

I/O expansion, For use with easyE4, 100 - 240 V AC, 110 - 220 V DC (cULus: 100-110 V DC), Inputs expansion (number) digital: 4, screw terminal



Part no. **EASY-E4-AC-8RE1**  
Catalog No. **197221**

## Delivery program

Product range	Control relays easyE4
Subrange	easyE4 digital input/output enhancements
Basic function	easyE4 extensions
Description	Input/output extension for easyE4 control relay Expandable with the easyE4 series of digital input/output expansions with easy-E4-CONNECT1 connector (Item Y7-197225) Rated operating voltage 100 to 240V AC or 100 to 240V DC For cULus, 100-110 VDC applies to all VDC specifications. 4 digital inputs with 100-240 VAC or 100-240 VDC 4 relay outputs for 12-250 VAC or 12-220 VDC Screw terminals
<b>Inputs</b>	
Inputs expansion (number)	digital: 4
<b>Additional features</b>	
Display	with diagnostic LED
Software	EASYSOFT-SWLIC/easySoft 7
Supply voltage	100 - 240 V AC, 100 - 240 V DC (cULus: 100 - 110 V DC)
For use with	easyE4

## Technical data

General			
Standards		EN 61000-6-2 EN 61000-6-3 IEC 60068-2-6 IEC 60068-2-27 IEC 60068-2-30 IEC/EN 61131-2 EN 61010 EN 50178	
Approvals		cULus	
Approvals		CE	
certificate		DNV GL	
shipping classification			
Dimensions (W x H x D)	mm	35.5 x 90 x 58	
Weight	kg	0.129	
Mounting		Top-hat rail IEC/EN 60715, 35 mm or screw fixing using fixing brackets ZB4-101-GF1 (accessories)	
Connection type		screw terminal	

## Terminal capacities

Screw terminals			
Solid	mm <sup>2</sup>	0.2 - 4	
flexible	mm <sup>2</sup>	0.2 - 2.5	
Solid or flexible conductor, with ferrule	mm <sup>2</sup>	0.2 - 2.5	
Solid or stranded	AWG	22 - 12	
Standard screwdriver	mm	0.8 x 3.5	
Tightening torque	Nm	0.5 - 0.7	
Stripping length	mm	6.5	

## Climatic environmental conditions

Operating ambient temperature		°C	-25 to 55, cold as per IEC 60068-2-1, heat as per IEC 60068-2-2
Condensation			Take appropriate measures to prevent condensation
Storage	θ	°C	-40 - +70
relative humidity		%	in accordance with IEC 60068-2-30, IEC 60068-2-78 5 - 95

Air pressure (operation)	hPa	795 - 1080
<b>Ambient conditions, mechanical</b>		
Protection type (IEC/EN 60529, EN50178, VBG 4)		IP20
Vibrations	Hz	In accordance with IEC 60068-2-6 constant amplitude 0.15 mm: 10 - 57 constant acceleration 2 g: 57 - 150
Mechanical shock resistance (IEC/EN 60068-2-27) semi-sinusoidal 15 g/11 ms	Impacts	18
Drop to IEC/EN 60068-2-31	Drop height	mm 50
Free fall, packaged (IEC/EN 60068-2-32)		m 0.3
Mounting position		Vertical or horizontal
<b>Electromagnetic compatibility (EMC)</b>		
Overtoltage category/pollution degree		III/2
Electrostatic discharge (ESD)		
applied standard		nach IEC/EN 61000-4-2
Air discharge	kV	8
Contact discharge	kV	6
Electromagnetic fields (RFI) to IEC EN 61000-4-3	V/m	0.08 - 1.0 GHz: 10 1.4 - 2 GHz: 3 2.0 - 2.7 GHz: 1
Radio interference suppression		EN 61000-6-3 Class B
Burst	kV	according to IEC/EN 61000-4-4 Supply cables: 2 Signal cables: 2
power pulses (Surge)		according to IEC/EN 61000-4-5 1 kV (supply cables, symmetrical) 2 kV (supply cables, asymmetrical)
Immunity to line-conducted interference to (IEC/EN 61000-4-6)	V	10
<b>Insulation resistance</b>		
Clearance in air and creepage distances		nach EN 50178, EN 61010-2-201, UL61010-2-201, CSA-C22.2 NO. 61010-2-201
Insulation resistance		in accordance with EN 50178, EN 61010-2-201, UL61010-2-201, CSA-C22.2 NO. 61010-2-201
<b>Power supply</b>		
Rated operational voltage	U <sub>e</sub>	V 100 - 240V DC (-15/+10%) 100 - 240 DC (cULus: 100 - 110 DC) (-15/+10%)
Permissible range	U <sub>e</sub>	85 - 264 V AC 85 - 264 V DC (cULus: 85 - 120 V DC)
Residual ripple		% $\leq 5$
Protection against polarity reversal		yes
Frequency	Hz	50/60 ( $\pm 5\%$ )
Voltage dips	ms	$\leq 20$ ms at 100V AC 10 ms at 100V DC
Fuse	A	$\geq 1$ A (T)
<b>Digital inputs 115/230 V AC</b>		
Number		4
Potential isolation		from power supply: no between inputs: no from the outputs: yes to the base unit: yes to the expansion units: yes
Rated operational voltage	U <sub>e</sub>	V 100 - 240 V AC 100 - 240 V DC (cULus: 100 - 110 V DC)
Input voltage	U <sub>e</sub>	V Condition 0: 0 - 40V AC/DC Condition 1: 79-264 V AC/DC (cULus: 79-264 V AC/79-120 V DC)
Rated frequency	Hz	50/60
Input current at signal 1	mA	I1 - I4: 4 x 0.25 (at 115 V AC, 60 Hz) I1 - I4: 4 x 0.5 (at 230V AC, 50 Hz) I1-I4: 4 x 0.25 (at 115 VDC) I1 - I4: 4 x 0.5 (at 230V DC)
Deceleration time	ms	type 2521 (0 -> 1/1 -> 0, 50/60Hz) for AC type 0.5 (0 -> 1/1 -> 0) in DC
Cable length	m	40 (unshielded)
<b>Relay outputs</b>		
Number		4
Outputs in groups of		1
Parallel switching of outputs for increased output		Not permitted
Protection of an output relay		B16 circuit breaker or 8 A (T) fuse

Potential isolation			Safe isolation according to EN 50178: 300 V AC Basic isolation: 600 V AC from power supply: yes From the inputs: yes between outputs: yes to expansion devices: yes
Contacts			
Conventional thermal current (10 A UL)	A	5	
Recommended for load: 12 V AC/DC	mA	> 500	
Rated impulse withstand voltage $U_{imp}$ of contact coil	kV	6	
Rated operational voltage	$U_e$	V AC	240
Rated insulation voltage	$U_i$	V AC	240
Safe isolation according to EN 50178		V AC	300 between coil and contact 300 between two contacts
Making capacity			
AC-15, 250 V AC, 3 A (600 ops./h)	Operations	300000	
DC-13, L/R $\leq$ 150 ms, 24 V DC, 1 A (500 S/h)	Operations	200000	
Breaking capacity			
AC-15, 250 V AC, 3 A (600 Ops./h)	Operations	300000	
DC-13, L/R $\leq$ 150 ms, 24 V DC, 1 A (500 S/h)	Operations	200000	
Filament bulb load			
1000 W at 230/240 V AC	Operations	25000	
500 W at 115/120 V AC	Operations	25000	
Fluorescent lamp load			
Fluorescent lamp load 10 x 58 W at 230/240 V AC			
With upstream electrical device	Operations	25000	
Uncompensated	Operations	25000	
Fluorescent lamp load 1 x 58 W at 230/240 V AC, conventional, compensated	Operations	25000	
Switching frequency			
Mechanical operations	$\times 10^6$	10	
Switching frequency	Hz	10	
Resistive load/lamp load	Hz	2	
Inductive load	Hz	0.5	
UL/CSA			
Uninterrupted current at 240 V AC	A	5	
Uninterrupted current at 24 V DC	A	5	
AC			
Control Circuit Rating Codes (utilization category)			B 300 Light Pilot Duty
Max. rated operational voltage	V AC	300	
max. thermal continuous current $\cos \varphi = 1$ at B 300	A	5	
max. make/break $\cos \varphi \neq$ capacity 1 at B 300	VA	3600/360	
DC			
Control Circuit Rating Codes (utilization category)			R 300 Light Pilot Duty
Max. rated operational voltage	V DC	300	
Max. thermal uninterrupted current at R 300	A	1	
Max. make/break capacity at R 300	VA	28/28	

## Design verification as per IEC/EN 61439

Technical data for design verification			
Static heat dissipation, non-current-dependent	$P_{vs}$	W	8
Operating ambient temperature min.		°C	-25
Operating ambient temperature max.		°C	55
IEC/EN 61439 design verification			
10.2 Strength of materials and parts			
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 Verification of resistance of insulating materials to abnormal heat and fire due to internal electric 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 Insulation properties		
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 8.0

Programmable logic controllers PLC (EG000024) / Logic module (EC001417)		
Electric engineering, automation, process control engineering / Control / Programmable logic control (SPS) / Logic module (ecl@ss10.0.1-27-24-22-16 [AKE539014])		
Supply voltage AC 50 Hz	V	85 - 264
Supply voltage AC 60 Hz	V	85 - 264
Supply voltage DC	V	110 - 220
Voltage type of supply voltage		AC
Switching current	A	5
Number of analogue inputs		0
Number of analogue outputs		0
Number of digital inputs		4
Number of digital outputs		4
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 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 Wi-Fi 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
Width	mm	36
Height	mm	90
Depth	mm	58