



I/O expansion, For use with easyE4, 100 - 240 V AC, 110 - 220 V DC (cULus: 100-110 V DC), Inputs expansion (number) digital: 4, screw terminal



Part no. **EASY-E4-AC-8RE1**  
 Catalog No. **197221**

### 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 100 to 240 VAC or 100 to 240 VDC (cULus: 100 to 110 VDC)<br>Digital inputs: 4<br>Digital outputs: 4 relays<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             |  | 100 - 240 V AC, 100 - 240 V DC (cULus: 100 - 110 V DC)  |
| 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 61131-2<br>EN 61010<br>EN 50178 |
| Approvals              |    |  |
| Approvals certificate  |    | cULus<br>CE  |
| Dimensions (W x H x D) | mm | 35.5 x 90 x 58   |
| Weight                 | kg | 0.129  |
| Mounting               |    | Top-hat rail IEC/EN 60715, 35 mm or screw fixing using fixing brackets ZB4-101-GF1 (accessories)                         |
| Connection type        |    | screw terminal   |

#### Terminal capacities

|   |                 |           |
|---|-----------------|-----------|
| Screw terminals                           |                 |           |
| 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  |  |     | according to IEC EN 61000-4-2  |
| Air discharge   |  | kV  | 8  |
| Contact discharge   |  | kV  | 6  |
| Electromagnetic fields (RFI) to IEC EN 61000-4-3              |  | V/m | 0.8 - 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 | $U_e$ | V  | 100 - 240V DC (-15/+10%)<br>100 - 240 DC (cULus: 100 - 110 DC) (-15/+10%) |
| Permissible range         | $U_e$ |    | 85 - 264 V AC<br>85 - 264 V DC (cULus: 85 - 120 V DC)                     |
| Residual ripple           |       | %  | ≤ 5   |
| Siemens MPI, (optional)   |       |    | yes   |
| Frequency                 |       | Hz | 50/60 (± 5%)  |
| Voltage dips              |       | ms | ≤ 20 ms at 100V AC<br>10 ms at 100V DC                                    |
| Fuse                      |       | A  | ≥ 1A (T)  |
| Power loss                | P     | W  | Normally 8  |

## Digital inputs 115/230 V AC

|                           |       |    |   |
|---------------------------|-------|----|---|
| Number                    |       |    | 4   |
| Potential isolation       |       |    | from power supply: no<br>between inputs: no<br>from the outputs: yes<br>to the base unit: yes<br>to the expansion units: yes                    |
| Rated operational voltage | $U_e$ | V  | 100 - 240 V AC<br>100 - 240 V DC (cULus: 100 - 110 V DC)  |
| Input voltage             | $U_e$ | V  | Condition 0: 0 - 40V AC/DC<br>Condition 1: 79–264 V AC/DC (cULus: 79–264 V AC/79–120 V DC)  |
| Rated frequency           |       | Hz | 50/60   |
| Input current at signal 1 |       | mA | I1 - I4: 4 x 0.25 (at 115 V AC, 60 Hz)<br>I1 - I4: 4 x 0.5 (at 230V AC, 50 Hz)<br>I1–I4: 4 x 0.25 (at 115 VDC)<br>I1 - I4: 4 x 0.5 (at 230V DC) |
| Deceleration time         |       | ms | type 25/21 (0 - > 1/1 -> 0, 50/60Hz) for AC<br>type 0.5 (0 - > 1/1 -> 0) in DC  |
| 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   |            | $\times 10^6$ | 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 $\cos \varphi = 1$ at B 300               |            | A             | 5  |
| max. make/break $\cos \varphi \neq$ 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  |

### Supply voltage $U_{Aux}$

|            |   |   |   |
|------------|---|---|---|
| Power loss | P | W | 8 |
|------------|---|---|---|

## Design verification as per IEC/EN 61439

|  |          |                    |  |
|--|----------|--------------------|--|
| Technical data for design verification         |          |                    |  |
| Static heat dissipation, non-current-dependent | $P_{vs}$ | W                  | 8  |
| Operating ambient temperature min.             |          | $^{\circ}\text{C}$ | -25  |
| Operating ambient temperature max.             |          | $^{\circ}\text{C}$ | 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 7.0

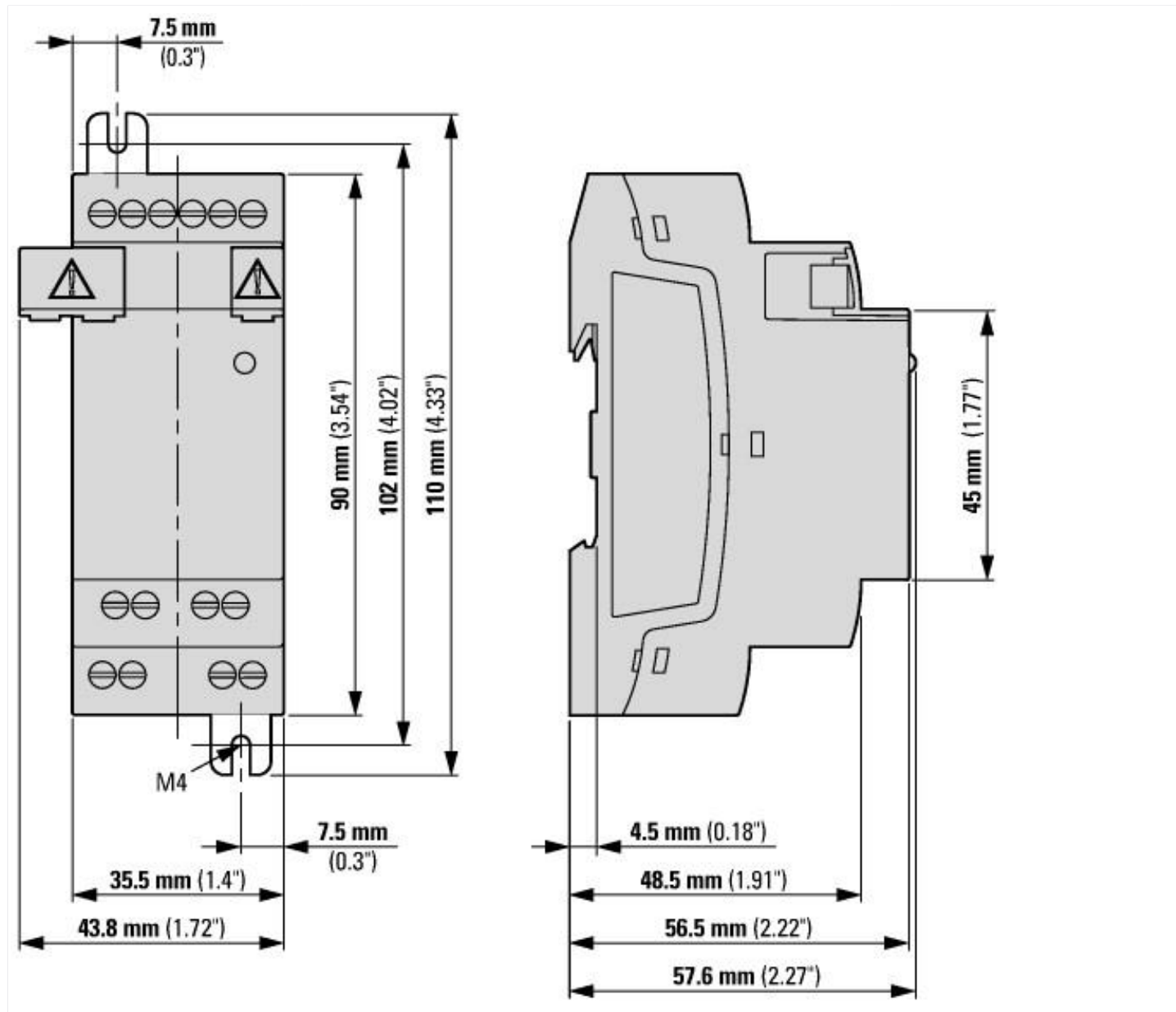
|  |   |          |
|--|---|----------|
| PLC's (EG000024) / Logic module (EC001417)   |   |          |
| Electric engineering, automation, process control engineering / Control / Programmable logic control (SPS) / Logic module (ecl@ss10.0.1-27-24-22-16 [AKE539014]) |   |          |
| Supply voltage AC 50 Hz  | V | 85 - 264 |
| Supply voltage AC 60 Hz  | V | 85 - 264 |
| Supply voltage DC  | V | 85 - 264 |
| 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  |   | 2        |
| With optical interface   |   | No       |
| 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 WLAN 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 timer  |  |    | No   |
| Rail mounting possible                              |  |    | Yes  |
| Wall mounting/direct mounting                       |  |    | Yes  |
| Front build in possible                             |  |    | No   |
| Rack-assembly possible                              |  |    | No   |
| Suitable for safety functions                       |  |    | No   |
| Category according to EN 954-1                      |  |    | None |
| SIL according to IEC 61508                          |  |    | None |
| Performance level acc. 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 | 35.5 |
| 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



## Assets (links)

### Declaration of CE Conformity

00003235

### Instruction Leaflets

IL050021ZU2019\_02

### Manuals

MN050009\_EN (English)

## Additional product information (links)

### assembly instructions easyE4 IL050021ZU

assembly instructions easyE4 IL050021ZU [ftp://ftp.moeller.net/DOCUMENTATION/AWA\\_INSTRUCTIONS/IL050021ZU.pdf](ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL050021ZU.pdf)

### easyE4 (MN050009) manual

easyE4 – Handbuch (MN050009) - Deutsch [ftp://ftp.moeller.net/DOCUMENTATION/AWB\\_MANUALS/MN050009\\_DE.pdf](ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN050009_DE.pdf)

easyE4 (MN050009) manual - English [ftp://ftp.moeller.net/DOCUMENTATION/AWB\\_MANUALS/MN050009\\_EN.pdf](ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN050009_EN.pdf)

Manuale easy E4 (MN050009) - italiano [ftp://ftp.moeller.net/DOCUMENTATION/AWB\\_MANUALS/MN050009\\_IT.pdf](ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN050009_IT.pdf)

instrukcja easyE4 (MN050009) - polski [ftp://ftp.moeller.net/DOCUMENTATION/AWB\\_MANUALS/MN050009\\_PL.pdf](ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN050009_PL.pdf)

f1=1454&f2=1174&f3=1755;Download Software easySoft V7 <http://applications.eaton.eu/sdlc?LX=11&mp>

Product overview (WEB) <http://www.eaton.eu/easyE4>