



Touch panel, ir, 24 V DC, 10.4z, TFTcolor, ethernet, RS232, CAN, (PLC), 4-hole

Part no. **XV-440-10TVB-1-20**  
 Catalog No. **139906**

## Delivery program

Product range			XV400 10.4"
Product range			XV400
Function			HMI-PLC (SPS function, retrofittable)
Common features of the model series			Ethernet interface USB device RS232 CAN/easyNet UL508, cUL approvals PLC function can be fitted by user Communications scope can be fitted by user with licenses
Display - Type			Color display, TFT
Touch-technology			Infra-red touch
Number of colours			Adjustable: 65536 or 256 colours
Resolution		Pixel	VGA 640 x 480
Portrait format			yes
Screen diagonal		Inch	10.4
Model			Metal enclosure and front plate
Operating system			Windows CE (license required) CompactFlash card required
PLC-licence			Can be fitted by user with article no. 140390 LIC-PLC-MXP-MEDIUM
License certificates for onboard interfaces			Can be expanded as required, see Accessories -> License product certificates
built-in interfaces			1 x Ethernet 100base-TX/10base-T 1 x RS232 1 x CAN 1 x USB host 1 x USB device
Front type			Four-hole front with standard membrane Laminated safety glass, non-reflective
Utilization			Flush mounting
Slots			for Compact-Flash™ Cards: 2 for communication modules: 2
Memory card automation			required, see Accessories -> Memory cards
Pluggable communication cards (optional)			yes
Heat dissipation		W	32
Instructions Not for new applications.			

## Technical data

### Display

Display - Type			Color display, TFT
Screen diagonal		Inch	10.4
Resolution		Pixel	VGA 640 x 480
Visible screen area		mm	211 x 158
Number of colours			Adjustable: 65536 or 256 colours
Contrast ratio (Normally)			Normally 350:1
Brightness		cd/m <sup>2</sup>	Normally 350
Back-lighting			LED dimmable via software
Service life of back-lighting		h	Normally 50000
Infra-red touch protective screen			Laminated safety glass, non-reflective

### Operation

Technology			Infra-red touch
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			79 x 59 logic channels
<b>System</b>			
Processor			RISC CPU, 32 Bit, 400 MHz
Internal memory			DRAM (OS, Program and data memory): 64 MByte Flash (can be used for data backup): approx. 1.5 MByte available NVRAM (retained data): approx. 32 KByte available
External memory			CF-Slot: 2 x CompactFlash Card type I/II for operating system, programs and data
Back-up of real-time clock			
Battery (service life)			non-replaceable, CR2032 soldered in
Backup (time at zero voltage)			Normally 10 years

## Engineering

Visualisation software			GALILEO EPAM XSOFTE-CODESYS-2 XSOFTE-CODESYS-3
PLC-Programming software			XSOFTE-CODESYS-2 XSOFTE-CODESYS-3
PLC-licence			Can be fitted by user with article no. 140390 LIC-PLC-MXP-MEDIUM
Operating system			Windows CE (license required) CompactFlash card required

## Interfaces, communication

built-in interfaces			1 x Ethernet 100base-TX/10base-T 1 x RS232 1 x CAN 1 x USB host 1 x USB device
USB Host			USB 2.0 (1.5 - 12 Mbit/s), not galvanically isolated
USB device			USB 1.1, not galvanically isolated
RS-232			RS-232, not galvanically isolated (SUB-D plug 9 pole, UNC)
CAN			CAN, galvanically isolated (SUB-D plug 9 pole, UNC)
Slots			for Compact-Flash <sup>TM</sup> Cards: 2 for communication modules: 2
Ethernet			100Base-TX/10Base-T

## Power supply

Nominal voltage			24 V DC SELV (safety extra low voltage)
permissible voltage			Effective: 20.4-28.8 V DC (rated operating voltage -15%/+20%) Absolute with ripple: 19.2-30.0 V DC 35 V DC for a duration of < 100 ms
Voltage dips		ms	≤ 10 ms from rated voltage (24 V DC) 5 ms from undervoltage (20.4 V DC)
Power consumption	P <sub>max.</sub>	W	32
Power consumption		W	Normally 14
Heat dissipation		W	32
Note on heat dissipation			Heat dissipation with power consumption for 24 V 18 W for basic device + two times 4 W for communication modules + two times 3 W for USB modules
Siemens MPI, (optional)			yes
Type of fuse			Yes (fuse not accessible)
Potential isolation			no potential isolation (0 V-connection to housing potential)

## General

Housing material			Metal, anodized
Front type			Four-hole front with standard membrane Laminated safety glass, non-reflective
Weight		kg	4.1
Degree of protection (IEC/EN 60529, EN50178, VBG 4)			IP65 (at front), IP20 (at rear)
Approvals			
Approvals			cUL (UL508)
Explosion protection (according to ATEX 94/9/EC)			II 3D Ex II T70°C IP5x: Zone 22, Category 3D (in relation to CE) EN60079-0, EN61241-1, EN13463
Applied standards and directives			
EMC			(in relation to CE) EN 61000-6-2 EN 61000-6-3 EN 61000-6-4 EN 61131-2

Product standards			EN 50178 EN 61131-2
Security			EN 60950 UL 60950
Mechanical shock resistance		g	according to IEC 60068-2-27
Vibration			To IEC 68-2-6

### Environmental conditions

Temperature			
Storage / Transport	θ	°C	-20 - +60
Operating ambient temperature min.		°C	0
Operating ambient temperature max.		°C	+ 50
Relative humidity			
Relative humidity			10 - 95%, non-condensing

### Supply voltage $U_{Aux}$

Rated operational voltage	$U_{Aux}$	V	24 V DC (-15/+20%)
Protection against polarity reversal			Yes
Potential isolation			No

## Design verification as per IEC/EN 61439

Technical data for design verification			
Rated operational current for specified heat dissipation	$I_n$	A	0
Heat dissipation per pole, current-dependent	$P_{vid}$	W	0
Equipment heat dissipation, current-dependent	$P_{vid}$	W	0
Static heat dissipation, non-current-dependent	$P_{vs}$	W	32
Heat dissipation capacity	$P_{diss}$	W	0
Operating ambient temperature min.		°C	0
Operating ambient temperature max.		°C	50
IEC/EN 61439 design verification			
10.2 Strength of materials and parts			
10.2.2 Corrosion resistance			
			Meets the product standard's requirements.
10.2.3.1 Verification of thermal stability of enclosures			
			Meets the product standard's requirements.
10.2.3.2 Verification of resistance of insulating materials to normal heat			
			Meets the product standard's requirements.
10.2.3.3 Verification of resistance of insulating materials to abnormal heat and fire due to internal electric effects			
			Meets the product standard's requirements.
10.2.4 Resistance to ultra-violet (UV) radiation			
			Please enquire
10.2.5 Lifting			
			Does not apply, since the entire switchgear needs to be evaluated.
10.2.6 Mechanical impact			
			Does not apply, since the entire switchgear needs to be evaluated.
10.2.7 Inscriptions			
			Meets the product standard's requirements.
10.3 Degree of protection of ASSEMBLIES			
			Meets the product standard's requirements.
10.4 Clearances and creepage distances			
			Meets the product standard's requirements.
10.5 Protection against electric shock			
			Does not apply, since the entire switchgear needs to be evaluated.
10.6 Incorporation of switching devices and components			
			Does not apply, since the entire switchgear needs to be evaluated.
10.7 Internal electrical circuits and connections			
			Is the panel builder's responsibility.
10.8 Connections for external conductors			
			Is the panel builder's responsibility.
10.9 Insulation properties			
10.9.2 Power-frequency electric strength			
			Is the panel builder's responsibility.
10.9.3 Impulse withstand voltage			
			Is the panel builder's responsibility.
10.9.4 Testing of enclosures made of insulating material			
			Is the panel builder's responsibility.
10.10 Temperature rise			
			The panel builder is responsible for the temperature rise calculation. Eaton will provide heat dissipation data for the devices.
10.11 Short-circuit rating			
			Is the panel builder's responsibility.
10.12 Electromagnetic compatibility			
			Is the panel builder's responsibility.
10.13 Mechanical function			
			The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.

## Technical data ETIM 7.0

PLC's (EG000024) / Graphic panel (EC001412)

Supply voltage AC 50 Hz	V	0 - 0
Supply voltage AC 60 Hz	V	0 - 0
Supply voltage DC	V	20.4 - 28.8
Voltage type of supply voltage		DC
Number of HW-interfaces industrial Ethernet		1
Number of interfaces PROFINET		0
Number of HW-interfaces RS-232		1
Number of HW-interfaces RS-422		0
Number of HW-interfaces RS-485		0
Number of HW-interfaces serial TTY		0
Number of HW-interfaces USB		3
Number of HW-interfaces parallel		0
Number of HW-interfaces Wireless		0
Number of HW-interfaces other		0
With SW interfaces		Yes
Supporting protocol for TCP/IP		Yes
Supporting protocol for PROFIBUS		Yes
Supporting protocol for CAN		Yes
Supporting protocol for INTERBUS		No
Supporting protocol for ASI		No
Supporting protocol for KNX		Yes
Supporting protocol for MODBUS		Yes
Supporting protocol for Data-Highway		No
Supporting protocol for DeviceNet		Yes
Supporting protocol for SUCONET		Yes
Supporting protocol for LON		No
Supporting protocol for PROFINET IO		No
Supporting protocol for PROFINET CBA		No
Supporting protocol for SERCOS		No
Supporting protocol for Foundation Fieldbus		No
Supporting protocol for EtherNet/IP		Yes
Supporting protocol for AS-Interface Safety at Work		No
Supporting protocol for DeviceNet Safety		No
Supporting protocol for INTERBUS-Safety		No
Supporting protocol for PROFIsafe		No
Supporting protocol for SafetyBUS p		No
Supporting protocol for other bus systems		Yes
Radio standard Bluetooth		No
Radio standard WLAN 802.11		No
Radio standard GPRS		No
Radio standard GSM		No
Radio standard UMTS		No
IO link master		No
Type of display		TFT
With colour display		Yes
Number of colours of the display		65536
Number of grey-scales/blue-scales of display		0
Screen diagonal	inch	10.4
Number of pixels, horizontal		640
Number of pixels, vertical		480
Useful project memory/user memory	kByte	64000
With numeric keyboard		Yes
With alpha numeric keyboard		Yes
Number of function buttons, programmable		0

Number of buttons with LED			0
Number of system buttons			1
Touch technology			Infrared touch
With message indication			Yes
With message system (incl. buffer and confirmation)			Yes
Process value representation (output) possible			Yes
Process default value (input) possible			Yes
With recipes			Yes
Number of password levels			200
With printer output			Yes
Number of online languages			100
Additional software components, loadable			Yes
Degree of protection (IP), front side			IP65
Degree of protection (NEMA), front side			
Operation temperature		°C	0 - 50
Rail mounting possible			No
Wall mounting/direct mounting			No
Suitable for safety functions			No
Width of the front		mm	345
Height of the front		mm	260
Built-in depth		mm	88

## Approvals

Product Standards			UL 60950-01; CSA-C22.2 No. 60950-1; IEC/EN 61131-2; CE marking
UL File No.			E208621
UL Category Control No.			NWQG2, NWQG8
CSA File No.			UL report applies to both US and Canada
CSA Class No.			–
North America Certification			UL recognized, certified by UL for use in Canada
Conditions of Acceptability			The investigated Pollution Degree is: 2 Proper bonding to the end-product main protective earthing termination is: Required The following end-product enclosures are required: Fire, Electrical The unit must be supplied via a SELV source. The provided Ethernet Connection is only allowed to connect to inhouse networks.
Specially designed for North America			No
Current Limiting Circuit-Breaker			No
Degree of Protection			IEC: IP65, UL/CSA Type: -

## Dimensions

Dimensions
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## Assets (links)

### Declaration of CE Conformity

00002508

### Instruction Leaflets

IL04802010Z2018\_02

### Manuals

MN04802010Z\_EN (English)

MN04802093Z-EN (English)

## Additional product information (links)

<b>IL04802010Z Enclosed kit information</b>	
IL04802010Z Enclosed kit information	<a href="ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL04802010Z2018_02.pdf">ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL04802010Z2018_02.pdf</a>
<b>Instruction manual XV400 10.4"/12.1"/15" MN04802010Z</b>	
Bedienungsanleitung XV400 10.4"/12.1"/15" MN04802010Z - Deutsch	<a href="ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN04802010Z_DE.pdf">ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN04802010Z_DE.pdf</a>
Instruction manual XV400 10.4"/12.1"/15" MN04802010Z - English	<a href="ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN04802010Z_EN.pdf">ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN04802010Z_EN.pdf</a>

**User manual XSoft-CoDeSys-2, SPS programming XV400 MN04802093Z**

Benutzerhandbuch XSoft-CoDeSys-2, SPS-  
Programmierung XV400 MN04802093Z -  
Deutsch [ftp://ftp.moeller.net/DOCUMENTATION/AWB\\_MANUALS/MN04802093Z-DE.pdf](ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN04802093Z-DE.pdf)

User manual XSoft-CoDeSys-2, SPS  
programming XV400 MN04802093Z - English [ftp://ftp.moeller.net/DOCUMENTATION/AWB\\_MANUALS/MN04802093Z-EN.pdf](ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN04802093Z-EN.pdf)

**Manual XSOF-CODESYS-3, SPS programming MN048008ZU**

Handbuch XSOF-CODESYS-3, SPS-  
Programmierung MN048008ZU - Deutsch [ftp://ftp.moeller.net/DOCUMENTATION/AWB\\_MANUALS/MN048008ZU\\_DE.pdf](ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN048008ZU_DE.pdf)

Manual XSOF-CODESYS-3, SPS programming  
MN048008ZU - English [ftp://ftp.moeller.net/DOCUMENTATION/AWB\\_MANUALS/MN048008ZU\\_EN.pdf](ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN048008ZU_EN.pdf)

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Product overview (WEB) <http://www.eaton.eu/xv>