



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**  
 Catalog No. **197222**

EL-Nummer **4500560**  
 (Norway)

**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 240 VAC or 100 to 240 VDC (cULus: 100 to 110 VDC) Digital inputs: 8 Digital outputs: 8 relays Screw terminals
<b>Inputs</b>			
Inputs expansion (number)			digital: 8
<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 61131-2 EN 61010 EN 50178
Approvals			
Approvals certificate			cULus CE
Dimensions (W x H x D)		mm	71.5 x 90 x 58
Weight		kg	0.232
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**

<b>Screw terminals</b>			
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	ø	°C	-40 - +70
relative humidity		%	in accordance with IEC 60068-2-30, IEC 60068-2-78 5 - 95

Air pressure (operation)		hPa	795 - 1080
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### Ambient conditions, mechanical

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

### Electromagnetic compatibility (EMC)

Overvoltage category/pollution degree			III/2
Electrostatic discharge (ESD)			
applied standard			according to IEC EN 61000-4-2
Air discharge		kV	8
Contact discharge		kV	6
Electromagnetic fields (RFI) to IEC EN 61000-4-3		V/m	0.8 - 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

### Insulation resistance

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

### Power supply

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		%	≤ 5
Siemens MPI, (optional)			yes
Frequency		Hz	50/60 (± 5%)
Voltage dips		ms	≤ 20 ms at 100V AC 10 ms at 100V DC
Fuse		A	≥ 1A (T)
Power loss	P	W	Normally 11

### Digital inputs 115/230 V AC

Number			8
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 - I8: 8 x 0.25 (at 115V AC, 60 Hz) I1 - I8: 8 x 0.5 (at 230V AC, 50 Hz) I1 - I8: 8 x 0.25 (at 115V DC) I1 - I8: 8 x 0.5 (at 230V DC)
Deceleration time		ms	type 39/32 (0 - > 1/1 -> 0, 50/60Hz) in AC type 0.5 (0 - > 1/1 -> 0) in DC
Cable length		m	40 (unshielded)

### Relay outputs

Number			8
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
<b>Supply voltage <math>U_{Aux}</math></b>			
Power loss	P	W	11

## Design verification as per IEC/EN 61439

Technical data for design verification			
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 7.0

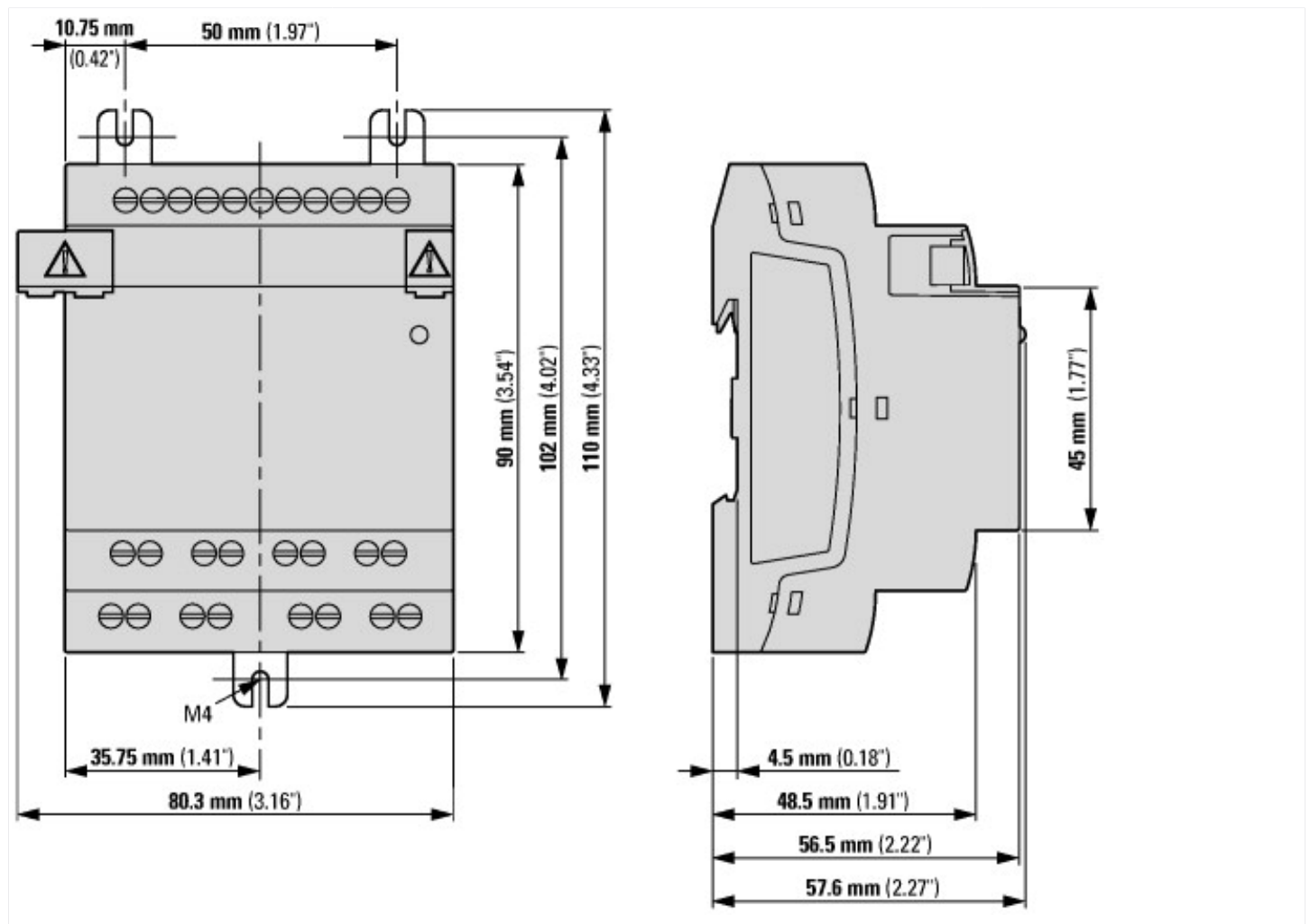
PLC's (EG000024) / Logic module (EC001417)		
Electric engineering, automation, process control engineering / Control / Programmable logic control (SPS) / Logic module (ecl@ss10.0.1-27-24-22-16 [AKE539014])		
Supply voltage AC 50 Hz	V	85 - 264
Supply voltage AC 60 Hz	V	85 - 264
Supply voltage DC	V	85 - 264
Voltage type of supply voltage		AC/DC
Switching current	A	5
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		2
With optical interface		No
Supporting protocol for TCP/IP		No
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		No

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 timer			No
Rail mounting possible			Yes
Wall mounting/direct mounting			Yes
Front build in possible			No
Rack-assembly possible			No
Suitable for safety functions			No
Category according to EN 954-1			
SIL according to IEC 61508			None
Performance level acc. 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	71.5
Height		mm	90
Depth		mm	58

## Approvals

UL File No.			E205091
UL Category Control No.			NRAQ/7
North America Certification			UL listed
Degree of Protection			IEC: IP20, UL/CSA Type: -

## Dimensions



## Assets (links)

### Declaration of CE Conformity

00003235

### Instruction Leaflets

IL050021ZU2019\_02

### Manuals

MN050009\_EN (English)

## Additional product information (links)

<b>assembly instructions easyE4 IL050021ZU</b>	
assembly instructions easyE4 IL050021ZU	<a href="ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL050021ZU2019_02.pdf">ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL050021ZU2019_02.pdf</a>
<b>easyE4 (MN050009) manual</b>	
easyE4 – Handbuch (MN050009) - Deutsch	<a href="ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN050009_DE.pdf">ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN050009_DE.pdf</a>
easyE4 (MN050009) manual - English	<a href="ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN050009_EN.pdf">ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN050009_EN.pdf</a>
Manuale easy E4 (MN050009) - italiano	<a href="ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN050009_IT.pdf">ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN050009_IT.pdf</a>
instrukcja easyE4 (MN050009) - polski	<a href="ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN050009_PL.pdf">ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN050009_PL.pdf</a>
f1=1454&f2=1174&f3=1755;Download Software easySoft V7	<a href="http://applications.eaton.eu/sdlc?LX=11&amp;f1=1454&amp;f2=1174&amp;f3=1755">http://applications.eaton.eu/sdlc?LX=11&amp;f1=1454&amp;f2=1174&amp;f3=1755</a>
Product overview (WEB)	<a href="http://www.eaton.eu/easyE4">http://www.eaton.eu/easyE4</a>