Eaton 197507

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

PRODUCT NAME	Eaton Moeller® series EASY Control relay
CATALOG NUMBER	197507
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	IEC 60068-2-6 IEC/EN 61000-4 EN 55022 IEC 60068-2-27 IEC/EN 61000-4-2 EN 55011 UL Listed UL Category Control No.: NRAQ, NRAQ7 IEC/EN 61131-2 IEC 60068-2-30 EN 61010 IEC/EN 61000-6-3 IEC/EN 61000-6-2 EN 50178 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

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	group C (ethylene) 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

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

CHARACTERISTIC CURVE	eaton-electrical-timers-easy-control-relays-characteristic-curve-002.eps
INSTALLATION VIDEOS	Video easy E4 control relay
	eaton-logic-relays-easy-control-relays-dimensions.eps eaton-modular-plc-easy-control-relays-3d-drawing-002.eps

	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.
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	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
POLLUTION DEGREE	2
ACCURACY	± 2 s/day, Real-time clock to inputs (± 0.2 h/Year) ± 1 %, Repetition accuracy of timing relays (of values) ± 2 %, (I7, I8) ± 0.12 V, of actual value, within a single device (Analog Inputs) ± 3 %, of actual value, two easy devices (Analog

	Inputs)
BURST IMPULSE	2 kV, Signal cable 2 kV, Supply cable According to IEC/EN 61000-4-4
AIR PRESSURE	795 - 1080 hPa (operation)
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	Max. 2.5 V (at status 0 per channel, transistor outputs) $U = U_e$ - 1 V (signal 1 at I_e = 0.5 A, 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) Front build in possible Rail mounting possible
VOLTAGE TYPE	DC
MOUNTING POSITION	Horizontal Vertical
OUTPUT	Voltage Current 4 Transistor Outputs Parallel connection of max. 2 Transistor outputs
CONTACT DISCHARGE	6 kV
BASE TYPE	No
SAFETY PERFORMANCE LEVEL (EN ISO 13849-1)	None
SIL (IEC 61508)	None
AMBIENT OPERATING TEMPERATURE - MAX	55 °C
AMBIENT OPERATING TEMPERATURE - MIN	-25 °C

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	100 % (Inductive load to EN 60947-5-1, With external suppressor circuit) 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, Without

	external suppressor circuit, T0.95 = 15 ms, R = 48 Ω, L = 0.24 H)
SOFTWARE	EASYSOFT-SWLIC/easySoft
SURGE RATING	0.5 kV, Supply cables, symmetrical, EASY...DC, power pulses (Surge), EMC 1 kV, Supply cables, asymmetrical, power pulses (Surge), EMC According to IEC/EN 61000-4-5 Level 4
CABLE LENGTH	30 m, screened, Analog inputs 100 m, unscreened, Digital inputs 12 V DC 100 m, unscreened, Digital inputs 24 V AC
CONVERSIONS	Each CPU cycle, Analog inputs
ELECTROMAGNETIC FIELDS	1 V/m at 2 - 2.7 GHz (according to IEC EN 61000-4-3) 10 V/m at 0.08 - 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)
PROTECTION AGAINST POLARITY REVERSAL	Yes (Caution: A short circuit will result if 0 V or earth is applied to the outputs in the event that the supply voltage is connected to the wrong poles.)
NUMBER OF INPUTS (ANALOG)	4
CONNECTION TYPE	Ethernet: RJ45 plug, 8-pole Push in terminals
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	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
RESIDUAL CURRENT	0.1 mA (on signal "1" per channel)
PROTOCOL	MODBUS TCP/IP
RESIDUAL RIPPLE	5 % (transistor outputs) ≤ 5 %
RAPID COUNTER INPUTS	1:1 (Pulse pause ratio) 10 kHz, Counter frequency ≤ 20 m (cable length, screened) -2147483648 - 2147483647 (value range) Square (pulse shape) Number: 4 (I1, I2, I3, I4 - Digital inputs 24 V DC)
RATED OPERATIONAL CURRENT (IE)	Max. 0.5 A at signal „1” DC per channel
INSULATION RESISTANCE	According to EN 50178, EN 61010-2-201, UL61010-2-201, CSA-C22.2 NO. 61010-

	2-201
FUNCTIONS	Thermal cutout
INCREMENTAL COUNTER	Pulse shape: Square Signal offset: 90° Counter frequency: ≤ 5 kHz Number of counter inputs: 2 (I1 + I2, I3 + I4) Pulse pause ratio: 1:1 Value range: -2147483648 to +2147483647
SHORT-CIRCUIT CURRENT	6.8 A, Transistor outputs
VIBRATION RESISTANCE	10 - 57 Hz, 0.15 mm constant amplitude According to IEC/EN 60068-2-6 57 - 150 Hz, 2 g constant acceleration
INCREMENTAL ENCODER	Cable length: ≤ 20 m (screened)
INPUT IMPEDANCE	13.3 kΩ
INPUT CURRENT	80 mA
SHOCK RESISTANCE	15 g, Mechanical, according to IEC/EN 60068-2-27, Half-sinusoidal shock 11 ms, 18 Impacts
FREQUENCY COUNTER	Pulse shape: Square (digital inputs 24 V DC) Cable length: ≤ 20 m (screened, Digital inputs 24 V DC) Counter frequency: 5 kHz (Digital inputs 24 V DC) Number: 4 (I1, I2, I3, I4 - Digital inputs 24 V DC) Pulse pause ratio: 1:1 (Digital inputs 24 V DC)
INPUT VOLTAGE	Signal 0: ≤ 5 V DC (I1 - I8, Digital inputs, 24 V DC)
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
LED INDICATOR	Status indication of Power/RUN Status indication of Ethernet: LED
SIGNAL RANGE	0 - 10 V DC, Analog inputs
UTILIZATION FACTOR	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) 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)
POTENTIAL ISOLATION	Between Analog inputs and Digital inputs: no Between Transistor outputs: no
NUMBER OF INPUTS (DIGITAL)	4 8
POWER LOSS	2 W
VOLTAGE DIPS	≤ 10 ms, Bridging voltage dips
NUMBER OF INTERFACES (PROFINET)	0
NUMBER OF OUTPUTS (ANALOG)	0
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	• 1 min (Range H:M) • 1 s (Range M:S) • 12 Bit (value 0 - 4095, Analog inputs) • 12 Bit (value 0 -

	4095, Analog outputs) • 5 ms (Range S)
POWER CONSUMPTION	2 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)
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

PROJECT NAME:	
PROJECT NUMBER:	
PREPARED BY:	
:	

Eaton House
30 Pembroke Road
Dublin 4,
Eaton.com

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