

Specifications

Eaton 197214

Eaton Moeller® series EASY Control relays, easyE4 (expandable, Ethernet), 24 V DC, Inputs Digital: 8, of which can be used as analog: 4, screw terminal

General specifications

PRODUCT NAME	Eaton Moeller® series EASY Control relay
CATALOG NUMBER	197214
MODEL CODE	EASY-E4-DC-12TCX1
EAN	4015081939459
PRODUCT LENGTH/DEPTH	58 mm
PRODUCT HEIGHT	90 mm
PRODUCT WIDTH	72 mm
PRODUCT WEIGHT	0.2 kg
COMPLIANCES	Eaton supports the product until its end of life
CERTIFICATIONS	CULus per UL 61010 IEC/EN 61000-6-2 IEC 60068-2-30 CSA-C22.2 No. 61010 IEC/EN 61000-4-2 IEC 60068-2-27 IEC 60068-2-6 EN 50178 EN 61010 IEC/EN 61000-6-3 IEC/EN 61131-2 UL Listed UL Category Control No.: NRAQ, NRAQ7 UL File No.: E205091 DNV GL CE 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 A (acetylene)



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	UL hazardous location group D (propane)
CATALOG NOTES	Accuracy of the real-time clock depending on ambient air temperature - fluctuations of up to ± 5 s/day (± 0.5 h/year) are possible
GLOBAL CATALOG	197214

Product specifications

USED WITH	easyE4
TYPE	easyE4 base device
FEATURES	Expandable Parallel connection of transistor outputs with resistive load, inductive load with external suppressor circuit, combination within a group - Group 1: Q1 to Q4 Networkable (Ethernet)
AIR DISCHARGE	8 kV
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.

Resources

APPLICATION NOTES	eaton-easye4-aws-ap050027-en-us.pdf
CATALOGS	eaton-product-overview-for-machinery-catalogue-ca08103003zen-en-us.pdf
CHARACTERISTIC CURVE	eaton-electrical-timers-easy-control-relays-characteristic-curve-002.eps
DECLARATIONS OF CONFORMITY	eaton-i-o-expansion-declaration-of-conformity-uk251130en.pdf eaton-i-o-expansion-declaration-of-conformity-eu250647en.pdf
DRAWINGS	eaton-logic-relays-easy-control-relays-dimensions.eps 2723DIM-100 eaton-modular-plc-easy-control-relays-3d-drawing-002.eps eaton-general-easy-control-relays-symbol-002.tif
ECAD MODEL	ETN.EASY-E4-DC-12TCX1.edz
INSTALLATION INSTRUCTIONS	IL050020ZU
INSTALLATION VIDEOS	Control relay easyE4: The new generation Video easy E4 control relay
MANUALS AND USER GUIDES	MN050009_EN
MCAD MODEL	DA-CD-uc_12rcx1 DA-CS-uc_12rcx1
MULTIMEDIA	How to process SmartWire-DT modules using the EASY-COM-SWD-C1 module connected to an easyE4? How to process ModbusRTU devices with the EASY-COM-RTU-M1 module on an easyE4? How to connect the Remote Touch Display EASY-RTD to the easyE4?

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.
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.
CABLE TYPE	CAT5
FITTED WITH:	Timer Real time clock
OPERATING FREQUENCY	Dependent on the cycle- and transmission-time of the expansion devices Dependent on the cycle time of the basic device Depending on the suppressor circuit (Inductive load to EN 60947-5-1, With external suppressor circuit, Max. switching frequency, max. duty factor)
POLLUTION DEGREE	2
ACCURACY	± 2 %, (I7, I8) ± 0.12 V, of actual value, within a single device (Analog Inputs) ± 1 %, Repetition accuracy of timing relays (of values) ± 3 %, of actual value, two easy devices (Analog Inputs) ± 2 s/day, Real-time clock to inputs (± 0.2 hYear)
BURST IMPULSE	2 kV, Signal cable 2 kV, Supply cable According to IEC/EN

[How to connect the easyE4 to the touch panel XV-102 for easy? - 5 Steps](#)

[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.](#)

PRODUCT NOTIFICATIONS	MZ049014EN
	TT-197214 EASY-E4-DC-12TCX1-de_DE
SALES NOTES	eaton-control-relay-easye4-flyer-fl050007en-us.pdf
	eaton-easy-remote-touch-display-flyer-fl048004en-us.pdf

	61000-4-4
AIR PRESSURE	795 - 1080 hPa (operation)
CATEGORY (EN 954-1)	None
EXPLOSION SAFETY CATEGORY FOR DUST	None
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
INPUT	Voltage (DC)
OUTPUT VOLTAGE	$U = U_e - 1 \text{ V}$ (signal 1 at $I_e = 0.5 \text{ A}$, transistor outputs) Max. 2.5 V (at status 0 per channel, transistor outputs)
EXPLOSION SAFETY CATEGORY FOR GAS	None
MOUNTING METHOD	Top-hat rail fixing (according to IEC/EN 60715, 35 mm) Screw fixing using fixing brackets ZB4-101-GF1 (accessories) Rail mounting possible Front build in possible Wall mounting/direct mounting
SCREWDRIVER SIZE	3.5 x 0.8 mm, Terminal screw
VOLTAGE TYPE	DC
MOUNTING POSITION	Horizontal Vertical
OUTPUT	2 A, Max. total current, Outputs Parallel connection of max. 4 Transistor outputs 4 Transistor Outputs Voltage Current
CONTACT DISCHARGE	6 kV
BASE TYPE	Yes
SAFETY PERFORMANCE LEVEL (EN ISO 13849-1)	None
SIL (IEC 61508)	None
AMBIENT OPERATING TEMPERATURE - MAX	55 °C
AMBIENT OPERATING	-25 °C

TEMPERATURE - MIN	
AMBIENT STORAGE TEMPERATURE - MAX	70 °C
AMBIENT STORAGE TEMPERATURE - MIN	-40 °C
CONVENTIONAL THERMAL CURRENT ITH OF AUXILIARY CONTACTS (1-POLE, OPEN)	0.5 A
EQUIPMENT HEAT DISSIPATION, CURRENT-DEPENDENT PVID	0 W
HEAT DISSIPATION CAPACITY PDISS	0 W
HEAT DISSIPATION PER POLE, CURRENT-DEPENDENT PVID	0 W
HEIGHT OF FALL (IEC/EN 60068-2-32) - MAX	0.3 m
NUMBER OF HW-INTERFACES (INDUSTRIAL ETHERNET)	1
NUMBER OF HW-INTERFACES (OTHER)	0
NUMBER OF HW-INTERFACES (PARALLEL)	0
NUMBER OF HW-INTERFACES (RS-232)	0
NUMBER OF HW-INTERFACES (RS-422)	0
NUMBER OF HW-INTERFACES (RS-485)	0
NUMBER OF HW-INTERFACES (SERIAL TTY)	0
NUMBER OF HW-INTERFACES (USB)	0
NUMBER OF HW-INTERFACES (WIRELESS)	0
OVERVOLTAGE CATEGORY	III
DUTY FACTOR	<p>100 % (Inductive load to EN 60947-5-1, With external suppressor circuit)</p> <p>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)</p> <p>100 % (Inductive load to EN 60947-5-1, Without external suppressor)</p>

	circuit, T0.95 = 15 ms, R = 48 Ω , L = 0.24 H)
SOFTWARE	EASYSOFT-SWLIC/easySoft
SURGE RATING	0.5 kV, Supply cables, symmetrical, power pulses (Surge), EMC 1 kV, Supply cables, asymmetrical, power pulses (Surge), EMC According to IEC/EN 61000-4-5, power pulses (Surge), EMC
CABLE LENGTH	\leq 30 m, screened, Analog inputs 100 m, unscreened, Digital inputs 24 V DC
CONVERSIONS	Each CPU cycle, Analog inputs
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)
PROTECTION AGAINST POLARITY REVERSAL	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) Yes, for supply voltage (Siemens MPI optional)
NUMBER OF INPUTS (ANALOG)	0 4
CONNECTION TYPE	Ethernet: RJ45 plug, 8-pole Screw terminal
DROP AND TOPPLE	50 mm Drop height, Drop to IEC/EN 60068-2-31
IMMUNITY TO LINE-CONDUCTED INTERFERENCE	10 V (according to IEC/EN 61000-4-6)
RADIO INTERFERENCE CLASS	Class B (EN 61000-6-3)
NUMBER OF OUTPUTS (DIGITAL)	4
DATA TRANSFER RATE	10/100 MBit/s
RELATIVE HUMIDITY	5 - 95 % (IEC 60068-2-30, IEC 60068-2-78)
DEGREE OF PROTECTION	IP20

DELAY TIME	20 ms typ., Digital inputs 24 V DC (I1 - I8), Delay time from 1 to 0, Debounce ON 20 ms typ., Digital inputs 24 V DC (I1 - I8), Delay time from 0 to 1, Debounce ON 0.015 ms typ., Digital inputs 24 V DC (I1 - I8), Delay time from 1 to 0, Debounce OFF 0.015 ms typ., Digital inputs 24 V DC (I1 - I8), Delay time from 0 to 1, Debounce OFF
RESIDUAL CURRENT	0.1 mA (on signal "1" per channel)
PROTOCOL	MODBUS TCP/IP
RESIDUAL RIPPLE	5 % (transistor outputs) ≤ 5 %
RAPID COUNTER INPUTS	Square (pulse shape) -2147483648 - 2147483647 (value range) 1:1 (Pulse pause ratio) 10 kHz, Counter frequency Number: 4 (I1, I2, I3, I4 - Digital inputs 24 V DC) ≤ 20 m (cable length, screened)
RATED OPERATIONAL CURRENT (IE)	Max. 0.5 A at signal „1“ DC per channel
INRUSH CURRENT	12.5 A (for 6 ms)
INSULATION RESISTANCE	According to EN 50178, EN 61010-2-201, UL61010-2- 201, CSA-C22.2 NO. 61010- 2-201
HEAT DISSIPATION	3.4 W (at 24 V DC)
FUNCTIONS	Thermal cutout
INCREMENTAL COUNTER	Pulse pause ratio: 1:1 Number of counter inputs: 2 (I1 + I2, I3 + I4) Pulse shape: Square Signal offset: 90° Value range: -2147483648 to +2147483647 Counter frequency: ≤ 5 kHz
SHORT-CIRCUIT CURRENT	6.8 A, Transistor outputs
VIBRATION RESISTANCE	57 - 150 Hz, 2 g constant acceleration 10 - 57 Hz, 0.15 mm constant amplitude According to IEC/EN 60068-2-6

INCREMENTAL ENCODER	Cable length: ≤ 20 m (screened)
INPUT IMPEDANCE	13.3 k Ω
INPUT CURRENT	1 mA (Analog inputs) 2.2 mA (I5 - I8, at 24 V DC, at signal 1) 3.3 mA (I1 - I4, at 24 V DC, at signal 1) 80 mA
SHOCK RESISTANCE	15 g, Mechanical, according to IEC/EN 60068-2-27, Half- sinusoidal shock 11 ms, 18 Impacts
FREQUENCY COUNTER	Cable length: ≤ 20 m (screened, Digital inputs 24 V DC) Number: 4 (I1, I2, I3, I4 - Digital inputs 24 V DC) Pulse shape: Square (digital inputs 24 V DC) Pulse pause ratio: 1:1 (Digital inputs 24 V DC) Counter frequency: 5 kHz (Digital inputs 24 V DC)
INPUT VOLTAGE	Status 0: ≤ 8 V DC (I5 - I8, Digital inputs, 24 V DC) Status 0: ≤ 15 V DC (I1 - I4, Digital inputs, 24 V DC) Status 1: ≥ 15 V DC (I1 - I4, Digital inputs, 24 V DC) Signal 0: ≤ 5 V DC (I1 - I8, Digital inputs, 24 V DC)
SHORT-CIRCUIT TRIPPING CURRENT	$0.7 \leq I_e \leq 1.7$ per output, For $R_a \leq 10$ m Ω , Depending on number of active channels and their load, Transistor outputs
LAMP LOAD	Max. 3 W (without R_v per channel)
LED INDICATOR	Status indication of Power/RUN Status indication of Ethernet: LED
SIGNAL RANGE	0 - 10 V DC, Analog inputs
SUPPLY CURRENT	24/44 mA, Normally/max., On 1 signal, Transistor outputs 18/32 mA, Normally/max., On 0 signal, Transistor outputs
UTILIZATION FACTOR	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)
 0.25 (Inductive load to EN
 60947-5-1, Without
 external suppressor
 circuit, T0.95 = 15 ms, R =
 48 Ω, L = 0.24 H)
 1 (Inductive load to EN
 60947-5-1, With external
 suppressor circuit)

POTENTIAL ISOLATION

Between Transistor
 outputs and expansion
 devices: yes
 Between Analog inputs
 and expansion devices:
 yes
 Between Analog inputs
 and Power supply: no
 Between Analog inputs
 and Outputs: yes
 Between Digital inputs 24
 V DC and expansion
 devices: yes
 Between Transistor
 outputs: no
 Between Transistor
 outputs and control
 buttons: yes
 Between Transistor
 outputs and Ethernet: yes
 Between Digital inputs 24
 V DC: no
 Between Analog inputs
 and Memory card: no
 Between Digital inputs 24
 V DC and Power supply:
 no
 Between Transistor
 outputs and Memory card:
 yes
 Between Transistor
 outputs and Inputs: yes
 Between Digital inputs 24
 V DC and Outputs: yes
 Between Digital inputs 24
 V DC and Memory card: no

Between Analog inputs: no

Between Analog inputs
 and Ethernet: yes
 Between Digital inputs 24
 V DC and Ethernet: yes
 Between Transistor
 outputs and Power supply:
 yes

**NUMBER OF INPUTS
 (DIGITAL)**

8

POWER LOSS

2 W

VOLTAGE DIPS	20 ms ≤ 10 ms, Bridging voltage dips
NUMBER OF INTERFACES (PROFINET)	0
NUMBER OF OUTPUTS (ANALOG)	0
RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN)	0 A
STATIC HEAT DISSIPATION, NON-CURRENT-DEPENDENT PVS	2 W
SUPPLY VOLTAGE AT AC, 50 HZ - MAX	0 VAC
SUPPLY VOLTAGE AT AC, 50 HZ - MIN	0 VAC
SUPPLY VOLTAGE AT AC, 60 HZ - MAX	0 VAC
SUPPLY VOLTAGE AT AC, 60 HZ - MIN	0 VAC
SUPPLY VOLTAGE AT DC - MAX	28.8 VDC
SUPPLY VOLTAGE AT DC - MIN	20.4 VDC
SWITCHING CURRENT	0.5 A
PRODUCT CATEGORY	Control relays easyE4
RESOLUTION	<ul style="list-style-type: none"> • 1 min (Range H:M) • 1 s (Range M:S) • 12 Bit (value 0 - 4095, Analog inputs) • 5 ms (Range S)
POWER CONSUMPTION	2 W
RATED OPERATIONAL VOLTAGE	24 V DC (transistor outputs) 20.4 - 28.8 V DC 24 V DC (digital inputs) 24 V DC (-15 %/+ 20 % - power supply) 20.4 - 28.8 V DC (Transistor outputs)
SHORT-CIRCUIT PROTECTION	≥ 1A (T), Fuse, Power supply Yes, electronic (Q1 - Q4), Transistor outputs
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

PROJECT NAME:

PROJECT NUMBER:

PREPARED BY:

DATE:



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