# Specifications






## Eaton 197218

Eaton Moeller® series EASY I/O expansion, For use with easyE4, 12/24 V DC, 24 V AC, Inputs expansion (number) digital: 8, screw terminal

### General specifications

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|---|---|
| **PRODUCT NAME** | Eaton Moeller® series EASY I/O expansion |
| **CATALOG NUMBER** | 197218 |
| **MODEL CODE** | EASY-E4-UC-16RE1 |
| **EAN** | 4015080892793 |
| **PRODUCT LENGTH/DEPTH** | 58 mm |
| **PRODUCT HEIGHT** | 90 mm |
| **PRODUCT WIDTH** | 72 mm |
| **PRODUCT WEIGHT** | 0.25 kg |
| **CERTIFICATIONS** | UL File No.: E205091<br>CE<br>UL hazardous location class I<br>UL hazardous location group B (hydrogen)<br>UL hazardous location division 2<br>UL hazardous location group D (propane)<br>UL hazardous location group A (acetylene)<br>UL hazardous location group C (ethylene)<br>cULus Ordinary Location<br>DNV<br>TAA00002HT<br>cULus Hazard Location<br>UL File No.: E523283<br>EN 61131-2<br>IEC 61131-2<br>EN IEC 61000-6-3<br>IEC 61000-6-3<br>EN IEC 61010-2-201<br>IEC 61010-2-201<br>UL 61010-1<br>UL 61010-2-201<br>CSA C22.2 No. 61010-1<br>CSA C22.2 No. 61010-2-201 |

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| | UL 121201<br>CSA C22.2 No. 213 |
| **CATALOG NOTES** | fitted with two controlled relays |

## Ambient conditions, mechanical

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| **DROP AND TOPPLE** | 50 mm Drop height, Drop to IEC/EN 60068-2-31 |
| **HEIGHT OF FALL (IEC/EN 60068-2-32) - MAX** | 0.3 m |
| **MOUNTING POSITION** | Vertical<br>Horizontal |
| **SHOCK RESISTANCE** | 15 g, Mechanical, acc. to IEC/EN61131-2, Half-sinusoidal shock 11 ms, 18 Impacts |
| **VIBRATION RESISTANCE** | 8.4 - 150 Hz, 1 g constant acceleration<br>5 - 8.4 Hz, 3.5 mm constant amplitude<br>According to IEC/EN 61131-2 |

## Cable

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| **CABLE LENGTH** | Digital inputs (DC): ≤ 100 m (unshielded)<br>Digital inputs (AC): ≤ 40 m (unshielded) |

## Climatic environmental conditions

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| **AIR PRESSURE** | 795 - 1080 hPa (operation) |
| **AMBIENT OPERATING TEMPERATURE - MAX** | 55 °C |
| **AMBIENT STORAGE TEMPERATURE - MAX** | 70 °C |
| **AMBIENT OPERATING TEMPERATURE - MIN** | -25 °C |
| **AMBIENT STORAGE TEMPERATURE - MIN** | -40 °C |
| **ENVIRONMENTAL CONDITIONS** | Clearance in air and creepage distances according to EN 50178, EN 61010-2-201, UL61010-2-201, CSA-C22.2 NO. 61010-2-201<br>Condensation: prevent with appropriate measures |
| **RELATIVE HUMIDITY** | 5 - 95 % (IEC 60068-2-30, IEC 60068-2-78) |

## Communication

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| **CONNECTION TYPE** | Screw terminal |
| **LED INDICATOR** | Status indication of Power/RUN |

## Design verification

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| **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. |
| **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 RESIST. OF INSUL. MAT. TO ABNORMAL HEAT/FIRE BY INTERNAL ELECT. 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. |

## Electrical rating

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| **POWER CONSUMPTION** | 3 W |
| **POWER LOSS** | 10 VA |
| **RATED BREAKING CAPACITY** | 300000 Operations at AC-15, 250 V AC, 3 A (600 Ops./h)<br>200000 Operations at DC-13, L/R □ 150 ms, 24 V DC, 1 A (500 Ops./h) |
| **RATED OPERATIONAL VOLTAGE** | Power supply: 24 V DC (-15 %/+ 20 %)<br>Power supply: 24 V AC (-15 %/+ 10 %)<br>Power supply: 12 V DC (-15 %/+ 20 %)<br>Relay outputs: max. 300 V AC/DC<br>Inputs: shall be identical to the power supply voltage |
| **SUPPLY FREQUENCY** | 50/60 Hz (± 5%) |
| **SUPPLY VOLTAGE AT AC, 50 HZ - MAX** | 26.4 VAC |
| **SUPPLY VOLTAGE AT AC, 50 HZ - MIN** | 20.4 VAC |
| **SUPPLY VOLTAGE AT DC - MAX** | 28.8 VDC |
| **SUPPLY VOLTAGE AT DC - MIN** | 10.2 VDC |
| **UNINTERRUPTED CURRENT** | 1 A DC, at R 300 (UL/CSA)<br>10 A AC, at 240 V AC (UL/CSA)<br>8 A DC, at 24 V DC (UL/CSA)<br>5 A AC, max. thermal continuous current cos ϕ = 1 at B 300 (UL/CSA) |

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| **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. |
| **10.9.2 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. |
| **EQUIPMENT HEAT DISSIPATION, CURRENT-DEPENDENT PVID** | 2 W |
| **HEAT DISSIPATION CAPACITY PDISS** | 0 W |
| **HEAT DISSIPATION PER POLE, CURRENT-DEPENDENT PVID** | 0 W |
| **STATIC HEAT DISSIPATION, NON-CURRENT-DEPENDENT PVS** | 3 W |

## Electro magnetic compatibility

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| **AIR DISCHARGE** | 8 kV |
| **BURST IMPULSE** | 2 kV, I/O port<br>2 kV, Power supply port<br>According to IEC/EN 61131-2 |
| **CONTACT DISCHARGE** | 6 kV |
| **ELECTROMAGNETIC FIELDS** | 10 V/m at 0.08 - 1.0 GHz (according to IEC/EN 61131-2)<br>3 V/m at 1.0 - 6 GHz (according to IEC/EN 61131-2) |
| **IMMUNITY TO LINE-CONDUCTED INTERFERENCE** | 10 V (according to IEC/EN 61131-2) |
| **RADIO INTERFERENCE CLASS** | Class B (EN 61000-6-3) |
| **SURGE RATING** | 1 kV, Line-to-Line, Power supply port<br>2 kV, Line-to-Earth, Power supply port<br>According to IEC/EN 61131-2 |
| **VOLTAGE DIPS** | 1 ms 12 V DC<br>10 ms at 24 V DC<br>20 ms at 24 V AC |

## Features & functions

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| **FEATURES** | Expansion device<br>Expandable |
| **FITTED WITH:** | Relay output |
| **INDICATION** | Software used as status indication of digital I/Os |

## General information

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| **DEGREE OF PROTECTION** | IP20 |
| **DUTY FACTOR** | 100 % |
| **INPUT FREQUENCY** | 50/60 Hz (Digital inputs at AC) |
| **INSULATION RESISTANCE** | According to EN IEC 61010-2-201, UL61010-2-201, CSA-C22.2 NO. 61010-2-227 |
| **LIFESPAN, ELECTRICAL** | 25,000 Operations (Filament bulb load at 500 W, 115/120 V AC)<br>25,000 Operations (Filament bulb load at 1000 W, 230/240 V AC)<br>25,000 Operations (Fluorescent lamp load 10 x 58 W at 230/240 V AC, with upstream electrical device)<br>25,000 Operations (Fluorescent lamp load 10 x 58 W at 230/240 V AC, uncompensated)<br>25,000 Operations (Fluorescent lamp load 1 x 58 W at 230/240 V AC, conventional, compensated) |
| **LIFESPAN, MECHANICAL** | 10,000,000 Operations |
| **MOUNTING METHOD** | Top-hat rail fixing (according to IEC/EN 60715, 35 mm)<br>Wall mounting/direct mounting<br>Screw fixing using fixing brackets ZB4-101-GF1 (accessories)<br>Front build in possible<br>Rail mounting possible |
| **OVERVOLTAGE CATEGORY** | Power supply + Inputs + Right extension interface: II<br>Relay outputs: III<br>Left extension interface: III |
| **POLLUTION DEGREE** | 2 |
| **PRODUCT CATEGORY** | Control relays easyE4 |
| **PROTECTION** | B16 circuit breaker or 8 A (T) fuse, Protection of an Output relay |
| **RATED IMPULSE WITHSTAND VOLTAGE (UIMP)** | Relay outputs: 6 kV (contact-coil) |
| **RESIDUAL RIPPLE** | Power supply: ≤ 5 % |

## Input/Output

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| **DELAY TIME** | Digital inputs (12 V DC): 0.2 ms typ., from 0 to 1<br>Digital inputs (12 V DC): 0.15 ms typ., from 1 to 0<br>Digital inputs (24 V DC): 0.1 ms typ., from 0 to 1<br>Digital inputs (24 V DC): 0.2 ms typ., from 1 to 0<br>Digital inputs (24 V AC 50 Hz): 25 ms typ., from 0 to 1<br>Digital inputs (24 V AC 50 Hz): 25 ms typ., from 1 to 0<br>Digital inputs (24 V AC 60 Hz): 21 ms typ., from 0 to 1<br>Digital inputs (24 V AC 60 Hz): 21 ms typ., from 1 to 0 |
| **INPUT CURRENT** | 3.3 mA (I1 - I8, at 24 V DC,at signal 1)<br>1.75 mA (I1 - I8, at 12 V DC,at signal 1)<br>3.5 mA (I1 - I8, at 24 V AC,at signal 1) |
| **INPUT VOLTAGE** | Condition 0: ≤ 5 V DC (Digital inputs, 12 V DC)<br>Condition 0: ≤ 5 V DC (Digital inputs, 24 V DC)<br>Condition 1: ≥ 15 V DC (Digital inputs, 24 V DC)<br>Condition 1: ≥ 8 V DC (Digital inputs, 12 V DC)<br>Condition 0: ≤ 5 V AC (Digital inputs, 24 V AC)<br>Condition 1: ≥ 15 V AC (Digital inputs, 24 V AC) |
| **MAKING/BREAKING CAPACITY** | 3600/360 VA (AC, at B 300)<br>28/28 VA (DC, at R 300) |
| **NUMBER OF INPUTS (ANALOG)** | 0 |
| **NUMBER OF INPUTS (DIGITAL)** | 8 |
| **NUMBER OF OUTPUTS (ANALOG)** | 0 |
| **NUMBER OF OUTPUTS (DIGITAL)** | 8 |
| **OUTPUT** | 8 Relay Outputs<br>min. recommended load: 12 V AC/DC > 500 mA |
| **PARALLEL SWITCHING** | Not permitted |

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| **SOFTWARE** | EASYSOFT-SWLIC/easySoft |
| **SWITCHING FREQUENCY** | 10 Hz, Relay outputs<br>0.5 Hz, Inductive load, Relay outputs<br>2 Hz, Resistive load/lamp load, Relay outputs |
| **TYPE** | easyE4 extension |
| **USED WITH** | easyE4 |
| **UTILIZATION CATEGORY** | B 300 Light Pilot Duty, UL/CSA Control Circuit Rating Codes AC<br>R 300 Light Pilot Duty, UL/CSA Control Circuit Rating Codes DC |
| **VOLTAGE TYPE** | AC/DC |

## Safety

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| **EXPLOSION SAFETY CATEGORY FOR DUST** | None |
| **EXPLOSION SAFETY CATEGORY FOR GAS** | None |
| **POTENTIAL ISOLATION** | Power supply + Inputs + right Extension interface against Outputs: yes<br>POW+Inputs+right Extension interface vs. left Extension interface: yes<br>Outputs against left Extension interface: yes<br>Outputs against each other: yes |
| **PROTECTION AGAINST POLARITY REVERSAL** | Yes |
| **SAFE ISOLATION** | Relay outputs: 300 V AC, Between two contacts<br>Relay outputs: 300 V AC, Between coil and contact |

## Short-circuit rating

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| **SHORT-CIRCUIT PROTECTION** | ≥ 1A (T), Fuse, Power supply |

## Terminal capacities

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| **SCREWDRIVER SIZE** | 3.5 x 0.6 mm, Terminal screw |
| **TERMINAL CAPACITY** | 0.2 - 4 mm² (AWG 22 - 12), solid<br>0.2 - 2.5 mm², flexible with ferrule<br>0.2 - 2.5 mm², flexible without ferrule |
| **TIGHTENING TORQUE** | 0.6 Nm, Screw terminals |

## Resources

| | |
|---|---|
| APPLICATION NOTES | eaton-easye4-aws-ap050027-en-us.pdf |
| CATALOGUES | eaton-product-overview-for-machinery-catalogue-ca08103003zen-en-us.pdf |
| DECLARATIONS OF CONFORMITY | eaton-control-relay-declaration-of-conformity-uk251131en.pdf<br>eaton-control-relay-declaration-of-conformity-eu250648en.pdf |

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| DRAWINGS | eaton-modular-plc-easy-i-o-expansion-dimensions-003.eps<br><br>eaton-modular-plc-easy-i-o-expansion-3d-drawing.eps |
| ECAD MODEL | ETN.EASY-E4-UC-16RE1 |
| INSTALLATION INSTRUCTIONS | eaton-easye4-i-o-expansions-control-relays-il050021zu.pdf |
| INSTALLATION VIDEOS | Video easy E4 control relay<br><br>Control relay easyE4: The new generation |
| MCAD MODEL | DA-CS-ac_16re1<br><br>eaton-logic-modules-mcad-drawings-ac-16re1.dwg |
| MULTIMEDIA | Handling of the data logger as a ring buffer with the easyE4 using the ST programming language.<br><br>How to process ModbusRTU devices with the EASY-COM-RTU-M1 module on an easyE4?<br><br>easyE4 SmartWire-DT module with Remote Touch Display and RMQ multi color indicator<br><br>How to connect the easyE4 to the touch panel XV-102 for easy? - 5 Steps<br><br>How to process SmartWire-DT modules using the EASY-COM-SWD-C1 module connected to an easyE4?<br><br>How to connect the Remote Touch Display EASY-RTD to the easyE4? |
| PRODUCT NOTIFICATIONS | MZ049014EN |
| SALES NOTES | eaton-easy-remote-touch-display-flyer-fl048004en-en-us.pdf<br><br>eaton-control-relay-easye4-flyer-fl050007en-en-us.pdf |

| | |
|---|---|
| **PROJECT NAME:** | |
| **PROJECT NUMBER:** | |
| **PREPARED BY:** | |
| **DATE:** | |

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