



Touch panel, 24 V DC, 3.5z, TFTcolor, ethernet, RS232, CAN, PLC

Part no. **XV-102-B5-35TQR-10-PLC**
140021
EL Number **4560836**
(Norway)

General specifications		
Product name		Eaton XV-102 Touch panel
Part no.		XV-102-B5-35TQR-10-PLC
EAN		7640130095700
Product Length/Depth		136 millimetre
Product height		30 millimetre
Product width		100 millimetre
Product weight		0.275 kilogram
Certifications		EN 60950 CUL508 UL report applies to both US and Canada UL 60950 Certified by UL for use in Canada CSA Class No.: NWWGQ8 IEC/EN 61131-2 IEC/EN 61000-6-4 DNV GL UL 60950-01 CE UL File No.: E208621 IEC/EN 61000-6-2 UL Recognized EN 50178 CSA-C22.2 No. 60950-1 UL Category Control No.: NWWGQ2 EAC
Product Tradename		XV-102
Product Type		Touch panel
Product Sub Type		None
Catalog Notes		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 -> article no. 139807 PLC license inclusive
Features & Functions		
Enclosure material		Plastic
Features		USB device Fanless CPU and system cooling, natural convection-based passive cooling UL508, cUL approvals Slot for SD card Portrait format Ethernet interface
Fitted with:		Numeric keyboard Printer output Color display Alpha numeric keyboard Message system (incl. buffer and confirmation) 1 x Ethernet 10/100 Mbps (built-in interfaces) 1 x CANopen®/easyNet (built-in interfaces) Recipes 1 x USB device (built-in interface) 1 x RS232 (built-in interface) SW interfaces Message indication
Functions		Process value representation (output) possible Additional software components, loadable Process default value (input) possible
General information		
Battery runtime		Back-up of real-time clock: CR 2032 (190 mA/h), zero maintenance (soldered)
Conditions of acceptability		The provided Ethernet Connection is only allowed to connect to inhouse networks. The investigated Pollution Degree is: 2 The following end-product enclosures are required: Fire The unit must be supplied via a SELV source. UL/CSA
Degree of protection		IP20, rear

		IP65
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 ≥ 30 mm (1.18")
Product category		HMI-PLC (integrated SPS function)
Residual ripple		≤ 5 % (input voltage)
RoHs conformity		Yes
Software		XSOFT-CODESYS-2, Visualization software, Engineering GALILEO, Visualization software, Engineering EPAM, Visualization software, Engineering XSOFT-CODESYS-3, PLC-Programming software, Engineering XSOFT-CODESYS-3, Visualization software, Engineering XSOFT-CODESYS-2, PLC-Programming software, Engineering
Voltage type		DC
Ambient conditions, mechanical		
Shock resistance		Mechanical, According to IEC/EN 60068-2-27
Vibration resistance		According to IEC/EN 60068-2-6
Climatic environmental conditions		
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)
Electro magnetic compatibility		
Voltage dips		5 ms from undervoltage (19.2 V DC) ≤ 10 ms from rated voltage (24 V DC)
Electrical rating		
Permissible voltage		35 V DC (for a duration of < 100 ms) 19.2 - 30 V DC, effective (rated operating voltage -20 %/+25 %) 18 - 31.2 V DC, battery powered (rated operating voltage -25 %/+30 %) 18.0 - 31.2 V DC, absolute with ripple
Power consumption		Max. 5 W 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		
Communication interface		PROFIBUS galvanically isolated, max. 1.5 MBit/s (SUB-D socket 9 pole, UNC)
Interfaces		Ethernet (100Base-TX/10Base-T) USB 2.0 device (not galvanically isolated) CAN, not galvanically isolated (SUB-D plug 9 pole, UNC) RS232 (not galvanically isolated, 9-pin SUB-D plug, UNC)
Number of slots		1 (for SD-Card)
Protocol		EtherNet/IP Other bus systems TCP/IP MODBUS CAN
Display		
Display contrast ratio		300:1
Display lighting		Dimmable via software LED

Display size		70 x 53 mm
Display type		TFT Standard front with standard membrane (fully enclosed) Color display, TFT
Luminance intensity		250 cd/m ²
Number of colors of the display		65536
Screen size (diagonal)		3.5 in
Touch technology		Glass with film touch sensor Touch sensor (glass with foil), Resistive touch protective screen Resistive touch
Input/Output		
Resolution		320 x 240 px QVGA
Safety		
Explosion safety category for dust		ATEX dust-ex-protection, II 3D Ex II T70°C IP5x: Zone 22, Category 3D ATEX dust-ex-protection, in relation to CE
Potential isolation		Power supply: no Supply voltage UAUX: no
Protection against polarity reversal		Yes, for supply voltage (Siemens MPI optional) Yes
System		
Backup time		10 years, typ. (time at zero voltage)
Memory		64 MByte internal DRAM (OS, Program and data memory) 32 kByte internal NVRAM (retained data) SD Memory Card Slot: SDA Specification 1.00 (External) 128 MByte internal NAND-Flash (can be used for data backup)
Memory capacity		64,000 kByte
Operating system		Windows CE 5.0 (license included)
Processor		RISC CPU, 32 Bit, 400 MHz
Design verification		
Equipment heat dissipation, current-dependent P _{vid}		5 W
Heat dissipation capacity P _{diss}		0 W
Heat dissipation per pole, current-dependent P _{vid}		0 W
Rated operational current for specified heat dissipation (I _n)		0 A
Static heat dissipation, non-current-dependent P _{vs}		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 9.0

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 (supply voltage)		DC
Power consumption	W	5
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		1
Number of HW-interfaces parallel		0
Number of HW-interfaces wireless		0
Number of HW-interfaces other		1
With SW interfaces		Yes
Supporting protocol for EtherCAT		No
Supporting protocol for TCP/IP		Yes
Supporting protocol for PROFIBUS		No
Supporting protocol for CAN		Yes
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 WLAN 802.11		No
Radio standard GPRS		No
Radio standard GSM		No
Radio standard UMTS		No
IO link master		No
Type of display		TFT
Colour display		Yes
Number of colours of the display		65536
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	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		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
Certified for UL hazardous location class I		No
Certified for UL hazardous location class II		No
Certified for UL hazardous location class III		No
Certified for UL hazardous location division 1		No
Certified for UL hazardous location division 2		No
Certified for UL hazardous location group A (acetylene)		No
Certified for UL hazardous location group B (hydrogen)		No
Certified for UL hazardous location group C (ethylene)		No
Certified for UL hazardous location group D (propane)		No
Certified for UL hazardous location group E (metal dusts)		No
Certified for UL hazardous location group F (carbonaceous dusts)		No
Certified for UL hazardous location group G (non-conductive dusts)		No
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