



**Control panel with PLC as SWD coordinator, 24 VDC, 10 Inches PCT-Display, 1024x600, 2xEthernet, 1xRS232, 1xRS485, 1xCAN, 1xSWD, 1xSD card slot, VisualDesigner**



**Part no. XV-303-10-CE0-A00-1E**  
**Catalog No. 184581**  
**Eaton Catalog No. XV-303-10-CE0-A00-1E**

Similar to illustration

## Delivery program

|   |  |       |   |
|---|--|-------|---|
| Product range                               |  |       | XV300 10.1"   |
| 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 2nd Ethernet port<br>Software (Engineering): visualization = Visual Designer   |
| 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  | 10.1<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                         |  |       | 2 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 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     | 18  |
| Connection to SmartWire-DT                  |  |       | yes   |

## Technical data

|                     |  |       |                                |
|---------------------|--|-------|--------------------------------|
| <b>Display</b>      |  |       |                                |
| Display - Type      |  |       | Color display, TFT, anti-glare |
| Screen diagonal     |  | Inch  | 10.1<br>widescreen             |
| Resolution          |  | Pixel | WSVGA<br>1024 x 600            |
| Visible screen area |  | mm    | 222.72 x 125.28                |

|                               |  |                   |                               |
|-------------------------------|--|-------------------|-------------------------------|
| Format                        |  |                   | 16:9                          |
| Number of colours             |  |                   | 16777216 (Color depth 24 bit) |
| Contrast ratio (Normally)     |  |                   | Normally 500:1                |
| 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)        |  |  | Zero maintenance   |
| Backup (time at zero voltage) |  |  | Normally 10 years  |
| Operating system              |  |  | Windows Embedded Compact 7 Pro   |

## Engineering

|                              |  |  |                                  |
|------------------------------|--|--|----------------------------------|
| Visualisation software       |  |  | VISUAL DESIGNER<br>XSOF-CODESYS  |
| PLC-Programming software     |  |  | XSOF-CODESYS-2<br>XSOF-CODESYS-3 |
| Target and web visualization |  |  | Yes                              |

## Interfaces, communication


|                     |  |  |  |
|---------------------|--|--|--|
| built-in interfaces |  |  | 2 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 SmartWire-DT |
| PLC-licence         |  |  | PLC licence inclusive  |
| 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   |
| Slots               |  |  | for SD card: 1   |
| SmartWire-DT master |  |  | Yes  |
| Ethernet            |  |  | 10/100 Mbps  |
| MPI                 |  |  | no   |

## 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  | 18   |
| Power consumption        |                   | W  | Normally 18  |
| Heat dissipation         |                   | W  | 18   |
| Note on heat dissipation |                   |    | Heat dissipation with power consumption for 24 V<br>12 W for basic device + 2.5 W for USB module   |
| Siemens MPI, (optional)  |                   |    | 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  | 269 x 174 x 58   |
| flush mounted                                       |  |     | Clearance: W x H x D $\geq$ 30 mm (1.18")<br>Inclination from vertical: $\pm 45^\circ$ (if using natural convection) |
| Weight  |  | kg  | 1.13   |
| 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  |
| 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   |

### Environmental conditions

|                                    |          |                  |                          |
|------------------------------------|----------|------------------|--------------------------|
| Temperature                        |          |                  |                          |
| Operation                          | $\theta$ | $^\circ\text{C}$ | 0 - +50                  |
| Storage / Transport                | $\theta$ | $^\circ\text{C}$ | -20 - +60                |
| Operating ambient temperature max. |          | $^\circ\text{C}$ | 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           |
| Siemens MPI, (optional)     |           |   | 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<br>250  |
| Address allocation            |  |     | automatic   |
| Status indication             |  | LED | SmartWire-DT master LED: red/green<br>Configurations LED: red/green |
| Connections                   |  |     | Plug, 8-pole  |
| Plug connectors               |  |     | 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  | 18   |
| Heat dissipation capacity  | P <sub>diss</sub> | W  | 0  |
| Operating ambient temperature max.   |                   | °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)<br>NEMA 4X |
| IEC/EN 61439 design verification   |                   |    |  |
| 10.2 Strength of materials and parts   |                   |    |  |
| 10.2.2 Corrosion resistance  |                   |    |  |
| 10.2.3.1 Verification of thermal stability of enclosures   |                   |    |  |
| 10.2.3.2 Verification of resistance of insulating materials to normal heat   |                   |    |  |
| 10.2.3.3 Verification of resistance of insulating materials to abnormal heat and fire due to internal electric effects |                   |    |  |
| 10.2.4 Resistance to ultra-violet (UV) radiation   |                   |    |  |
| 10.2.5 Lifting   |                   |    |  |
| 10.2.6 Mechanical impact   |                   |    |  |
| 10.2.7 Inscriptions  |                   |    |  |
| 10.3 Degree of protection of ASSEMBLIES  |                   |    |  |
| 10.4 Clearances and creepage distances   |                   |    |  |
| 10.5 Protection against electric shock   |                   |    |  |
| 10.6 Incorporation of switching devices and components   |                   |    |  |
| 10.7 Internal electrical circuits and connections  |                   |    |  |
| 10.8 Connections for external conductors   |                   |    |  |
| 10.9 Insulation properties   |                   |    |  |
| 10.9.2 Power-frequency electric strength   |                   |    |  |
|  |                   |    | Meets the product standard's requirements.   |
|  |                   |    | Meets the product standard's requirements.   |
|  |                   |    | Meets the product standard's requirements.   |
|  |                   |    | Meets the product standard's requirements.   |
|  |                   |    | Please enquire   |
|  |                   |    | Does not apply, since the entire switchgear needs to be evaluated.                 |
|  |                   |    | Does not apply, since the entire switchgear needs to be evaluated.                 |
|  |                   |    | Meets the product standard's requirements.   |
|  |                   |    | Meets the product standard's requirements.   |
|  |                   |    | Does not apply, since the entire switchgear needs to be evaluated.                 |
|  |                   |    | Does not apply, since the entire switchgear needs to be evaluated.                 |
|  |                   |    | Is the panel builder's responsibility.   |
|  |                   |    | Is the panel builder's responsibility.   |
|  |                   |    | 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 6.0

PLC's (EG000024) / Graphic panel (EC001412)

Electric engineering, automation, process control engineering / Control / Operate and Observe (HMI) / Graphic panel (HMI) (ecl@ss8.1-27-24-23-02 [BAA722010])

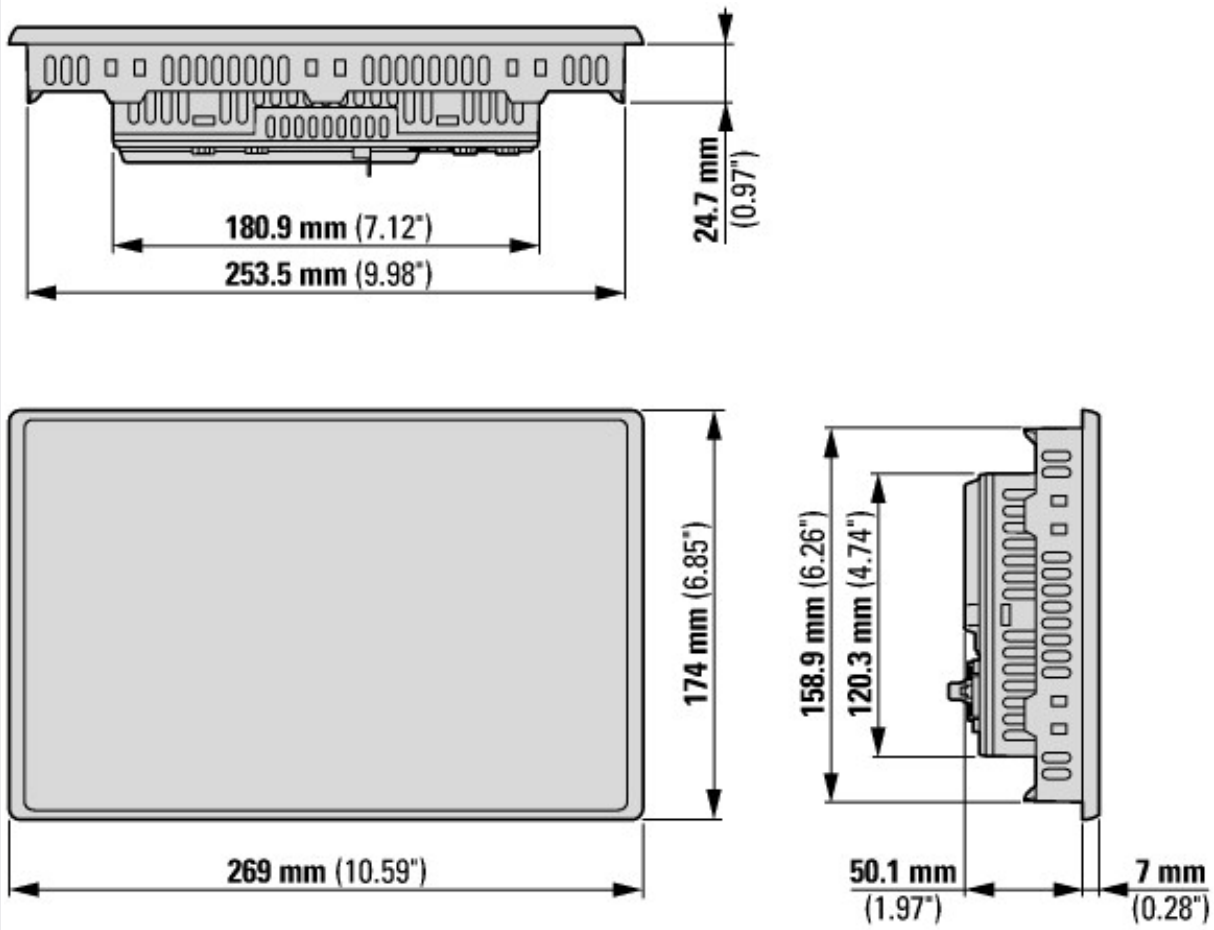
|   |   |           |
|---|---|-----------|
| Supply voltage AC 50 Hz                             | V | 0 - 0     |
| Supply voltage AC 60 Hz                             | V | 0 - 0     |
| Supply voltage DC                                   | V | 19.2 - 30 |
| Voltage type of supply voltage                      |   | DC        |
| Number of HW-interfaces industrial Ethernet         |   | 2         |
| Number of HW-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                    |   | 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           |   | 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  | 10.1     |
| 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        |
| With touch screen                                   |       | Yes      |
| 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      |
| Printer output available                            |       | Yes      |
| Number of online languages                          |       | 100      |
| Additional software components, loadable            |       | Yes      |
| Degree of protection (IP), front side               |       | IP65     |
| Operation temperature                               | °C    | 0 - 50   |
| Rail mounting possible                              |       | No       |
| Wall mounting/direct mounting                       |       | No       |
| Suitable for safety functions                       |       | No       |
| Width of the front                                  | mm    | 269      |
| Height of the front                                 | mm    | 174      |
| Built-in depth                                      | mm    | 50.1     |

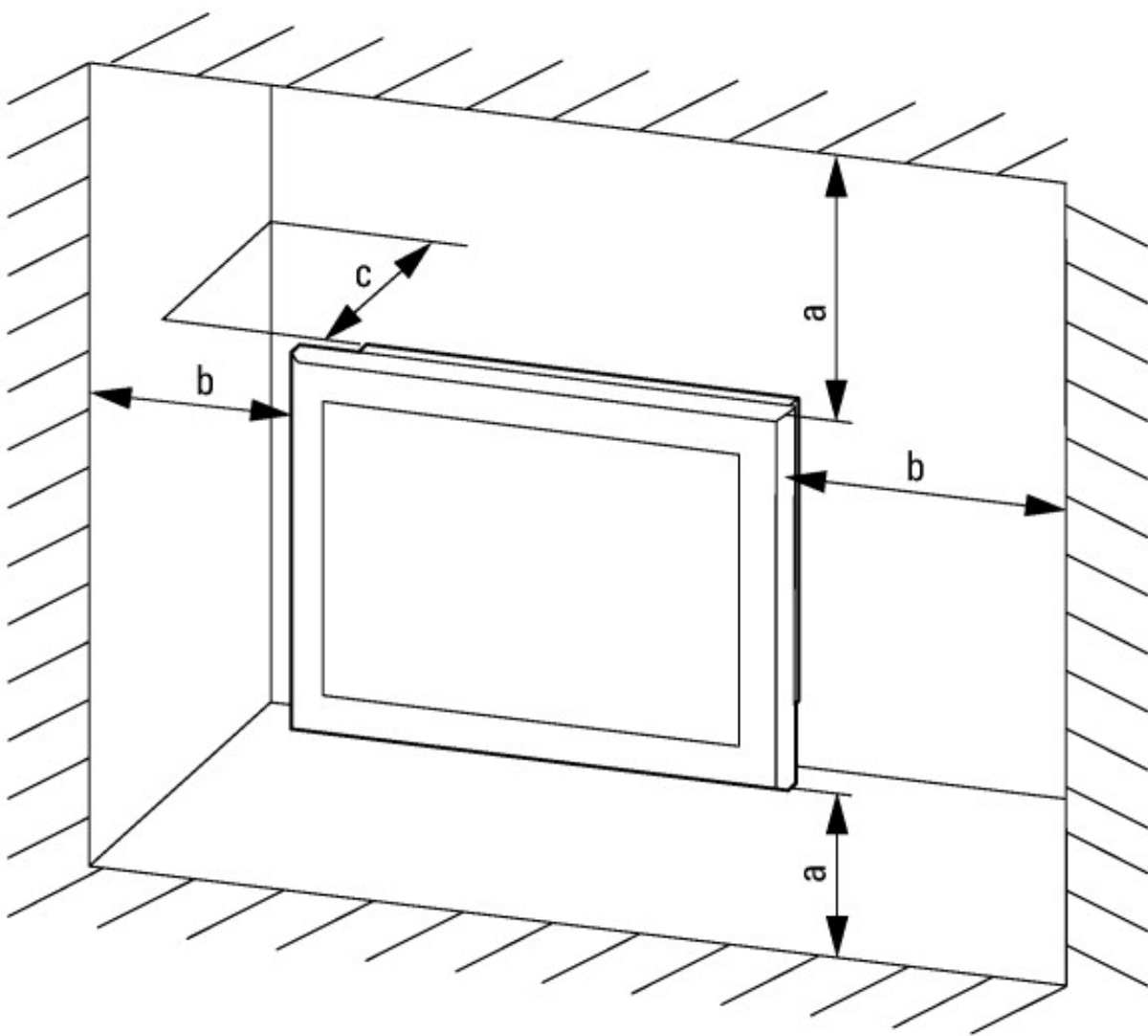
## Approvals

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

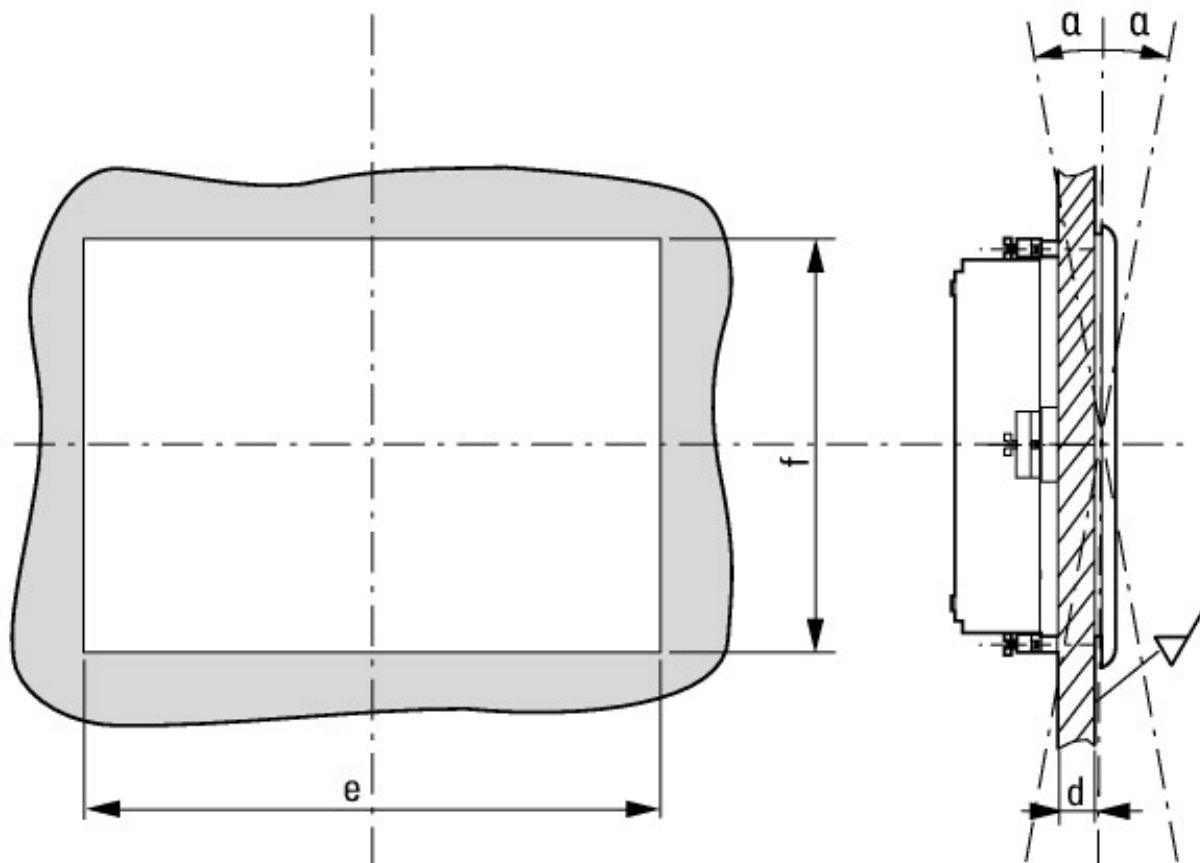
## Dimensions



XV-303-... multi-touch panel with 10.1" screen diagonal; version: flush mounting



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



$2 \text{ mm} \leq d \leq 5 \text{ mm}, e = 255.5 \text{ mm}, f = 160.5 \text{ mm}, \# = 45^\circ$