

Touch panel, 24 V DC, 3.5z, TFTcolor, ethernet, RS485, PLC



**Part no.**                    **XV-102-B4-35TQR-10-PLC**  
**140020**  
**EL Number**                **4521107**  
**(Norway)**

Product name	Eaton XV-102 Touch panel
Part no.	XV-102-B4-35TQR-10-PLC
EAN	7640130095670
Product Length/Depth	136 millimetre
Product height	30 millimetre
Product width	100 millimetre
Product weight	0.265 kilogram
Certifications	<p>DNV GL  IEC/EN 61131-2  IEC/EN 61000-6-4  UL File No.: E208621  CE  UL report applies to both US and Canada  IEC/EN 61000-6-2  UL 60950-01  CUL508  EN 60950  Certified by UL for use in Canada  CSA Class No.: NWWQ8  UL Category Control No.: NWWQ2  CSA-C22.2 No. 60950-1  EN 50178  UL Recognized  UL 60950  EAC</p>
Product Tradename	XV-102
Product Type	Touch panel
Product Sub Type	None
Catalog Notes	<p>4-wire Technology  Can be expanded as required, see Accessories  Heat dissipation with power consumption for 24 V, all ports and interfaces connected  Optionally with SD card -&gt; article no. 139807  PLC license inclusive</p>
Enclosure material	Plastic
Features	<p>Ethernet interface  Portrait format  Fanless CPU and system cooling, natural convection-based passive cooling  UL508, cUL approvals  USB device  Slot for SD card</p>
Fitted with:	<p>Numeric keyboard  SW interfaces  Printer output  Alpha numeric keyboard  Message indication  1 x USB device (built-in interface)  Color display  1 x RS485 (built-in interface)  Message system (incl. buffer and confirmation)  Recipes  1 x Ethernet 10/100 Mbps (built-in interfaces)</p>
Functions	<p>Process value representation (output) possible  Process default value (input) possible  Additional software components, loadable</p>
Battery runtime	Back-up of real-time clock: CR 2032 (190 mA/h), zero maintenance (soldered)
Conditions of acceptability	<p>The following end-product enclosures are required: Fire  The provided Ethernet Connection is only allowed to connect to inhouse networks.  UL/CSA  The unit must be supplied via a SELV source.  The investigated Pollution Degree is: 2</p>
Degree of protection	<p>IP20, rear  IP65</p>

Degree of protection (front side)		IP65 NEMA 4X
Fuse type		Built-in fuse (not accessible)
Lifespan		40,000 h (Service life of back-lighting)
Model		Insulating enclosure and front plate
Mounting method		Flush mounting - Inclination from vertical: $\pm 45^\circ$ (if using natural convection) Flush mounting Flush mounting - Clearance: Width x Height x Depth $\geq 30$ mm (1.18")
Product category		HMI-PLC (integrated SPS function)
Residual ripple		$\leq 5$ % (input voltage)
RoHS conformity		Yes
Software		EPAM, Visualisation software, Engineering GALILEO, Visualisation software, Engineering XSOF-CODESYS-3, Visualisation software, Engineering XSOF-CODESYS-3, PLC-Programming software, Engineering XSOF-CODESYS-2, Visualisation software, Engineering XSOF-CODESYS-2, PLC-Programming software, Engineering
Voltage type		DC
Shock resistance		Mechanical, According to IEC/EN 60068-2-27
Vibration resistance		According to IEC/EN 60068-2-6
Air pressure		795 - 1080 hPa (operation)
Ambient operating temperature - min		0 °C
Ambient operating temperature - max		50 °C
Ambient storage temperature - min		-20 °C
Ambient storage temperature - max		60 °C
Operating temperature - min		0 °C
Operating temperature - max		50 °C
Relative humidity		10 - 95 % (non-condensing)
Voltage dips		$\leq 10$ ms from rated voltage (24 V DC) 5 ms from undervoltage (19.2 V DC)
Permissible voltage		18 - 31.2 V DC, battery powered (rated operating voltage -25 %/+30 %) 35 V DC (for a duration of < 100 ms) 18.0 - 31.2 V DC, absolute with ripple 19.2 - 30 V DC, effective (rated operating voltage -20 %/+25 %)
Power consumption		Max. 5 W
Rated control supply voltage		24 V DC (UAUX, -20 %/+25 %) 24 V DC (UPOW, -20 %/+25 %)
Rated operational voltage		24 V DC (power-supply - safety extra low voltage)
Supply voltage at AC, 50 Hz - min		0 V AC
Supply voltage at AC, 50 Hz - max		0 V AC
Supply voltage at DC - min		20.4 V DC
Supply voltage at DC - max		28.8 V DC
Communication interface		PROFIBUS galvanically isolated, max. 1.5 MBit/s (SUB-D socket 9 pole, UNC)
Interfaces		USB 2.0 device (not galvanically isolated) RS485 (not galvanically isolated, 9-pin SUB-D plug, UNC) Ethernet (100Base-TX/10Base-T) RS232 (not galvanically isolated, 9-pin SUB-D plug, UNC)
Number of slots		1 (for SD-Card)
Protocol		EtherNet/IP MODBUS TCP/IP Other bus systems
Display contrast ratio		300:1
Display lighting		LED Dimmable via software
Display size		70 x 53 mm
Display type		Standard front with standard membrane (fully enclosed) TFT

		Color display, TFT
Luminance intensity		250 cd/m <sup>2</sup>
Number of colors of the display		65536
Screen size (diagonal)		3.5 in
Touch technology		Touch sensor (glass with foil), Resistive touch protective screen Glass with film touch sensor Resistive touch
Resolution		320 x 240 px QVGA
Explosion safety category for dust		ATEX dust-ex-protection, in relation to CE ATEX dust-ex-protection, II 3D Ex II T70°C IP5x: Zone 22, Category 3D
Potential isolation		Supply voltage UAUX: no Power supply: no
Protection against polarity reversal		Yes, for supply voltage (Siemens MPI optional) Yes
Backup time		10 years, typ. (time at zero voltage)
Memory		64 MByte internal DRAM (OS, Program and data memory) 128 MByte internal NAND-Flash (can be used for data backup) 32 kByte internal NVRAM (retained data) SD Memory Card Slot: SDA Specification 1.00 (External)
Memory capacity		64,000 kByte
Operating system		Windows CE 5.0 (license included)
Processor		RISC CPU, 32 Bit, 400 MHz
Equipment heat dissipation, current-dependent Pvid		5 W
Heat dissipation capacity Pdis		0 W
Heat dissipation per pole, current-dependent Pvid		0 W
Rated operational current for specified heat dissipation (In)		0 A
Static heat dissipation, non-current-dependent Pvs		5 W
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 Resist. of insul. mat. to abnormal heat/fire by internal elect. 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.
10.9.2 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 8.0

Programmable logic controllers PLC (EG000024) / Graphic panel (EC001412)		
Electric engineering, automation, process control engineering / Display and control component / Panel (HMI) / Graphic panel (HMI) (ecl@ss10.0.1-27-33-02-01 [AFX016003])		
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		0
Number of HW-interfaces RS-422		0
Number of HW-interfaces RS-485		1
Number of HW-interfaces serial TTY		0
Number of HW-interfaces USB		1
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		No
Supporting protocol for CAN		No
Supporting protocol for INTERBUS		No
Supporting protocol for ASI		No
Supporting protocol for KNX		No
Supporting protocol for Modbus		Yes
Supporting protocol for Data-Highway		No
Supporting protocol for DeviceNet		No
Supporting protocol for SUCONET		No
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 Wi-Fi 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		65,536
Number of grey-scales/blue-scales of display		0
Screen diagonal	inch	3.5
Number of pixels, horizontal		320
Number of pixels, vertical		240
Useful project memory/user memory	kByte	64,000
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			Resistive 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			4X
Operating temperature		°C	0 - 50
Rail mounting possible			No
Wall mounting/direct mounting			No
Suitable for safety functions			No
Width of the front		mm	136
Height of the front		mm	100
Built-in depth		mm	25