



**Control panel with PLC as SWD coordinator, 24 VDC, 7 Inches PCT-Display, 1024x600, 1xEthernet, 1xRS232, 1xRS485, 1xCAN, 1xSWD, 1xProfibus**



**Part no. XV-303-70-BE2-A00-1C**  
**Catalog No. 179657**  
**Alternate Catalog No. XV-303-70-BE2-A00-1C**

**Delivery program**

Product range			XV300 7"
Product range			XV-303
Subrange			SmartWire-DT touch display with integrated controller (HMI PLC)
Function			SmartWire-DT coordinator
Description			XV300 multi touch display with PLC function for flush mounting plates
Description			Control panel with PLC as a SmartWire-DT coordinator and 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			PLC licence inclusive
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 1 x SmartWire-DT
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
Connection to SmartWire-DT			yes

**Technical data**

<b>Display</b>			
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 <sup>2</sup>	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 XSOF-CODESYS
PLC-Programming software			XSOF-CODESYS-2 XSOF-CODESYS-3
Target and web visualization			Yes
PLC-licence			PLC licence inclusive
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 1 x SmartWire-DT
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
SmartWire-DT master			Yes
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 <sub>max.</sub>	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 $\geq$ 30 mm (1.18") Inclination from vertical: $\pm 45^\circ$ (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 $\pm$ 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	$\theta$	$^\circ\text{C}$	-20 - +60
Operating ambient temperature min.		$^\circ\text{C}$	0
Operating ambient temperature max.		$^\circ\text{C}$	+ 50
Relative humidity			
Condensation			Non-condensing
Relative humidity			10 - 95%, non-condensing

## Supply voltage $U_{Aux}$

Rated operational voltage	$U_{Aux}$	V	24 V DC (-15/+20%)
Residual ripple on the input voltage		%	$\leq$ 5
Protection against polarity reversal			Yes
Max. current	$I_{max}$	A	3
Note			If contactors with a total power consumption $>$ 3 A are connected, a power feeder module EU5C-SWD-PF1/2 has to be used.
Short-circuit rating			no, external fuse FAZ Z3
Potential isolation			No
Rated operating voltage of 24-V-DC slaves		V	typ. $U_{Aux}$ - 0.2

## Supply voltage $U_{Pow}$

Supply voltage	$U_{Pow}$	V	24 DC -15 % + 20 %
Input voltage ripple		%	$\leq$ 5
Protection against polarity reversal			yes
Rated current	I	A	0.7
Overload proof			yes
Inrush current and duration		A	12.5 A/6 ms

Heat dissipation at 24 V DC		W	1.0
Potential isolation between U <sub>PoW</sub> and 15 V SmartWire-DT supply voltage			No
Bridging voltage dips		ms	10
Repetition rate		s	1
Status indication		LED	yes

### SmartWire-DT supply voltage

Rated operating voltage	U <sub>e</sub>	V	14.5 ± 3 %
max. current	I <sub>max</sub>	A	0.7
Note			If SmartWire-DT modules with a total power consumption > 0.7 A are connected, a power feeder module EU5C-SWD-PF2 has to be used.
Short-circuit rating			Yes

### Connection supply voltages

Connection type			Push in terminals
Solid		mm <sup>2</sup>	0.2 - 1.5
Flexible with ferrule		mm <sup>2</sup>	0.25 - 1.5
UL/CSA solid or stranded		AWG	24 - 16

### SmartWire-DT network

Station type			SmartWire-DT master
Number of SmartWire-DT slaves			99
Baud Rates		kBd	125 250
Address allocation			automatic
Status indication			SmartWire-DT master LED: red/green Configurations LED: red/green
Connections			Plug, 8-pole
Plug connector			Blade terminal SWD4-8MF2

## Design verification as per IEC/EN 61439

Technical data for design verification			
Rated operational current for specified heat dissipation	I <sub>n</sub>	A	0
Heat dissipation per pole, current-dependent	P <sub>vid</sub>	W	0
Equipment heat dissipation, current-dependent	P <sub>vid</sub>	W	0
Static heat dissipation, non-current-dependent	P <sub>vs</sub>	W	14.4
Heat dissipation capacity	P <sub>diss</sub>	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) (ec1@ss10.0.1-27-33-02-01 [AFX016003])

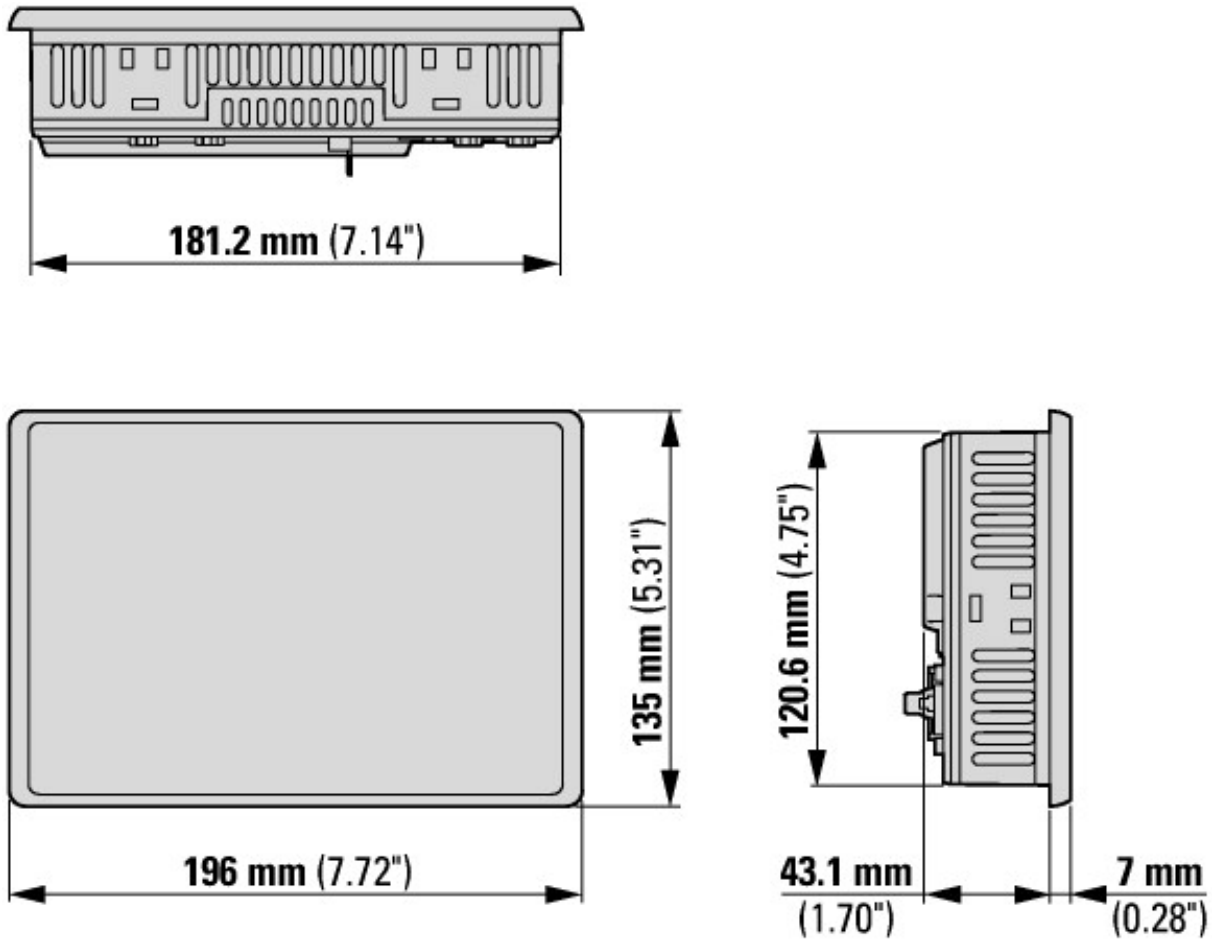
Supply voltage AC 50 Hz	V	0 - 0
Supply voltage AC 60 Hz	V	0 - 0
Supply voltage DC	V	19.2 - 30
Voltage type of supply voltage		DC
Number of HW-interfaces industrial Ethernet		1
Number of interfaces PROFINET		0
Number of HW-interfaces RS-232		1
Number of HW-interfaces RS-422		0
Number of HW-interfaces 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		3
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		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		16777.216
Number of grey-scales/blue-scales of display		0
Screen diagonal	inch	7
Number of pixels, horizontal		1.024
Number of pixels, vertical		600
Useful project memory/user memory	kByte	512
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

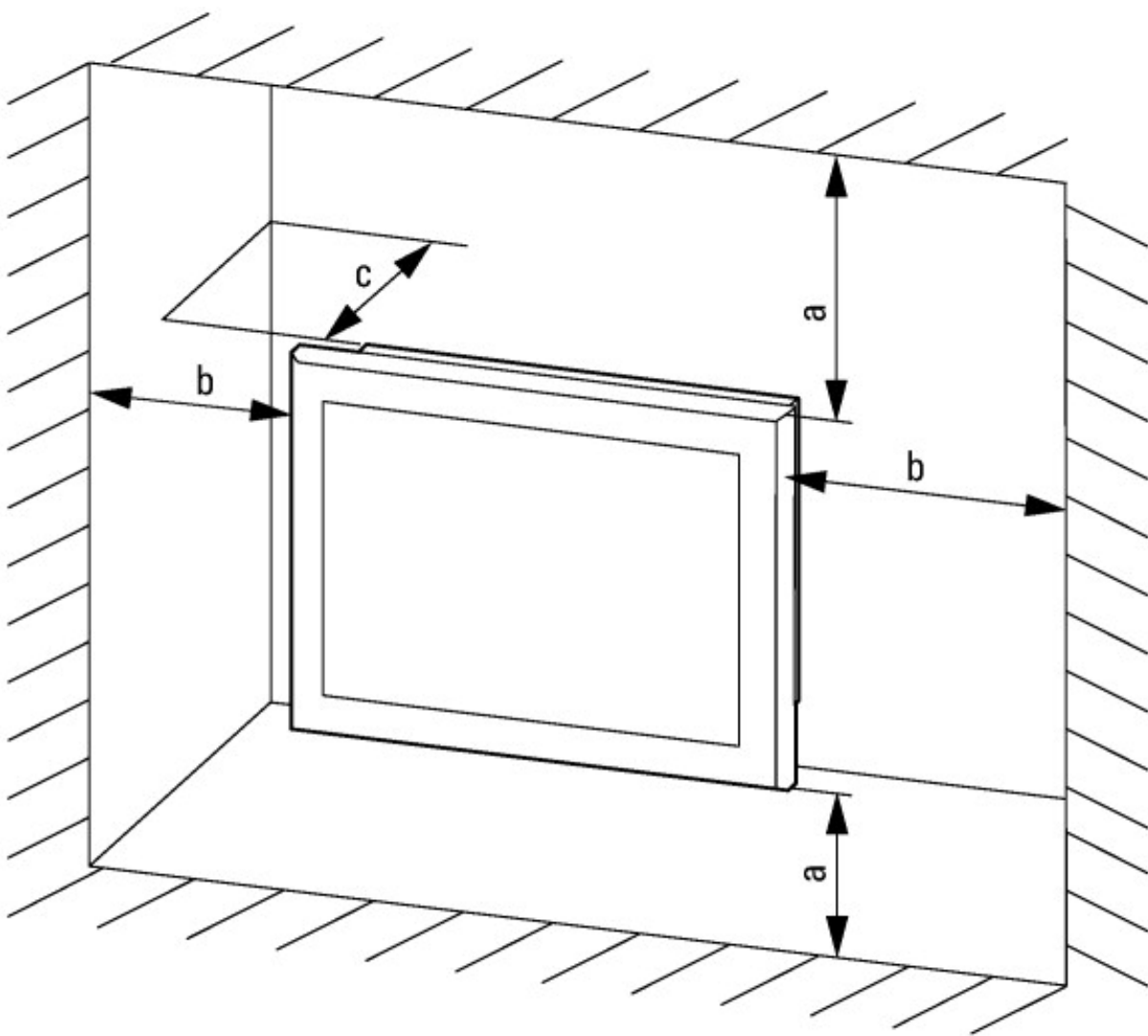
## Approvals

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

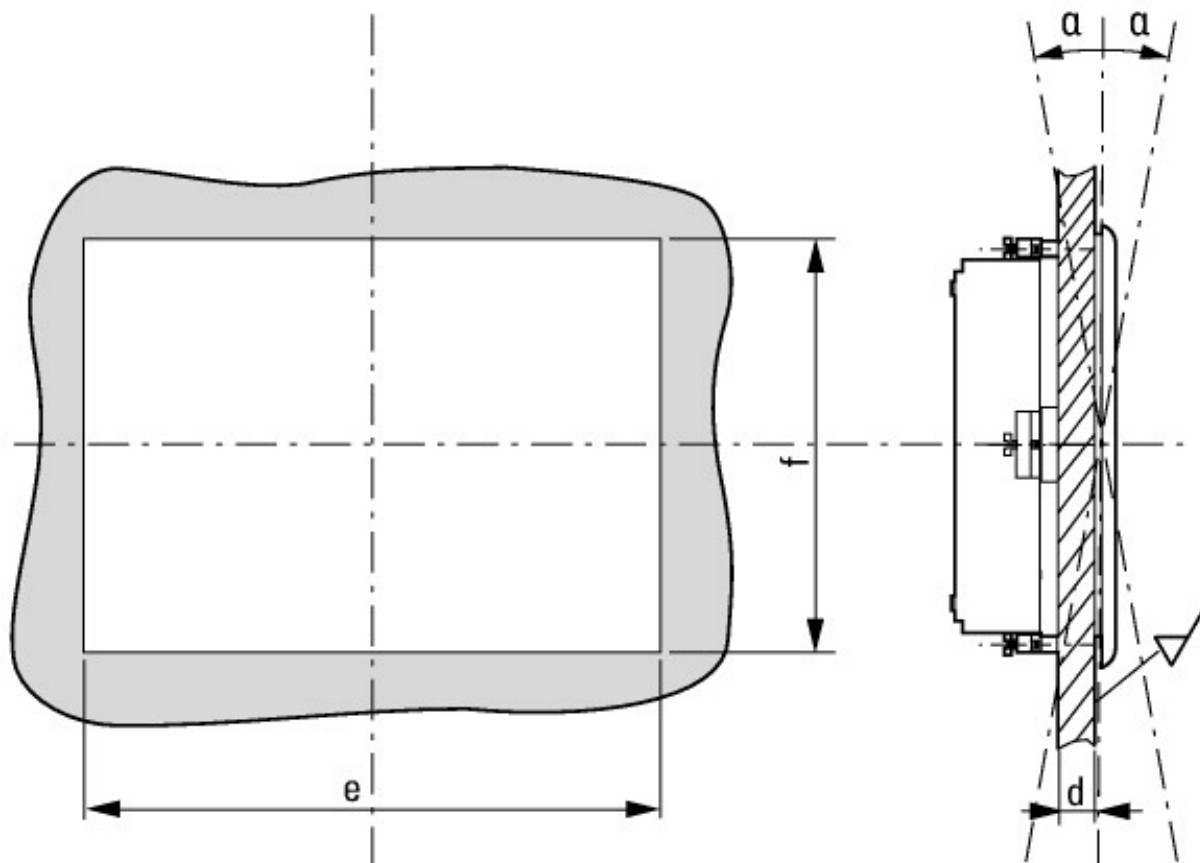
## Dimensions



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



$a, b, c \geq 30 \text{ mm}, 0 \leq T \leq 50 \text{ }^\circ\text{C}$



$2 \text{ mm} \leq d \leq 5 \text{ mm}, e = 183 \text{ mm}, f = 122 \text{ mm}, \# = 45^\circ$



## Additional product information (links)

<b>Instruction leaflet XV-303-... IL048009ZU</b>	
Instruction leaflet XV-303-... IL048009ZU	<a href="https://es-assets.eaton.com/DOCUMENTATION/AWA_INSTRUCTIONS/IL048009ZU.pdf">https://es-assets.eaton.com/DOCUMENTATION/AWA_INSTRUCTIONS/IL048009ZU.pdf</a>
Instruction leaflet XV-303-... IL048009ZU	<a href="https://es-assets.eaton.com/DOCUMENTATION/AWA_INSTRUCTIONS/IL048009ZU2018_06.pdf">https://es-assets.eaton.com/DOCUMENTATION/AWA_INSTRUCTIONS/IL048009ZU2018_06.pdf</a>
<b>Manual multi-touchpanel XV300 MN048017</b>	
Handbuch Multi-Touch-Panel XV300 MN048017 - Deutsch	<a href="https://es-assets.eaton.com/DOCUMENTATION/AWB_MANUALS/MN048017_DE.pdf">https://es-assets.eaton.com/DOCUMENTATION/AWB_MANUALS/MN048017_DE.pdf</a>
Manual multi-touchpanel XV300 MN048017 - English	<a href="https://es-assets.eaton.com/DOCUMENTATION/AWB_MANUALS/MN048017_EN.pdf">https://es-assets.eaton.com/DOCUMENTATION/AWB_MANUALS/MN048017_EN.pdf</a>
<b>Communications manual MN048019ZU</b>	
Kommunikationshandbuch MN048019ZU - Deutsch	<a href="https://es-assets.eaton.com/DOCUMENTATION/AWB_MANUALS/MN048019ZU_DE.pdf">https://es-assets.eaton.com/DOCUMENTATION/AWB_MANUALS/MN048019ZU_DE.pdf</a>
Communications manual MN048019ZU - English	<a href="https://es-assets.eaton.com/DOCUMENTATION/AWB_MANUALS/MN048019ZU_EN.pdf">https://es-assets.eaton.com/DOCUMENTATION/AWB_MANUALS/MN048019ZU_EN.pdf</a>
SmartWire-DT product range catalog	<a href="http://ecat.moeller.net/flip-cat/?edition=SWKAT&amp;startpage=10">http://ecat.moeller.net/flip-cat/?edition=SWKAT&amp;startpage=10</a>
Technical data	<a href="http://ecat.moeller.net/flip-cat/?edition=SWKAT&amp;startpage=48">http://ecat.moeller.net/flip-cat/?edition=SWKAT&amp;startpage=48</a>
f1=1454&f2=1242&f3=1773;Download Software GALILEO	<a href="http://applications.eaton.eu/sdlc?LX=11&amp;f1=1454&amp;f2=1242&amp;f3=1773;Download Software GALILEO">http://applications.eaton.eu/sdlc?LX=11&amp;f1=1454&amp;f2=1242&amp;f3=1773;Download Software GALILEO</a>
Product overview (WEB)	<a href="http://www.eaton.eu/XV300">http://www.eaton.eu/XV300</a>