# DATASHEET - XV-102-A3-57TVRB-1E4



**Touch display for easyE4, 24 V DC, 5.7z, TFTcolor, ethernet**

**Part no.** XV-102-A3-57TVRB-1E4
**Catalog No.** 199734

Powering Business Worldwide

## Delivery program

| | | |
|---|---|---|
| Product range | | Visualisation solutions XV |
| Product range | | easyE4<br>XV-102 |
| Subrange | | Touch HMI easy |
| Function | | Touch display for easyE4 |
| Function | | as a visualization for the easyE4 control relay |
| Description | | Touchdisplay für easyE4, 24 V DC, 5.7 Zoll, TFTcolor, 640x480 px , Ethernet<br>Communication with the easyE4 via Modbus TCP |
| Common features of the model series | | Ethernet interface<br>USB device<br>Slot for SD card |
| Display - Type | | Color display, TFT |
| Touch-technology | | Resistive-Touch |
| Number of colours | | 64 k Colours |
| Resolution | Pixel | 640 x 480<br>VGA |
| Screen diagonal | Inch | 5.7 |
| Model | | Plastic enclosure and glass panel in plastic frame |
| Operating system | | Windows CE 5.0 (licence incl.) |
| PLC-licence | | no PLC function possible |
| License certificates for onboard interfaces | | not expandable |
| built-in interfaces | | 1 x Ethernet 100base-TX/10base-T<br>1 x USB device<br>1 x RS232 |
| Front type | | Standard front with standard membrane (fully enclosed) |
| Utilization | | Flush mounting |
| Slots | | for SD card: 1 |
| Memory card automation | | Optionally with SD card -> article no. 139807 |
| Pluggable communication cards (optional) | | no |
| Touch sensor | | Glass with film |
| Heat dissipation | W | 9.5 |
| For use with | | easyE4 |
| For use with | | EASY-E4-...-12... |

## Technical data

### Display

| | | |
|---|---|---|
| Display - Type | | Color display, TFT |
| Screen diagonal | Inch | 5.7 |
| Resolution | Pixel | 640 x 480<br>VGA |
| Visible screen area | mm | 115 x 86 |
| Number of colours | | 64 k Colours |
| Contrast ratio (Normally) | | Normally 300:1 |
| Brightness | $cd/m^2$ | Normally 250 |
| Back-lighting | | LED<br>dimmable via software |
| Service life of back-lighting | h | Normally 40000 |
| Resistive touch protective screen | | Touch sensor (glass with foil) |

### Operation

| | | |
|---|---|---|
| Technology | | Resistive-Touch<br>4 wire |

| | | | |
|---|---|---|---|
| Touch sensor | | | Glass with film |

## System

| | | | |
|---|---|---|---|
| Processor | | | RISC CPU, 32 Bit, 400 MHz |
| Internal memory | | | DRAM (OS, Program and data memory): 64 MByte<br>NAND-Flash (can be used for data backup): approx. 128 MByte available<br>NVRAM (retained data): approx. 32 KByte available |
| External memory | | | SD Memory Card Slot: SDA Specification 1.00 |
| Cooling | | | Fanless CPU and system cooling, natural convection-based passive cooling |
| Back-up of real-time clock | | | |
| Battery (service life) | | | non-replaceable, CR2032 soldered in |
| Backup (time at zero voltage) | | | Normally 10 years |

## Engineering

| | | | |
|---|---|---|---|
| Visualisation software | | | GALILEO |
| PLC-licence | | | no PLC function possible |
| Operating system | | | Windows CE 5.0 (licence incl.) |

## Interfaces, communication

| | | | |
|---|---|---|---|
| built-in interfaces | | | 1 x Ethernet 100base-TX/10base-T<br>1 x USB device<br>1 x RS232 |
| USB Host | | | USB 2.0 (1.5 - 12 Mbit/s), not galvanically isolated |
| RS-232 | | | RS-232, not galvanically isolated (SUB-D plug 9 pole, UNC) |
| Slots | | | for SD card: 1 |
| Ethernet | | | 100Base-TX/10Base-T |

## 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 | $P_{max.}$ | W | 10 |
| Note on power consumption | | | Basic device<br>USB Slave to USB Host: 2.5<br>Total: 9.5 |
| Heat dissipation | | W | 9.5 |
| Note on heat dissipation | | | Heat dissipation with power consumption for 24 V<br>7 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 potential isolation |

## General

| | | | |
|---|---|---|---|
| Housing material | | | Plastic, gray |
| Front type | | | Standard front with standard membrane (fully enclosed) |
| Dimensions (W x H x D) | | mm | 170 x 130 x 39 |
| flush mounted | | | Clearance: W x H x D ≥ 30 mm (1.18")<br>Inclination from vertical: ±45° (if using natural convection)<br>Material thickness at the installation cutout: min. 2 mm (0.08"), max. 5 mm (0.2") |
| Weight | | kg | 0.6 |
| Degree of protection (IEC/EN 60529, EN50178, VBG 4) | | | IP65 (at front), IP20 (at rear) |
| Approvals | | | |
| Approvals | | | cUL (UL508)<br>EAC |
| Explosion protection (according to ATEX 94/9/EC) | | | II 3D Ex II T70°C IP5x: Zone 22, Category 3D |
| shipping classification | | | DNV GL |
| Mechanical shock resistance | | g | according to IEC 60068-2-27 |
| Vibration | | | according to IEC/EN 60068-2-6 |
| RoHS | | | conform |

## Environmental conditions

| | | | |
|---|---|---|---|
| Climatic environmental conditions | | | |
| 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 | | | Take appropriate measures to prevent condensation |
| Relative humidity | | | 10 - 90%, non condensing |

### Supply voltage $U_{Aux}$

| | | | |
|---|---|---|---|
| Rated operational voltage | $U_{Aux}$ | V | 24 V DC (-20/+25%) |
| Protection against polarity reversal | | | Yes |
| Potential isolation | | | No |

### Supply voltage $U_{Pow}$

| | | | |
|---|---|---|---|
| Supply voltage | $U_{Pow}$ | V | 24 DC -20 % + 25 % |
| Input voltage ripple | | % | ≦ 5 |
| Protection against polarity reversal | | | yes |

## Design verification as per IEC/EN 61439

| | | | |
|---|---|---|---|
| Technical data for design verification | | | |
| Static heat dissipation, non-current-dependent | $P_{vs}$ | W | 9.5 |
| Operating ambient temperature min. | | °C | 0 |
| Operating ambient temperature max. | | °C | 50 |
| 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 to enclosures without lifting aids. |
| 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. The specifications for the switchgear must be observed. |
| 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 8.0

| | | | |
|---|---|---|---|
| Programmable logic controllers PLC (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 | 20.4 - 28.8 |
| Voltage type of supply voltage | | | DC |
| Number of HW-interfaces industrial Ethernet | | | 1 |

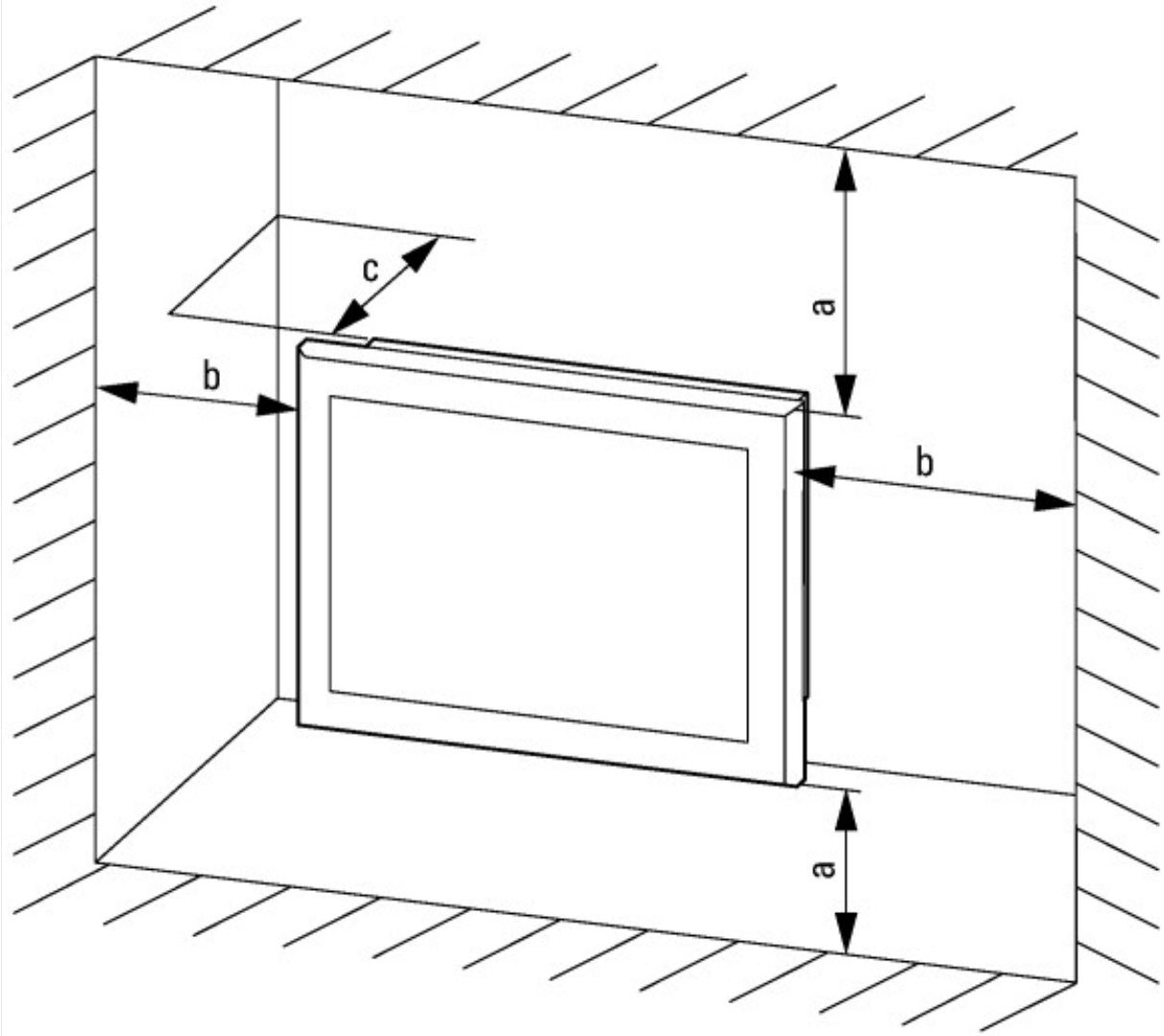
| | | |
|---|---|---|
| Number of interfaces PROFINET | | 0 |
| Number of HW-interfaces RS-232 | | 0 |
| Number of HW-interfaces RS-422 | | 0 |
| Number of HW-interfaces RS-485 | | 0 |
| Number of HW-interfaces serial TTY | | 0 |
| Number of HW-interfaces USB | | 1 |
| Number of HW-interfaces parallel | | 0 |
| Number of HW-interfaces Wireless | | 0 |
| Number of HW-interfaces other | | 0 |
| With SW interfaces | | Yes |
| Supporting protocol for TCP/IP | | No |
| Supporting protocol for PROFIBUS | | No |
| Supporting protocol for CAN | | No |
| Supporting protocol for INTERBUS | | No |
| Supporting protocol for ASI | | No |
| Supporting protocol for KNX | | No |
| Supporting protocol for Modbus | | No |
| 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 | | No |
| 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 Wi-Fi 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 | | 64000 |
| Number of grey-scales/blue-scales of display | | 0 |
| Screen diagonal | inch | 5.7 |
| 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 | | No |

| | | |
|---|---|---|
| Process default value (input) possible | | No |
| With recipes | | Yes |
| Number of password levels | | 200 |
| With printer output | | Yes |
| Number of online languages | | 100 |
| Additional software components, loadable | | No |
| Degree of protection (IP), front side | | IP65 |
| Degree of protection (NEMA), front side | | 4X |
| Operating temperature | °C | 0 - 50 |
| Rail mounting possible | | No |
| Wall mounting/direct mounting | | No |
| Suitable for safety functions | | No |
| Width of the front | mm | 170 |
| Height of the front | mm | 130 |
| Built-in depth | mm | 34 |

## Approvals

| | | |
|---|---|---|
| Product Standards | | UL 60950-01; CSA-C22.2 No. 60950-1; IEC/EN 61131-2; CE marking |
| UL File No. | | E208621 |
| UL Category Control No. | | NWGQ2 |
| CSA File No. | | UL 60950-01; CSA-C22.2 No. 60950-1; IEC/EN 61131-2; CE marking |
| CSA Class No. | | NWGQ8 |
| North America Certification | | UL recognized, certified by UL for use in Canada |
| Conditions of Acceptability | | The investigated Pollution Degree is: 2<br>The following end-product enclosures are required: Fire<br>The unit must be supplied via a SELV source.<br>The provided Ethernet Connection is only allowed to connect to inhouse networks. |
| Specially designed for North America | | No |
| Degree of Protection | | IEC: IP65, UL/CSA Type: - |

## Dimensions




a, b, c ≧ 30 mm, ϑ 0 ≦ T ≦ 50 °C

## Additional product information (links)

| | |
|---|---|
| **Instruction leaflet IL048007ZU XV-102** | |
| Instruction leaflet IL048007ZU XV-102 | https://es-assets.eaton.com/DOCUMENTATION/AWA_INSTRUCTIONS/IL048007ZU.pdf |
| **Instruction manual XV-102 MN04802004Z** | |
| Bedienungsanleitung XV-102 MN04802004Z - Deutsch | https://es-assets.eaton.com/DOCUMENTATION/AWB_MANUALS/MN04802004Z_DE.pdf |
| Instruction manual XV-102 MN04802004Z - English | https://es-assets.eaton.com/DOCUMENTATION/AWB_MANUALS/MN04802004Z_EN.pdf |
| **Quick-start manual XV100 MN04802013Z** | |
| Schnellstart-Handbuch XV100 MN04802013Z - Deutsch | https://es-assets.eaton.com/DOCUMENTATION/AWB_MANUALS/MN04802013Z_DE.pdf |
| Quick-start manual XV100 MN04802013Z - English | https://es-assets.eaton.com/DOCUMENTATION/AWB_MANUALS/MN04802013Z_EN.pdf |
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| f1=1454&f2=1242&f3=1773;Download Software GALILEO | http://applications.eaton.eu/sdlc?LX=11&amp |
| Product overview (WEB) | http://www.eaton.eu/xv |


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