Specifications

Eaton 197219

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

General specifications

PRODUCT NAME	Eaton Moeller® series EASY I/O expansion
CATALOG NUMBER	197219
MODEL CODE	EASY-E4-DC-8TE1
EAN	4015080892809
PRODUCT LENGTH/DEPTH	58 mm
PRODUCT HEIGHT	90 mm
PRODUCT WIDTH	36 mm
PRODUCT WEIGHT	0.1 kg
CERTIFICATIONS	CSA-C22.2 No. 61010 IEC/EN 61000-6-3 IEC 60068-2-27 IEC 60068-2-30 IEC 60068-2-6 EN 50178 IEC/EN 61000-4-2 IEC/EN 61000-6-2 IEC/EN 61131-2 CULus per UL 61010 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 division 2 UL hazardous location group A (acetylene) UL hazardous location group B (hydrogen) UL hazardous location group C (ethylene)

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	UL hazardous location group D (propane)

Features & Functions

FEATURES	Expandable Expansion device Parallel connection of transistor outputs with resistive load, inductive load with external suppressor circuit, combination within a group - Group 1: Q1 to Q4
FUNCTIONS	Thermal cutout
INDICATION	LCD-display base unit used as Output status indication of Transistor outputs LCD-display base unit used as status indication of Digital inputs 24 V DC

General

DEGREE OF PROTECTION	IP20
DUTY FACTOR	100 % (Inductive load to EN 60947-5-1, Without external suppressor circuit, DC-13, T0.95 = 72 ms, R = 48 Ω, L = 1.15 H) 100 % (Inductive load to EN 60947-5-1, With external suppressor circuit) 100 % (Inductive load to EN 60947-5-1, Without external suppressor circuit, T0.95 = 15 ms, R = 48 Ω, L = 0.24 H)
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
OPERATING FREQUENCY	Dependent on the cycle- and transmission-time of the expansion devices Depending on the suppressor circuit (Inductive load to EN 60947-5-1, With external suppressor circuit, Max. switching frequency, max. duty factor) Dependent on the cycle time of the basic device
OVERVOLTAGE CATEGORY	III
POLLUTION DEGREE	2
PRODUCT CATEGORY	Control relays easyE4
PROTOCOL	MODBUS TCP/IP

RESIDUAL CURRENT	0.1 mA (on signal "1" per channel)
RESIDUAL RIPPLE	≤ 5 % 5 % (transistor outputs)
SOFTWARE	EASYSOFT-SWLIC/easySoft
TYPE	easyE4 extension
VOLTAGE TYPE	DC

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 According to IEC/EN 60068-2-6 10 - 57 Hz, 0.15 mm constant amplitude

Climatic environmental conditions

AIR PRESSURE	795 - 1080 hPa (operation)
AMBIENT OPERATING TEMPERATURE - MIN	-25 °C
AMBIENT OPERATING TEMPERATURE - MAX	55 °C
AMBIENT STORAGE TEMPERATURE - MIN	-40 °C
AMBIENT STORAGE TEMPERATURE - MAX	70 °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)

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	1 kV, Supply cables, asymmetrical, power pulses (Surge), EMC 0.5 kV, Supply cables, symmetrical, power pulses (Surge), EMC According to IEC/EN 61000-4-5, power pulses (Surge), EMC
VOLTAGE DIPS	20 ms ≤ 10 ms, Bridging voltage dips

Terminal capacities

TERMINAL CAPACITY	0.2 - 4 mm^2 (AWG 22 - 12), solid 0.2 - 2.5 mm^2 (22 - 12 AWG), flexible with ferrule
SCREWDRIVER SIZE	3.5 x 0.8 mm, Terminal screw
TIGHTENING TORQUE	0.6 Nm, Screw terminals

Electrical rating

CONVENTIONAL THERMAL CURRENT ITH OF AUXILIARY CONTACTS (1-POLE, OPEN)	0.5 A
HEAT DISSIPATION	3.4 W (at 24 V DC)
INRUSH CURRENT	12.5 A (for 6 ms)
POWER CONSUMPTION	1 W
RATED OPERATIONAL VOLTAGE	20.4 - 28.8 V DC 20.4 - 28.8 V DC (Transistor outputs) 24 V DC (-15 %/+ 20 % - power supply) 24 V DC (transistor outputs) 24 V DC (digital inputs)
SUPPLY CURRENT	18/32 mA, Normally/max., On 0 signal, Transistor outputs 24/44 mA, Normally/max., On 1 signal, Transistor outputs
SUPPLY VOLTAGE AT AC, 50 HZ - MIN	0 VAC
SUPPLY VOLTAGE AT AC, 50 HZ - MAX	0 VAC
SUPPLY VOLTAGE AT DC - MIN	20.4 VDC
SUPPLY VOLTAGE AT DC - MAX	28.8 VDC

Short-circuit rating

SHORT-CIRCUIT CURRENT	6.8 A, Transistor outputs
SHORT-CIRCUIT PROTECTION	Yes, electronic (Q1 - Q4), Transistor outputs ≥ 1A (T), Fuse, Power supply
SHORT-CIRCUIT TRIPPING CURRENT	0.7 ≤ Ie ≤ 1.7 per output, For Ra ≤ 10 mΩ, Depending on number of active channels and their load, Transistor outputs

Communication

CONNECTION TYPE	Screw terminal

Cable

CABLE LENGTH	100 m, unscreened, Digital inputs 24 V DC

Input/Output

DELAY TIME	0.2 ms typ., Digital inputs 24 V DC (I1 - I4), Delay time from 1 to 0, Debounce OFF 0.015 ms typ., Digital inputs 12 V DC (I1 - I8), Delay time from 1 to 0, Debounce OFF 0.015 ms typ., Digital inputs 12 V DC (I1 - I8), Delay time from 0 to 1, Debounce OFF 20 ms, Digital Inputs 12 V DC, Delay time from 0 to 1, Debounce ON 20 ms, Digital Inputs 12 V DC, Delay time from 1 to 0, Debounce ON 0.1 ms typ., Digital inputs 24 V DC (I1 - I4), Delay time from 0 to 1, Debounce OFF
INPUT CURRENT	40 mA
INPUT VOLTAGE	Signal 0: ≤ 5 V DC (I1 - I4, Digital inputs, 24 V DC) Signal 1: ≥ 15 V DC (I1 - I4, Digital inputs, 24 V DC)
LAMP LOAD	Max. 3 W (without Rv per channel)
NUMBER OF INPUTS (ANALOG)	0
NUMBER OF INPUTS (DIGITAL)	4
NUMBER OF OUTPUTS (ANALOG)	0
NUMBER OF OUTPUTS (DIGITAL)	4
OUTPUT	2 A, Max. total current, Outputs 4 Transistor Outputs Parallel connection of max. 4 Transistor outputs Voltage Current
OUTPUT VOLTAGE	$U = U_e$ - 1 V (signal 1 at I_e = 0.5 A, transistor outputs) Max. 2.5 V (at status 0 per channel, transistor outputs)
UTILIZATION FACTOR	0.25 (Inductive load to EN 60947-5-1, Without external suppressor

Safety

EXPLOSION SAFETY CATEGORY FOR GAS	None
POTENTIAL ISOLATION	Between Digital inputs 24 V DC and expansion devices: yes Between Transistor outputs: no Between Digital inputs 24 V DC: no Between Digital inputs 24 V DC and Power supply: no Between Digital inputs 24 V DC and Outputs: no Between Transistor outputs and expansion devices: yes Between Transistor outputs and Power supply: no
PROTECTION AGAINST POLARITY REVERSAL	Yes, for supply voltage (Siemens MPI optional) For transistor outputs (Caution: A short circuit will result if 0 V/earth is applied to the outputs in the event that the supply voltage is connected to the wrong poles)
EXPLOSION SAFETY CATEGORY FOR DUST	None

	circuit, T0.95 = 15 ms, R = 48 Ω, L = 0.24 H) 1 (Inductive load to EN 60947-5-1, With external suppressor circuit) 0.25 (Inductive load to EN 60947-5-1, Without external suppressor circuit, DC-13, T0.95 = 72 ms, R = 48 Ω, L = 1.15 H)

Design verification

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
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.

Resources

APPLICATION NOTES	eaton-easye4-aws-ap050027-en-us.pdf
BROCHURES	easy E4 control relay-brochure
CATALOGUES	eaton-product-overview-for-machinery-catalogue-ca08103003zen-en-us.pdf
DECLARATIONS OF CONFORMITY	DA-DC-00005056.pdf DA-DC-00005049.pdf
DRAWINGS	eaton-modular-plc-easy-i-o-expansion-dimensions.eps eaton-modular-plc-easy-i-o-expansion-3d-drawing-002.eps eaton-general-easy-control-relays-symbol-002.tif
ECAD MODEL	ETN.EASY-E4-DC-8TE1
INSTALLATION INSTRUCTIONS	IL050021ZU
INSTALLATION VIDEOS	Control relay easyE4: The new generation Video easy E4 control relay
MANUALS AND USER GUIDES	MN050009_EN
MCAD MODEL	DA-CD-dc_8te1 DA-CS-dc_8te1
MULTIMEDIA	Handling of the data logger as a ring buffer with the easyE4 using the ST programming language. How to process ModbusRTU devices with the EASY-COM-RTU-M1 module on an easyE4? How to process SmartWire-DT modules using the EASY-COM-SWD-C1 module connected to an easyE4?

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.
10.9.2 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.

	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
PRODUCT NOTIFICATIONS	MZ049014EN
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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