



I/O expansion, For use with easyE4, 12/24 V DC, 24 V AC, Inputs/Outputs expansion (number) digital: 8, Push-In



Part no. **EASY-E4-UC-16RE1P**  
**197511**

General specifications	
Product name	Eaton Moeller® series EASY I/O expansion
Part no.	EASY-E4-UC-16RE1P
EAN	4015081940899
Product Length/Depth	58 millimetre
Product height	90 millimetre
Product width	72 millimetre
Product weight	0.25 kilogram
Compliances	CE
Certifications	IEC 60068-2-27 EN 61010 UL Category Control No.: NRAQ, NRAQ7 IEC/EN 61000-6-3 IEC 60068-2-6 IEC/EN 61000-4-2 UL Listed CE IEC 60068-2-30 DNV GL EN 50178 UL File No.: E205091 IEC/EN 61131-2 IEC/EN 61000-6-2 UL hazardous location class I UL hazardous location division 2 UL hazardous location group C (ethylene) UL hazardous location group D (propane) UL hazardous location group A (acetylene) UL hazardous location group B (hydrogen)
Product Tradename	EASY
Product Type	I/O expansion
Product Sub Type	None
<b>Features &amp; Functions</b>	
Fitted with:	Relay output
<b>General information</b>	
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 (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, with upstream electrical device) 25,000 Operations (Fluorescent lamp load 10 x 58 W at 230/240 V AC, uncompensated) 25,000 Operations (Filament bulb load at 500 W, 115/120 V AC) 25,000 Operations (Filament bulb load at 1000 W, 230/240 V AC)
Lifespan, mechanical	1,000,000 Operations
Mounting method	Rail mounting possible Wall mounting/direct mounting
Overvoltage category	III
Pollution degree	2
Product category	Control relays easyE4
Protocol	MODBUS TCP/IP
Protection	Miniature circuit-breaker B16 or slow-blow 8 A fuse, Protection of an output relay
Rated impulse withstand voltage (Uimp)	6 kV (contact-coil)
Residual ripple	5 % (transistor outputs) ≤ 5 %
Software	EASYSOFT-SWLIC/easySoft7

Switching frequency		0.5 Hz, Inductive load, Relay outputs 10 Hz, Relay outputs 2 Hz, Resistive load/lamp load, Relay outputs
Type		easyE4 extension
Used with		easyE4
Utilization category		B 300 Light Pilot Duty, UL/CSA Control Circuit Rating Codes AC R 300 Light Pilot Duty, UL/CSA Control Circuit Rating Codes DC
Voltage type		AC/DC
<b>Ambient conditions, mechanical</b>		
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
<b>Climatic environmental conditions</b>		
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)
<b>Electro magnetic compatibility</b>		
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		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)
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, symmetrical, power pulses (Surge), EMC 2 kV, Supply cables, asymmetrical, power pulses (Surge), EMC According to IEC/EN 61000-4-5 Level 4
Voltage dips		≤ 1 ms from rated voltage (12 V DC) 10 ms
<b>Terminal capacities</b>		
Terminal capacity		0.2 - 2.5 mm <sup>2</sup> (22 - 12 AWG), flexible with ferrule
<b>Electrical rating</b>		
Conventional thermal current Ith of auxiliary contacts (1-pole, open)		5 A
Power consumption		3 W
Rated breaking capacity		200000 Operations at DC-13, 24 V DC, 1 A (500 Ops./h) 300000 Operations at AC-15, 250 V AC, 3 A (600 Ops./h)
Rated insulation voltage (Ui)		240 V
Rated operational voltage		Max. 300 V AC Max. 300 V DC 85 - 264 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		10.2 V DC
Supply voltage at DC - max		28.8 V DC
Uninterrupted current		1 A DC, at R 300 (UL/CSA) 10 A AC, at 240 V AC (UL/CSA) 8 A DC, at 24 V DC (UL/CSA)

		5 A AC, max. thermal continuous current $\cos \varphi = 1$ at B 300 (UL/CSA)
<b>Short-circuit rating</b>		
Short-circuit protection		$\geq 1$ A (T), Fuse, Power supply
<b>Communication</b>		
Connection type		Push in terminals
<b>Cable</b>		
Cable length		40 m (max. per input), Digital inputs 24 V DC 100 m, unscreened, Digital inputs 12 V DC 100 m, unscreened, Digital inputs 24 V AC
<b>Input/Output</b>		
Delay time		20 ms, Digital Inputs 12 V DC, Delay time from 1 to 0, Debounce ON 0.2 ms typ., Digital inputs 24 V DC (I1 - I8), Delay time from 1 to 0, Debounce OFF 20 ms, Digital Inputs 12 V DC, Delay time from 0 to 1, Debounce ON 0.2 ms typ., Digital inputs 12 V DC (I1 - I8), Delay time from 1 to 0, Debounce OFF 0.15 ms typ., Digital inputs 12 V DC (I1 - I8), Delay time from 0 to 1, Debounce OFF 0.1 ms typ., Digital inputs 24 V DC (I1 - I8), Delay time from 0 to 1, Debounce OFF
Input current		200 mA
Input voltage		Status 0: $\leq 15$ V DC (I1 - I4, Digital inputs, 24 V DC) Signal 0: $\leq 5$ V DC (I1 - I8, Digital inputs, 24 V DC)
Making/breaking capacity		28/28 VA (DC, at R 300) 3600/360 VA (AC, at B 300)
Number of inputs (analog)		0
Number of inputs (digital)		8
Number of outputs (analog)		0
Number of outputs (digital)		8
Output		Voltage Relay outputs in groups of 1 > 500 mA (Relay outputs, Recommended for load: 12 V AC/DC) Current 8 Relay Outputs
<b>Safety</b>		
Explosion safety category for gas		None
Potential isolation		Basic isolation: 600 V AC (Relay outputs) Between Analog inputs and Digital inputs: no Between Relay outputs: yes
Protection against polarity reversal		Yes
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
<b>Design verification</b>		
Equipment heat dissipation, current-dependent P <sub>vid</sub>		2 W
Heat dissipation capacity P <sub>diss</sub>		0 W
Heat dissipation per pole, current-dependent P <sub>vid</sub>		0 W
Static heat dissipation, non-current-dependent P <sub>vs</sub>		3 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 (ec@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	10.2 - 28.8
Voltage type (supply voltage)		AC/DC
Switching current	A	5
Power consumption	W	3
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		No
Expansion device		No
With time switch clock		No
Rail mounting possible		Yes
Wall mounting/direct mounting		Yes
Front built-in possible		No
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