

Specifications



Eaton 197222

Eaton Moeller® series EASY I/O expansion,
For use with easyE4, 100 - 240 V AC, 110 -
220 V DC (cULus: 100-110 V DC), Inputs
expansion (number) digital: 8, screw
terminal

General specifications

PRODUCT NAME	Eaton Moeller® series EASY I/O expansion
CATALOG NUMBER	197222
MODEL CODE	EASY-E4-AC-16RE1
EAN	4015081939428
PRODUCT LENGTH/DEPTH	58 mm
PRODUCT HEIGHT	90 mm
PRODUCT WIDTH	72 mm
PRODUCT WEIGHT	0.25 kg

CERTIFICATIONS

CULus per UL 61010
IEC 60068-2-30
IEC/EN 61131-2
CSA-C22.2 No. 61010
EN 50178
IEC 60664
IEC/EN 61000-4-2
EN 61010
IEC 60068-2-27
IEC/EN 61000-6-2
IEC/EN 61000-6-3
IEC 60068-2-6
UL Listed
UL Category Control No.:
NRAQ, NRAQ7
UL File No.: E205091
DNV GL
CE
UL hazardous location
division 2
UL hazardous location
group A (acetylene)
UL hazardous location
group B (hydrogen)
UL hazardous location
group D (propane)
UL hazardous location
class I

Ambient conditions, mechanical

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 Horizontal
Vertical

SHOCK RESISTANCE 15 g, Mechanical, according to IEC/EN 60068-2-27, Half-sinusoidal shock 11 ms, 18 Impacts

VIBRATION RESISTANCE 57 - 150 Hz, 2 g constant acceleration
10 - 57 Hz, 0.15 mm constant amplitude
According to IEC/EN 60068-2-6

Climatic environmental conditions

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 Condensation: prevent with appropriate measures
Clearance in air and creepage distances according to EN 50178, EN 61010-2-201, UL61010-2-201, CSA-C22.2 NO. 61010-2-201

RELATIVE HUMIDITY 5 - 95 % (IEC 60068-2-30, IEC 60068-2-78)

UL hazardous location group C (ethylene)

CATALOG NOTES

fitted with two controlled relays

Cable

CABLE LENGTH

≤ 100 m per input (I1 - I6, I9 - I12, debounce ON), Digital inputs 115/230 V AC
≤ 60 m per input (I1 - I8), Digital inputs 115/230 V AC
40 m (max. permissible per input R1 to R12), Digital inputs 115/230 V AC

Communication

CONNECTION TYPE

Screw terminal

Design verification

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

CONVENTIONAL THERMAL CURRENT ITH OF AUXILIARY CONTACTS (1-POLE, OPEN)	5 A
INRUSH CURRENT	12.5 A (for 6 ms)
POWER CONSUMPTION	4 W
RATED BREAKING CAPACITY	300000 Operations at AC-15, 250 V AC, 3 A (600 Ops./h) 200000 Operations at DC-13, 24 V DC, 1 A (500 Ops./h)
RATED INSULATION VOLTAGE (UI)	240 V
RATED OPERATIONAL VOLTAGE	85 - 264 V AC Max. 300 V AC Max. 300 V DC 110/120 V DC (power supply) 240 V AC 100/110/115/120/230/240 AC (-15 %/+10 %)
SUPPLY FREQUENCY	50/60 Hz (± 5%)
SUPPLY VOLTAGE AT AC, 50 HZ - MAX	264 VAC
SUPPLY VOLTAGE AT AC, 50 HZ - MIN	85 VAC
SUPPLY VOLTAGE AT DC - MAX	264 VDC
SUPPLY VOLTAGE AT DC - MIN	85 VDC
UNINTERRUPTED CURRENT	1 A DC, at R 300 (UL/CSA) 5 A AC, max. thermal continuous current $\cos \phi = 1$ at B 300 (UL/CSA) 8 A DC, at 24 V DC (UL/CSA) 8 A AC, at 240 V AC (UL/CSA)

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
RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN)	0 A
STATIC HEAT DISSIPATION, NON-CURRENT-DEPENDENT PVS	4 W

Electro magnetic compatibility

AIR DISCHARGE	8 kV
BURST IMPULSE	2 kV, Signal cable 2 kV, Supply cable According to IEC/EN 61000-4-4
CONTACT DISCHARGE	6 kV
ELECTROMAGNETIC FIELDS	10 V/m at 0.8 - 1.0 GHz (according to IEC EN 61000-4-3) 3 V/m at 1.4 - 2 GHz (according to IEC EN 61000-4-3) 1 V/m at 2.0 - 2.7 GHz (according to IEC EN 61000-4-3)
IMMUNITY TO LINE-CONDUCTED INTERFERENCE	10 V (according to IEC/EN 61000-4-6)
RADIO INTERFERENCE CLASS	Class B (EN 61000-6-3)
SURGE RATING	According to IEC/EN 61000-4-5, power pulses (Surge), EMC 1 kV, Supply cables, symmetrical, power pulses (Surge), EMC 2 kV, Supply cables, asymmetrical, power pulses (Surge), EMC
VOLTAGE DIPS	10 ms

Features & functions

FEATURES	Expandable Expansion device
FITTED WITH:	Relay output

General information

DEGREE OF PROTECTION	IP20
INPUT FREQUENCY	50/60 Hz (Digital inputs, at 115/230 V AC) 50/60 Hz (Digital inputs, at 24 V DC)
INSULATION RESISTANCE	According to EN 50178, EN 61010-2-201, UL61010-2-201, CSA-C22.2 NO. 61010-2-201
LIFESPAN, ELECTRICAL	25,000 Operations (Filament bulb load at 1000 W, 230/240 V AC) 25,000 Operations (Fluorescent lamp load 10 x 58 W at 230/240 V AC, with upstream electrical device) 25,000 Operations (Filament bulb load at 500 W, 115/120 V AC) 25,000 Operations (Fluorescent lamp load 1 x 58 W at 230/240 V AC, conventional, compensated) 25,000 Operations (Fluorescent lamp load 10 x 58 W at 230/240 V AC, uncompensated)
LIFESPAN, MECHANICAL	1,000,000 Operations
MOUNTING METHOD	Wall mounting/direct mounting Top-hat rail fixing (according to IEC/EN 60715, 35 mm) Rail mounting possible Screw fixing using fixing brackets ZB4-101-GF1 (accessories) Front build in possible
OVERVOLTAGE CATEGORY	III
POLLUTION DEGREE	2
PRODUCT CATEGORY	Control relays easyE4
PROTECTION	B16 circuit breaker or 8 A (T) fuse, Protection of an Output relay
PROTOCOL	MODBUS TCP/IP
RATED IMPULSE WITHSTAND VOLTAGE (UIMP)	Relay outputs: 6 kV (contact-coil)
RESIDUAL RIPPLE	≤ 5 %

Input/Output

DELAY TIME	39 ms typ., Digital Inputs 100 - 240 V AC 50 Hz (I1 - I8), Delay time from 1 to 0, Debounce OFF 32 ms typ., Digital Inputs 100 - 240 V AC 60 Hz (I1 - I8), Delay time from 1 to 0, Debounce OFF 80 ms, Digital inputs 115/230 V AC 50 Hz (I7, I8), Delay time from 0 to 1, Debounce ON 0.5 ms typ., Digital Inputs 100 - 240 V DC (I1 - I8), Delay time from 1 to 0, Debounce OFF 39 ms typ., Digital Inputs 100 - 240 V AC 50 Hz (I1 - I8), Delay time from 0 to 1, Debounce OFF 32 ms typ., Digital Inputs 100 - 240 V AC 60 Hz (I1 - I8), Delay time from 0 to 1, Debounce OFF 0.5 ms typ., Digital Inputs 100 - 240 V DC (I1 - I8), Delay time from 0 to 1, Debounce OFF
INPUT CURRENT	6 x 0.25 mA (I1 - I8, at 115 V AC, 60 Hz, at signal 1) 6 x 0.5 mA (I1 - I8, at 230 V AC, 50 Hz, at signal 1)
INPUT VOLTAGE	Condition 0: 0 - 40 V AC, Digital inputs, 115/230 V AC) Condition 1: 79 - 264 V AC, Digital inputs, 115/230 V AC)
MAKING/BREAKING CAPACITY	3600/360 VA (AC, at B 300) 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 > 500 mA (Relay outputs, Recommended for load: 12 V AC/DC) Relay outputs in groups of 1

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

	Voltage Current
PARALLEL SWITCHING	Not permitted

Safety

EXPLOSION SAFETY CATEGORY FOR DUST

None

EXPLOSION SAFETY CATEGORY FOR GAS

None

POTENTIAL ISOLATION

Between Relay outputs
and expansion devices:
yes
Between Digital inputs
115/230 V AC and
Outputs: yes
Between Digital inputs
115/230 V AC and
expansion devices: yes
Between Relay outputs
and Inputs: yes
Between Digital inputs
115/230 V AC and base
unit: yes
Between Digital inputs
115/230 V AC and Power
supply: no
Between Digital inputs
115/230 V AC: no
Basic isolation: 600 V AC
(Relay outputs)
Between Relay outputs
and Power supply: yes
Between Relay outputs:
yes
Safe isolation according to
EN 50178: 300 V AC (Relay
outputs)

PROTECTION AGAINST POLARITY REVERSAL

Yes, for supply voltage
(Siemens MPI optional)

SAFE ISOLATION

300 V AC, Between coil
and contact, According to
EN 50178
300 V AC, Between two
contacts, According to EN
50178

Terminal capacities

SCREWDRIVER SIZE

3.5 x 0.8 mm, Terminal
screw

TERMINAL CAPACITY

0.2 - 2.5 mm² (22 - 12
AWG), flexible with ferrule
0.2 - 4 mm² (AWG 22 - 12),
solid

TIGHTENING TORQUE

0.6 Nm, Screw terminals

Short-circuit rating

SHORT-CIRCUIT PROTECTION

≥ 1A (T), Fuse, Power
supply

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-
eu250648en.pdf](#)

	eaton-control-relay-declaration-of-conformity-uk251131en.pdf
DRAWINGS	eaton-modular-plc-easy-i-o-expansion-dimensions-003.eps eaton-modular-plc-easy-i-o-expansion-3d-drawing.eps
ECAD MODEL	ETN.EASY-E4-AC-16RE1
INSTALLATION INSTRUCTIONS	eaton-easye4-i-o-expansions-control-relays-il050021zu.pdf
INSTALLATION VIDEOS	Video easy E4 control relay Control relay easyE4: The new generation
MCAD MODEL	eaton-logic-modules-mcad-drawings-ac-16re1.dwg DA-CS-ac_16re1
MULTIMEDIA	How to process ModbusRTU devices with the EASY-COM-RTU-M1 module on an easyE4? easyE4 SmartWire-DT module with Remote Touch Display and RMQ multi color indicator Handling of the data logger as a ring buffer with the easyE4 using the ST programming language. How to connect the Remote Touch Display EASY-RTD to the easyE4? How to connect the easyE4 to the touch panel XV-102 for easy? - 5 Steps How to process SmartWire-DT modules using the EASY-COM-SWD-C1 module connected to an easyE4?
PRODUCT NOTIFICATIONS	MZ049014EN
SALES NOTES	eaton-control-relay-easye4-flyer-fl050007en-en-us.pdf eaton-easy-remote-touch-display-flyer-fl048004en-en-us.pdf

PROJECT NAME:
PROJECT NUMBER:
PREPARED BY:
DATE:



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