



I/O expansion, For use with easyE4, 12/24 V DC, 24 V AC, Inputs expansion (number) digital: 4, screw terminal



**Part no.** EASY-E4-UC-8RE1  
**Catalog No.** 197217  
**EL-Nummer (Norway)** 4500550

**Delivery program**

|                            |  |  |
|----------------------------|--|--|
| Product range              |  | Control relays easyE4  |
| Subrange                   |  | easyE4 digital input/output enhancements   |
| Basic function             |  | easyE4 extensions  |
| Description                |  | Input/output extension for easyE4 control relay<br>Expandable with the easyE4 series of digital input/output expansions with easy-E4-CONNECT1 connector (Item Y7-197225)<br>Rated operating voltage 12V DC, 24V DC or 24V AC<br>4 digital inputs for 12 VDC, 24 VDC or 24 VAC<br>4 relay outputs for 12–250 VAC or 12–240 VDC<br>Screw terminals |
| <b>Inputs</b>              |  |  |
| Inputs expansion (number)  |  | digital: 4   |
| <b>Additional features</b> |  |  |
| Display                    |  | with diagnostic LED  |
| Software                   |  | EASYSOFT-SWLIC/easySoft 7  |
| Supply voltage             |  | 12/24 V DC<br>24 V AC  |
| For use with               |  | easyE4   |

**Technical data**

**General**

|                         |    |   |
|-------------------------|----|---|
| Standards               |    | EN 61000-6-2<br>EN 61000-6-3<br>IEC 60068-2-6<br>IEC 60068-2-27<br>IEC 60068-2-30<br>IEC/EN 61131-2<br>EN 61010<br>EN 50178 |
| Approvals               |    |   |
| Approvals certificate   |    | cULus<br>CE   |
| shipping classification |    | DNV GL  |
|                         |    |   |
| Dimensions (W x H x D)  | mm | 35.5 x 90 x 58  |
| Weight                  | kg | 0.125   |
| Mounting                |    | Top-hat rail IEC/EN 60715, 35 mm or screw fixing using fixing brackets ZB4-101-GF1 (accessories)                            |
| Connection type         |    | Push-in terminals   |

**Terminal capacities**

|   |                 |           |
|---|-----------------|-----------|
| <b>Screw terminals</b>                    |                 |           |
| Solid                                     | mm <sup>2</sup> | 0.2 - 4   |
| flexible                                  | mm <sup>2</sup> | 0.2 - 2.5 |
| Solid or flexible conductor, with ferrule | mm <sup>2</sup> | 0,2 - 2,5 |
| Solid or stranded                         | AWG             | 22 - 12   |
| Standard screwdriver                      | mm              | 0.8 x 3.5 |
| Tightening torque                         | Nm              | 0.5 - 0.7 |
| Stripping length                          | mm              | 6.5       |

## Climatic environmental conditions

|                               |   |     |   |
|-------------------------------|---|-----|---|
| Operating ambient temperature |   | °C  | -25 to 55, cold as per IEC 60068-2-1, heat as per IEC 60068-2-2 |
| Condensation                  |   |     | Take appropriate measures to prevent condensation               |
| Storage                       | θ | °C  | -40 - +70   |
| relative humidity             |   | %   | in accordance with IEC 60068-2-30, IEC 60068-2-78<br>5 - 95     |
| Air pressure (operation)      |   | hPa | 795 - 1080  |

## Ambient conditions, mechanical

|  |             |         |  |
|--|-------------|---------|--|
| Protection type (IEC/EN 60529, EN50178, VBG 4)                             |             |         | IP20   |
| Vibrations   |             | Hz      | In accordance with IEC 60068-2-6<br>constant amplitude 0.15 mm: 10 - 57<br>constant acceleration 2 g: 57 - 150 |
| Mechanical shock resistance (IEC/EN 60068-2-27) semi-sinusoidal 15 g/11 ms |             | Impacts | 18   |
| Drop to IEC/EN 60068-2-31  | Drop height | mm      | 50   |
| Free fall, packaged (IEC/EN 60068-2-32)                                    |             | m       | 0.3  |
| Mounting position  |             |         | Vertical or horizontal   |

## Electromagnetic compatibility (EMC)

|   |  |     |  |
|---|--|-----|--|
| Overvoltage category/pollution degree                         |  |     | III/2  |
| Electrostatic discharge (ESD)                                 |  |     |  |
| applied standard  |  |     | nach IEC/EN 61000-4-2  |
| Air discharge   |  | kV  | 8  |
| Contact discharge   |  | kV  | 6  |
| Electromagnetic fields (RFI) to IEC EN 61000-4-3              |  | V/m | 0.08 - 1.0 GHz: 10<br>1.4 - 2 GHz: 3<br>2.0 - 2.7 GHz: 1   |
| Radio interference suppression                                |  |     | EN 61000-6-3 Class B   |
| Burst   |  | kV  | according to IEC/EN 61000-4-4<br>Supply cables: 2<br>Signal cables: 2                                    |
| power pulses (Surge)  |  |     | according to IEC/EN 61000-4-5<br>1 kV (supply cables, symmetrical)<br>2 kV (supply cables, asymmetrical) |
| Immunity to line-conducted interference to (IEC/EN 61000-4-6) |  | V   | 10   |

## Insulation resistance

|   |  |  |   |
|---|--|--|---|
| Clearance in air and creepage distances |  |  | nach EN 50178, EN 61010-2-201, UL61010-2-201, CSA-C22.2 NO. 61010-2-201               |
| Insulation resistance                   |  |  | in accordance with EN 50178, EN 61010-2-201, UL61010-2-201, CSA-C22.2 NO. 61010-2-201 |

## Power supply

|                                      |                |    |   |
|--------------------------------------|----------------|----|---|
| Rated operational voltage            | U <sub>e</sub> | V  | 12/24 DC (-15/+20%)<br>24 AC (-15/+10%)                   |
| Permissible range                    | U <sub>e</sub> |    | 10.2 - 28.8 V DC<br>20.4 - 26.4 V AC                      |
| Residual ripple                      |                | %  | ≤ 5   |
| Protection against polarity reversal |                |    | yes   |
| Frequency                            |                | Hz | 50/60 (± 5%)  |
| Input current                        |                |    | max. 150 mA at 12 V DC<br>max. 80 mA at 24 V DC           |
| Voltage dips                         |                | ms | ≤ 20 ms at 24 V AC<br>10 ms at 24 V DC<br>1 ms at 12 V DC |
| Fuse                                 |                | A  | ≥ 1A (T)  |
| Power loss                           | P              | W  | Normally 2  |
| Heat dissipation at 24 V DC          |                | W  | 2   |

## Digital inputs 12 V DC

|                           |                |      |  |
|---------------------------|----------------|------|--|
| Number                    |                |      | 4  |
| Potential isolation       |                |      | from power supply: no<br>between inputs: no<br>from the outputs: yes<br>to base unit: yes<br>to expansion devices: yes |
| Rated operational voltage | U <sub>e</sub> | V DC | 12   |
| Input voltage             |                | V DC | Status 0: ≤ 5 (I1 - I4)<br>Condition 1: ≥ 8 (I1 - I4)  |
| Input current at signal 1 |                | mA   | 1.75 mA (I1 - I4)  |
| Deceleration time         |                | ms   | type 0.2 (0 -> 1)  |

|              |   |  |                    |
|--------------|---|--|--------------------|
| Cable length |   |  | type 0.15 (1 -> 0) |
|              | m |  | 100 (unshielded)   |

### Digital inputs 24 V DC

|                           |       |      |  |
|---------------------------|-------|------|--|
| Number                    |       |      | 4  |
| Potential isolation       |       |      | from power supply: no<br>between inputs: no<br>from the outputs: yes<br>to base unit: yes<br>to expansion devices: yes |
| Rated operational voltage | $U_e$ | V DC | 24   |
| Input voltage             |       | V DC | Signal 0: $\leq 5$ (I1 - I4)<br>Signal 1: $\geq 15$ (I1 - I4)  |
| Input current at signal 1 |       | mA   | 3.3 (I1 - I4)  |
| Deceleration time         |       | ms   | type 0.1 (0 -> 1)<br>type 0.2 (1 -> 0)   |
| Cable length              | m     |      | 100 (unshielded)   |

### Digital inputs 24 V AC

|                                 |       |      |  |
|---------------------------------|-------|------|--|
| Number                          |       |      | 4  |
| Potential isolation             |       |      | from power supply: no<br>between inputs: no<br>from the outputs: yes<br>to base unit: yes<br>to expansion devices: yes |
| Rated operational voltage       | $U_e$ | V AC | 24   |
| Input voltage (AC = sinusoidal) | $U_e$ | V    | Status 0: $\leq 5$ (I1 - I8)<br>Condition 1: $\geq 14$ (I1 - I4)   |
| Rated frequency                 |       | Hz   | 50/60  |
| Input current at signal 1       |       | mA   | I1 - I4: 3.5 (at 24 VAC/DC)  |
| Deceleration time               |       | ms   | type 25/21 (0 -> 1/1 -> 0, 50/60Hz)  |
| Cable length                    | m     |      | 40 (unshielded)  |

### Relay outputs

|   |            |      |  |
|---|------------|------|--|
| Number  |            |      | 4  |
| Outputs in groups of  |            |      | 1  |
| Parallel switching of outputs for increased output                        |            |      | Not permitted  |
| Protection of an output relay   |            |      | B16 circuit breaker or 8 A (T) fuse  |
| Potential isolation   |            |      | Safe isolation according to EN 50178: 300 V AC<br>Basic isolation: 600 V AC<br>from power supply: yes<br>From the inputs: yes<br>between outputs: yes<br>to expansion devices: yes |
| Contacts  |            |      |  |
| Conventional thermal current (10 A UL)                                    |            | A    | 5  |
| Recommended for load: 12 V AC/DC  |            | mA   | > 500  |
| Rated impulse withstand voltage $U_{imp}$ of contact coil                 |            | kV   | 6  |
| Rated operational voltage   | $U_e$      | V AC | 240  |
| Rated insulation voltage  | $U_i$      | V AC | 240  |
| Safe isolation according to EN 50178                                      |            | V AC | 300 between coil and contact<br>300 between two contacts   |
| Making capacity   |            |      |  |
| AC--15, 250 V AC, 3 A (600 ops./h)  | Operations |      | 300000   |
| DC-13, L/R $\leq 150$ ms, 24 V DC, 1 A (500 S/h)                          | Operations |      | 200000   |
| Breaking capacity   |            |      |  |
| AC-15, 250 V AC, 3 A (600 Ops./h)   | Operations |      | 300000   |
| DC-13, L/R $\leq 150$ ms, 24 V DC, 1 A (500 S/h)                          | Operations |      | 200000   |
| Filament bulb load  |            |      |  |
| 1000 W at 230/240 V AC  | Operations |      | 25000  |
| 500 W at 115/120 V AC   | Operations |      | 25000  |
| Fluorescent lamp load   |            |      |  |
| Fluorescent lamp load 10 x 58 W at 230/240 V AC                           |            |      |  |
| With upstream electrical device   | Operations |      | 25000  |
| Uncompensated   | Operations |      | 25000  |
| Fluorescent lamp load 1 x 58 W at 230/240 V AC, conventional, compensated | Operations |      | 25000  |

|   |                   |                        |
|---|-------------------|------------------------|
| Switching frequency                                 |                   |                        |
| Mechanical operations                               | x 10 <sup>6</sup> | 10                     |
| Switching frequency                                 | Hz                | 10                     |
| Resistive load/lamp load                            | Hz                | 2                      |
| Inductive load                                      | Hz                | 0.5                    |
| UL/CSA  |                   |                        |
| Uninterrupted current at 240 V AC                   | A                 | 5                      |
| Uninterrupted current at 24 V DC                    | A                 | 5                      |
| AC  |                   |                        |
| Control Circuit Rating Codes (utilization category) |                   | B 300 Light Pilot Duty |
| Max. rated operational voltage                      | V AC              | 300                    |
| max. thermal continuous current cos φ = 1 at B 300  | A                 | 5                      |
| max. make/break cos φ ≠ capacity 1 at B 300         | VA                | 3600/360               |
| DC  |                   |                        |
| Control Circuit Rating Codes (utilization category) |                   | R 300 Light Pilot Duty |
| Max. rated operational voltage                      | V DC              | 300                    |
| Max. thermal uninterrupted current at R 300         | A                 | 1                      |
| Max. make/break capacity at R 300                   | VA                | 28/28                  |

## Design verification as per IEC/EN 61439

|  |                 |    |  |
|--|-----------------|----|--|
| Technical data for design verification   |                 |    |  |
| Static heat dissipation, non-current-dependent   | P <sub>vs</sub> | W  | 2  |
| Operating ambient temperature min.   |                 | °C | -25  |
| Operating ambient temperature max.   |                 | °C | 55   |
| 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   |                 |    | Meets the product standard's requirements.   |
| 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 8.0

|  |   |          |
|--|---|----------|
| Programmable logic controllers PLC (EG000024) / Logic module (EC001417)  |   |          |
| Electric engineering, automation, process control engineering / Control / Programmable logic control (SPS) / Logic module (ecl@ss10.0.1-27-24-22-16 [AKE539014]) |   |          |
| Supply voltage AC 50 Hz  | V | 85 - 264 |

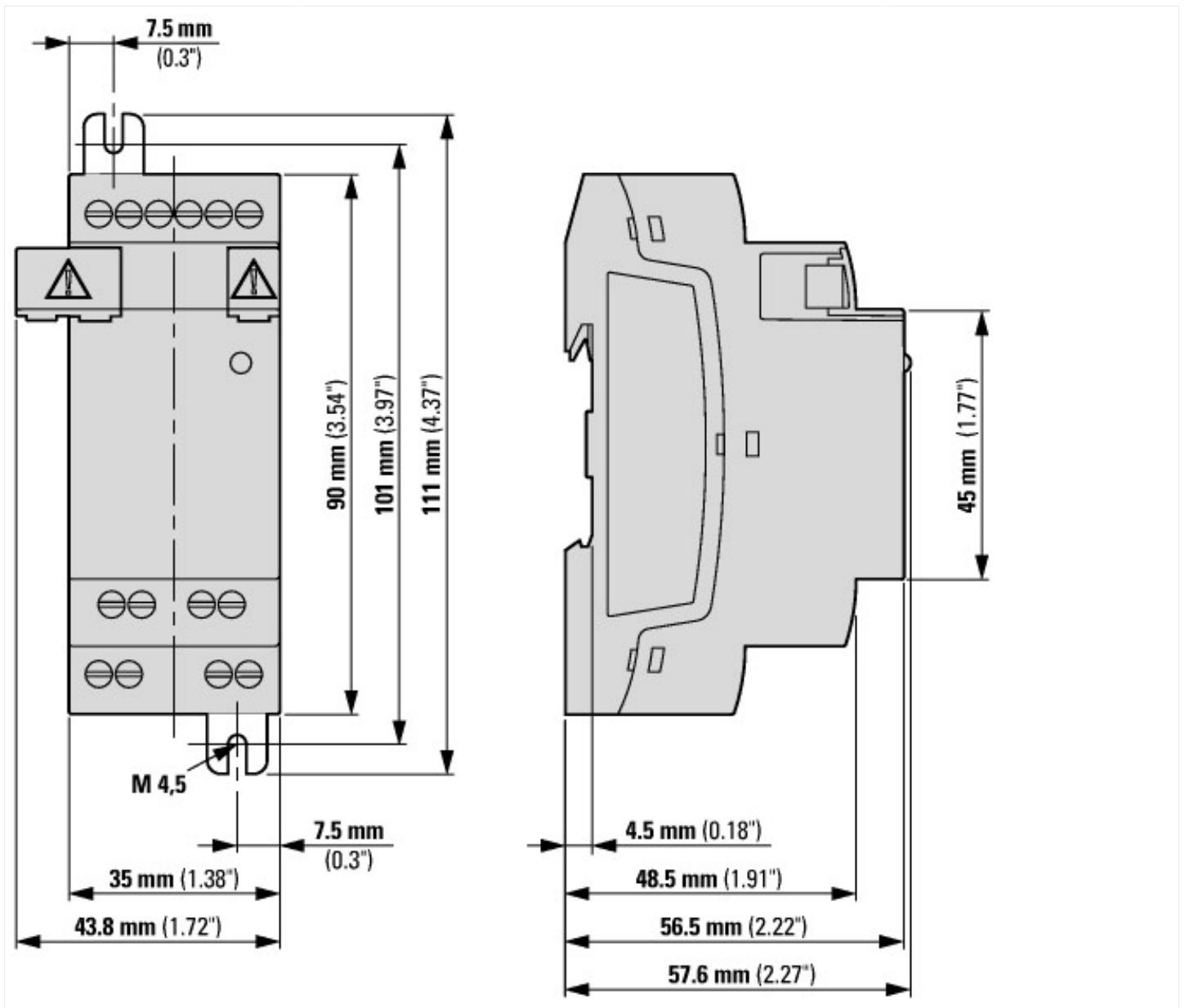
|   |   |             |
|---|---|-------------|
| Supply voltage AC 60 Hz                             | V | 85 - 264    |
| Supply voltage DC                                   | V | 10.2 - 28.8 |
| Voltage type of supply voltage                      |   | AC/DC       |
| Switching current                                   | A | 5           |
| Number of analogue inputs                           |   | 0           |
| Number of analogue outputs                          |   | 0           |
| Number of digital inputs                            |   | 4           |
| Number of digital outputs                           |   | 4           |
| With relay output                                   |   | Yes         |
| Number of HW-interfaces industrial Ethernet         |   | 0           |
| 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                         |   | 0           |
| Number of HW-interfaces parallel                    |   | 0           |
| Number of HW-interfaces Wireless                    |   | 0           |
| Number of HW-interfaces other                       |   | 0           |
| With optical interface                              |   | No          |
| Supporting protocol for TCP/IP                      |   | Yes         |
| 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                      |   | 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                 |   | 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          |
| Redundancy  |   | No          |
| With display  |   | No          |
| Degree of protection (IP)                           |   | IP20        |
| Basic device  |   | No          |
| Expandable  |   | Yes         |
| Expansion device                                    |   | Yes         |
| With time switch clock                              |   | No          |

|   |    |      |
|---|----|------|
| Rail mounting possible                        |    | Yes  |
| Wall mounting/direct mounting                 |    | Yes  |
| Front built-in possible                       |    | Yes  |
| Rack-assembly possible                        |    | No   |
| Suitable for safety functions                 |    | No   |
| SIL according to IEC 61508                    |    | None |
| Performance level according to EN ISO 13849-1 |    | None |
| Appendant operation agent (Ex ia)             |    | No   |
| Appendant operation agent (Ex ib)             |    | No   |
| Explosion safety category for gas             |    | None |
| Explosion safety category for dust            |    | None |
| Width   | mm | 36   |
| Height  | mm | 90   |
| Depth   | mm | 58   |

## Approvals

|                             |  |                           |
|-----------------------------|--|---------------------------|
| UL File No.                 |  | E205091                   |
| UL Category Control No.     |  | NRAQ/7                    |
| North America Certification |  | UL listed                 |
| Degree of Protection        |  | IEC: IP20, UL/CSA Type: - |

## Dimensions



## Additional product information (links)

|   |   |
|---|---|
| <b>assembly instructions easyE4 IL050021ZU</b>        |   |
| assembly instructions easyE4 IL050021ZU               | <a href="https://es-assets.eaton.com/DOCUMENTATION/AWA_INSTRUCTIONS/IL050021ZU.pdf">https://es-assets.eaton.com/DOCUMENTATION/AWA_INSTRUCTIONS/IL050021ZU.pdf</a>     |
| <b>easyE4 (MN050009) manual</b>                       |   |
| easyE4 – Handbuch (MN050009) - Deutsch                | <a href="https://es-assets.eaton.com/DOCUMENTATION/AWB_MANUALS/MN050009_DE.pdf">https://es-assets.eaton.com/DOCUMENTATION/AWB_MANUALS/MN050009_DE.pdf</a>             |
| easyE4 (MN050009) manual - English                    | <a href="https://es-assets.eaton.com/DOCUMENTATION/AWB_MANUALS/MN050009_EN.pdf">https://es-assets.eaton.com/DOCUMENTATION/AWB_MANUALS/MN050009_EN.pdf</a>             |
| manuel easyE4 (MN050009) - français                   | <a href="https://es-assets.eaton.com/DOCUMENTATION/AWB_MANUALS/MN050009_FR.pdf">https://es-assets.eaton.com/DOCUMENTATION/AWB_MANUALS/MN050009_FR.pdf</a>             |
| Manuale easy E4 (MN050009) - italiano                 | <a href="https://es-assets.eaton.com/DOCUMENTATION/AWB_MANUALS/MN050009_IT.pdf">https://es-assets.eaton.com/DOCUMENTATION/AWB_MANUALS/MN050009_IT.pdf</a>             |
| instrukcja easyE4 (MN050009) - polski                 | <a href="https://es-assets.eaton.com/DOCUMENTATION/AWB_MANUALS/MN050009_PL.pdf">https://es-assets.eaton.com/DOCUMENTATION/AWB_MANUALS/MN050009_PL.pdf</a>             |
| f1=1454&f2=1174&f3=1755;Download Software easySoft V7 | <a href="http://applications.eaton.eu/sdlc?LX=11&amp;f1=1454&amp;f2=1174&amp;f3=1755">http://applications.eaton.eu/sdlc?LX=11&amp;f1=1454&amp;f2=1174&amp;f3=1755</a> |
| Product overview (WEB)                                | <a href="http://www.eaton.eu/easyE4">http://www.eaton.eu/easyE4</a>   |