

Specifications



Eaton 197224

Eaton Moeller® series EASY I/O expansion,
For use with easyE4, 24 V DC, Inputs
expansion (number) analog: 4, screw
terminal EASY-E4-DC-4PE1

General specifications

PRODUCT NAME	Eaton Moeller® series EASY I/O expansion
CATALOG NUMBER	197224
MODEL CODE	EASY-E4-DC-4PE1
EAN	4015080892854
PRODUCT LENGTH/DEPTH	58 mm
PRODUCT HEIGHT	90 mm
PRODUCT WIDTH	36 mm
PRODUCT WEIGHT	0.1 kg

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

CERTIFICATIONS

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)

Cable

CABLE LENGTH	≤ 30 m, unscreened, Analog inputs temperature resistance Pt100 or Ni1000 sensors
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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

HEAT DISSIPATION	3.4 W (at 24 V DC)
INRUSH CURRENT	12.5 A (for 6 ms)
POWER CONSUMPTION	1 W
POWER LOSS	1 W
RATED OPERATIONAL VOLTAGE	24 V DC (-15 %/+ 20 % - power supply) 20.4 - 28.8 V DC
SUPPLY VOLTAGE AT DC - MAX	28.8 VDC
SUPPLY VOLTAGE AT DC - MIN	20.4 VDC

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	0 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	1 W

Electro magnetic compatibility

AIR DISCHARGE	8 kV
BURST IMPULSE	2 kV, Signal cable According to IEC/EN 61000-4-4 2 kV, Supply cable
CONTACT DISCHARGE	6 kV
ELECTROMAGNETIC FIELDS	10 V/m at 0.8 - 1.0 GHz (according to IEC EN 61000-4-3) 1 V/m at 2.0 - 2.7 GHz (according to IEC EN 61000-4-3) 3 V/m at 1.4 - 2 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 0.5 kV, Supply cables, symmetrical, EASY...DC, power pulses (Surge), EMC 1 kV, Supply cables, asymmetrical, power pulses (Surge), EMC
VOLTAGE DIPS	20 ms ≤ 10 ms, Bridging voltage dips

Features & functions

FEATURES

Additional measurement aids: Filtering (software), smoothing of analog input signal (PT1 behavior), only with set sampling time, selectable per sensor: yes
Expandable
Expansion device
Measuring principle: Two or three wire per sensor, selectable by connection of sensor

FUNCTIONS

Card diagnostic
Diagnostics below lower measurement range

General information

DEGREE OF PROTECTION	IP20
INSULATION RESISTANCE	According to EN 50178, EN 61010-2-201, UL61010-2-201, CSA-C22.2 NO. 61010-2-201
MOUNTING METHOD	Rail mounting possible 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
OVERVOLTAGE CATEGORY	III
POLLUTION DEGREE	2
PRODUCT CATEGORY	Control relays easyE4
PROTOCOL	TCP/IP MODBUS
RESIDUAL RIPPLE	≤ 5 %
RESOLUTION	12 Bit (0- 4095, digital, scaling per sensor)
SOFTWARE	EASYSOFT-SWLIC/easySoft
TYPE	easyE4 extension
VOLTAGE TYPE	DC

Safety

EXPLOSION SAFETY CATEGORY FOR DUST	None
EXPLOSION SAFETY CATEGORY FOR GAS	None
POTENTIAL ISOLATION	Between Analog inputs PT100 or Ni1000 and Power supply: no Between Analog inputs PT100 or Ni1000 and expansion units: yes Between Analog inputs PT100 or Ni1000 and Inputs: no
PROTECTION AGAINST POLARITY REVERSAL	Yes, for supply voltage (Siemens MPI optional)

Input/Output

INPUT	Input type resistance sensor: Platinum sensor Pt100 (according to DIN EN 60751, IEC 751) Input type resistance sensor: Nickel sensor Ni1000 (according to DIN 43760)
INPUT CURRENT	40 mA
NUMBER OF INPUTS (ANALOG)	4
NUMBER OF INPUTS (DIGITAL)	0
NUMBER OF OUTPUTS (ANALOG)	0
NUMBER OF OUTPUTS (DIGITAL)	0

Short-circuit rating

SHORT-CIRCUIT PROTECTION	≥ 1A (T), Fuse, Power supply
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Terminal capacities

SCREWDRIVER SIZE	3.5 x 0.8 mm, Terminal screw
TERMINAL CAPACITY	0.2 - 2.5 mm ² (22 - 12 AWG), flexible with ferrule 0.2 - 4 mm ² (AWG 22 - 12), solid
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-i-o-expansion-declaration-of-conformity-eu251486en.pdf eaton-i-o-expansion-declaration-of-conformity-uk251130en.pdf
DRAWINGS	eaton-modular-plc-easy-i-o-expansion-dimensions-002.eps eaton-modular-plc-easy-i-o-expansion-3d-drawing-002.eps
ECAD MODEL	DA-CE-ETN.EASY-E4-DC-4PE1
INSTALLATION INSTRUCTIONS	eaton-easye4-i-o-expansions-control-relays-il050021zu.pdf
INSTALLATION VIDEOS	Control relay easyE4: The new generation Video easy E4 control relay
MCAD MODEL	eaton-logic-modules-mcad-drawings-dc-4pe1.dwg DA-CS-dc 4pe1
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 How to process SmartWire-DT modules using the EASY-COM-SWD-C1 module connected to an easyE4?

	Handling of the data logger as a ring buffer with the easyE4 using the ST programming language.
PRODUCT NOTIFICATIONS	eaton-easye-product-cybersecurity-guideline-mz049001en-us.pdf MZ049014EN
	TT-197224 EASY-E4-DC-4PE1-de_DE
SALES NOTES	eaton-control-relay-easye4-flyer-fl050007en-us.pdf eaton-easy-remote-touch-display-flyer-fl048004en-us.pdf

PROJECT NAME:

PROJECT NUMBER:

PREPARED BY:

DATE:



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