

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

PRODUCT NAME	Eaton Moeller® series EASY I/O expansion
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CATALOG NUMBER	197218
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MODEL CODE	EASY-E4-UC-16RE1
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EAN	4015080892793
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PRODUCT LENGTH/DEPTH	58 mm
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PRODUCT HEIGHT	90 mm
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PRODUCT WIDTH	72 mm
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PRODUCT WEIGHT	0.25 kg
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IEC/EN 61000-6-3
IEC 60068-2-27
IEC/EN 61000-6-2
IEC 60068-2-30
IEC/EN 61000-4-2
IEC/EN 61131-2
CSA-C22.2 No. 61010
IEC 60068-2-6
CULus per UL 61010
EN 50178
EN 61010
UL Listed
UL Category Control No.:
NRAQ, NRAQ7
UL File No.: E205091
DNV GL
CE
UL hazardous location
class I
UL hazardous location
group B (hydrogen)
UL hazardous location
division 2
UL hazardous location
group D (propane)
UL hazardous location
group A (acetylene)
UL hazardous location
group C (ethylene)

CERTIFICATIONS



Powering Business Worldwide

CATALOG NOTES

fitted with two controlled relays

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	Vertical Horizontal
SHOCK RESISTANCE	15 g, Mechanical, according to IEC/EN 60068-2-27, Half-sinusoidal shock 11 ms, 18 Impacts
VIBRATION RESISTANCE	According to IEC/EN 60068-2-6 10 - 57 Hz, 0.15 mm constant amplitude 57 - 150 Hz, 2 g constant acceleration

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	Clearance in air and creepage distances according to EN 50178, EN 61010-2-201, UL61010-2-201, CSA-C22.2 NO. 61010-2-201 Condensation: prevent with appropriate measures
RELATIVE HUMIDITY	5 - 95 % (IEC 60068-2-30, IEC 60068-2-78)

Cable

CABLE LENGTH	100 m, unscreened, Digital inputs 12 V DC 100 m, unscreened, Digital inputs 24 V AC 100 m, unscreened, Digital inputs 24 V DC 40 m (max. per input), Digital inputs 24 V DC
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Communication

CONNECTION TYPE	Screw terminal
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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
POWER CONSUMPTION	3 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	24 V AC (-15 %/+10 % - power supply) 10.2 - 28.8 V DC 24 V DC (digital inputs) Max. 300 V DC 12 V DC (digital inputs) Max. 300 V AC 240 V AC 12/24 V DC (-15 %/+ 20 % - power supply) 20.4 - 26.4 V AC 24 V AC (digital inputs)
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	28.8 VDC
SUPPLY VOLTAGE AT DC - MIN	10.2 VDC
UNINTERRUPTED CURRENT	1 A DC, at R 300 (UL/CSA) 10 A AC, at 240 V AC (UL/CSA) 8 A DC, at 24 V DC (UL/CSA) 5 A AC, max. thermal continuous current $\cos \phi = 1$ at B 300 (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	3 W

Electro magnetic compatibility

AIR DISCHARGE	8 kV
BURST IMPULSE	According to IEC/EN 61000-4-4 2 kV, Supply cable 2 kV, Signal cable
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	1 kV, Supply cables, symmetrical, power pulses (Surge), EMC 2 kV, Supply cables, asymmetrical, power pulses (Surge), EMC According to IEC/EN 61000-4-5, power pulses (Surge), EMC
VOLTAGE DIPS	≤ 1 ms from rated voltage (12 V DC) 10 ms

Features & functions

FEATURES	Expansion device Expandable
FITTED WITH:	Relay output
INDICATION	LCD-display base unit used as status indication of Digital inputs 12 V DC LCD-display base unit used as status indication of Digital inputs 24 V DC

General information

DEGREE OF PROTECTION	IP20
INPUT FREQUENCY	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 500 W, 115/120 V AC) 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 (Fluorescent lamp load 10 x 58 W at 230/240 V AC, uncompensated) 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) Wall mounting/direct mounting Screw fixing using fixing brackets ZB4-101-GF1 (accessories) Front build in possible Rail mounting 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)	6 kV (contact-coil)
RESIDUAL RIPPLE	≤ 5 %
SOFTWARE	EASYSOFT-SWLIC/easySoft

Input/Output

	0.1 ms typ., Digital inputs 24 V DC (I1 - I8), Delay time from 0 to 1, Debounce OFF
	20 ms, Digital Inputs 12 V DC, Delay time from 1 to 0, Debounce ON 0.2 ms typ., Digital inputs 24 V DC (I1 - I8), Delay time from 1 to 0, Debounce OFF
DELAY TIME	20 ms, Digital Inputs 12 V DC, Delay time from 0 to 1, Debounce ON 0.2 ms typ., Digital inputs 12 V DC (I1 - I8), Delay time from 1 to 0, Debounce OFF 0.15 ms typ., Digital inputs 12 V DC (I1 - I8), Delay time from 0 to 1, Debounce OFF
INPUT CURRENT	3.3 mA (I5 - I8, at 24 V DC, at signal 1) 200 mA
INPUT VOLTAGE	Condition 1: ≥ 15 V DC (I1 - I8, Digital inputs, 24 V DC) Signal 0: ≤ 5 V DC (I1 - I4, Digital inputs, 12 V DC) At signal 0: ≤ 5 V (I1 - I8, sinusoidal, Digital inputs, 24 V DC) At signal 1: ≥ 15 V (I1 - I8, sinusoidal, Digital inputs, 24 V DC) Signal 0: ≤ 5 V DC (I1 - I8, Digital inputs, 24 V DC) Status 0: ≤ 15 V DC (I1 - I4, Digital inputs, 24 V DC)
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 Relay outputs in groups of 1 > 500 mA (Relay outputs, Recommended for load: 12 V AC/DC)

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

Voltage	
Current	
PARALLEL SWITCHING	Not permitted

Safety

EXPLOSION SAFETY CATEGORY FOR DUST

None

EXPLOSION SAFETY CATEGORY FOR GAS

None

POTENTIAL ISOLATION

Between Digital inputs 24 V DC and base unit: yes
Between Digital inputs 24 V DC and Outputs: yes
Between Digital inputs 24 V DC and expansion devices: yes
Between Relay outputs and Inputs: yes
Basic isolation: 600 V AC (Relay outputs)
Safe isolation according to EN 50178: 300 V AC (Relay outputs)
Between Digital inputs 24 V AC and base unit: yes
Between Digital inputs 12 V DC and Outputs: yes
Between Digital inputs 24 V AC and expansion devices: yes
Between Digital inputs 12 V DC and expansion devices: yes
Between Relay outputs and Power supply: yes
Between Relay outputs and expansion devices: yes
Between Digital inputs 12 V DC and base unit: yes
Between Digital inputs 24 V AC and Outputs: yes
Between Relay outputs: yes

PROTECTION AGAINST POLARITY REVERSAL

Yes, for supply voltage (Siemens MPI optional)

SAFE ISOLATION

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

Short-circuit rating

SHORT-CIRCUIT PROTECTION

≥ 1A (T), Fuse, Power supply

Terminal capacities

SCREWDRIVER SIZE	3.5 x 0.8 mm, Terminal screw
TERMINAL CAPACITY	0.2 - 4 mm ² (AWG 22 - 12), solid 0.2 - 2.5 mm ² (22 - 12 AWG), flexible with 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-eu250648en.pdf eaton-control-relay-declaration-of-conformity-uk251131en.pdf
DRAWINGS	eaton-modular-plc-easy-i-o-expansion-dimensions-003.eps eaton-general-easy-control-relays-symbol-002.tif 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 Control relay easyE4: The new generation
MCAD MODEL	DA-CS-ac_16re1 eaton-logic-modules-mcad-drawings-ac-16re1.dwg
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 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

[Handling of the data logger as a ring buffer with the easyE4 using the ST programming language.](#)

[How to process SmartWire-DT modules using the EASY-COM-SWD-C1 module connected to an easyE4?](#)

PRODUCT NOTIFICATIONS	MZ049014EN
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SALES NOTES	eaton-easy-remote-touch-display-flyer-fl048004en-en-us.pdf
	eaton-control-relay-easye4-flyer-fl050007en-en-us.pdf

PROJECT NAME:

PROJECT NUMBER:

PREPARED BY:

DATE:



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