Ethernet communication drivers
- Ethernet, COMM port and USB upload/download
- USB ports for data storage
- Three serial ports
- Up to four simultaneous protocols
- Math and logic functions
- CSV import/export tags and recipes
- Macro capability
- Alarm/event recording and viewing
- Real-time and historical trending
- Online and offline simulation

HM*i* VU Exclusive Features

- VU server
- VU remote
- Multi-link
- Onboard Ethernet on some models
- Audio and SD on some models
- Supports USB mouse and other industrial pointing devices

Protocols

Supported Protocols

Manufacturer and Protocol
Allen-Bradley
MicroLogix
SLC 5
DH485
Ethernet/IP (Micro, Compact and ControlLogix, SCL 5
Cimon
BP Series Loader Protocol
CP Series Loader Protocol
XP Series Loader Protocol
Copley
Stepnet
Danfoss
VLT 2800 (FC Protocol)
Delta
Delta DVP PLC
Delta DVP EH/SA ES/EX/SS (V5.1)
Delta Controller ASCII
Delta Controller RTU
Delta DVP TCP/IP
Eaton
ELC Series Serial
ELC Series TCP/IP
GVX—RTU
GVX—ASCII
MVX—RTU
MVX—ASCII
NFX—RTU
NFX—ASCII
Eaton Controller ASCII
Eaton Controller RTU
EasyPLC 800/MFD (EasyCom)
Emerson
EC20 Series
Facon
FB Series

Manufacturer and Protocol
Festo
Festo PLC
FuFeng
APC
Fuji Electric
Frenic Inverter
GE Fanuc
Series 90 SNP
Hitachi
EH Series Procedure 1
EH Series Procedure 2
Hust
Hust CNC Controller
Hust CNC Controller v2
IDEC
Micro Smart
Jetter
JC Series
Nano Series
Keyence
KV/KZ Series
Koyo
DL/SU Series
K-Sequence
Lenze
LECOM-A/B Protocol
LG
Master-K 120S/200S
Glofa GM6 CNET
Master-K CNET
XGT CNET
LiYan
LYPLC EX

Manufacturer and Protocol
M2i
M2i Master
M2i Slave
Matsushita
FP Series
Mirle
FAMA SC
Mitsubishi
FX Series
FX2N
FX3U
FX Series Computer Link
A Series/J71UC24
A2A/A2AS/A2USH
A1SH/A3N/A2ASH CPU Port
Q Series CPU Port
Q Series Ethernet
Q Series Computer Link
J2s Series
MKS
BY125
CT150
MC700/720
Modbus
ASCII (Master)
984 RTU (Master)
RTU 2W (Master)
ASCII Hex Address (Master)
RTU Hex Address (Master)
ASCII nW (Master)
RTU nW (Master)
ASCII (Slave)
RTU (Slave)
TCP/IP

Manufacturer and Protocol
Modicon
TSX Micro (Uni-Telway)
TSX Premium (Uni-Telway 1-1)
NEZA (Uni-Telway)
TWIDO
Moeller
PS3 Series
PS4 Series
NIKKI DENSO
NCS-FI/FS Series
Omron
C Series
CJ1 Series
TPM1A
Parker
Compax 3
SIEMENS
S7 200
S7 300 (with PC Adapter)
S7 300 (without PC Adapter)
S7 300 (Direct MPI)
S7 300 (ISO TCP)
S7 1200 (ISO TCP)
Taian
TP02
Ti
Ti435
Vigor
M Series
VIPA
S7 300 (with PC Adapter)
YOKOGAWA
ACE

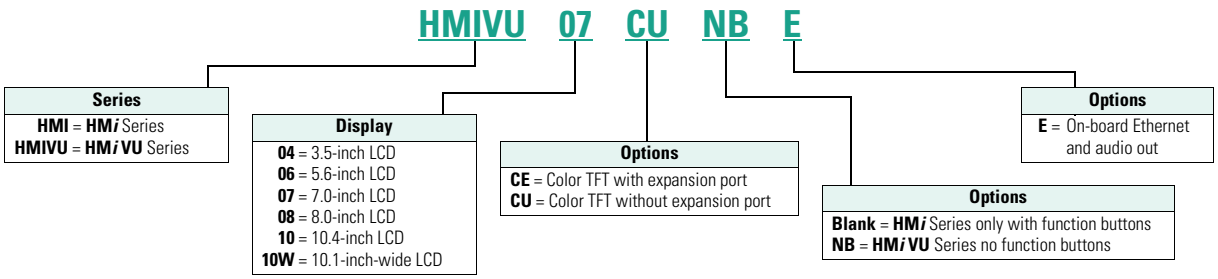
Standards and Certifications

- CE
- UL
- cUL
- C-Tick
- RoHS

Catalog Number Selection

HM*i* Operator Interface

HM*i*



Product Selection

HMI_

HM*i* Products

Description	Catalog Number
4-inch color TFT touchscreen with function buttons	**HMI04CU**
8-inch color TFT with expansion slot and function buttons	**HMI08CE**
10-inch color TFT with expansion slot and function buttons	**HMI10CE**

HM*i* VU Products

Description	Catalog Number
6-inch color TFT, no function buttons, no Ethernet	**HMIVU06CUNB**
7-inch color TFT, no function buttons, on-board Ethernet	**HMIVU07CUNBE**
8-inch color TFT, no function buttons, on-board Ethernet	**HMIVU08CUNBE**
10-inch color TFT, no function buttons, on-board Ethernet	**HMIVU10WCUNBE**

Software and Accessories

HMiSoft Programming Software

For use with the of **HM*i*** and **HM*i* VU** series touchscreens. This easy to use Windows based software can run on Windows XP and Windows 7 32-bit and 64-bit systems.

- Ethernet and serial communication drivers
- Up to four simultaneous protocols
- Screen manager
- Over 70 on-screen objects
- Pop-up screens
- Animated graphics
- Conditional visibility
- Built-in picture library
- Create your own picture library
- Multi-language
- Eight levels of security
- Macro editing with math and logic functions
- CSV import/export tags and recipes
- Alarm/event recording and viewing
- Store archived data, alarms and events to USB
- Real-time and historical trending
- Auto-scale application from 10 to 4 inches
- On and offline simulation
- Upload/download applications over USB, serial or Ethernet
- Application lock for IP protection
- Screen and backlight saver
- Multi-link allows sharing of PLC data over Ethernet ①
- VU Server optional download ①
- VU Remote optional download ①

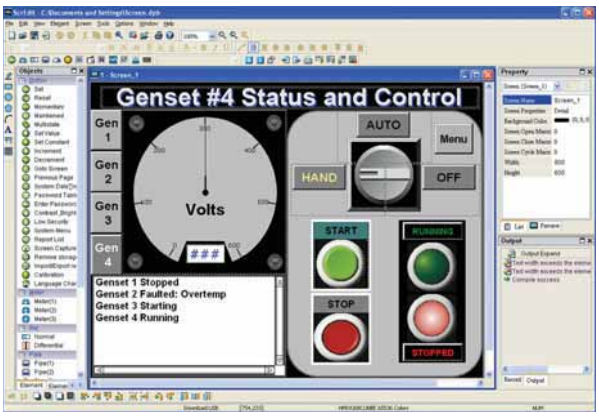
HM*i* Editor

HM*i* Editor

Description	Catalog Number
Programming software for **HM*i*** and **HM*i* VU** models	**HMISOFT**

HM*i* Screen Management

HMiSoft Editor



Note

① Exclusive **HM*i*VU** features.

Adapter Plate

Description	Catalog Number
6-inch **HM*i*** adapter plate for PM1000	**APPM1HMI6**

Kits

Description	Catalog Number
HM*i* spare parts kits (includes several power connectors, battery doors, gaskets, mounting clips, etc.)	**HMI-SPKIT**

Replacement Gaskets

Description	Catalog Number
4-inch **HM*i*** replacement gasket (2/kit)	**HMI04-GASKET**
6-inch **HM*i*** and 7-inch **HM*i* VU** replacement gasket (2/kit)	**HMI06-GASKET**
8-inch **HM*i*** replacement gasket (2/kit)	**HMI08-GASKET**
10-inch **HM*i*** replacement gasket (2/kit)	**HMI10-GASKET**

Cable

Description	Catalog Number
1 meter cable to connect between the **HM*i*** and Eaton Logic Controller (ELC)	**ELC-CBPCELC1**
3 meter cable to connect between the **HM*i*** and Eaton Logic Controller (ELC)	**ELC-CBPCELC3**

Power Supply

Description	Catalog Number
1 amp 24 Vdc power supply	**ELC-PS01**
2 amp 24 Vdc power supply	**ELC-PS02**

Technical Data and Specifications

HM*i* Operator Interface

Description	Specification HMI04CU	HMI08CE	HMI10CE
Display type	TFT LCD	TFT LCD	TFT LCD
Display color	65536 colors	65536 colors	65536 colors
Screen pixels	320 x 240 pixels	640 x 480 pixels	640 x 480 pixels
NIT rating	300 cd/m^2	400 cd/m^2	330 cd/m^2
LCD module	LED backlight	CCFL backlight	2CCFL backlight
Backlight life	30,000 hours half-life at 25°C ①	50,000 hours half-life at 25°C ①	50,000 hours half-life at 25°C ①
Display size	3.5-inch (70.1 x 52.6 mm)	8-inch (162.2 x 121.7 mm)	10.4-inch (215.2 x 162.4 mm)
Operating system	Real Time OS	Real Time OS	Real Time OS
MCU	32-bit RISC micro-controller/206.4 MHz	32-bit RISC micro-controller/206.4 MHz	32-bit RISC micro-controller/206.4 MHz
Memory			
Program	3M	7M	7M
History	120K	360K	360K
Recipe	64K ②	128K	128K
Alarm	4K	16K	16K
Data registers			
Volatile	64K	64K	64K
Non-volatile	1K	1K	1K
Backup memory (bytes)	128K	512K	512K
USB host ③	Yes	Yes	Yes
Expansion port	Yes	Yes	Yes
USB client for programming	Yes	Yes	Yes
Serial COM port			
COM1	RS-232	RS-232	RS-232
COM2	RS-422/RS-485	RS-232/RS-422/RS-485	RS-232/RS-422/RS-485
COM3	RS-232	RS-232/RS-422/RS-485	RS-232/RS-422/RS-485
Function key	4 user defined keys + 1 system key	6 user defined keys + 1 system key	7 user defined keys + 1 system key
Perpetual calendar (RTC)	Built-in	Built-in	Built-in
Cooling method	Natural air circulation	Natural air circulation	Natural air circulation
Enclosure ratings	IP65/NEMA 4X (indoor only)	IP65/NEMA 4X (indoor only)	IP65/NEMA 4X (indoor only)
Agency certifications	CE/UL/cUL/C-Tick	CE/UL/cUL/C-Tick	CE/UL/cUL/C-Tick
Operating voltage	DC +24V (–10% to +15%) (use isolated power supply) ④		
Power consumption ⑤	3.36W	14W	15W
Operating temp.	32° to 122°F (0° to 50°C)	32° to 122°F (0° to 50°C)	32° to 122°F (0° to 50°C)
Storage temp.	–4° to 140°F (–20° to 60°C)	–4° to 140°F (–20° to 60°C)	–4° to 140°F (–20° to 60°C)
Ambient humidity	10% to 90% RH (0° to 40°C), 10% to 55% RH (41° to 50°C) pollution degree 2		
Shock	30G at 11 ms	30G at 11 ms	30G at 11 ms
Vibration resistance	IEC61131-2 compliant 5 Hz ≤ f < 9 Hz = continuous: 1.75 mm/occasional: 3.5 mm 9 Hz ≤ f < 150 Hz = continuous: 0.5g/occasional: 1.0g X, Y, Z directions for 10 times		
Backup battery	3V lithium battery CR2032 x 1/battery life: 5 years		
Backup battery life	Three years or more at 25°C	3 years or more at 25°C	3 years or more at 25°C
Buzzer	Multitone frequency (2K to 4K Hz)/85dB		
Dimensions (W) x (H) x (D) in inches (mm)	5.54 x 4.13 x 1.76 (140.8 x 104.8 x 44.8)	9.57 x 7.01 x 2.06 (243.1 x 178.1 x 52.4)	11.70 x 8.74 x 2.01 (297.1 x 222.1 x 51.1)
Panel cutout (W) x (H) in inches (mm)	4.68 x 3.65 (118.8 x 92.8)	9.11 x 6.55 (231.4 x 166.4)	11.23 x 8.28 (285.2 x 210.2)
Weight in lbs (kg)	0.62 (0.310)	2.52 (1.147)	3.79 (1.721)

Notes

① The half-life of backlight is defined as original luminance being reduced by 50% when the maximum driving current is supplied to **HM*i***.
The life of LED backlight shown is an estimated value under 25°C normal temperature and humidity conditions.

② Program memory is used for recipes.

③ USB Host port can provide up to 5V/500mA of power. Supports USB memory devices and certain USB printers.

④ Use isolated power supply (not applicable for HMI08CE and HMI10CE).

⑤ The value of the power consumption indicates the electrical power consumed by **HM*i*** without peripheral devices.
In order to ensure the normal operation, it is recommended to use a power supply which the capacity is 1.5 to 2 times the value of the power consumption.

HM*i* VU Operator Interface

Description	Specification HMIVU06CUNB	HMIVU07CUNBE	HMIVU08CUNBE	HMIVU10WCUNBE
LCD Module				
Display type	5.6-inch TFT LCD	7-inch TFT LCD	8-inch TFT LCD	10.1-inch widescreen TFT LCD
Display color	65536 colors	65536 colors	65536 colors	65536 colors
Resolution	320 x 234 pixels	800 x 600 pixels	800 x 600 pixels	1024 x 600 pixels
Backlight	LED backlight (20,000 hours half-life at 25°C) ①	LED backlight (10,000 hours half-life at 25°C) ①	LED backlight (10,000 hours half-life at 25°C) ①	LED backlight (10,000 hours half-life at 25°C) ①
Brightness NIT rating	200 DC/m^2	200 DC/m^2	250 DC/m^2	200 DC/m^2
Display size	113.28 x 84.70 mm	141 x 105.75 mm	162 x 121.5 mm	226 x 128.7 mm
Operation system	Real Time OS	Real Time OS	Real Time OS	Real Time OS
MCU	32-bit RISC micro-controller	32-bit RISC micro-controller	32-bit RISC micro-controller	32-bit RISC micro-controller
NOR Flash ROM	Flash ROM 8MB OS System: 2MB User Application: 6MB	Flash ROM 128MB OS System: 30MB Backup: 16MB User Application: 82MB	Flash ROM 128MB OS System: 30MB Backup: 16MB User Application: 82MB	Flash ROM 128MB OS System: 30MB Backup: 16MB User Application: 82MB
SDRAM	16M bytes	64M bytes	64M bytes	64M bytes
Backup memory	128K bytes	16M bytes	16M bytes	16M bytes
Sound effect output				
Buzzer	Multi-tone frequency (2–4 kHz)/85dB	Multi-tone frequency (2–4 kHz)/85dB	Multi-tone frequency (2–4 kHz)/85dB	Multi-tone frequency (2–4 kHz)/85dB
AUX	N/A	Stereo output	Stereo output	Stereo output
Ethernet interface	N/A	IEEE 802.3, IEEE 802.3u 10/100 Mbps auto-sensing has built-in isolated power circuit ③		
Memory card	N/A	SD card (supports SDHC)	SD card (supports SDHC)	SD card (supports SDHC)
USB	1 USB Host ② Ver 1.1 1 USB Client Ver 1.1	1 USB Host ② Ver 2.0 1 USB Client Ver 1.1	1 USB Host ② Ver 2.0 1 USB Client Ver 1.1	1 USB Host ② Ver 2.0 1 USB Client Ver 1.1
Serial COM port				
COM1	RS-232 (supports hardware flow control)	RS-232 (supports hardware flow control)	RS-232 (supports hardware flow control)	RS-232 (supports hardware flow control)
COM2	RS-232/RS-485	RS-232/RS-422/RS-485 (has built-in isolated power circuit) ③	RS-232/RS-422/RS-485 (has built-in isolated power circuit) ③	RS-232/RS-422/RS-485 (has built-in isolated power circuit) ③
COM3	RS-422/RS-485	RS-232/RS-422/RS-485 (has built-in isolated power circuit) ③	RS-232/RS-422/RS-485 (has built-in isolated power circuit) ③	RS-232/RS-422/RS-485 (has built-in isolated power circuit) ③
Perpetual calendar (RTC)	Built-in	Built-in	Built-in	Built-in
Cooling method	Natural air circulation	Natural air circulation	Natural air circulation	Natural air circulation
Safety approval	CE/UL	CE/UL	CE/UL	CE/UL
Waterproof degree	IP65/NEMA 4X (indoor use only)	IP65/NEMA 4X (indoor use only)	IP65/NEMA 4X (indoor use only)	IP65/NEMA 4X (indoor use only)
Operation voltage ④	DC +24V (–10 to +15%) Please use isolated power supply	DC +24V (–10 to +15%) (has built-in isolated power circuit) ③	DC +24V (–10 to +15%) (has built-in isolated power circuit) ③	DC +24V (–10 to +15%) (has built-in isolated power circuit) ③
Voltage endurance	AC500V for 1 minute (between charging [DC24 terminal] and FG terminals)			
Power consumption ④	3.0W	7.68W	7.8W	12W
Backup battery	3V lithium battery CR2032 x 1	3V lithium battery CR2032 x 1	3V lithium battery CR2032 x 1	3V lithium battery CR2032 x 1
Backup battery life	Varies based on temperature and conditions. Approximately 3 years or more at 25°C.			
Operation temp.	0° to 50°C	0° to 50°C	0° to 50°C	0° to 50°C
Storage temp.	–20° to 60°C	–20° to 60°C	–20° to 60°C	–20° to 60°C
Ambient humidity	10%–90% RH [0° to 40°C], 10%–55% RH [41° to 50°C] Pollution Degree 2			
Vibration resistance	IEC 61131-2 Compliant 5 Hz ≤ f ≤ 9 Hz = continuous: 1.75 mm/occasional: 3.5 mm 9 Hz ≤ f ≤ 150 Hz = continuous: 0.5g/occasional: 1.0g X, Y, Z directions for 10 times			
Dimensions (W) x (H) x (D) mm	184 x 144 x 50	184 x 144 x 50	227.1 x 174.1 x 61	272 x 200 x 61
Panel cutout (W) x (H) mm	172.4 x 132.4	172.4 x 132.4	219.4 x 166.5	261.3 x 189.3
Weight	Approx. 670g	Approx. 800g	Approx. 1228g	Approx.1520g

Notes

① The half-life of backlight is defined as original luminance being reduced by 50% when the maximum driving current is supplied to **HM*i***. The life of LED backlight shown is an estimated value under 25°C normal temperature and humidity conditions

② USB Host port can provide up to 5V/500 mA of power.

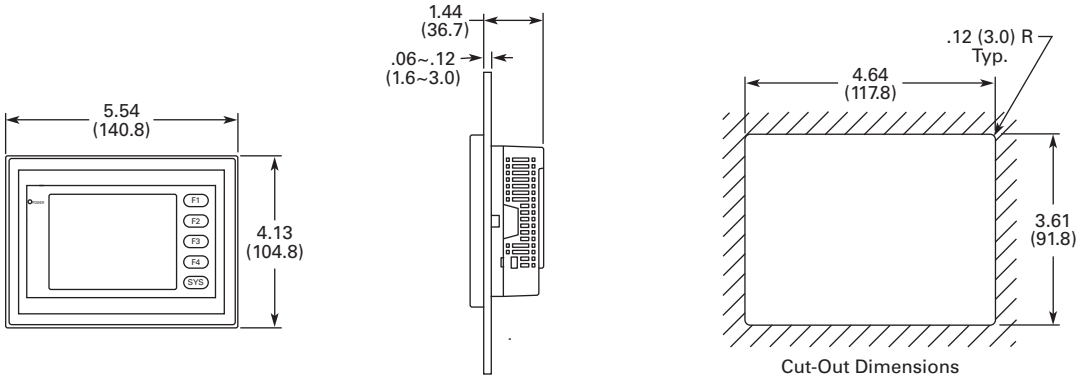
③ The withstand voltage of the isolated power circuit is 1500V peak for 1 minute.

④ The value of the power consumption indicates the electrical power consumed by **HM*i*** only without connecting to any peripheral devices. In order to ensure the normal operation, it is recommended to use a power supply where the capacity is 1.5~2 times the value of the power consumption.

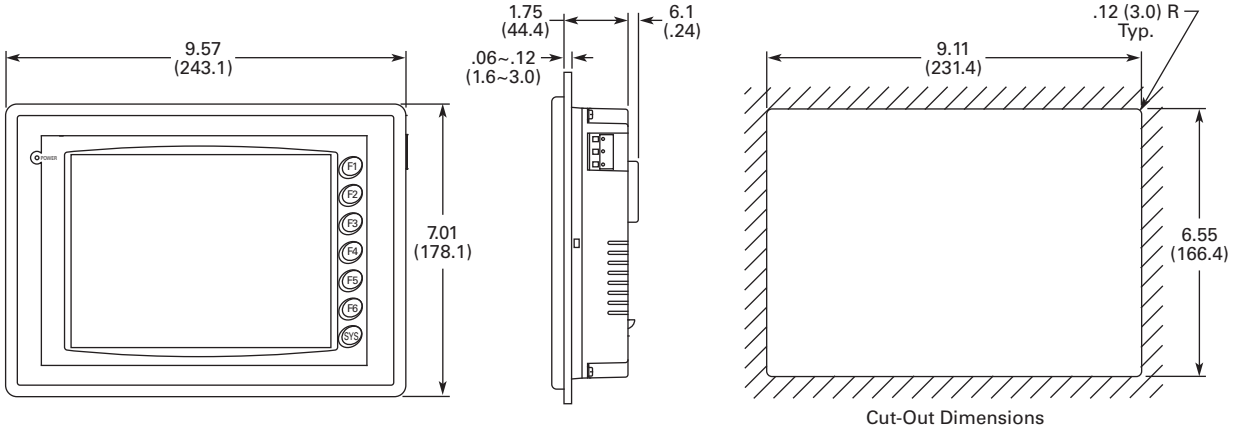
Dimensions

Approximate Dimensions in Inches (mm)

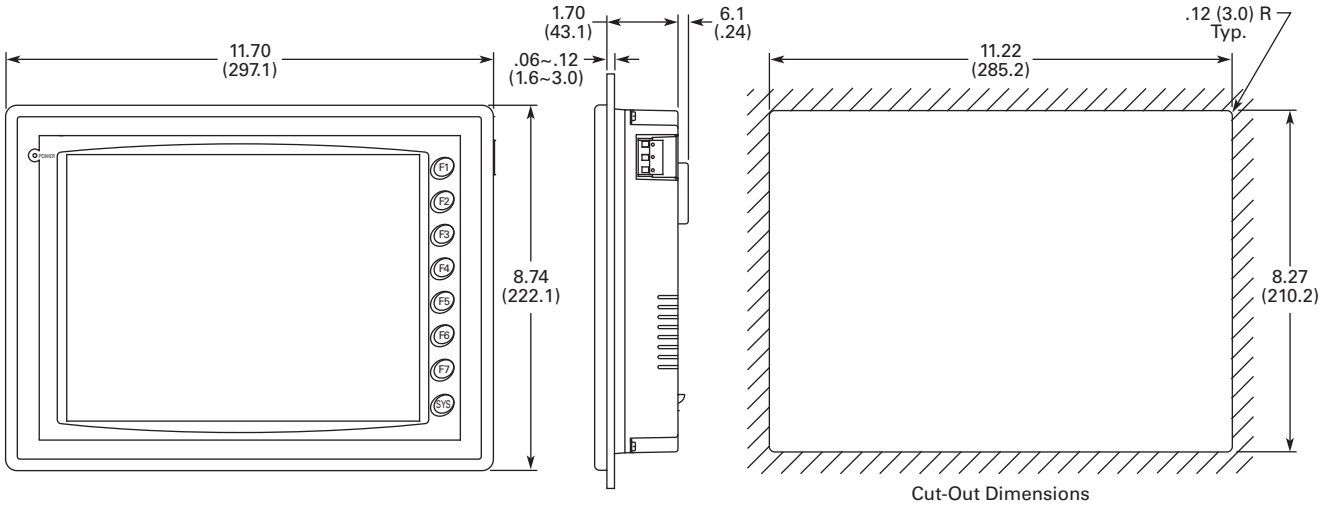
HMI04



HMI08CE

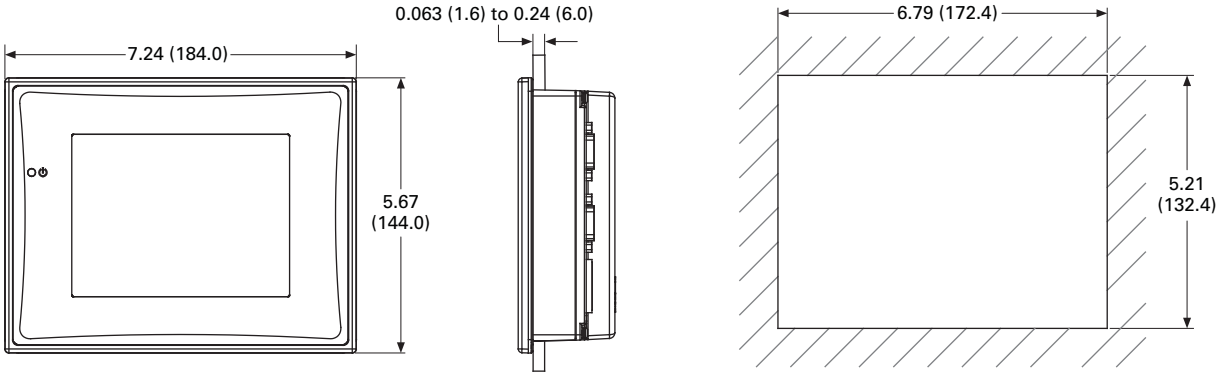


HMI10CE

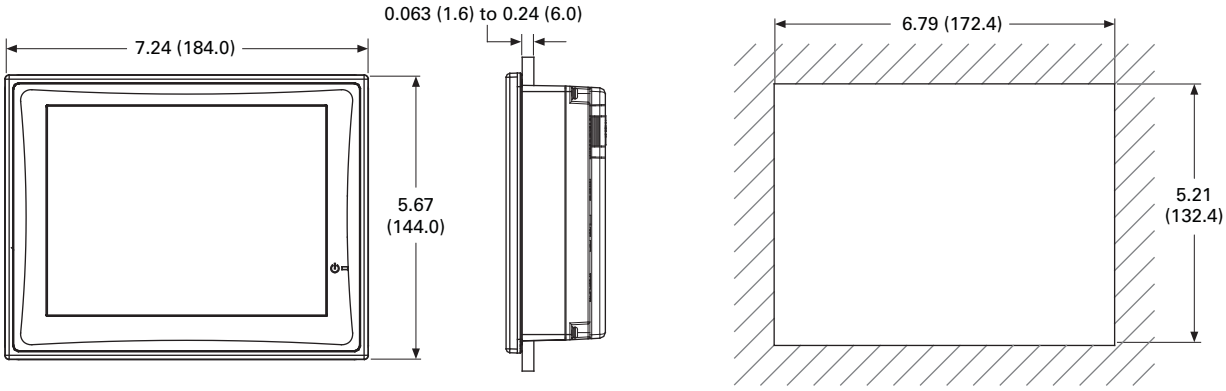


Approximate Dimensions in Inches (mm)

HMIVU06

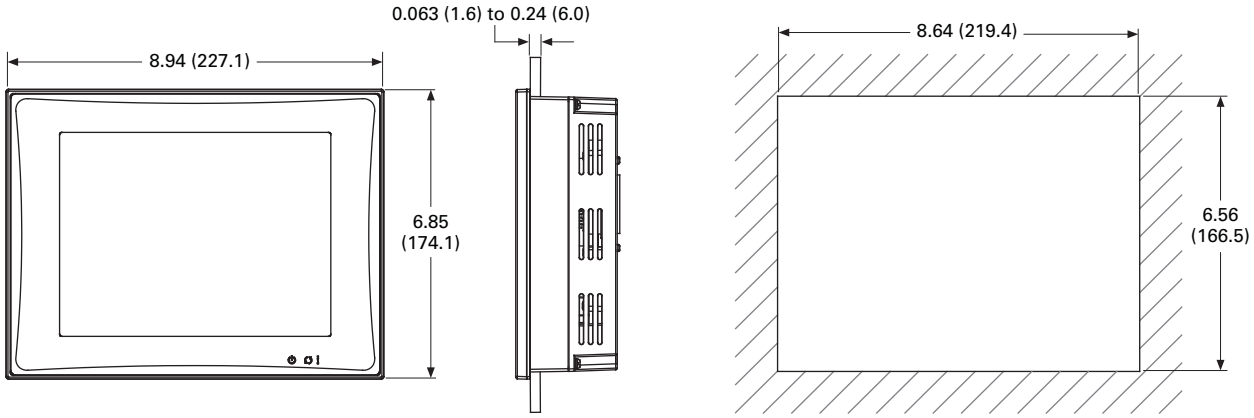


HMIVU07

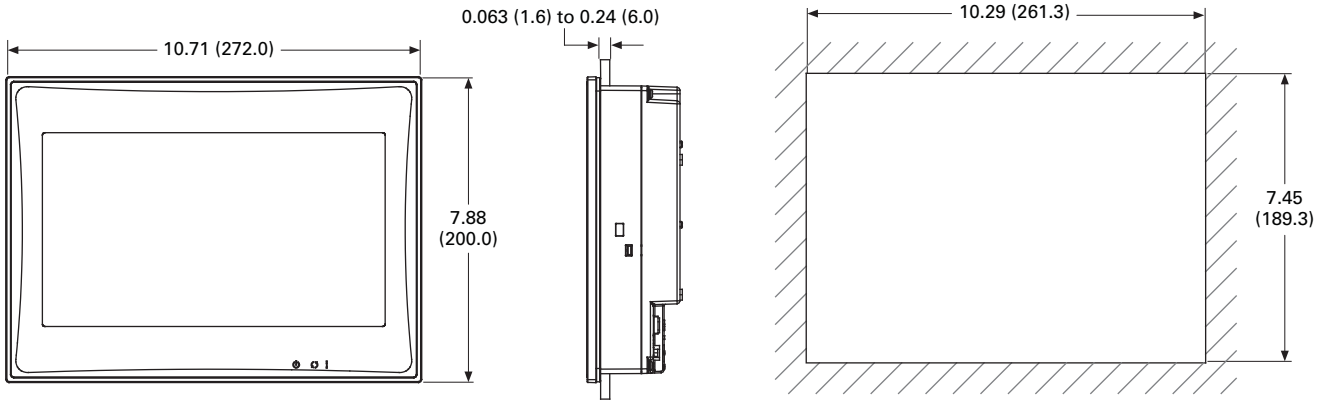


Approximate Dimensions in Inches (mm)

HMIVU08



HMIVU10



XV Operator Interface

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XSoft-CoDeSys-2 Software	**V7-T5-37**

XV with Visual Designer, Galileo or XSoft-CoDeSys-2

Product Description

XV with Visual Designer

Positioned between the **HMi** and the XP series of operator interface, the XV series is ideal for applications requiring extensive connectivity and the advanced features available in Visual Designer without the expense associated with more powerful open platforms.

The XV models were designed with OEMs in mind featuring an attractive bezel and slim and light weight housing. The clip mount design simplifies installation.

XV with Galileo

The XV Series with Galileo offers a global visualization software package for all applications in system and machine building. It is designed to optimize performance on the XV platform. Galileo can also run as the visualization package on XV CoDeSys units when a stronger visualization tool is required.

XV with XSoft-CoDeSys

The XV series with XSoft-CoDeSys combines powerful logic and visualization capabilities into a single device. It is ideal for OEM applications where low component count and ease of program development and remote administration is critical.

The XV Models with XSoft-CoDeSys offer multiple field bus options built directly on-board the unit to provide an overall solution optimized both for size and cost.

Features

XV with Visual Designer

XV Series operator interface with Windows CE operating system

- 3.5-, 5.7-, 7.0- (widescreen), 8.4- and 10.4-inch screen sizes
- Cost effective plastic or metal housing
- Resistive touch with flush bezel
- Ethernet and serial ports on all models
- Visual Designer XP or CE development software
- Pre-installed Visual Designer runtime and Web serving licenses

XV with Galileo only units

- 3.5-, 5.7- and 7.0-inch (widescreen)
- Plastic housing
- Resistive touch with flush bezel
- Ethernet on all models
- RS-232 or RS-485 serial ports available
- Prelicensed for Galileo Run Time (GRS)

XV with XSoft-CoDeSys

XV Series operator interface with Windows CE operating system

- 3.5-, 5.7-, 7.0- (widescreen), 8.4- and 10.4-inch screen sizes
- Cost effective plastic or metal housing
- Resistive touch with flush bezel
- Ethernet and serial ports on all models
- PROFIBUS, CANopen and SmartWire-DT optional
- XSoft-CoDeSys-2 programming software
- Pre-licensed for CoDeSys run time

Standards and Certifications

- CE
- UL
- cUL
- RoHS

Selecting the right model for your application

The XV product offered with Visual Designer, Galileo or XSoft-CoDeSys offers the highest level of flexibility for one operator interface product.

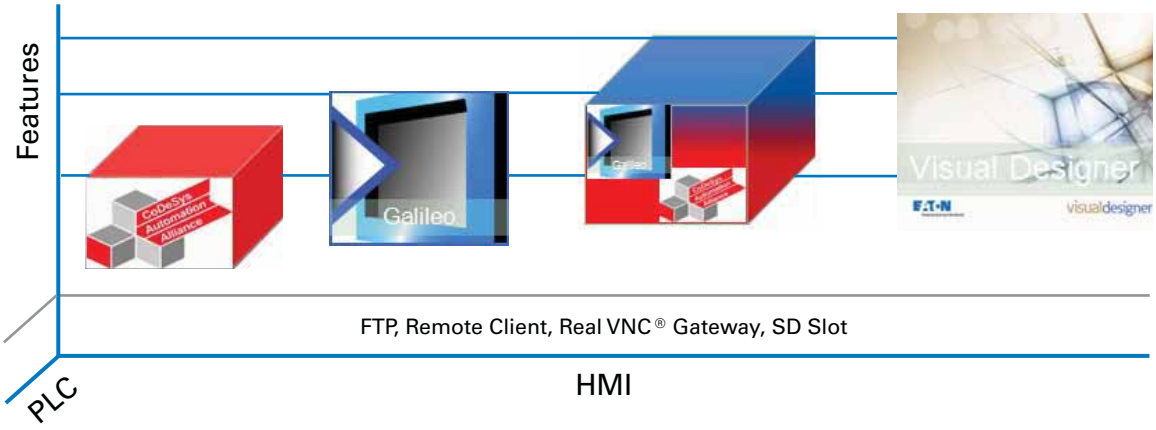
Visual Designer provides a fully integrated SCADA and HMI platform. Use Visual Designer when Web enabling, remote access, database and connectivity, and when one operator software package is required across XV and XP platforms.

Galileo provides a visualization environment designed around the needs of machine building OEMs. Use Galileo when designing high-performance machines in the OEM space.

XSoft-CoDeSys turns the XV into a fully integrated Logic and OI platform (HMI-PLC). Use XSoft-CoDeSys to unleash the PLC functionality on an XV. With optional communication interfaces like SmartWire-DT, CANopen and PROFIBUS, Eaton welcomes you into the Lean Automation space.

Take advantage of the best of both worlds with Galileo and XSoft-CoDeSys together. Combining the power of these two software platforms provides limitless possibilities on an HMI/PLC platform.

Software Suite



Product Selection Guide

XV and XP Operator Interface with Visual Designer

Series	XV		XP	
Model	XV-102	XV-152	XP-702	
Screen Size	3.5, 5.7, 7.0	5.7, 8.4, 10.4	8.4, 10.4, 12.1, 15.0	Blind Node (no display)
Housing material	Plastic	Metal	Metal	
Operating system	WinCE 5.0 Professional		Windows XPe	
Touchscreen technology	Resistive		Infrared, non-reflective safety glass	N/A
Communication ports	1 Ethernet, 1 or 2 serial, 0 or 1 USB		2 Ethernet, 2 serial, 4 USB	
Development software	Visual Designer (VISUALDCE or VISUALDXP)		Visual Designer (VISUALDXP)	
Pre-licensed tags, drivers, Web sessions	1500 tags, 3 drivers, 1 Web session		Standard models 4000 tags, 5 drivers, 1 Web session	
			Enterprise models 64,000 tags, 8 drivers, 1 Web session	
Field upgradeable max tags, drivers, Web sessions	4000 tags, 3 drivers, 1, 2, 4, or 8 Web sessions simultaneously		64,000 tags, 8 drivers, 1, 2, 4, 8, 16, 32, 64, 128, or 256 Web sessions simultaneously	
Alarm online/history	Yes		Yes	
Trend online/history	Yes		Yes	
Scripting	Yes (VB Script)		Yes (VB Script)	
Scheduler	Yes		Yes	
Recipe	Yes		Yes	
Reports	Yes		Yes	
OPC, TCP/IP, and communication drivers	Yes		Yes	
Web Server and Web Thin Client support	Yes		Yes	
Full remote access	Yes		Yes	
Local/remote database interface	Yes		Yes	
Ability to run third-party software	No		Yes	
ActiveX and .NET controls	No		Yes	
Full document viewing	No		Yes	
Windows media player	No		Yes	
Vision system interfaces	No		Yes	
Network camera monitoring	No		Yes	

XV Series with Galileo Only Run Time Option (Not Available on XP Series)

Series	XV
Model	**Model XV-102-H**
Screen Size	**3.5, 5.7, 7.0**
Housing material	Plastic
Operating system	WinCE 5.0 standard
Touchscreen	Resistive
Communications ports	1 Ethernet, 1 RS-232, or 1 RS-485, 1 USB
Optional field buses	N/A
Development software	Galileo
Alarm online/historical	Yes
Trend online/historical	Yes
Scripting	Structured text
Scheduler	No
Recipe	Yes
Reports	No
Full remote access	Yes
Ability to run third-party software	No
Vision system interfaces	Yes
Multi-language support	Yes
PLC variable import	Yes

XV Series with CoDeSys Run Time (Not Available on XP Series)

Series	XV	
Model	**XV-102**	**XV-152**
Screen Size	**3.5, 5.7, 7.0**	**5.7, 8.4, 10.4**
Housing material	Plastic	Metal
Operating system	WinCE 5.0 Standard	
Touchscreen	Resistive	
Communications ports	1 Ethernet, 1 or 2 serial, 0 or 1 USB	
Optional field buses	PROFIBUS, CANopen, SmartWire-DT	
Development software	XSoft-CoDeSys-2	
IEC-61131-3 logic programming	(LD, ST, SFC, IL, FBD, CFC) Yes	
Integrated screen design	Yes	
Integrated field bus configuration	Yes	
Alarm online/historical	Yes	
Trend online/historical	Yes	
Scripting	Structured Text	
Scheduler	Yes	
Recipe	Yes	
Reports	No	
OPC, TCP/IP and communication driver	Yes (OPC Server for PC)	
Web Server and Web Thin Client support	Yes	
Full remote access	Yes	
Local/remote data base access	Limited (DDE)	
Ability to run third-party software	No	
ActiveX and .NET controls	No	
Full document viewing	No	
Windows media player	No	
Vision system interfaces	No	
Network camera monitoring	No	

Catalog Number Selection

XV Operator Interface

XV

XV – 102 – B3 – 35TQRG – 10

Family
XV = Microsoft Windows CE operating system

Performance Class
102 = CE, plastic housing, 2nd gen
152 = CE, metal housing, 2nd gen

Features Base Unit Variant ①	Features Additional COMM Options
B = Retentive memory	**3** = 1-RS-232
D = Retentive memory, USB host, RS-232	**4** = 1-RS-485
E = Retentive memory, USB host, SmartWire-DT	**6** = 1-CANopen
H = Galileo only unit, USB host	**8** = 1-PROFIBUS
	E = 1-SmartWire-DT

Display Size	Display Technology	OS Build
35 = 3.5-inch	**TQR** = TFT (QVGA) resistive	**C** = XSoft-CoDeSys/Galileo
57 = 5.7-inch	**TVR** = TFT (VGA) resistive	**G** = CE Professional OS and Visual Designer runtime 1500 tags ②
70 = 7.0-inch	**TWR** = TFT (widescreen) resistive	**L** = Galileo only unit
84 = 8.4-inch		
10 = 10.4-inch		

Branding and Bezel
10 = Standard blank front bezel with Eaton branded product label

Product Selection

XV Operator Interface

XV Operator Interface with Visual Designer

Description	Catalog Number
XV 3.5-inch TFT, plastic housing, resistive touch, Ethernet and RS-232	**XV-102-B3-35TQRG-10**
XV 3.5-inch TFT, plastic housing, resistive touch, Ethernet and RS-485	**XV-102-B4-35TQRG-10**
XV 5.7-inch TFT, plastic housing, resistive touch, Ethernet, RS-232, RS-485	**XV-102-D4-57TVRG-10**
XV 7.0-inch TFT wide screen, plastic housing, resistive touch, Ethernet, RS-232, RS-485	**XV-102-D4-70TWRG-10**
XV 5.7-inch TFT, metal housing, resistive touch, Ethernet, RS-232, RS-485	**XV-152-D4-57TVRG-10**
XV 8.4-inch TFT, metal housing, resistive touch, Ethernet, RS-232, RS-485	**XV-152-D4-84TVRG-10**
XV 10.4-inch TFT, metal housing, resistive touch, Ethernet, RS-232, RS-485	**XV-152-D4-10TVRG-10**

Notes

① All 1xx performance class units have 400 MHz processor, 64 MB DRAM, 1 x 10/100 Ethernet, and 1 x USB device.

② Standard software on embedded hardware. These XV models have a Microsoft Windows CE 5.0 Professional operating system and are pre-licensed with Visual Designer runtime for up to 1500 tags, 3 simultaneous communication drivers, and 1 Web session. Field upgrades are available for up to 4000 tags, 3 drivers, and 2, 4 or 8 simultaneous Web sessions.

XV Operator Interface with XSoft-CoDeSys

Description	Catalog Number
XV 3.5-inch TFT plastic housing, resistive touch, CANopen	**XV-102-B6-35TQRC-10**
XV 3.5-inch TFT plastic housing, resistive touch, PROFIBUS	**XV-102-B8-35TQRC-10**
XV 3.5-inch TFT plastic housing, resistive touch, SmartWire-DT	**XV-102-BE-35TQRC-10**
XV 5.7-inch TFT plastic housing, resistive touch, CANopen	**XV-102-D6-57TVRC-10**
XV 5.7-inch TFT plastic housing, resistive touch, PROFIBUS	**XV-102-D8-57TVRC-10**
XV 5.7-inch TFT plastic housing, resistive touch, CANopen, SmartWire-DT	**XV-102-E6-57TVRC-10**
XV 5.7-inch TFT plastic housing, resistive touch, PROFIBUS, SmartWire-DT	**XV-102-E8-57TVRC-10**
XV 7.0-inch TFT plastic housing, resistive touch, CANopen	**XV-102-D6-70TWRC-10**
XV 7.0-inch TFT plastic housing, resistive touch, PROFIBUS	**XV-102-D8-70TWRC-10**
XV 7.0-inch TFT plastic housing, resistive touch, CANopen, SmartWire-DT	**XV-102-E6-70TWRC-10**
XV 7.0-inch TFT plastic housing, resistive touch, PROFIBUS, SmartWire-DT	**XV-102-E8-70TWRC-10**
XV 5.7-inch TFT metal housing, resistive touch, CANopen	**XV-152-D6-57TVRC-10**
XV 5.7-inch TFT metal housing, resistive touch, PROFIBUS	**XV-152-D8-57TVRC-10**
XV 5.7-inch TFT metal housing, resistive touch, CANopen, SmartWire-DT	**XV-152-E6-57TVRC-10**
XV 5.7-inch TFT metal housing, resistive touch, PROFIBUS, SmartWire-DT	**XV-152-E8-57TVRC-10**
XV 8.4-inch TFT metal housing, resistive touch, CANopen	**XV-152-D6-84TVRC-10**
XV 8.4-inch TFT metal housing, resistive touch, PROFIBUS	**XV-152-D8-84TVRC-10**
XV 8.4-inch TFT metal housing, resistive touch, CANopen, SmartWire-DT	**XV-152-E6-84TVRC-10**
XV 8.4-inch TFT metal housing, resistive touch, PROFIBUS, SmartWire-DT	**XV-152-E8-84TVRC-10**
XV 10.4-inch TFT metal housing, resistive touch, CANopen	**XV-152-D6-10TVRC-10**
XV 10.4-inch TFT metal housing, resistive touch, PROFIBUS	**XV-152-D8-10TVRC-10**
XV 10.4-inch TFT metal housing, resistive touch, CANopen, SmartWire-DT	**XV-152-E6-10TVRC-10**
XV 10.4-inch TFT metal housing, resistive touch, PROFIBUS, SmartWire-DT	**XV-152-E8-10TVRC-10**

XV Operator Interface with Galileo Only

Description	Catalog Number
XV 3.5-inch TFT plastic housing, resistive touch, Ethernet RS-232	**XV-102-H3-35TQRL-10**
XV 3.5-inch TFT plastic housing, resistive touch, Ethernet RS-485	**XV-102-H4-35TQRL-10**
XV 5.7-inch TFT plastic housing, resistive touch, Ethernet RS-232	**XV-102-H3-57TVRL-10**
XV 5.7-inch TFT plastic housing, resistive touch, Ethernet RS-485	**XV-102-H4-57TVRL-10**
XV 7.0-inch TFT plastic housing, resistive touch, Ethernet RS-232	**XV-102-H3-70TWRL-10**
XV 7.0-inch TFT plastic housing, resistive touch, Ethernet RS-485	**XV-102-H4-70TWRL-10**

Accessories

XV Family Accessories

Description	Catalog Number
SD memory card for all XV models	**MEMORY-SD-A1-S**
Spare part kit for XV-102 models—1 power connector, 8 mounting brackets, 1 sealing strip, 1 touch pen	**ACC-TP-57-KG-1 XV-102**
Spare part kit for XV-152 models—1 power connector, 8 mounting brackets, 1 sealing strip, 1 touch pen	**ACC-TP-10-12-RES-1**

Technical Data and Specifications

XV Operator Interface

Series	XV Midrange Operator Interface					
Model	XV-102			XV-152		
Screen Size	3.5-Inch	5.7-Inch	7.0-Inch	5.7-Inch	8.4-Inch	10.4-Inch
Operating system	WinCE 5.0 Professional/Standard			WinCE 5.0 Professional/Standard		
Touchscreen technology	Resistive	Resistive	Resistive	Resistive	Resistive	Resistive
Display, colors	Color TFT, 64k colors	Color TFT, 64k colors	Color TFT, 64k colors	Color TFT, 64k colors	Color TFT, 64k colors	Color TFT, 64k colors
Pixel resolution (landscape) portrait mode also available	QVGA 320 x 240	VGA 640 x 480	WVGA 800 x 480	VGA 640 x 480	VGA 640 x 480	VGA 640 x 480
Brightness (cd/m^2)	250	250	250	350	350	350
Backlight	LED, selectable dimming	LED, selectable dimming	LED, selectable dimming	LED, selectable dimming	LED, selectable dimming	LED, selectable dimming
Lifespan of backlight (half-life)	40,000 hrs	40,000 hrs	40,000 hrs	40,000 hrs	40,000 hrs	40,000 hrs
Processor	32 bit RISC, 400 MHz	32 bit RISC, 400 MHz	32 bit RISC, 400 MHz	32 bit RISC, 400 MHz	32 bit RISC, 400 MHz	32 bit RISC, 400 MHz
Volatile memory	64 MB DRAM	64 MB DRAM	64 MB DRAM	64 MB DRAM	64 MB DRAM	64 MB DRAM
Non-volatile memory	125 KB NVRAM/64 MB NAND, 1 SD card slot	125 KB NVRAM/64 MB NAND/ 2 MB NOR, 1 SD card slot		125 KB NVRAM/64 MB NAND/ 2 MB NOR, 1 SD card slot		
Real time clock	Yes	Yes	Yes	Yes	Yes	Yes
Communication ports	Ethernet 10/100, RS-485 or RS-232 USB Device	Ethernet 10/100, RS-485, RS-232 USB Host, USB Device		Ethernet 10/100, RS-485, RS-232 USB Host, USB Device		
Slots for COMM modules	None	None	None	None	None	None
Power supply rated voltage	24 Vdc nominal (–20%/+25%) with polarity protection			24 Vdc nominal (–20%/+25%) with polarity protection		
Continuous current consumption (max. amps)	0.2	0.4	0.4	0.4	0.6	0.6
Starting current inrush (A^2s)	1.5	1.5	1.5	1.5	1.5	1.5
Ambient conditions						
Operation—relative humidity, noncondensing	0 to 50°C, 10 to 95%	0 to 50°C, 10 to 95%	0 to 50°C, 10 to 95%	0 to 50°C, 10 to 95%	0 to 50°C, 10 to 95%	0 to 50°C, 10 to 95%
Storage/transport—relative humidity, noncondensing	–20 to 60°C, 10 to 95%	–20 to 60°C, 10 to 95%	–20 to 60°C, 10 to 95%	–20 to 60°C, 10 to 95%	–20 to 60°C, 10 to 95%	–20 to 60°C, 10 to 95%
Shock	IEC 60068-2-27 15g for 11 ms duration			IEC 60068-2-27 15g for 11 ms duration		
Vibration	IEC 60068-2-6 5–9 Hz: 3.5 mm displacement 9–60 Hz: 0.15 mm displacement 60–150 Hz: 2g acceleration			IEC 60068-2-6 5–9 Hz: 3.5 mm displacement 9–60 Hz: 0.15 mm displacement 60–150 Hz: 2g acceleration		
Agency certifications and standards	CE, UL/cUL, CSA (pending), RoHS			CE, UL/cUL, CSA (pending), RoHS		
Protection type						
Front	IP65, NEMA 4X (indoor)	IP65, NEMA 4X (indoor)	IP65, NEMA 4X (indoor)	IP65, NEMA 4X (indoor)	IP65, NEMA 4X (indoor)	IP65, NEMA 4X (indoor)
Rear	IP20, NEMA 1	IP20, NEMA 1	IP20, NEMA 1	IP20, NEMA 1	IP20, NEMA 1	IP20, NEMA 1
Housing material	Plastic	Plastic	Plastic	Metal	Metal	Metal
Dimensions W x H x D (mm)	136 x 100 x 30	170 x 130 x 39	210 x 135 x 38	212 x 156 x 53	275 x 208 x 53	345 x 260 x 54
Mounting cutout W x H (mm)	123 x 87	157 x 117	197 x 122	198 x 142	261 x 194	329 x 238
Approximate weight lbs (kg)	0.7 (0.3)	1.3 (0.6)	1.3 (0.6)	2.9 (1.3)	4.3 (2.1)	6.1 (3.0)
Ability to run third-party software	No	No	No	No	No	No
Visual Designer development software	VISUALDCE or VISUALDXP			VISUALDCE or VISUALDXP		
Pre-licensed tags, drivers, Web sessions (Visual Designer models)	1500 tags, 3 drivers, 1 Web session			1500 tags, 3 drivers, 1 Web session		
Field upgradeable max tags, drivers, Web sessions (Visual Designer Models)	4000 tags, 3 drivers, 1, 2, 4, or 8 Web sessions simultaneously			4000 tags, 3 drivers, 1, 2, 4, or 8 Web sessions simultaneously		
XSoft-CoDeSys-2 development software	SW-XSOFT-CODESYS-2-S (seat) SW-XSOFT-CODESYS-2-M (multi-seat)			SW-XSOFT-CODESYS-2-S (seat) SW-XSOFT-CODESYS-2-M (multi-seat)		
Galileo development software	SW-GALILEO-S (seat) SW-GALILEO-M (multi-seat)			SW-GALILEO-S (seat) SW-GALILEO-M (multi-seat)		

XP Operator Interface

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XP with Visual Designer

Product Description

The XP models were designed for performance. This series is perfect for OEMs who require extensive connectivity, the advanced features available in Visual Designer, have large or high speed applications, or need an open platform for running third-party software. The unique infrared touchscreen with scratch resistant safety glass is ideal for harsh environments where traditional touchscreens are easily damaged. The two externally accessible solid state CompactFlash® drives provide both easy access and reliability. Protect Mode, available only on Eaton's XP embedded operator interface products, protects the operating system from unwanted changes providing improved up-time and reliability.

Features

XP Series operator interface with Windows XP Embedded operating system

- 8.4-, 10.4-, 12.1- and 15.0-inch screen sizes as well as blind node
- Infrared touch screen, safety glass and metal housing for demanding environments
- Multiple Ethernet, serial, and USB ports on all models
- All solid state media increases reliability
- Open architecture compatible with third-party software and hardware
- Non-corruptible OS with Protect Mode® increases security and minimizes emergency and preventative maintenance downtime
- Visual Designer XP development software
- Pre-installed Visual Designer runtime and Web serving licenses

Standards and Certifications

- CE
- UL
- cUL
- RoHS

Catalog Number Selection

XP Operator Interface

XP

XP – 702 – F0 – 84TSIK – 10

Family
XP = X86 Microsoft Windows XPe operating system

Performance Class
702 = XPe, metal housing, 2nd gen

Features Base Unit Variant ①	Features Additional COMM Options
E = 1 GHz Celeron with 1 GB RAM 4 GB C drive CF and 1 GB D drive CF **F** = 1.8 GHz Pentium with 2GB RAM 4 GB C drive CF and 1 GB D drive CF	**0** = No additional communication options

Display Size	Display Technology	OS Build ②
84 = 8.4-inch **10** = 10.4-inch **12** = 12.1-inch **15** = 15.0-inch **BOX** = Blind node (no display)	**TSI** = TFT (SVGA) Infrared **TXI** = TFT (XVGA) Infrared **Blank** = No display	**J** = XPe OS and License Visual Designer Runtime 4000 tags **K** = XPe OS and License Visual Designer Runtime 64,000 tags

Branding and Bezel
00 = No bezel (blind node) **10** = Standard blank front bezel with Eaton branded product label

Product Selection

Series Information

All XP models have a Microsoft Windows XP embedded operating system and are pre-licensed with Visual Designer runtime. The standard models are licensed for 4000 tags, 5 simultaneous communication drivers and 1 Web session. The enterprise models are licensed for 64,000 tags, 8 simultaneous communication drivers and 1 Web session. Field upgrades are available for up to 64,000 tags, 8 drivers, and 2, 4, 8, 16, 32, 64, 128 or 256 simultaneous Web sessions.

XP Operator Interface

XP Operator Interface

Description	Catalog Number
XP 8.4-inch TFT, 1 GHz Celeron, 1 GB RAM, 4 GB C drive, 1 GB D drive, 4000 tags, 5 drivers, 1 Web session	**XP-702-E0-84TSIJ-10**
XP 10.4-inch TFT, 1 GHz Celeron, 1 GB RAM, 4 GB C drive, 1 GB D drive, 4000 tags, 5 drivers, 1 Web session	**XP-702-E0-10TSIJ-10**
XP 12.1-inch TFT, 1 GHz Celeron, 1 GB RAM, 4 GB C drive, 1 GB D drive, 4000 tags, 5 drivers, 1 Web session	**XP-702-E0-12TXIJ-10**
XP 15.0-inch TFT, 1 GHz Celeron, 1 GB RAM, 4 GB C drive, 1 GB D drive, 4000 tags, 5 drivers, 1 Web session	**XP-702-E0-15TXIJ-10**
XP blind node (no display), 1 GHz Celeron, 1 GB RAM, 4 GB C drive, 1 GB D drive, 4000 tags, 5 drivers, 1 Web session	**XP-702-E0-BOXJ-00**
XP 8.4-inch TFT, 1.8 GHz Pentium, 2 GB RAM, 4 GB C drive, 1 GB D drive, 64k tags, 8 drivers, 1 Web session	**XP-702-F0-84TSIK-10**
XP 10.4-inch TFT, 1.8 GHz Pentium, 2 GB RAM, 4 GB C drive, 1 GB D drive, 64k tags, 8 drivers, 1 Web session	**XP-702-F0-10TSIK-10**
XP 12.1-inch TFT, 1.8 GHz Pentium, 2 GB RAM, 4 GB C drive, 1 GB D drive, 64k tags, 8 drivers, 1 Web session	**XP-702-F0-12TXIK-10**
XP 15.0-inch TFT, 1.8 GHz Pentium, 2 GB RAM, 4 GB C drive, 1 GB D drive, 64k tags, 8 drivers, 1 Web session	**XP-702-F0-15TXIK-10**
XP blind node (no display), 1.8 GHz Pentium, 2 GB RAM, 4 GB C drive, 1 GB D drive, 64k tags, 8 drivers, 1 Web session	**XP-702-F0-BOXK-00**

Notes

① All 7xx Performance Class units have 1 x 10/100, 1 x 10/100/1000 Ethernet, 4 x USB Host V2.0, 2 x RS-232.

② Standard software on embedded hardware.

Accessories

XP Operator Interface

Description	Catalog Number
Hard drive, 80 GB minimum for all XP models for application or data storage	**HDU-A7-S XP700**
Industrial grade hard drive, 80 GB minimum for all XP models for application or data storage	**HDU-A7-SI XP700**
XP700 externally mounted fan for all XP models (included with 1.8 GHz Enterprise models)	**ACC-FAN-700-S**
CompactFlash memory card, minimum 4 GB	**MEMORY-CF-A8-S**
XP-702 spare part kit for all XP models—1 power connector, 8 mounting brackets, 1 sealing strip	**ACC-TP-57-RES-1**

Technical Data and Specifications

XP Operator Interface

Series	**XP Performance Operator Interface**				
Model	**XP-702**				
Screen Size	**8.4-Inch**	**10.4-Inch**	**12.1-Inch**	**15.0-Inch**	**Blind Node (no display)**
Operating system	Windows XPe	Windows XPe	Windows XPe	Windows XPe	Windows XPe
Touchscreen technology	Infrared, non-reflective safety glass				N/A
Display, colors	Color TFT, selectable 16 million, 64k, or 256 colors				VGA and DVI-D output
Pixel resolution (landscape)—Portrait mode also available	SVGA 800 x 600	SVGA 800 x 600	XGA 1024 x 768	XGA 1024 x 768	800 x 600 to 1920 x 1200
Brightness (cd/m^2)	400	400	400	400	N/A
Backlight	2 CCFL	2 CCFL	2 CCFL	4 CCFL	N/A
Lifespan of backlight (half-life)	50,000 hrs	50,000 hrs	50,000 hrs	50,000 hrs	N/A
Processor					
Standard models	1 GHz Celeron M	1 GHz Celeron M	1 GHz Celeron M	1 GHz Celeron M	1 GHz Celeron M
Enterprise models	1.8 GHz Pentium M	1.8 GHz Pentium M	1.8 GHz Pentium M	1.8 GHz Pentium M	1.8 GHz Pentium M
Volatile memory					
Standard models	1 GB	1 GB	1 GB	1 GB	1 GB
Enterprise models	2 GB	2 GB	2 GB	2 GB	2 GB
Non-volatile memory					
Standard models ①	4 GB min C drive (OS), 1 GB min D drive				
Enterprise models ①	4 GB min C drive (OS), 1 GB min D drive				
Real time clock	Yes	Yes	Yes	Yes	Yes
Communication ports	Ethernet 1 x 10/100 and 1 x 10/100/1000; 2 x RS-232; 4 x USB 2.0 Host				
Slots for COMM modules	1 x PCI 32-bit	1 x PCI 32-bit	1 x PCI 32-bit	1 x PCI 32-bit	1 x PCI 32-bit
Power supply rated voltage	24 Vdc nominal (–15%/+20%) with polarity protection				

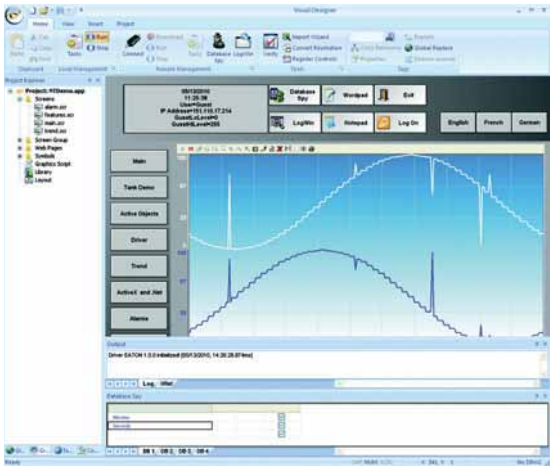
Note

① All are removable CompactFlash.

XP Operator Interface, continued

Series	XP Performance Operator Interface				
Model	**XP-702**				
Screen Size	**8.4-Inch**	**10.4-Inch**	**12.1-Inch**	**15.0-Inch**	**Blind Node (no display)**
Continuous current consumption (maximum amps)					
Standard models	2.0	2.0	2.1	2.1	1.4
Enterprise models	3.1	3.1	3.2	3.2	2.8
Starting Current Inrush (A^2s)	2.0	2.0	2.0	2.0	2.0
Ambient conditions					
Operation—relative humidity, noncondensing	0 to 50°C, 10 to 95%	0 to 50°C, 10 to 95%	0 to 50°C, 10 to 95%	0 to 50°C, 10 to 95%	0 to 50°C, 10 to 95%
Storage/transport—relative humidity, noncondensing	–20° to 60°C, 10 to 95%	–20° to 60°C, 10 to 95%	–20° to 60°C, 10 to 95%	–20° to 60°C, 10 to 95%	–20° to 60°C, 10 to 95%
Shock	IEC 60068-2-27 15g for 11 ms duration				
Vibration	IEC 60068-2-6	IEC 60068-2-6	IEC 60068-2-6	IEC 60068-2-6	IEC 60068-2-6
5–9 Hz	3.5 mm displacement	3.5 mm displacement	3.5 mm displacement	3.5 mm displacement	3.5 mm displacement
9–60 Hz	0.15 mm displacement	0.15 mm displacement	0.15 mm displacement	0.15 mm displacement	0.15 mm displacement
60–150 Hz	1g acceleration	1g acceleration	1g acceleration	1g acceleration	1g acceleration
Agency certifications and standards	CE, UL/cUL, CSA (pending), RoHS				
Protection type					
Front	IP65, NEMA 4X (indoor)	IP65, NEMA 4X (indoor)	IP65, NEMA 4X (indoor)	IP65, NEMA 4X (indoor)	IP20, NEMA 1
Rear	IP20, NEMA 1	IP20, NEMA 1	IP20, NEMA 1	IP20, NEMA 1	IP20, NEMA 1
Housing material	Metal	Metal	Metal	Metal	Metal
Dimensions W x H x D (mm)	275 x 208 x 102/140	345 x 260 x 91/129	361 x 279 x 98/136	427 x 322 x 101/139	264 x 194 x 58/96
Mounting cutout W x H (mm)	261 x 194	329 x 238	344 x 262	410 x 315	N/A
Approximate weight lbs (kg)	6.4/7.3 (3.2/3.6)	8.3/9.1 (4.1/4.5)	9.5/10.3 (4.7/5.1)	12.8/13.6 (6.3/6.7)	3.9/4.7 (1.9/2.3)
Development software	Visual Designer (VISUALDXP)	Visual Designer (VISUALDXP)	Visual Designer (VISUALDXP)	Visual Designer (VISUALDXP)	Visual Designer (VISUALDXP)
Ability to run third-party software	Yes	Yes	Yes	Yes	Yes
Pre-licensed tags, drivers, Web sessions					
Standard models	4000 tags, 5 drivers, 1 Web session				
Enterprise models	64,000 tags, 8 drivers, 1 Web session				
Field upgradeable max tags, drivers, Web sessions	64,000 tags, 8 drivers, 1, 2, 4, 8, 16, 32, 64, 128, or 256 Web sessions simultaneously				

Visual Designer Software



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5

Visual Designer Software

Product Description

Advanced GUI Development, Made Easy

Time-saving solutions, lower costs.

With application development expense often outweighing the hardware expense, the demand to quickly design and implement advanced GUI solutions is greater than ever. Even advanced features such as data archiving, recipe management, multi-language, SQL database access, and Web serving are made easy through an elegant and modern user interface. Visual Designer's ease-of-use and time-saving features lower your total installed cost.

Features

Visual Designer is a software development package optimized for OEMs. New tools streamline the application development process, and the creation of Web-based applications has never been easier. In addition to basic monitor and control functionality, Visual Designer is packed with advanced features streamlining the design of sophisticated applications.

Advanced Features

- Pop-ups and group screens
- Full mathematical and logical evaluation
- Web browsing and document viewing
- Remote access and control without having to install software to the remote PC
- Database interfacing
- Historical alarms and events
- Historical data archiving and trending
- Recipe management
- Multi-language
- VB scripting
- Report generation
- Scheduling
- Resolution conversion
- E-mailing and text messaging
- Launch and control of third-party applications

Advanced Development Features

- Conversion of legacy PanelMate configurations
- Optional PanelBuilder conversion utility
- Online configuration/ editing
- Advanced search and replace
- Automatic scaling of Web clients
- Customizable application symbols
- Reusable controls, images, and screens via indirect tag and/or PLC assignments

System Requirements

Windows XP and Windows 7 32-bit and 64-bit systems

Fully connected, Web-enabled

Today's operator interface applications range from basic monitor and control to high-end, feature-rich HMI software with Supervisory Control and Data Acquisition (SCADA). Customers demand communications capability with any network, PLC, Web client, and database. The answer: Eaton's Web-enabled Visual Designer operator interface software.

Web-based thin client

- Zero admin client—no need to install software on the remote PC
- Supports multiple simultaneous and independent Web clients
- Simplified security—the same local user accounts and passwords for viewing and control also apply remotely

Connectivity

- Extensive list of over 240 native communication drivers for PLCs, drives, and many other industrial and commercial devices
- Visual Designer software can interface to any relational database—access both local and enterprise functions such as MRP/ERP through databases such as Microsoft® Access, Fox Pro, SQL Server, Oracle®, PI System® and many others
- Other connectivity tools provide redundancy capabilities, Real-Time Data Exchange, Centralized Alarm Management, and more

Open platform

- Visual Designer Software can host third-party ActiveX® and .NET controls and Visual Basic® programs
- In addition to Eaton's Operator Interface families, Visual Designer's runtime may be licensed on any 32 or 64-bit Windows PC

Interoperability

- Software is designed to open standards such as XML, OPC, ActiveX, .NET, ODBC, ADO, SOAP, DDE and more

Peace of mind

All of these capabilities—combined with Eaton's commitment to provide free technical support for both OI hardware and software—make it quick and easy to purchase, develop and deploy XV and XP operator interface solutions.

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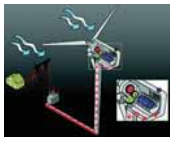
Product Selection

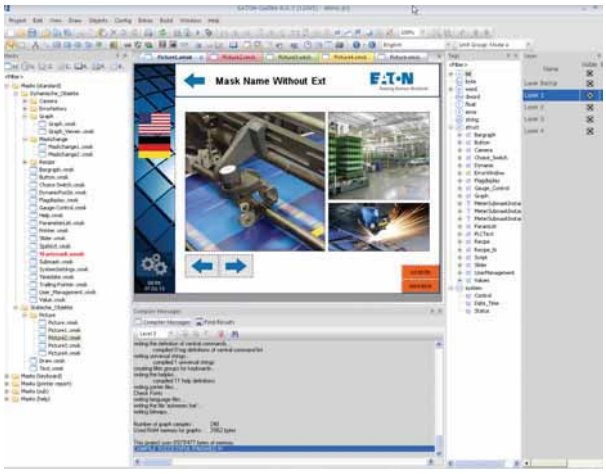
Visual Designer



Visual Designer Software

Description	Catalog Number
Visual Designer Development Software License Key	
For CE hardware	**VISUALDCE**
For PCs, XPe, and CE hardware	**VISUALDXP**
For CE hardware, 5-pack of VISUALDCE	**VISUALDCE5**
For PCs, XPe, and CE hardware, 5-pack of VISUALDXP	**VISUALDXP5**
For a PC Runtime software license with a maximum of 64k tags, 8 drivers, 1 Web session	**VISUALRTPC**
Visual Designer development software and PC runtime software licenses for a max of 64k tags, 8 drivers, 1 Web session	**VISUALRTDEVPC**
Software Updates and Upgrades	
Update to current version Visual Designer development software for CE hardware	**VISUALDUPCE**
Update to current version Visual Designer development software PCs/XPe/CE	**VISUALDUPXP**
Update to current version of Visual Designer runtime license for PCs	**VISUALRTUPPC**
Upgrade from Visual Designer CE 1500 tag to 4000 tag runtime	**VISUALRT4KCE**
Upgrade from Visual Designer XPe 4000 tag, 5 driver to 64k tag, 8 driver runtime license	**VISUALRT64KXP**
Upgrade from Visual Designer development software CE to CE plus PC and XPe (64k tag, 8 drivers)	**VISUALDCE2XP**
Visual Designer PanelBuilder conversion utility optional plug-in (requires Visual Designer software)	**VISUALDPBCU**
Visual Designer 1 additional Web thin client license for Internet Explorer	**VISUALWEB1**
Visual Designer 3 additional Web thin client licenses for Internet Explorer	**VISUALWEB3**
Visual Designer 7 additional Web thin client licenses for Internet Explorer	**VISUALWEB7**

Galileo Software



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Galileo Software

Product Description

The Intuitive Visualization Tool

Galileo is an easy to learn yet powerful and extensive project design environment that can be used ideally in all system and machine building applications close to the machine and process.

Galileo is designed for use in all sectors and offers comprehensive project design tools. Galileo provides a full range of functions without any graduated restrictions on tags or screens, and is optimized for our XV operator interface panels.

Features

- Easy to learn and intuitive graphical user interface with a project overview window
- User-friendly project design with project simulation on development PC
- Different user interface styles
- Drag and drop positioning of objects, WYSIWYG (what you see is what you get)
- Simple, clear user guidance
- Tabular object properties, easy and fast assignment of attributes—copy and paste
- Convenient series assignment of texts and images to tags
- Many graphical objects such as bar graph, slide adjuster, graph plotter, curve chart, camera
- Anti-aliased gauge display
- Enhanced password handling with complex password and aging
- Extensive recipe handling
- Alarm handling with time stamp, history and diagnostics support with image display
- Multi-line display of alarm entries
- Online language selection
- Unicode support (also Asian character sets)
- Text import/export in XML format (example, Excel®)
- Brilliant image display, up to 65536 colors
- Import of 15 different image formats
- Dynamic objects
- Object parameter list, any number of data objects in a screen
- Dynamic unit of measure selection (example, °C–°F, inch–mm)
- Direct printing on panel (reports, forms)
- Many specific objects and system functions
- Simple import of PLC variables
- Full functionality always available, no graduated performance level

System Requirements

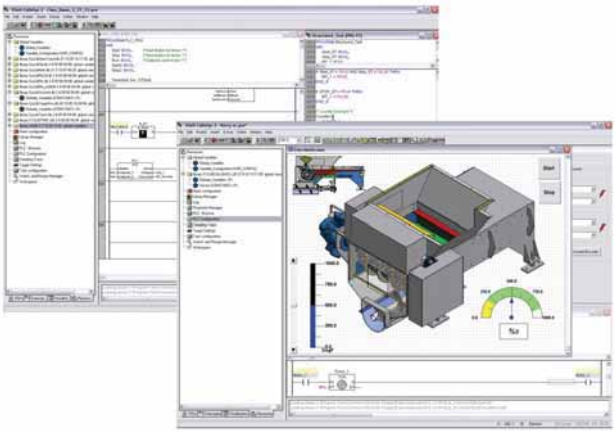
Windows XP and Windows 7

Product Selection

Galileo Development Software

Description	Catalog Number
Single-seat license	**SW-GALILEO-S**
Multiple-seat license	**SW-GALILEO-M**

XSoft-CoDeSys-2 Software



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XV with Visual Designer, Galileo, or XSoft-CoDeSys-2	**V7-T5-23**
XP with Visual Designer	**V7-T5-30**
Visual Designer Software	**V7-T5-34**
Galileo Software	**V7-T5-36**
XSoft-CoDeSys-2 Software	

XSoft-CoDeSys-2 Software

Product Description

Combined Logic and Visualization Development

IEC 61131-3 Logic Programming

- Ladder Diagram (LD)
- Structured Text (ST)
- Sequential function chart (SFC)
- Function block diagram (FBD)
- Freely definable function block chart/continuous function chart (CFC)
- Instruction List (IL)

Target Visualization

Integrated design of Operator Interface screens for the XV series. Visualization and logic developed as part of the same project. Simplifies screen design and always keeps the Logic and visualization in synch.

Web Visualization

Optionally XSoft-CoDeSys-2 can automatically generate XML-based runtime screens to make the screens from the XV accessible remotely using a Web browser with a JavaScript plug-in such as Internet Explorer®, Firefox® and others.

Features

Project Development

- Automatic variable declaration
- On line editing
- Pop-up variable and function search/pick tools
- Automatic formatting and color coding of logic/ declaration text
- Re-usable Visual-Logic Function Blocks

Debugging and commissioning

XSoft-CoDeSys-2 offers you a number of important functions for debugging, testing and commissioning your XV applications quickly and efficiently.

All these features are available as soon as you log on to the XV (online mode) over an Ethernet connection.

Simulation

Users can also test the application when the XV is not connected to the process. This is possible thanks to the integrated online simulation feature. Simulation supports both the screens and logic that have been designed using XSoft-CoDeSys.

Advanced Features

- Up to 16 time and/or event driven tasks per project
- Each task can include multiple logic programs or subroutines
- Programs and screen designs can be exported and imported to support reuse
- Powerful, built-in function block libraries
- Ability to create user-defined function blocks
- Fieldbus Configurator for CANopen, PROFIBUS-DP and SmartWire-DT device I/O
- Ethernet and serial communication function blocks (OPC server, UDP, TCP/IP, FTP client/ server, Modbus Master/Slave, email, SMS, and more)
- 8-level password protection
- Web access selectable per screen
- System function libraries (OS Storage Card, and more)
- Online and historical alarms
- Online and historical trends

System Requirements

Windows XP and Windows 7 32-bit systems

Product Selection

XSoft-CoDeSys-2

XSoft-CoDeSys-2 Software

Description	Catalog Number
Single Seat License	**SW-XSOFT-CODESYS-2-S**
Multiple Seat License (3)	**SW-XSOFT-CODESYS-2-M**

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