



I/O expansion, For use with easyE4, 100 - 240 V AC, 110 - 220 V DC (cULus: 100-110 V DC), Inputs expansion (number) digital: 8, screw terminal

Part no. EASY-E4-AC-16RE1
197222
EL Number 4500560
(Norway)

General specifications	
Product name	Eaton Moeller® series EASY I/O expansion
Part no.	EASY-E4-AC-16RE1
EAN	4015081939428
Product Length/Depth	58 millimetre
Product height	90 millimetre
Product width	72 millimetre
Product weight	0.25 kilogram
Compliances	Contact Manufacturer
Certifications	IEC 60068-2-30 CSA-C22.2 No. 61010 IEC/EN 61000-6-2 IEC 60068-2-6 EN 50178 IEC/EN 61131-2 IEC 60068-2-27 EN 61010 CULus per UL 61010 IEC 60664 IEC/EN 61000-4-2 IEC/EN 61000-6-3 DNV GL CE UL File No.: E205091 UL Listed UL Category Control No.: NRAQ, NRAQ7 UL hazardous location group A (acetylene) UL hazardous location class I UL hazardous location group C (ethylene) UL hazardous location group B (hydrogen) UL hazardous location group D (propane) UL hazardous location division 2
Product Tradename	EASY
Product Type	I/O expansion
Product Sub Type	None
Catalog Notes	fitted with two controlled relays
Features & Functions	
Features	Expandable Expansion device
Fitted with:	Relay output
General information	
Degree of protection	IP20
Input frequency	50/60 Hz (Digital inputs, at 115/230 V AC) 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 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 (Filament bulb load at 500 W, 115/120 V AC) 25,000 Operations (Fluorescent lamp load 1 x 58 W at 230/240 V AC, conventional, compensated) 25,000 Operations (Fluorescent lamp load 10 x 58 W at 230/240 V AC, uncompensated)
Lifespan, mechanical	1,000,000 Operations
Mounting method	Wall mounting/direct mounting Top-hat rail fixing (according to IEC/EN 60715, 35 mm) Rail mounting possible 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		MODBUS TCP/IP
Protection		B16 circuit breaker or 8 A (T) fuse, Protection of an Output relay
Rated impulse withstand voltage (Uimp)		6 kV (contact-coil)
Residual ripple		≤ 5 %
Software		EASYSOFT-SWLIC/easySoft7
Switching frequency		2 Hz, Resistive load/lamp load, Relay outputs 0.5 Hz, Inductive load, Relay outputs 10 Hz, Relay outputs
Type		easyE4 extension
Utilization category		R 300 Light Pilot Duty, UL/CSA Control Circuit Rating Codes DC B 300 Light Pilot Duty, UL/CSA Control Circuit Rating Codes AC
Voltage type		AC
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 - min		-25 °C
Ambient operating temperature - max		55 °C
Ambient storage temperature - min		-40 °C
Ambient storage temperature - max		70 °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)
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		According to IEC/EN 61000-4-5, power pulses (Surge), EMC 1 kV, Supply cables, symmetrical, power pulses (Surge), EMC 2 kV, Supply cables, asymmetrical, power pulses (Surge), EMC
Voltage dips		10 ms
Terminal capacities		
Terminal capacity		0.2 - 2.5 mm ² (22 - 12 AWG), flexible with ferrule 0.2 - 4 mm ² (AWG 22 - 12), solid
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)		5 A
Inrush current		12.5 A (for 6 ms)
Power consumption		4 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		85 - 264 V AC

			Max. 300 V AC Max. 300 V DC 110/120 V DC (power supply) 240 V AC 100/110/115/120/230/240 AC (-15 %/+10 %)
Supply frequency			50/60 Hz (± 5%)
Supply voltage at AC, 50 Hz - min			85 V AC
Supply voltage at AC, 50 Hz - max			264 V AC
Supply voltage at DC - min			85 V DC
Supply voltage at DC - max			264 V DC
Uninterrupted current			1 A DC, at R 300 (UL/CSA) 5 A AC, max. thermal continuous current $\cos \varphi = 1$ at B 300 (UL/CSA) 8 A DC, at 24 V DC (UL/CSA) 8 A AC, at 240 V AC (UL/CSA)
Short-circuit rating			
Short-circuit protection			≥ 1A (T), Fuse, Power supply
Communication			
Connection type			Screw terminal
Cable			
Cable length			≤ 100 m per input (I1 - I6, I9 - I12, debounce ON), Digital inputs 115/230 V AC ≤ 60 m per input (I1 - I8), Digital inputs 115/230 V AC 40 m (max. permissible per input R1 to R12), Digital inputs 115/230 V AC
Input/Output			
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
Input current			6 x 0.25 mA (I1 - I8, at 115 V AC, 60 Hz, at signal 1) 6 x 0.5 mA (I1 - I8, at 230 V AC, 50 Hz, at signal 1)
Input voltage			Condition 0: 0 - 40 V AC, Digital inputs, 115/230 V AC) Condition 1: 79 - 264 V AC, Digital inputs, 115/230 V AC)
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 > 500 mA (Relay outputs, Recommended for load: 12 V AC/DC) Relay outputs in groups of 1 Voltage Current
Parallel switching			Not permitted
Safety			
Explosion safety category for gas			None
Potential isolation			Between Relay outputs and expansion devices: yes Between Digital inputs 115/230 V AC and Outputs: yes Between Digital inputs 115/230 V AC and expansion devices: yes Between Relay outputs and Inputs: yes Between Digital inputs 115/230 V AC and base unit: yes Between Digital inputs 115/230 V AC and Power supply: no Between Digital inputs 115/230 V AC: no Basic isolation: 600 V AC (Relay outputs) Between Relay outputs and Power supply: yes Between Relay outputs: yes Safe isolation according to EN 50178: 300 V AC (Relay outputs)
Protection against polarity reversal			Yes, for supply voltage (Siemens MPI optional)
Explosion safety category for dust			None
Safe isolation			300 V AC, Between coil and contact, According to EN 50178 300 V AC, Between two contacts, According to EN 50178
Design verification			

Equipment heat dissipation, current-dependent Pvid		2 W
Heat dissipation capacity Pdis		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		4 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.
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.

Technical data ETIM 9.0

Programmable logic controllers PLC (EG000024) / Logic module (EC001417)		
Electric engineering, automation, process control engineering / Control, Process Control System (PCS) / Programmable logic control (SPS) / Logic module (ecl@ss13-27-24-22-16 [AKE539019])		
Supply voltage AC 50 Hz	V	85 - 264
Supply voltage AC 60 Hz	V	85 - 264
Supply voltage DC	V	85 - 264
Voltage type (supply voltage)		AC
Switching current	A	5
Power consumption	W	4
Number of analogue inputs		0
Number of analogue outputs		0
Number of digital inputs		8
Number of digital outputs		8
With relay output		Yes
Number of HW-interfaces industrial Ethernet		0
Number of interfaces PROFINET		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 parallel		0
Number of HW-interfaces wireless		0
Number of HW-interfaces other		0
With optical interface		No
Supporting protocol for EtherCAT		No
Supporting protocol for TCP/IP		Yes

Supporting protocol for PROFIBUS		No
Supporting protocol for CAN		No
Supporting protocol for INTERBUS		No
Supporting protocol for ASI		No
Supporting protocol for KNX		No
Supporting protocol for Modbus		Yes
Supporting protocol for Data-Highway		No
Supporting protocol for DeviceNet		No
Supporting protocol for SUCONET		No
Supporting protocol for LON		No
Supporting protocol for PROFINET IO		No
Supporting protocol for PROFINET CBA		No
Supporting protocol for SERCOS		No
Supporting protocol for Foundation Fieldbus		No
Supporting protocol for EtherNet/IP		No
Supporting protocol for AS-Interface Safety at Work		No
Supporting protocol for DeviceNet Safety		No
Supporting protocol for INTERBUS-Safety		No
Supporting protocol for PROFIsafe		No
Supporting protocol for SafetyBUS p		No
Supporting protocol for other bus systems		No
Radio standard Bluetooth		No
Radio standard WLAN 802.11		No
Radio standard GPRS		No
Radio standard GSM		No
Radio standard UMTS		No
IO link master		No
Redundancy		No
With display		No
Degree of protection (IP)		IP20
Basic device		No
Expandable		Yes
Expansion device		Yes
With time switch clock		No
Rail mounting possible		Yes
Wall mounting/direct mounting		Yes
Front built-in possible		Yes
Rack-assembly possible		No
Suitable for safety functions		No
SIL according to IEC 61508		None
Performance level according to EN ISO 13849-1		None
Appendant operation agent (Ex ia)		No
Appendant operation agent (Ex ib)		No
Explosion safety category for gas		None
Explosion safety category for dust		None
Certified for UL hazardous location class I		Yes
Certified for UL hazardous location class II		No
Certified for UL hazardous location class III		No
Certified for UL hazardous location division 1		No
Certified for UL hazardous location division 2		Yes
Certified for UL hazardous location group A (acetylene)		Yes
Certified for UL hazardous location group B (hydrogen)		No
Certified for UL hazardous location group C (ethylene)		Yes
Certified for UL hazardous location group D (propane)		Yes
Certified for UL hazardous location group E (metal dusts)		No

Certified for UL hazardous location group F (carbonaceous dusts)		No
Certified for UL hazardous location group G (non-conductive dusts)		No
Width	mm	72
Height	mm	90
Depth	mm	58