



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



**Part no.** XV-303-70-B02-A00-1C  
**Catalog No.** 179653  
**Alternate Catalog No.** XV-303-70-B02-A00-1C

Similar to illustration

## Delivery program

|   |  |       |   |
|---|--|-------|---|
| Product range                               |  |       | XV300 7"  |
| Product range                               |  |       | XV-303  |
| Function                                    |  |       | HMI-PLC (integrated SPS function)   |
| Description                                 |  |       | Control panel with PLC and Profibus   |
| Common features of the model series         |  |       | Ethernet interface<br>CAN<br>USB device<br>USB Host<br>RS232<br>RS485<br>Slot for SD card<br>Operating System Windows Embedded Compact 7 pro<br>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<br>1024 x 600   |
| Portrait format                             |  |       | yes   |
| Screen diagonal                             |  | Inch  | 7<br>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<br>1 x RS232<br>1 x RS485<br>1 x USB host 2.0<br>1 x USB device<br>1 x CANopen®/easyNet<br>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<br>widescreen                |
| Resolution                |  | Pixel | WSVGA<br>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<br>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<br>Flash: 1GB SLC<br>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<br>XSOFTE-CODESYS            |
| PLC-Programming software     |  |  | XSOFTE-CODESYS-2<br>XSOFTE-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<br>1 x RS232<br>1 x RS485<br>1 x USB host 2.0<br>1 x USB device<br>1 x CANopen®/easyNet<br>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%)<br>Absolute with ripple: 18,0-31,2 V DC<br>Battery powered: 18,0-31,2 V DC (rated operating voltage -25%/+30%)<br>35 V DC for a duration of < 100 ms |
| Voltage dips                         |                   | ms | ≤ 10 ms from rated voltage (24 V DC)<br>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<br>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: $\pm 45^\circ$ (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)<br>NEMA 4X<br>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<br>9...60 Hz +- 0.15 mm<br>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<br>Dry heat to IEC 60068-2-2<br>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   |

### 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.   |            | $^\circ\text{C}$ | 0  |
| Operating ambient temperature max.   |            | $^\circ\text{C}$ | 50   |
| Degree of Protection   |            |                  | IP65 (in the front as per EN 60529-1), IP20 (on rear as per EN 60529-1)<br>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

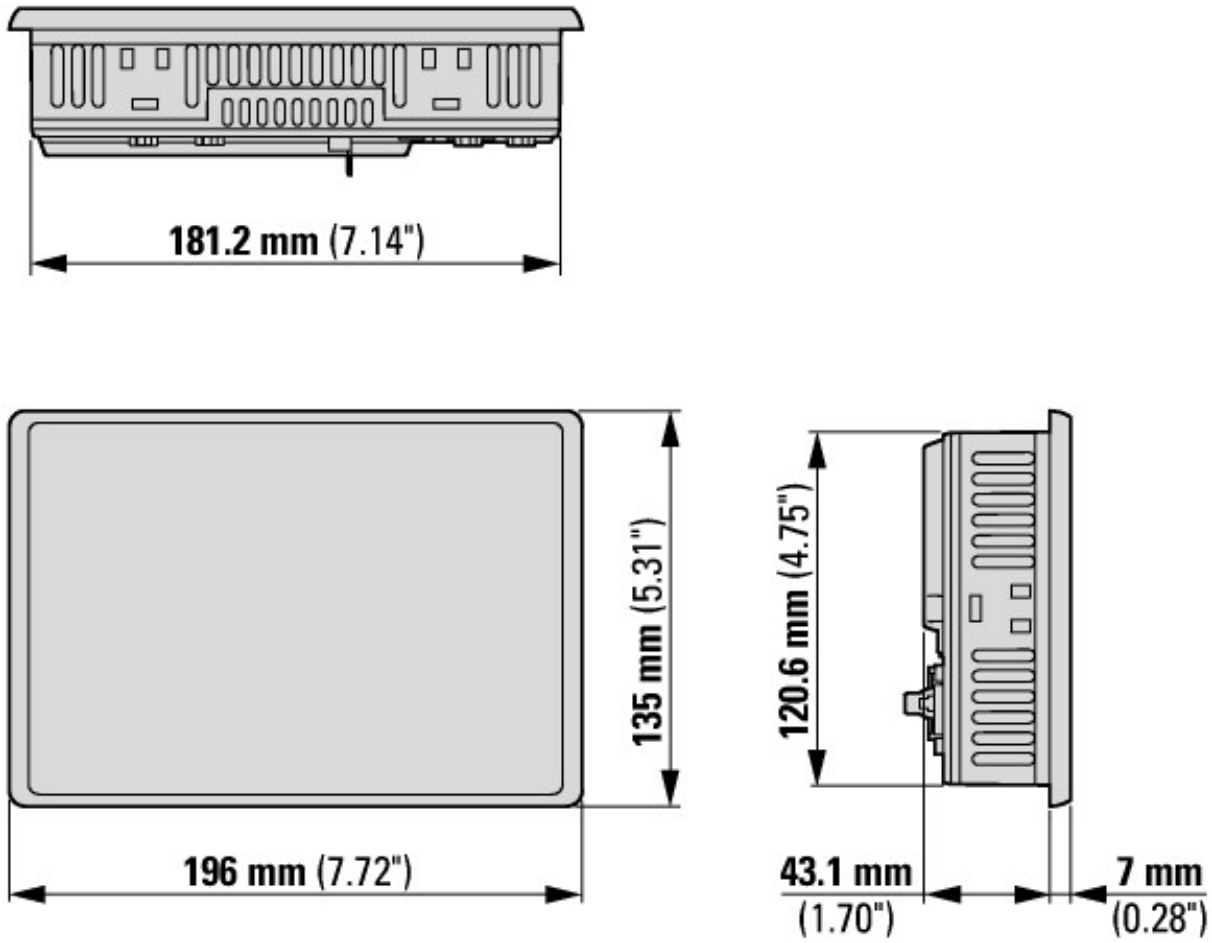
|  |   |           |
|--|---|-----------|
| PLC's (EG000024) / Graphic panel (EC001412)  |   |           |
| Electric engineering, automation, process control engineering / Display and control component / Panel (HMI) / Graphic panel (HMI) (ecl@ss10.0.1-27-33-02-01 [AFX016003]) |   |           |
| Supply 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                    |       | 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                  |

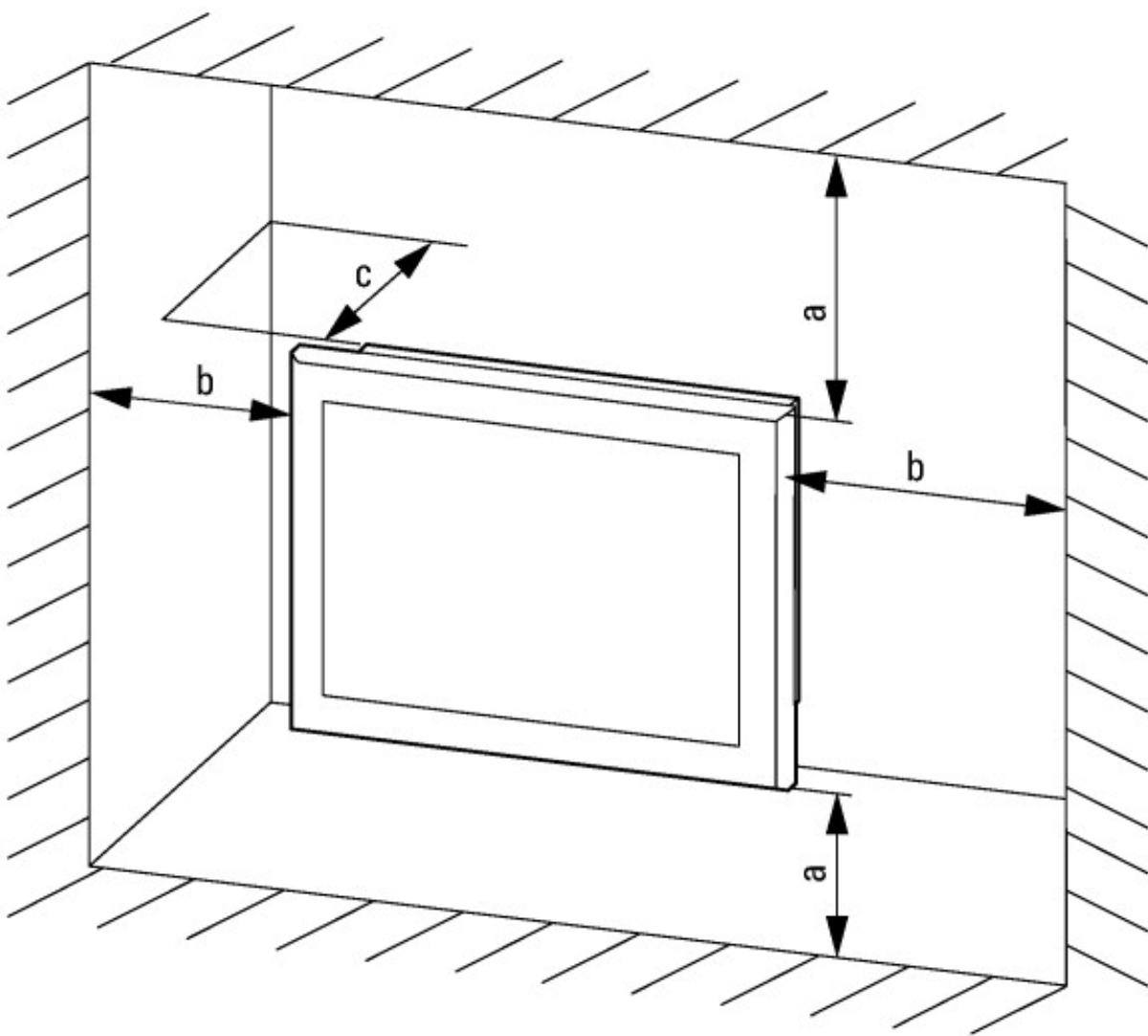
## Approvals

|                                      |  |  |
|--------------------------------------|--|--|
| 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                |

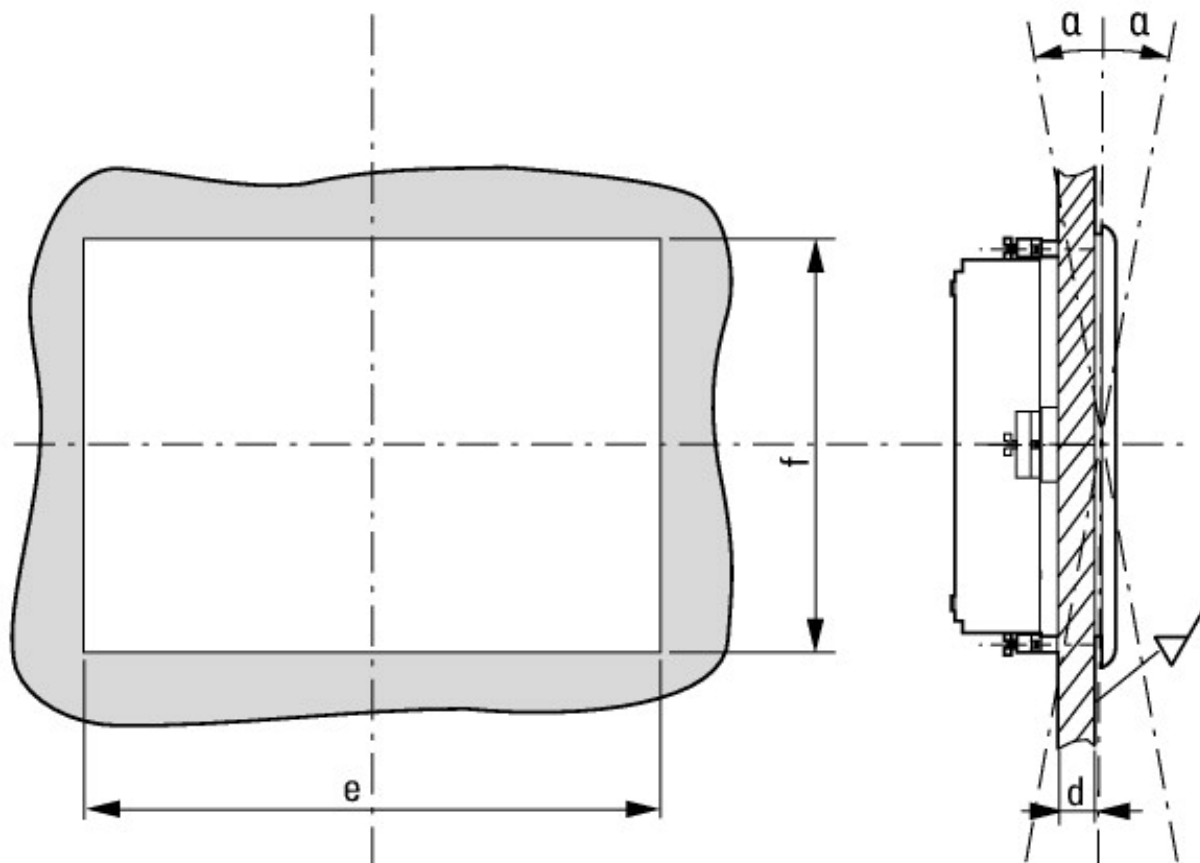
## Dimensions



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>   |
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| Product overview (WEB)                              | <a href="http://www.eaton.eu/XV300">http://www.eaton.eu/XV300</a>   |