

**XV-100 Operator Interface**



**XV-300 Operator Interface**



**XP-500 Operator Interface**



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#### Product and Software Selection Guides

##### Operator Interfaces and Programming Software Selection Guide



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Screen size	3.5-inch, 5.7-inch, 7.0-inch, 8.4-inch and 10.4-inch	7.0-inch, 10.1-inch, 15-inch	10.1-inch, 15.6-inch, 21.5-inch
Screen options	Color TFT, 64 k colors; resolutions from QVGA (320 x 240) to WVGA (800 x 480)	LED backlit Projected Capacitive Touch (PCT), resolutions from (1024 x 600) to (1366 x 768)	LED backlit Projected Capacitive Touchscreen (PCT), resolutions from (1280 x 800) to (1920 x 1080)
Interface	Resistive touchscreen	Non-reflective tempered scratch-resistant glass	Non-reflective tempered scratch-resistant glass
Communication ports	Ethernet, RS-232 and/or RS-485, USB; CANopen or PROFIBUS <sup>®</sup> DP, SmartWire-DT <sup>®</sup> , USB and RS-485 on CoDeSys models	Ethernet, RS-232 and/or RS-485, USB; CANopen or PROFIBUS DP, SmartWire-DT, USB and RS-485 on CoDeSys models	2 Ethernet 1000/100/10 Mbps, 4 USB 3.0, 1 RS-232/RS-422/RS-485, 1 DP, 1 HDMI
Simultaneous protocols	Varies	3 on Visual Designer, varies for Galileo and XSoft-CoDeSys-3	5 (8 optional)
Ethernet drivers	Yes	Yes	Yes
Upload/download	Serial, Ethernet, USB	Serial, Ethernet, USB	Serial, Ethernet, USB
Operating system	Windows <sup>®</sup> CE 5.0 Professional	Windows CE 7	Windows 10 Enterprise LTSC
Third-party software support	—	—	Yes
Screen saver	Yes	Yes	Yes

## Product Selection Guide

### XV Series with Galileo

Series	XV	XV
Model	XV-102-H	XV-303
Screen Size	3.5, 5.7, 7.0	7.0, 10.1, 15.4
Housing material	Plastic	Plastic
Operating system	WinCE 5.0 Standard	WinCE 7.0 Professional
Touchscreen	Resistive	Projected Capacitive Touchscreen (PCT)
Communications ports	1 Ethernet, 1 RS-232, or 1 RS-485, 1 USB	1 Ethernet, 1 RS-232, or 1 RS-485, 1 USB
Optional field buses	N/A	N/A
Development software	Galileo	Galileo
Alarm online/historical	Yes	Yes
Trend online/historical	Yes	Yes
Scripting	Structured text	Structured text
Scheduler	No	No
Recipe	Yes	Yes
Reports	No	No
Full remote access	Yes	Yes
Ability to run third-party software	No	No
Vision system interfaces	Yes	Yes
Multi-language support	Yes	Yes
PLC variable import	Yes	Yes

### XV Series with CoDeSys Runtime (Not Available on XP Series)

Series	XV	XV	XV
Model	XV-102	XV-152	XV-303
Screen Size	3.5, 5.7, 7.0	5.7, 8.4, 10.4	7.0, 10.1
Housing material	Plastic	Metal	Plastic
Operating system	WinCE 5.0 Standard	WinCE 5.0 Standard	WinCE 7.0 Professional
Touchscreen	Resistive	Resistive	PCT, ruggedized glass
Communications ports	1 Ethernet, 1 or 2 serial, 0 or 1 USB	1 Ethernet, 1 or 2 serial, 0 or 1 USB	1 Ethernet, 2 serial, 1 USB, CAN
Optional field buses	PROFIBUS, CANopen, SmartWire-DT	PROFIBUS, CANopen, SmartWire-DT	Optional Field Buses—2nd Ethernet, SmartWire-DT, PROFIBUS
Development software	XSoft-CoDeSys-3	XSoft-CoDeSys-3	XSoft-CoDeSys-3
IEC-61131-3 logic programming	(LD, ST, SFC, IL, FBD, CFC) Yes	(LD, ST, SFC, IL, FBD, CFC) Yes	(LD, ST, SFC, IL, FBD, CFC) Yes
Integrated screen design	Yes	Yes	Yes
Integrated field bus configuration	Yes	Yes	Yes
Alarm online/historical	Yes	Yes	Yes
Trend online/historical	Yes	Yes	Yes
Scripting	Structured Text	Structured Text	Structured Text
Scheduler	Yes	Yes	Yes
Recipe	Yes	Yes	No
Reports	No	No	Yes
OPC, TCP/IP and communication driver	Yes (OPC Server for PC)	Yes (OPC Server for PC)	Yes (OPC Server for PC)
Web server and web thin client support	Yes	Yes	Yes
Full remote access	Yes	Yes	Yes
Local/remote data base access	Limited (DDE)	Limited (DDE)	Yes (with Visual Designer software bundle)
Ability to run third-party software	No	No	No
ActiveX and .NET controls	No	No	No
Full document viewing	No	No	Yes (PDF and HTML)
Windows media player	No	No	No
Vision system interfaces	No	No	No
Network camera monitoring	No	No	No

**XV Operator Interface with Visual Designer**

<b>Series</b>	<b>XV</b>
<b>Model</b>	<b>XV-300</b>
<b>Screen Size</b>	<b>7.0, 10.1</b>
Housing material	Plastic
Operating system	WinCE 7.0 Professional
Touchscreen technology	PCT, ruggedized glass
Communication ports	1 Ethernet, 2 serial, 1 USB, CAN
Optional field buses	Optional communication ports—2nd Ethernet, SmartWire-DT, PROFIBUS DP
Development software	Visual Designer
Pre-licensed tags, driver and web session and field upgrade options	1500 tags, 3 drivers, 1 web session Optional upgrade to 4000 tags, 3 drivers, 1, 2, 4 or 8 simultaneous web sessions
Alarm online/history	Yes
Trend online/history	Yes
Scripting	Yes (VB Script)
Scheduler	Yes
Recipe	Yes
Reports	Yes
OPC, TCP/IP and communication drivers	Yes
Web server and web thin client support	Yes
Full remote access	Yes
Local/remote database interface	Yes
Ability to run third-party software	No
ActiveX and .NET controls	No
Full document viewing	Yes (PDF and HTML)
Windows media player	No
Vision system interfaces	No
Network camera monitoring	No

**XP Operator Interface with Galileo**

<b>Series</b>	<b>XP</b>
<b>Model</b>	<b>XP-504</b>
<b>Screen Size</b>	<b>10.1, 15.6, 21.5</b>
Housing material	Powder-coated aluminum
Operating system	Windows 10 Enterprise LTSC
Touchscreen technology	Projected capacitive touchscreen (PCT), non-reflective tempered glass
Communication ports	2 Ethernet 1000/100/10 Mbps, 4 USB 3.0, 1 RS-232/RS-422/RS-485, 1 DP, 1 HDMI
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

**XP Operator Interface with Visual Designer**

<b>Series</b>	<b>XP</b>
<b>Model</b>	<b>XP-504</b>
<b>Screen Size</b>	<b>10.1, 15.6, 21.5</b>
Housing material	Powder-coated aluminum
Operating system	Windows 10 Enterprise LTSC
Touchscreen technology	Projected capacitive touchscreen (PCT), non-reflective tempered glass
Communication ports	2 Ethernet 1000/100/10 Mbps, 4 USB 3.0, 1 RS-232/RS-422/RS-485, 1 DP, 1 HDMI
Optional field buses	N/A
Development software	Visual Designer (Runtime pre-installed)
Pre-licensed tags, driver and web session and field upgrade options	Standard 4000 tags, 5 drivers, 1 web session Optional upgrades to 64,000 tags, 8 drivers, 1, 2, 4, 8, 16, 32, 64 or 128 simultaneous web sessions
Alarm online/history	Yes
Trend online/history	Yes
Scripting	Yes (VB Script)
Scheduler	Yes
Recipe	Yes
Reports	Yes
OPC, TCP/IP and communication drivers	Yes
Web server and web thin client support	Yes
Full remote access	Yes
Local/remote database interface	Yes
Ability to run third-party software	Yes
ActiveX and .NET controls	Yes
Full document viewing	Yes
Windows media player	Yes
Vision system interfaces	Yes
Network camera monitoring	Yes

#### Software Product Selection Guide



**Galileo**



**XSoft-CoDeSys-3** <sup>①</sup>



**Visual Designer**

**Description**

**Overview**

Intuitive visualization tool. Use Galileo on XV-102-H\_ units or on XV units running CoDeSys when a stronger visualization package is needed

Feature-rich software package with integrated logic and visualization that can be run on specific XV operator interface models

Feature-rich software package with SCADA functionality and web serving capabilities that can be run on XV or XP operator interfaces or personal computers

**Catalog ID**

Development software seat license	SW-GALILEO-S SW-GALILEO-M	SW-XSOFT-CODESYS-3-S <sup>②</sup> SW-XSOFT-CODESYS-3-M <sup>③</sup>	Multiple options; see Section 5.5
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Runtime software for a PC	■	N/A	Multiple options; see Section 5.5
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**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
User-created controls	■	■	■
Customizable application symbols	■	■	■
Full math evaluation	■ 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-3 software package.
- ② Includes XSoft-CoDeSys-3 software for developing applications, runtime software for the XV Series. Single User License.
- ③ Includes XSoft-CoDeSys-3 software for developing applications, runtime software for the XV Series. Multi User License.

### Software Product Selection Guide, continued



**Galileo**



**XSoft-CoDeSys-3** <sup>Ⓢ</sup>



**Visual Designer**

Description	Galileo	XSoft-CoDeSys-3 <sup>Ⓢ</sup>	Visual Designer
<b>Runtime Features</b>			
Clock synchronization with controller	■	■ Configured via visualization screens	■
Sound actions or control	■	—	■
Security	■	■	■ Advanced multi-level
Pop-up screens	■	—	■ And group screens
Animated graphics	■	■	■
Multi-touch and gesture support	■	—	■
Real-time trending	■	■	■
Recipes	■	■	■
Report generation	■	—	■
Timer scheduling	■	■	■
Calendar scheduling	—	■	■
Notification of data and events via email/text messaging	—	■	■
Data archiving	■	■	■
Archive to shared network drive	■	■	■
Alarm and event archiving	■	■	■
Historical trending	■	■	■
Import/export from XML or CSV	■	■	■
Database interface	—	■ DDE	■ ADO.net compliant
Vision system interfaces	■	—	■
Secure document and web network browser	—	■ With user created passwords	■
Web server—viewing and control	—	■	■
Automatic scaling of web clients	—	—	■
Remote desktop	■ VNC and RemoteClient	■ VNC and RemoteClient	■ VNC and RemoteClient
Launch/control third-party applications	—	—	■
Embedded PLC logic	—	■	—

**Note**

<sup>Ⓢ</sup> See the logic section of the catalog for details on the logic features in the XSoft-CoDeSys-3 software package.

#### XV-100 Series Operator Interface



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### XV-100 with Galileo and XSoft-CoDeSys-3

#### Product Description

##### **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-102 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 Runtime (GRS)

##### **XV-100 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-3 programming software
- Pre-licensed for CoDeSys runtime

#### 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.

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.

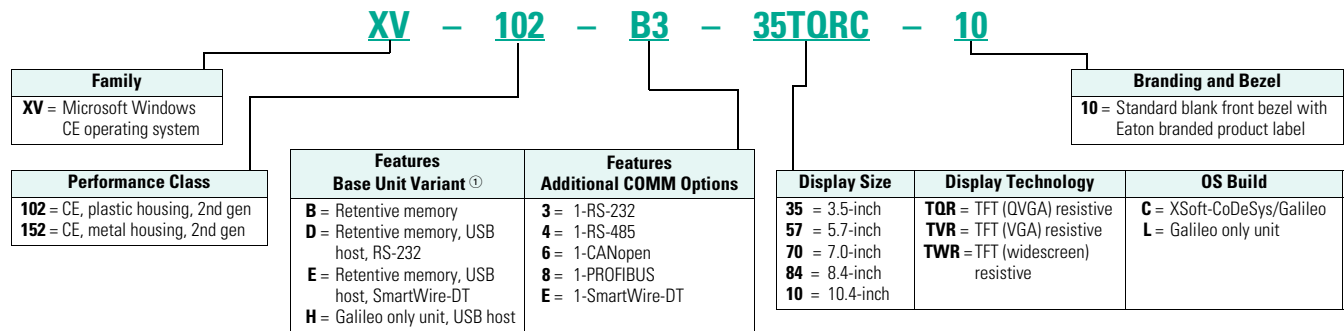
On XV-300 models on **Page V7-T5-12**, you can take advantage of the best of both worlds with Visual Designer and XSoft-CoDeSys together. Combining the power of these two software platforms on an HMI-PLC and SCADA platform.

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.

**Catalog Number Selection**

**XV Operator Interface—XV-102, XV-152**

**XV-102, XV-152**



**Product Selection**

**XV Operator Interface with Galileo Only**<sup>②</sup>



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

**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 For more information on Galileo software, see **Page V7-T5-20**.



### XV Operator Interface with XSoft-CoDeSys, HMI-PLC <sup>①</sup>

Description	Catalog Number
XV 3.5-inch TFT plastic housing, resistive touch, CANopen, RS-485	<b>XV-102-B6-35TQRC-10</b>
XV 3.5-inch TFT plastic housing, resistive touch, PROFIBUS, RS-485	<b>XV-102-B8-35TQRC-10</b>
XV 3.5-inch TFT plastic housing, resistive touch, SmartWire-DT	<b>XV-102-BE-35TQRC-10</b>
XV 5.7-inch TFT plastic housing, resistive touch, CANopen, RS-232, RS-485	<b>XV-102-D6-57TVRC-10</b>
XV 5.7-inch TFT plastic housing, resistive touch, PROFIBUS, RS-232, RS-485	<b>XV-102-D8-57TVRC-10</b>
XV 5.7-inch TFT plastic housing, resistive touch, CANopen, SmartWire-DT, RS-485	<b>XV-102-E6-57TVRC-10</b>
XV 5.7-inch TFT plastic housing, resistive touch, PROFIBUS, SmartWire-DT, RS-485	<b>XV-102-E8-57TVRC-10</b>
XV 7.0-inch TFT plastic housing, resistive touch, CANopen, RS-232, RS-485	<b>XV-102-D6-70TWRC-10</b>
XV 7.0-inch TFT plastic housing, resistive touch, PROFIBUS, RS-232, RS-485	<b>XV-102-D8-70TWRC-10</b>
XV 7.0-inch TFT plastic housing, resistive touch, CANopen, SmartWire-DT, RS-485	<b>XV-102-E6-70TWRC-10</b>
XV 7.0-inch TFT plastic housing, resistive touch, PROFIBUS, SmartWire-DT, RS-485	<b>XV-102-E8-70TWRC-10</b>
XV 5.7-inch TFT metal housing, resistive touch, CANopen, RS-232, RS-485	<b>XV-152-D6-57TVRC-10</b>
XV 5.7-inch TFT metal housing, resistive touch, PROFIBUS, RS-232, RS-485	<b>XV-152-D8-57TVRC-10</b>
XV 5.7-inch TFT metal housing, resistive touch, CANopen, SmartWire-DT, RS-485	<b>XV-152-E6-57TVRC-10</b>
XV 5.7-inch TFT metal housing, resistive touch, PROFIBUS, SmartWire-DT, RS-485	<b>XV-152-E8-57TVRC-10</b>
XV 8.4-inch TFT metal housing, resistive touch, CANopen, RS-232, RS-485	<b>XV-152-D6-84TVRC-10</b>
XV 8.4-inch TFT metal housing, resistive touch, PROFIBUS, RS-232, RS-485	<b>XV-152-D8-84TVRC-10</b>
XV 8.4-inch TFT metal housing, resistive touch, CANopen, SmartWire-DT, RS-485	<b>XV-152-E6-84TVRC-10</b>
XV 8.4-inch TFT metal housing, resistive touch, PROFIBUS, SmartWire-DT, RS-485	<b>XV-152-E8-84TVRC-10</b>
XV 10.4-inch TFT metal housing, resistive touch, CANopen, RS-232, RS-485	<b>XV-152-D6-10TVRC-10</b>
XV 10.4-inch TFT metal housing, resistive touch, PROFIBUS, RS-232, RS-485	<b>XV-152-D8-10TVRC-10</b>
XV 10.4-inch TFT metal housing, resistive touch, CANopen, SmartWire-DT, RS-485	<b>XV-152-E6-10TVRC-10</b>
XV 10.4-inch TFT metal housing, resistive touch, PROFIBUS, SmartWire-DT, RS-485	<b>XV-152-E8-10TVRC-10</b>

## Accessories

### XV Family Accessories

Description	Catalog Number
SD memory card for all XV-102 and XV-152 models	<b>MEMORY-SD-A1-S</b>
Spare part kit for XV-102 models—1 power connector, 8 mounting brackets, 1 sealing strip, 1 touch pen	<b>ACC-TP-57-KG-1</b>
Spare part kit for XV-152 models—1 power connector, 8 mounting brackets, 1 sealing strip, 1 touch pen	<b>ACC-TP-10-12-RES-1</b>
SD memory card with 1 GB storage for all XV-100 and XV-300 models	<b>MEMORY-SD-A2-S</b>
Accessory set for XV-100 (10 mounting brackets and 1 power plug)	<b>ACCESSORIES-TP-10-KG</b>

### XV Family Software Options

Description	Catalog Number
Product license for 40 points for use with Galileo or XSoft-CoDeSys units	<b>LIC-OPT-1ST-LEVEL</b>
Product license for 80 points for use with Galileo or XSoft-CoDeSys units	<b>LIC-OPT-2ND-LEVEL</b>
License product Paper PLC with license sticker for XSoft-CoDeSys-2/-3 for XV-300	<b>LIC-PLC-A</b>

#### Note

① For more information on XSoft-CoDeSys software, see **Page V7-T5-21**.

## Technical Data and Specifications

### XV Operator Interface

Series	XV Midrange Operator Interface			XV-152		
	XV-102				5.7-Inch	8.4-Inch
Model	3.5-Inch	5.7-Inch	7.0-Inch	5.7-Inch	8.4-Inch	10.4-Inch
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, 64 k colors	Color TFT, 64 k colors	Color TFT, 64 k colors	Color TFT, 64 k colors	Color TFT, 64 k colors	Color TFT, 64 k 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 <sup>2</sup> )	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 hours	40,000 hours	40,000 hours	40,000 hours	40,000 hours	40,000 hours
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 <sup>2</sup> s)	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 15 g for 11 ms duration			IEC 60068-2-27 15 g 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: 2 g acceleration			IEC 60068-2-6 5–9 Hz: 3.5 mm displacement 9–60 Hz: 0.15 mm displacement 60–150 Hz: 2 g 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 lb (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
XSoft-CoDeSys-3 development software	SW-XSOFT-CODESYS-3-S (seat) SW-XSOFT-CODESYS-3-M (multi-seat)			SW-XSOFT-CODESYS-3-S (seat) SW-XSOFT-CODESYS-3-M (multi-seat)		
Galileo development software	SW-GALILEO-S (seat) SW-GALILEO-M (multi-seat)			SW-GALILEO-S (seat) SW-GALILEO-M (multi-seat)		

#### XV-300 Series Operator Interface



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### XV-300 with Galileo, XSoft-CoDeSys-3 or Visual Designer

#### Product Description

##### **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.

##### **XV with Visual Designer**

Positioned below 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.

#### Features

##### **XV-300 Software Bundles**

The XV-300 series is the latest and most powerful in the XV product line. Its powerful CPU and graphics co-processor provide the high-performance engine required by demanding HMI and HMI-PLC applications. Coupled with an attractive, sleek design and multi-touch touchscreen, it supports the modern gesture based user interface that redefines ease of use.

The XV-300 series can run Visual Designer, XSoft-CoDeSys and Galileo and unlike the XV-100 series, there are bundles that include Visual Designer and XSoft-CoDeSys runtime licenses on a single unit. Because of the higher capacity and performance of the XV-300 over the XV-100, these appeal to OEMs who have demanding HMI-PLC applications in which case they will choose a model bundled with XSoft-CoDeSys software.

All XSoft-CoDeSys models include XSoft-CoDeSys logic and visualization tools, but also include a Galileo runtime license at no additional charge so the user can choose which visualization tool is appropriate for their needs.

Users who have large or demanding HMI applications that also require some SCADA software features such as web serving, document (PDF) viewing, SQL database interfaces, FDA 21 CFR Part 11 compliance or other advanced functionality could choose the XV-300 models bundled with Visual Designer software. For users who need PLC applications and advanced Visualization and SCADA features, they can choose XV-300 models with both XSoft-CoDeSys and Visual Designer Runtime licenses bundled in a single package.

#### 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.

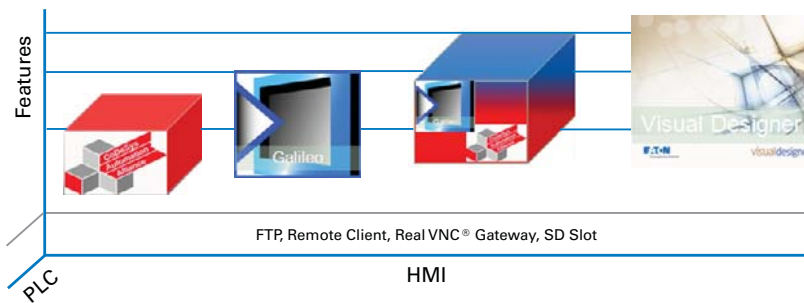
Galileo provides a visualization environment designed around the needs of machine building OEMs. Use Galileo when designing high-performance machines in the OEM space.

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.

On XV-300 models, you can take advantage of the best of both worlds with Visual Designer and XSoft-CoDeSys together. Combining the power of these two software platforms provides limitless possibilities on an HMI-PLC and SCADA platform.

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.

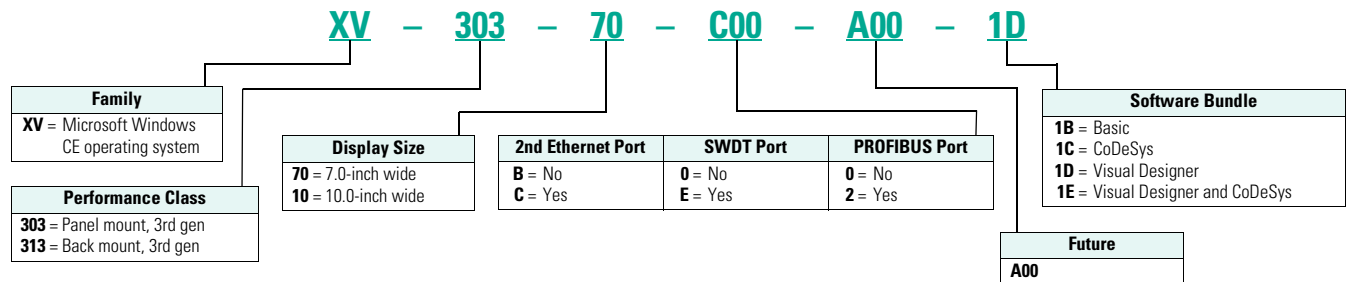
**Software Suite**



**Catalog Number Selection**

**XV Operator Interface—XV-303, XV-313**

**XV-303, XV-313**



## Product Selection

XV Operator Interface with Galileo <sup>①</sup>

Description	Catalog Number
XV with 7.0-inch TFT, plastic housing, PCT multi-touch, single Ethernet	<b>XV-303-70-B00-A00-1B</b>
XV with 7.0-inch TFT, plastic housing, PCT multi-touch, dual Ethernet	<b>XV-303-70-C00-A00-1B</b>
XV with 10.1-inch TFT, plastic housing, PCT multi-touch, single Ethernet	<b>XV-303-10-B00-A00-1B</b>
XV with 10.1-inch TFT, plastic housing, PCT multi-touch, dual Ethernet	<b>XV-303-10-C00-A00-1B</b>
XV with 15.4-inch TFT, plastic housing, PCT multi-touch, single Ethernet	<b>XV-303-15-C00-A00-1B</b>
XV with 15.4-inch TFT, plastic housing, PCT multi-touch, dual Ethernet, PROFIBUS	<b>XV-303-15-C02-A00-1B</b>

XV Operator Interface with XSoft-CoDeSys, HMI-PLC <sup>②</sup>

Description	Catalog Number
XV with 7.0-inch TFT, plastic housing, PCT multi-touch, single Ethernet, CAN, RS-232, RS-485, USB host	<b>XV-303-70-B00-A00-1C</b>
XV with 7.0-inch TFT, plastic housing, PCT multi-touch, dual Ethernet, CAN, RS-232, RS-485, USB host	<b>XV-303-70-C00-A00-1C</b>
XV with 7.0-inch TFT, plastic housing, PCT multi-touch, single Ethernet, CAN, PROFIBUS, RS-232, RS-485, USB host	<b>XV-303-70-B02-A00-1C</b>
XV with 7.0-inch TFT, plastic housing, PCT multi-touch, dual Ethernet, CAN, PROFIBUS, RS-232, RS-485, USB host	<b>XV-303-70-C02-A00-1C</b>
XV with 7.0-inch TFT, plastic housing, PCT multi-touch, single Ethernet, CAN, SmartWire-DT, RS-232, RS-485, USB host	<b>XV-303-70-BE0-A00-1C</b>
XV with 7.0-inch TFT, plastic housing, PCT multi-touch, dual Ethernet, CAN, SmartWire-DT, RS-232, RS-485, USB host	<b>XV-303-70-CE0-A00-1C</b>
XV with 10.0-inch TFT, plastic housing, PCT multi-touch, single Ethernet, CAN, RS-232, RS-485, USB host	<b>XV-303-10-B00-A00-1C</b>
XV with 10.0-inch TFT, plastic housing, PCT multi-touch, dual Ethernet, CAN, RS-232, RS-485, USB host	<b>XV-303-10-C00-A00-1C</b>
XV with 10.0-inch TFT, plastic housing, PCT multi-touch, single Ethernet, CAN, PROFIBUS, RS-232, RS-485, USB host	<b>XV-303-10-B02-A00-1C</b>
XV with 10.0-inch TFT, plastic housing, PCT multi-touch, dual Ethernet, CAN, PROFIBUS, RS-232, RS-485, USB host	<b>XV-303-10-C02-A00-1C</b>
XV with 10.0-inch TFT, plastic housing, PCT multi-touch, single Ethernet, CAN, SmartWire-DT, RS-232, RS-485, USB host	<b>XV-303-10-BE0-A00-1C</b>
XV with 10.0-inch TFT, plastic housing, PCT multi-touch, dual Ethernet, CAN, SmartWire-DT, RS-232, RS-485, USB host	<b>XV-303-10-CE0-A00-1C</b>
XV with 15.4-inch TFT, plastic housing, PCT multi-touch, dual Ethernet	<b>XV-303-15-C00-A00-1C</b>
XV with 15.4-inch TFT, plastic housing, PCT multi-touch, dual Ethernet, PROFIBUS	<b>XV-303-15-C02-A00-1C</b>
XV with 15.4-inch TFT, plastic housing, PCT multi-touch, dual Ethernet, SWDT	<b>XV-303-15-CE0-A00-1C</b>
XV with 15.4-inch TFT, plastic housing, PCT multi-touch, dual Ethernet, PROFIBUS and SWDT	<b>XV-303-15-CE2-A00-1C</b>

## XV Rear Mounted Operator Interface with XSoft-CoDeSys, HMI-PLC

Description	Catalog Number
XV rear mount with 7.0-inch TFT, plastic housing, PCT multi-touch, single Ethernet	<b>XV-313-70-B00-A00-1C</b>
XV rear mount with 7.0-inch TFT, plastic housing, PCT multi-touch, dual Ethernet	<b>XV-313-70-C00-A00-1C</b>
XV rear mount with 7.0-inch TFT, plastic housing, PCT multi-touch, dual Ethernet, SWDT	<b>XV-313-70-CE0-A00-1C</b>
XV rear mount with 10.1-inch TFT, plastic housing, PCT multi-touch, single Ethernet	<b>XV-313-10-B00-A00-1C</b>
XV rear mount with 10.1-inch TFT, plastic housing, PCT multi-touch, dual Ethernet	<b>XV-313-10-C00-A00-1C</b>
XV rear mount with 10.1-inch TFT, plastic housing, PCT multi-touch, dual Ethernet, SWDT	<b>XV-313-10-CE0-A00-1C</b>

## Notes

- ① For more information on Galileo software, see **Page V7-T5-20**.
- ② For more information on XSoft-CoDeSys software, see **Page V7-T5-21**.

## XV Operator Interface

XV Operator Interface with Visual Designer <sup>①</sup>

Description	Catalog Number
XV with 7.0-inch TFT, plastic housing, PCT multi-touch, dual Ethernet, CAN, RS-232, RS-485, USB host	<b>XV-303-70-C00-A00-1D</b>
XV with 10.0-inch TFT, plastic housing, PCT multi-touch, dual Ethernet, CAN, RS-232, RS-485, USB host	<b>XV-303-10-C00-A00-1D</b>
XV with 15.4-inch TFT, plastic housing, PCT multi-touch, dual Ethernet	<b>XV-303-15-C00-A00-1D</b>

XV Operator Interface with Visual Designer and XSoft-CoDeSys <sup>②</sup>

Description	Catalog Number
XV with 7.0-inch TFT, plastic housing, PCT multi-touch, dual Ethernet, CAN, RS-232, RS-485, USB host	<b>XV-303-70-C00-A00-1E</b>
XV with 7.0-inch TFT, plastic housing, PCT multi-touch, dual Ethernet, CAN, SmartWire-DT, RS-232, RS-485, USB host	<b>XV-303-70-CE0-A00-1E</b>
XV with 10.0-inch TFT, plastic housing, PCT multi-touch, dual Ethernet, CAN, RS-232, RS-485, USB host	<b>XV-303-10-C00-A00-1E</b>
XV with 10.0-inch TFT, plastic housing, PCT multi-touch, dual Ethernet, CAN, SmartWire-DT, RS-232, RS-485, USB host	<b>XV-303-10-CE0-A00-1E</b>

## Accessories

## XV Family Accessories

Description	Catalog Number
SD memory card for all XV-102 and XV-152 models	<b>MEMORY-SD-A1-S</b>
Spare part kit for XV-102 models—1 power connector, 8 mounting brackets, 1 sealing strip, 1 touch pen	<b>ACC-TP-57-KG-1</b>
Spare part kit for XV-152 models—1 power connector, 8 mounting brackets, 1 sealing strip, 1 touch pen	<b>ACC-TP-10-12-RES-1</b>
SD memory card with 1 GB storage for all XV-100 and XV-300 models	<b>MEMORY-SD-A2-S</b>
Accessory set for XV-303 (10 mounting brackets and 1 power plug)	<b>ACCESSORIES-TP-10-KG</b>

## XV Family Software Options

Description	Catalog Number
Product license for 40 points for use with Galileo or XSoft-CoDeSys units	<b>LIC-OPT-1ST-LEVEL</b>
Product license for 80 points for use with Galileo or XSoft-CoDeSys units	<b>LIC-OPT-2ND-LEVEL</b>
License product Paper PLC with license sticker for XSoft-CoDeSys-2/-3 for XV-300	<b>LIC-PLC-A</b>
License product Paper Visual Designer with license sticker for XV-300	<b>LIC-VISD-A</b>

**Notes**

- ① For more information on Galileo software, see **Page V7-T5-20**.
- ② For more information on Visual Designer software, see **Page V7-T5-22**.

## Technical Data and Specifications

### XV Operator Interface

#### Series

#### Model

#### Screen Size

	7.0-Inch	XV-303 10.0-Inch	15.0-Inch
Operating system	WinCE7.0 Professional	WinCE7.0 Professional	WinCE7.0 Professional
Touchscreen technology	Projected capacitive multi-touch	Projected capacitive multi-touch	Projected capacitive multi-touch
Display colors	16 million	16 million	16 million
Pixel resolution (landscape) portrait mode also available	WSVGA 1024 x 600	WSVGA 1024 x 600	1366 x 768
Brightness (cd/m <sup>2</sup> )	400	400	400
Backlight	LED, selectable dimming	LED, selectable dimming	LED, selectable dimming
Lifespan of backlight (half-life)	50,000 hours	50,000 hours	50,000 hours
Processor	800 MHz Cortex A8 CPU with graphics co-processor	800 MHz Cortex A8 CPU with graphics co-processor	800 MHz Cortex A8 CPU with graphics co-processor
Volatile memory	512 MB DRAM	512 MB DRAM	512 MB DRAM
Non-volatile memory	128 KB NVRAM (PLC), 1 GB SLC, 1 SD card slot	128 KB NVRAM (PLC), 1 GB SLC, 1 SD card slot	128 KB NVRAM (PLC), 1 GB SLC, 1 SD card slot
Real time clock	Yes	Yes	Yes
Communication ports	Ethernet 10/100, RS-232, RS-485, CAN, USB host, USB device	Ethernet 10/100, RS-232, RS-485, CAN, USB host, USB device	Ethernet 10/100, RS-232, RS-485, CAN, USB host, USB device
Optional communication ports	Second Ethernet 10/100, PROFIBUS DP, SmartWire-DT	Second Ethernet 10/100, PROFIBUS DP, SmartWire-DT	Second Ethernet 10/100, PROFIBUS DP, SmartWire-DT
Power supply rated voltage	24 Vdc nominal (–20%/+25%) with polarity protection	24 Vdc nominal (–20%/+25%) with polarity protection	24 Vdc nominal (–20%/+25%) with polarity protection
Continuous current consumption (max. amps)	0.6 (7.0-inch)	0.75 (10.1-inch)	0.9 (15.4-inch)
Starting current inrush (A2s)	1.0 (7.0-inch)	1.0 (10.1-inch)	1.0 (15.4-inch)
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%
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%
Shock	IEC 60068-2-27 15 g for 11 ms duration	IEC 60068-2-27 15 g for 11 ms duration	IEC 60068-2-27 15 g 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: 2 g acceleration	IEC 60068-2-6 5–9 Hz: 3.5 mm displacement 9–60 Hz: 0.15 mm displacement 60–150 Hz: 2 g acceleration	IEC 60068-2-6 5–9 Hz: 3.5 mm displacement 9–60 Hz: 0.15 mm displacement 60–150 Hz: 2 g acceleration
Agency certifications and standards	CE, UL/cUL, RoHS2, UL/cUL Class 1 Div 2 groups A, B, C, D (pending) ATEX Zone 22 (pending)	CE, UL/cUL, RoHS2, UL/cUL Class 1 Div 2 groups A, B, C, D (pending) ATEX Zone 22 (pending)	CE, UL/cUL, RoHS2, UL/cUL Class 1 Div 2 groups A, B, C, D (pending) ATEX Zone 22 (pending)
Protection type			
Front	IP65, NEMA 4X (indoor)	IP65, NEMA 4X (indoor)	IP65, NEMA 4X (indoor)
Rear	IP20, NEMA 1	IP20, NEMA 1	IP20, NEMA 1
Housing material	Plastic	Plastic	Plastic
Dimensions W x H x D (mm)	196 x 135 x 51	269 x 174 x 58	404 x 255 x 53
Mounting cutout W x H (mm)	182 x 121	254 x 160	388 x 239
Approximate weight lb (kg)	1.6 (0.74)	2.5 (1.13)	8.6 (3.90)
Ability to run third-party software	No	No	No
Visual Designer development software	Multiple options; see Section 5.5	Multiple options; see Section 5.5	Multiple options; see Section 5.5
Pre-licensed tags, drivers, web	1500 tags, 3 drivers, 1 web session	1500 tags, 3 drivers, 1 web session	1500 tags, 3 drivers, 1 web session
Field upgradeable max. tags, drivers, web sessions (VisD)	4000 tags, 5 drivers, 1, 2, 4 or 8 simultaneous web sessions	4000 tags, 5 drivers, 1, 2, 4 or 8 simultaneous web sessions	4000 tags, 5 drivers, 1, 2, 4 or 8 simultaneous web sessions
XSoft-CoDeSys-3 development software	SW-XSOFT-CODESYS-3-S (seat)	SW-XSOFT-CODESYS-3-M (multi-seat)	SW-XSOFT-CODESYS-3-M (multi-seat)



**XP Panel PCs**



**XP Modular Products**



**XP-504 Product Family**

**Product Description**

The industrial panel and box PCs in the XP-500 series feature an exceptional degree of openness and outstanding performance. The devices run on the Windows 10 Enterprise LTSC operating system and feature Protect Mode™ for preventing unauthorized changes to the operating system. The PCs are compatible with a wide range of third-party application software and come pre-installed with either Galileo or Visual Designer visualization software.

The industrial panel PCs and box PCs can support up to two additional terminals. These capacitive multi-touch displays allow familiar intuitive gestures for zoom, scroll and swipe, and offer increased safety to your system with two-hand or multiple button activation control for critical functions. The standard terminals can be used for a transmission distance up to 1.8 meters, whereas the extended terminals can be used for a transmission distance up to 100 meters with the addition of the extender unit. Both sets of terminals offer full HD video and USB data transmission.

The industrial PCs feature an Intel® Atom® E3950 quad-core CPU and ensure a high processing capacity as well as high-performance graphics. In addition to the two Ethernet and four USB interfaces, the devices are equipped with a configurable RS-232/RS-422/RS-485 interface. Furthermore, an SD card can be used for operation or data storage in addition to the internal mass storage of 64 GB.

**Application Description**

The industrial panel and box PC features come standard in a package that is slim and modern in design yet also rugged. With no fan or moving parts, a scratch-resistant glass screen and aluminum frame, XP-500 product family is fit for any industrial application.

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**Features**

XP-500 series panel PCs and box PCs with Windows 10 Enterprise LTSC.

- 10.1, 15.6 and 21.5 inch high resolution wide screen displays for distances up to 1.8 m
- 10.1, 15.6 and 21.5 inch high-resolution widescreen displays with built-in extender receiver for transmission distances up to 100 m
- Projected capacitive touchscreen supports gestures and recognizes up to four simultaneous touch inputs
- Remote access to mobile devices or tablets using HTML5 interface
- Intel Atom E3950 quad-core CPU ensures a high processing capacity as well as high-performance graphics
- 8 GB DDR3-RAM large memory for parallel processing and increased system performance
- 64 GB internal solid-state drive high-volume internal memory
- Two independent Ethernet ports standard for separation of IT and process level communications

- One DisplayPort™ and one HDMI port for video outputs to terminals
- Four USB interfaces, one configurable RS-232/RS-422/RS-485 interface and an SD card slot for operation or data storage
- All solid-state media and no moving parts or fan increases reliability
- Non-corruptible OS with Protect Mode increases security and reliability

**Standards and Certifications**

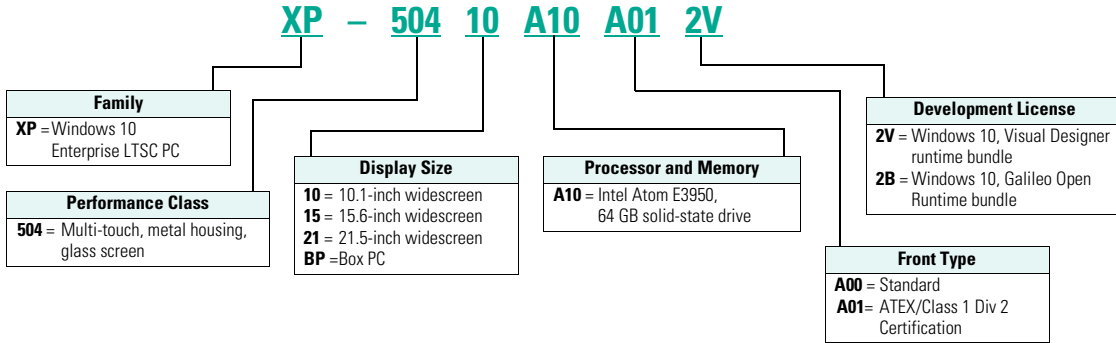
- UL/cUL (UL 508 for panel PCs)
- CE Mark
- UL Class 1 Div 2 (except for box PCs)
- ATEX Zone 22, Category 3D (except for box PCs)
- Front
  - IP65, NEMA 4X (indoor), NEMA 12
- Rear
  - IP20



#### Catalog Number Selection

##### XP Panel PCs and Box PCs

XP



#### Product Selection

##### XP Box PC



##### XP Panel and Box PCs with Galileo

Description	Catalog Number
10.1-inch panel PC, Intel Atom E3950 quad-core CPU, 8 GB DDR3-RAM, 64 GB solid-state drive	XP-504-10-A10-A01-2B
15.6-inch panel PC, Intel Atom E3950 quad-core CPU, 8 GB DDR3-RAM, 64 GB solid-state drive	XP-504-15-A10-A01-2B
21.5-inch panel PC, Intel Atom E3950 quad-core CPU, 8 GB DDR3-RAM, 64 GB solid-state drive	XP-504-21-A10-A01-2B
Box PC, Intel Atom E3950 quad-core CPU, 8 GB DDR3-RAM, 64 GB solid-state drive	XP-504-BP-A10-A00-2B

##### XP Panel PC



##### XP Panel and Box PCs with Visual Designer

Description	Catalog Number
10.1-inch panel PC, Intel Atom E3950 quad-core CPU, 8 GB DDR3-RAM, 64 GB solid-state drive	XP-504-10-A10-A01-2V
15.6-inch panel PC, Intel Atom E3950 quad-core CPU, 8 GB DDR3-RAM, 64 GB solid-state drive	XP-504-15-A10-A01-2V
21.5-inch panel PC, Intel Atom E3950 quad-core CPU, 8 GB DDR3-RAM, 64 GB solid-state drive	XP-504-21-A10-A01-2V
Box PC, Intel Atom E3950 quad-core CPU, 8 GB DDR3-RAM, 64 GB solid-state drive	XP-504-BP-A10-A00-2V

##### XP Modular Products



##### XP Accessories

Description	Catalog Number
10.1-inch terminal, DisplayPort and USB-B input	XP-504-10-TERMINAL
10.1-inch terminal extender RX, Cat 7 Ethernet input	XP-504-15-TERMINAL
15.6-inch terminal, DisplayPort and USB-B input	XP-504-21-TERMINAL
15.6-inch terminal extender RX, Cat 7 Ethernet input	XP-504-10-TERM-EXT
21.5-inch terminal, DisplayPort and USB-B input	XP-504-15-TERM-EXT
21.5-inch terminal extender RX, Cat 7 Ethernet input	XP-504-21-TERM-EXT
Range extender TX, DisplayPort and USB-B input, Cat 7 Ethernet output	XP-504-EXT-MODUL

## Technical Data and Specifications

### XP Panel PCs



10.1-inch XP-504-10-A10-A01-1V



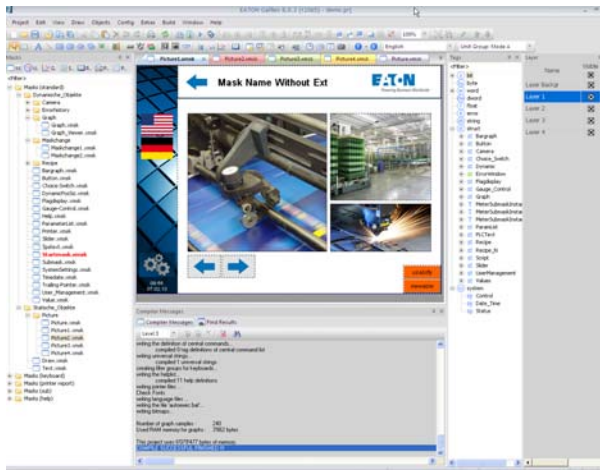
15.6-inch XP-504-15-A10-A01-1V



21.5-inch XP-504-21-A10-A01-1V

Model	10.1-inch XP-504-10-A10-A01-1V	15.6-inch XP-504-15-A10-A01-1V	21.5-inch XP-504-21-A10-A01-1V
<b>Display</b>			
Screen diagonal	10.1-inch widescreen	15.6-inch widescreen	21.5-inch widescreen
Resolution	1280 x 800 pixels	1366 x 768 pixels	1920 x 1080 pixels
Backlight	LED, dimmable via software	LED, dimmable via software	LED, dimmable via software
Display brightness (typical)	500 cd/m <sup>2</sup>	400 cd/m <sup>2</sup>	350 cd/m <sup>2</sup>
Contrast ratio (typical)	900:1	500:1	1000:1
<b>Operation</b>			
Touch sensor	Multi-touch touchscreen (4 simultaneous touches)	Multi-touch touchscreen (4 simultaneous touches)	Multi-touch touchscreen (4 simultaneous touches)
Technology	Projected capacitive touch (PCT)	Projected capacitive touch (PCT)	Projected capacitive touch (PCT)
<b>Enclosures</b>			
Front glass	Non-reflective tempered glass	Non-reflective tempered glass	Non-reflective tempered glass
Frame	Powder-coated aluminum	Powder-coated aluminum	Powder-coated aluminum
Device dimensions W x H x D (mm)	280.5 x 199.2 x 89.0	412.1 x 261.6 x 89.0	544.0 x 335.5 x 89.0
Installation cutout W x H (mm)	256 x 175	387 x 238	519 x 313
Weight lb (kg)	5.9 (2.70)	10.9 (4.95)	16.6 (7.55)
<b>System</b>			
Processor	Intel Atom E3950 quad-core 2 GHz	Intel Atom E3950 quad-core 2 GHz	Intel Atom E3950 quad-core 2 GHz
Memory	8 GB DDR3-RAM	8 GB DDR3-RAM	8 GB DDR3-RAM
Internal mass memory	64 GB SSD mSATA	64 GB SSD mSATA	64 GB SSD mSATA
Removable memory	1 x SD slot, minimum 8 GB	1 x SD slot, minimum 8 GB	1 x SD slot, minimum 8 GB
Interfaces	2 x Ethernet 1000/100/10 Mbps; 4 x USB 3.0; 1 x RS-232/RS-422/RS-485; 1 x DP; 1 x HDMI	2 x Ethernet 1000/100/10 Mbps; 4 x USB 3.0; 1 x RS-232/RS-422/RS-485; 1 x DP; 1 x HDMI	2 x Ethernet 1000/100/10 Mbps; 4 x USB 3.0; 1 x RS-232/RS-422/RS-485; 1 x DP; 1 x HDMI
Power supply	24 Vdc	24 Vdc	24 Vdc
Maximum current	1.6 A	1.8 A	2.0 A
Operating system	Windows 10 Enterprise LTSC	Windows 10 Enterprise LTSC	Windows 10 Enterprise LTSC
<b>Environment</b>			
Agency certifications	UL/cUL Class 1 Div 2, Groups A, B, C, D, ATEX Zone 22	UL/cUL Class 1 Div 2, Groups A, B, C, D, ATEX Zone 22	UL/cUL Class 1 Div 2, Groups A, B, C, D, ATEX Zone 22
Degree of protection	Front: IP65, NEMA 4X (indoor), UL 50E, NEMA 12; Rear: IP20	Front: IP65, NEMA 4X (indoor), UL 50E, NEMA 12; Rear: IP20	Front: IP65, NEMA 4X (indoor), UL 50E, NEMA 12; Rear: IP20
Operating temperature	0 to +45 °C	0 to +45 °C	0 to +45 °C
Storage temperature	-20 to +60 °C	-20 to +60 °C	-20 to +60 °C
Relative air humidity	20–85% noncondensing	20–85% noncondensing	20–85% noncondensing
Shock	IEC 60068-2-27 15 g for 11 ms duration	IEC 60068-2-27 15 g for 11 ms duration	IEC 60068-2-27 15 g 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: 2 g acceleration	IEC 60068-2-6 5–9 Hz: 3.5 mm displacement 9–60 Hz: 0.15 mm displacement 60–150 Hz: 2 g acceleration	IEC 60068-2-6 5–9 Hz: 3.5 mm displacement 9–60 Hz: 0.15 mm displacement 60–150 Hz: 2 g acceleration
<b>Software</b>			
Development software	Visual Designer	Visual Designer	Visual Designer
Ability to run third-party software	Yes	Yes	Yes
Pre-licensed tags, drivers, web sessions			
Standard models	4000 tags, 5 drivers, 1 web session	4000 tags, 5 drivers, 1 web session	4000 tags, 5 drivers, 1 web session
Field-upgradable max. tags, drivers, web sessions	64,000 tags, 8 drivers, 1, 2, 4, 8, 16, 32, 64 or 128 web sessions simultaneously	64,000 tags, 8 drivers, 1, 2, 4, 8, 16, 32, 64 or 128 web sessions simultaneously	64,000 tags, 8 drivers, 1, 2, 4, 8, 16, 32, 64 or 128 web sessions simultaneously

### Galileo Software



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#### Description

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XSoft-CoDeSys-3 Software	<b>V7-T5-21</b>
Visual Designer Software	<b>V7-T5-22</b>

### 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 65,536 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

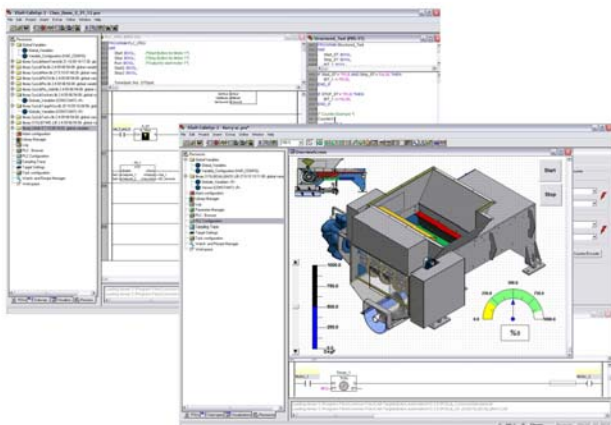
Windows XP, Windows 7 or Windows 10

#### Product Selection

##### Galileo Development Software

Description	Catalog Number
Single-seat license	<b>SW-GALILEO-S</b>
Multiple-seat license	<b>SW-GALILEO-M</b>

**XSoft-CoDeSys-3 Software**



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**XSoft-CoDeSys-3 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-3 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
- Online editing
- Pop-up variable and function search/pick tools
- Automatic formatting and color coding of logic/declaration text
- Reusable visual-logic function blocks

**Debugging and Commissioning**

XSoft-CoDeSys-3 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 primary/secondary, email, SMS and more)
- Eight-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, Windows 7 or Windows 10

**Product Selection**

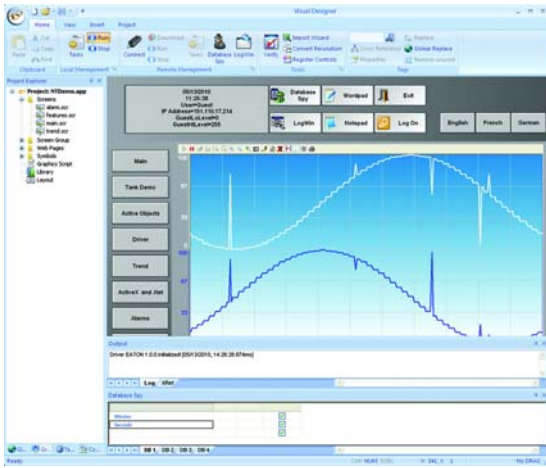
**XSoft-CoDeSys-3**



**XSoft-CoDeSys-3 Software**

Description	Catalog Number
Single Seat License	<b>SW-XSOFT-CODESYS-3-S</b>
Multiple Seat License (3)	<b>SW-XSOFT-CODESYS-3-M</b>

#### Visual Designer Software



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#### 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. Ease of use and time-saving features of Visual Designer 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
- Emailing 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, Windows 7 32-bit and 64-bit, or Windows 10



### 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, FoxPro, 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 runtime may be licensed on any Windows 7 or Windows 10 PC

#### 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 XP and XV operator interface solutions.

#### Interoperability

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

### Product Selection

#### Visual Designer Software

##### Visual Designer



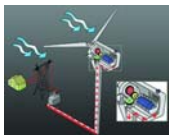
#### Visual Designer Development License Key

Description	Catalog Number
Lite Development License—1.5 K tags, hard key	<b>VISD-LD-1500-H</b>
Full Development License—64 K tags, hard key	<b>VISD-FD-064K-H</b>



#### Visual Designer PC Full Runtime License Key

Description	Catalog Number
1.5 K tags, 1 web session, soft key	<b>VISD-FR-1500-S</b>
4 K tags, 1 web session, soft key	<b>VISD-FR-4000-S</b>
64 K tags, 1 web session, soft key	<b>VISD-FR-064K-S</b>
1.5 K tags, 1 web session, hard key	<b>VISD-FR-1500-H</b>
4 K tags, 1 web session, hard key	<b>VISD-FR-4000-H</b>
64 K tags, 1 web session, hard key	<b>VISD-FR-064K-H</b>



#### Visual Designer XP-504 or XV-303 Runtime License

Description	Catalog Number
For XP-504 units ending with part number 1V	①
For XV-303 units ending with part number 1D or 1E	②
For XV-303 units ending with part numbers 1B or 1C	<b>LIC-VISD-A</b>



#### Notes

- ① Not applicable—Included 4 K Tag Full Runtime.
- ② Not applicable—Included 1.5 K Tag Lite Runtime.

## Visual Designer



## Visual Designer Add-Ons

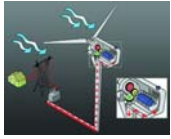
Description	Catalog Number
Import Wizard for PanelMate, PanelBuilder and FactoryTalk™	<b>VISD-FD-IMPW-A</b>
One additional web session for Lite Runtime (XV series)	<b>VISD-LR-WEBS-A</b>
One additional web session for Full Runtime (XP or PC)	<b>VISD-FR-WEBS-A</b>
Blank USB key for replacement or conversion of soft key to hard key	<b>VISD-HARDKEY</b>

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## Visual Designer Tag Upgrades

Description	Catalog Number
Lite Runtime (XV series)—1.5 K to 4 K tags	<b>VISD-LR-4000-T</b>
Full Runtime (XP or PC)—1.5 K to 4 K tags	<b>VISD-FR-4000-T</b>
Full Runtime (XP or PC)—4 K to 64 K tags	<b>VISD-LR-064K-T</b>
Development License—1.5 K to 64 K tags	<b>VISD-FD-064K-T</b>



## Visual Designer Version Upgrades for Development and Runtime Licenses



Description	Catalog Number
Lite Development License—1.5 K tags	<b>VISD-LD-1500-V</b>
Full Development License—64 K tags	<b>VISD-FD-064K-V</b>
Lite Runtime—1.5 K tags	<b>VISD-LR-1500-V</b>
Lite Runtime—4 K tags	<b>VISD-LR-4000-V</b>
Full Runtime—1.5 K tags	<b>VISD-FR-1500-V</b>
Full Runtime—4 K tags	<b>VISD-FR-4000-V</b>
Full Runtime—64 K tags	<b>VISD-FR-064K-V</b>