DATASHEET - XV-303-70-B02-A00-1B

Control panel, 24 VDC, 7 Inches PCT-Display, 1024x600, 1xEthernet, 1xRS232, 1xRS485, 1xCAN, 1xProfibus, 1xSD card slot

Part no.	**XV-303-70-B02-A00-1B**
Catalog No.	**179651**
Alternate Catalog No.	**XV-303-70-B02-A00-1B**

Similar to illustration

Delivery program

Product range		XV300 7"
Product range		XV-303
Function		HMI-PLC (SPS function, retrofittable)
Description		Control panel with Profibus
Common features of the model series		Ethernet interface CAN USB device USB Host RS232 RS485 Slot for SD card Operating System Windows Embedded Compact 7 pro Integrated Runtime visualization software license
Display - Type		Color display, TFT, anti-glare
Touch-technology		Capacitive multi-touch technology (PCT)
Number of colours		16777216 (Color depth 24 bit)
Resolution	Pixel	WSVGA 1024 x 600
Portrait format		yes
Screen diagonal	Inch	7 widescreen
Model		Plastic enclosure and glass panel in plastic frame
Operating system		Windows Embedded Compact 7 Pro
PLC-licence		Can be fitted by user with article no. 181585 LIC-PLC-A
License certificates for onboard interfaces		Not required
built-in interfaces		1 x Ethernet 10/100 Mbps 1 x RS232 1 x RS485 1 x USB host 2.0 1 x USB device 1 x CANopen®/easyNet 1 x PROFIBUS/MPI
Front type		Anti-glare tempered glass in plastic bezel
Utilization		Flush mounting
Slots		for SD card: 1
Memory card automation		Optionally with SD card -> article no. 181638
Pluggable communication cards (optional)		no
Touch sensor		Multi-touch touch panel
Heat dissipation	W	14.4

Technical data
Display

Display - Type		Color display, TFT, anti-glare
Screen diagonal	Inch	7 widescreen
Resolution	Pixel	WSVGA 1024 x 600
Visible screen area	mm	153.6 x 90.0
Format		16:9
Number of colours		16777216 (Color depth 24 bit)
Contrast ratio (Normally)		Normally 850:1

Brightness	cd/m^2	Normally 400
Back-lighting		LED dimmable via software
Service life of back-lighting	h	Normally 50000

Operation

Technology		Projected Capacitive Touch (PCT)
Touch sensor		Multi-touch touch panel

System

Processor		ARM Cortex-A9 800 MHz
Internal memory		DRAM: 512 MB RAM Flash: 1GB SLC NVRAM: 128kB Retain
External memory		SD card, Type: SDSC, SDHC
Cooling		Fanless CPU and system cooling, natural convection-based passive cooling
Back-up of real-time clock		
Battery (service life)		non-replaceable, BR2330 soldered in
Backup (time at zero voltage)		Normally 10 years

Engineering

Visualisation software		GALILEO XSOFT-CODESYS
PLC-Programming software		XSOFT-CODESYS-2 XSOFT-CODESYS-3
Target and web visualization		Yes
PLC-licence		Can be fitted by user with article no. 181585 LIC-PLC-A
Operating system		Windows Embedded Compact 7 Pro

Interfaces, communication

built-in interfaces		1 x Ethernet 10/100 Mbps 1 x RS232 1 x RS485 1 x USB host 2.0 1 x USB device 1 x CANopen®/easyNet 1 x PROFIBUS/MPI
USB Host		USB 2.0, not galvanically isolated
USB device		USB 2.0, not galvanically isolated
RS-232		Not galvanically isolated, 9-pin D-sub plug, UNC
RS-485		Not galvanically isolated, 9-pin D-sub plug, UNC
CAN		Not galvanically isolated, 9-pin D-sub plug, UNC
Profibus		PROFIBUS-DP, not galvanically isolated, 9 pole SUB-D socket, UNC
Slots		for SD card: 1
Ethernet		10/100 Mbps
MPI		Yes

Power supply

Nominal voltage		24 V DC SELV (safety extra low voltage)
permissible voltage		Effective: 19.2-30.0 V DC (rated operating voltage -20%/+25%) Absolute with ripple: 18,0-31,2 V DC Battery powered: 18,0-31,2 V DC (rated operating voltage -25%/+30%) 35 V DC for a duration of < 100 ms
Voltage dips	ms	≤ 10 ms from rated voltage (24 V DC) 5 ms from undervoltage (19.2 V DC)
Power consumption	$P_{max.}$ W	14.4
Power consumption	W	Normally 14
Heat dissipation	W	14.4
Note on heat dissipation		Heat dissipation with power consumption for 24 V 11.9 W for basic device + 2.5 W for USB module
Protection against polarity reversal		yes
Type of fuse		Yes (fuse not accessible)
Potential isolation		no

General

Housing material		Insulated material black
Front type		Anti-glare tempered glass in plastic bezel
Dimensions (W x H x D)	mm	196 x 135 x 51
flush mounted		Clearance: W x H x D ≥ 30 mm (1.18")

			Inclination from vertical: ±45° (if using natural convection)
Weight		kg	0.74
Degree of protection (IEC/EN 60529, EN50178, VBG 4)			IP65 (in the front as per EN 60529-1), IP20 (on rear as per EN 60529-1) NEMA 4X NEMA12 (as per NEMA 250-2003)
Approvals			
Approvals			cUL 61010-2-201
shipping classification			DNV GL

Applied standards and directives			
EMC			2004/108/EEC
Emitted interference			IEC/EN 61000-6-4
Interference immunity			IEC/EN 61000-6-2
Product standards			EN50178/IEC/EN 61131-2
Mechanical shock resistance		g	15g / 11ms
Vibration			5...9 Hz +- 3.5 mm 9...60 Hz +- 0.15 mm 60…150 Hz ± 2 g
Free fall, packaged		m	IEC/EN 60068-2-31
RoHS			conform

Environmental conditions

Climatic environmental conditions			
Climatic proofing			Cold to EN 60068-2-1 Dry heat to IEC 60068-2-2 Damp heat as per EN 60068-2-3
Air pressure (operation)		hPa	795 - 1080
Temperature			
Storage / Transport	ϑ	°C	-20 - +60
Operating ambient temperature min.		°C	0
Operating ambient temperature max.		°C	+ 50
Relative humidity			
Condensation			Non-condensing
Relative humidity			10 - 95%, non-condensing

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	14.4
Heat dissipation capacity	P_{diss}	W	0
Operating ambient temperature min.		°C	0
Operating ambient temperature max.		°C	50
Degree of Protection			IP65 (in the front as per EN 60529-1), IP20 (on rear as per EN 60529-1) NEMA 4X
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.

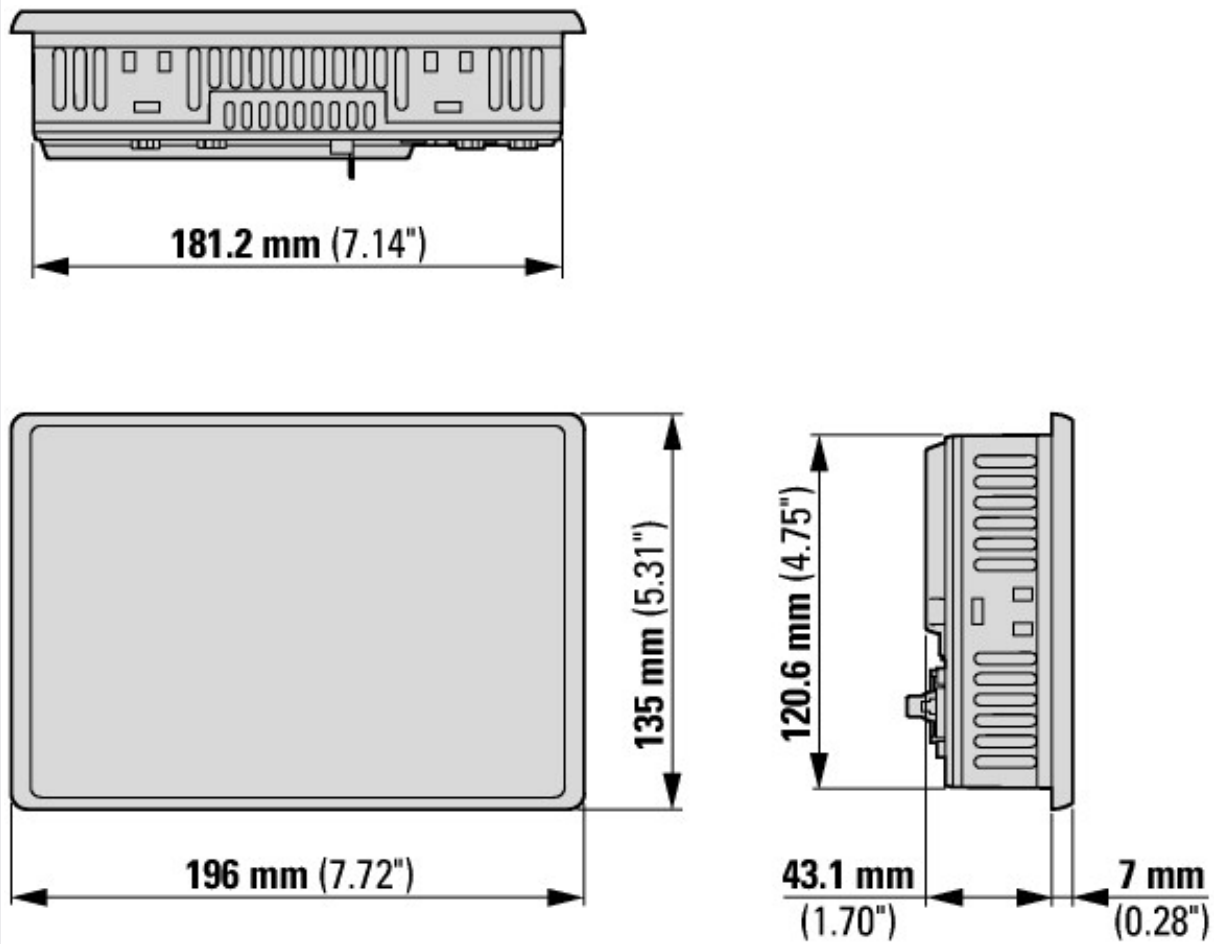|		
10.2.6 Mechanical impact		Does not apply, since the entire switchgear needs to be evaluated.
10.2.7 Inscriptions		Meets the product standard's requirements.
10.3 Degree of protection of ASSEMBLIES		Meets the product standard's requirements.
10.4 Clearances and creepage distances		Meets the product 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)		
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	19.2 - 30
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		1
Number of HW-interfaces serial TTY		0
Number of HW-interfaces USB		2
Number of HW-interfaces parallel		0
Number of HW-interfaces Wireless		0
Number of HW-interfaces other		2
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		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

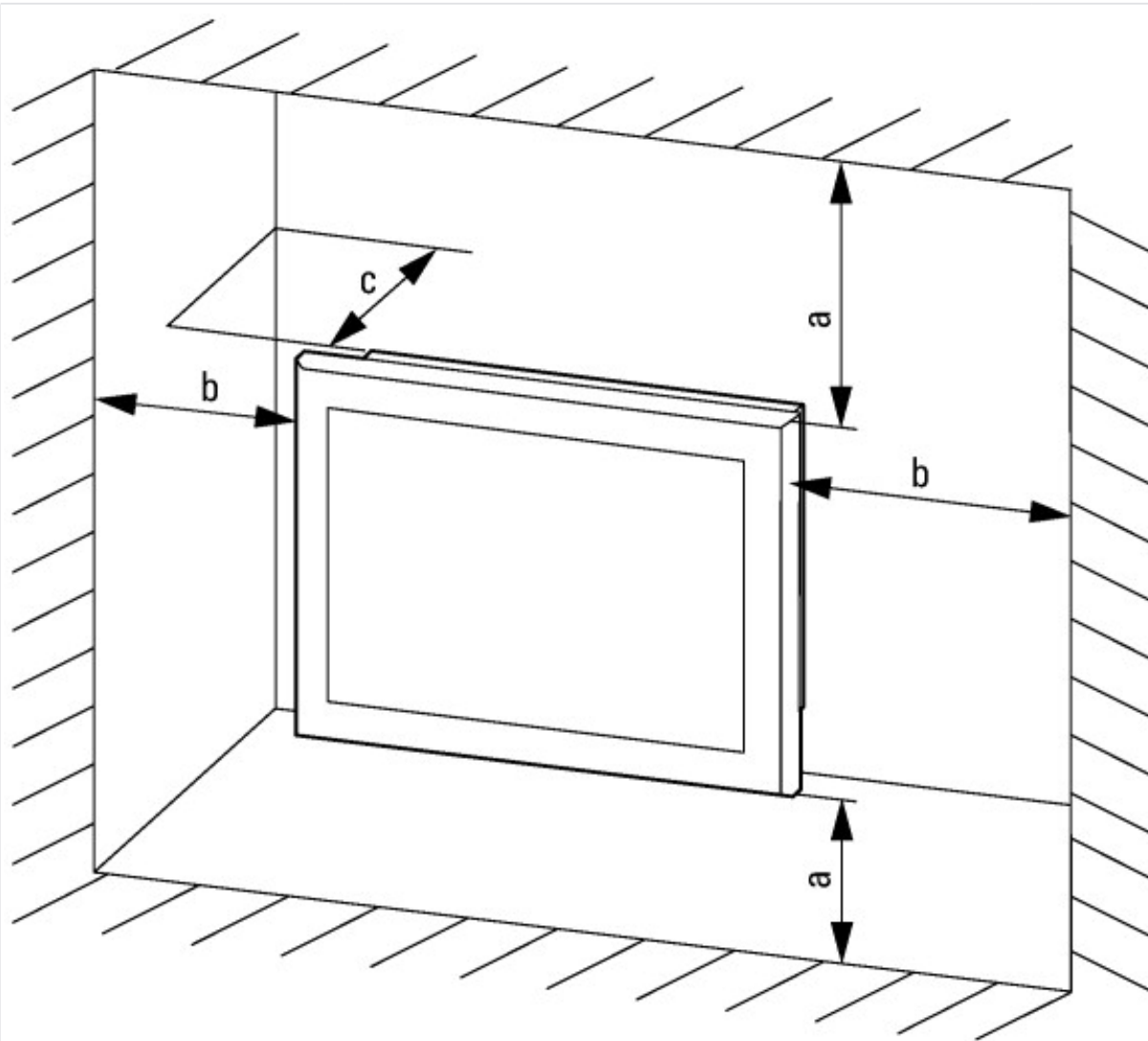|		
Supporting protocol for PROFIsafe		No
Supporting protocol for SafetyBUS p		No
Supporting protocol for other bus systems		No
Radio standard Bluetooth		No
Radio standard WLAN 802.11		No
Radio standard GPRS		No
Radio standard GSM		No
Radio standard UMTS		No
IO link master		No
Type of display		TFT
With colour display		Yes
Number of colours of the display		16777216
Number of grey-scales/blue-scales of display		0
Screen diagonal	inch	7
Number of pixels, horizontal		1024
Number of pixels, vertical		600
Useful project memory/user memory	kByte	512000
With numeric keyboard		No
With alpha numeric keyboard		No
Number of function buttons, programmable		0
Number of buttons with LED		0
Number of system buttons		1
Touch technology		Capacitive multitouch
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		12
Operation temperature	°C	0 - 50
Rail mounting possible		No
Wall mounting/direct mounting		No
Suitable for safety functions		No
Width of the front	mm	196
Height of the front	mm	135
Built-in depth	mm	43.1

Approvals

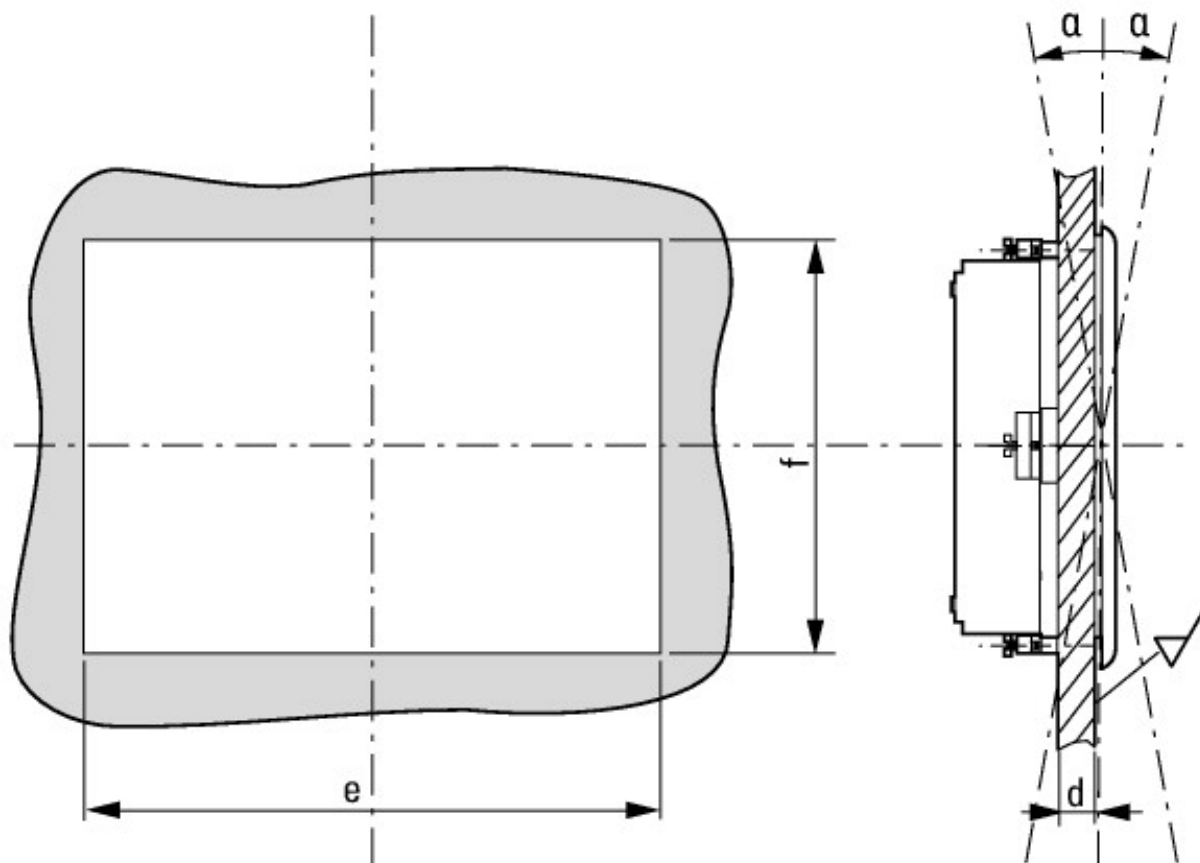|		
Product Standards		UL 61010-2-201; IEC/EN 61131-2; CE
UL File No.		E205091
North America Certification		UL listed, certified by UL for use in Canada
Specially designed for North America		No
Current Limiting Circuit-Breaker		No
Degree of Protection		IEC: IP65, NA: NEMA4X, NEMA12

Dimensions

XV-303-... multi-touch panel with 7" screen diagonal; version: flush mounting

a, b, c ≧ 30 mm, ϑ 0 ≦ T ≦ 50 °C

2 mm ≦ d ≦ 5 mm , e = 183 mm , f = 122 mm, # = 45°