DATASHEET - EASY-E4-AC-12RCX1



Control relays, easyE4 (expandable, Ethernet), 100 - 240 V AC, 110 - 240 V DC, Inputs Digital: 8, Outputs Digital: 4 relais, screw terminal

Part no. EASY-E4-AC-12RCX1
Catalog No. 197216

Delivery program

Basic function			easyE4 basic device
Description			Electronic control relay with diagnostic LEDs with Ethernet interface 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 Digital inputs: 8 Digital outputs: 4 relays Screw terminals Delivery with customized user program is possible via Item (Y7) -2010781 EASY-COMBINATION
Inputs			
Digital			8
Additional features			
Real time clock			#
Expansions			Expandable networkable (Ethernet)
Supply voltage			100 - 240 V AC, 100 - 240 V DC
Software			EASYSOFT-SWLIC/easySoft 7

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
Dimensions (W x H x D)		mm	71.5 x 90 x 58
Weight		kg	0.2
Mounting			Top-hat rail IEC/EN 60715, 35 mm or screw fixing using fixing brackets ZB4-101-GF1 (accessories)
Connection type			screw terminal
Ethernet			
Connections			RJ45 plug, 8-pin
Cable			CAT5

Terminal capacities

Screw terminals			
Solid		mm^2	0.2/4 (AWG 22 - 12)
Flexible with ferrule		mm^2	0.2 - 2.5
Standard screwdriver		mm	3.5 x 0.8
Max. tightening torque		Nm	0.6

Display

Status indicator (LED)			Power/RUN Ethernet

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

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

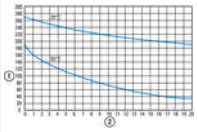
Electromagnetic compatibility (EMC)

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			per EN 50178, EN 61010-2-201, UL61010-2-201, CSA-C22.2 NO. 61010-2-201

Back-up of real-time clock

Back-up of real-time clock			
			① Backup time (hours) with fully charged double layer capacitor ② Service life (years)
Accuracy of real-time clock to inputs		s/day	typ. ± 2 (± 0.2 h/Year)
			depending on ambient air temperature fluctuations of up to ± 5 s/day (± 0.5 h/year) are possible

Repetition accuracy of timing relays

Accuracy of timing relays (of values)		%	± 0.02
Resolution			
Range “S”		ms	5
Range “M:S”		s	1
Range “H:M”		min	1

Power supply

Rated operational voltage	U_e	V	100 - 240V DC (-15/+10%) 100 - 240V DC (-15/+10%)
Permissible range	U_e		85 - 264 V AC 85 - 264 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)

Digital inputs 115/230 V AC

Number			8
Potential isolation			from power supply: no for memory card: no for Ethernet interface: yes between inputs: no from the outputs: yes to the base unit: yes to the expansion units: yes

Rated operational voltage	U_e	V	100 - 240 V AC 100 - 240 V DC
Input voltage	U_e	V	Condition 0: 0 - 40V AC/DC Condition 1: 79 - 264V AC/DC
Rated frequency		Hz	50/60
Input current at signal 1		mA	I1 - I6: 6 x 0.25 (at 115 V AC, 60 Hz) I7, I8: 2 x 4 (at 115 V AC, 60 Hz) I1 - I6: 6 x 0.5 (at 230 V AC, 50 Hz) I7, I8: 2 x 6 (at 230 V AC, 50 Hz) I1 - I8: 8 x 0.25 (at 115V DC) I1 - I8: 8 x 0.5 (at 230V DC)
Deceleration time		ms	45/38 (0 -> 1/1 -> 0, debounce ON 50/60Hz) for AC type 25/21 (0 -> 1/1 -> 0, debounce OFF 50/60Hz) for AC 20 (0 -> 1/1 -> 0, debounce ON) for DC type 0.03 (0 -> 1/1 -> 0, debounce OFF) for DC
Cable length		m	40 (unshielded) (I1 - I6) 100 (unshielded) (I7, I8)

Relay outputs

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 Ethernet: yes to control buttons: yes to expansion devices: yes
Contacts			
Conventional thermal current (10 A UL)		A	8
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 ≦ 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 ≦ 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		$x\ 10^6$	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	10
Uninterrupted current at 24 V DC		A	8
AC			
Control Circuit Rating Codes (utilization category)			B 300 Light Pilot Duty
Max. rated operational voltage		V AC	300

max. thermal continuous current cos φ = 1 at B 300	A	5
max. make/break cos φ ≠ 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

Ethernet

Data transfer rate	Mbit/s	10/100
Connections		RJ45 plug, 8-pin
Cable		CAT5

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	8
Number of analogue inputs		0
Number of analogue outputs		0
Number of digital inputs		8
Number of digital outputs		4
With relay output		Yes

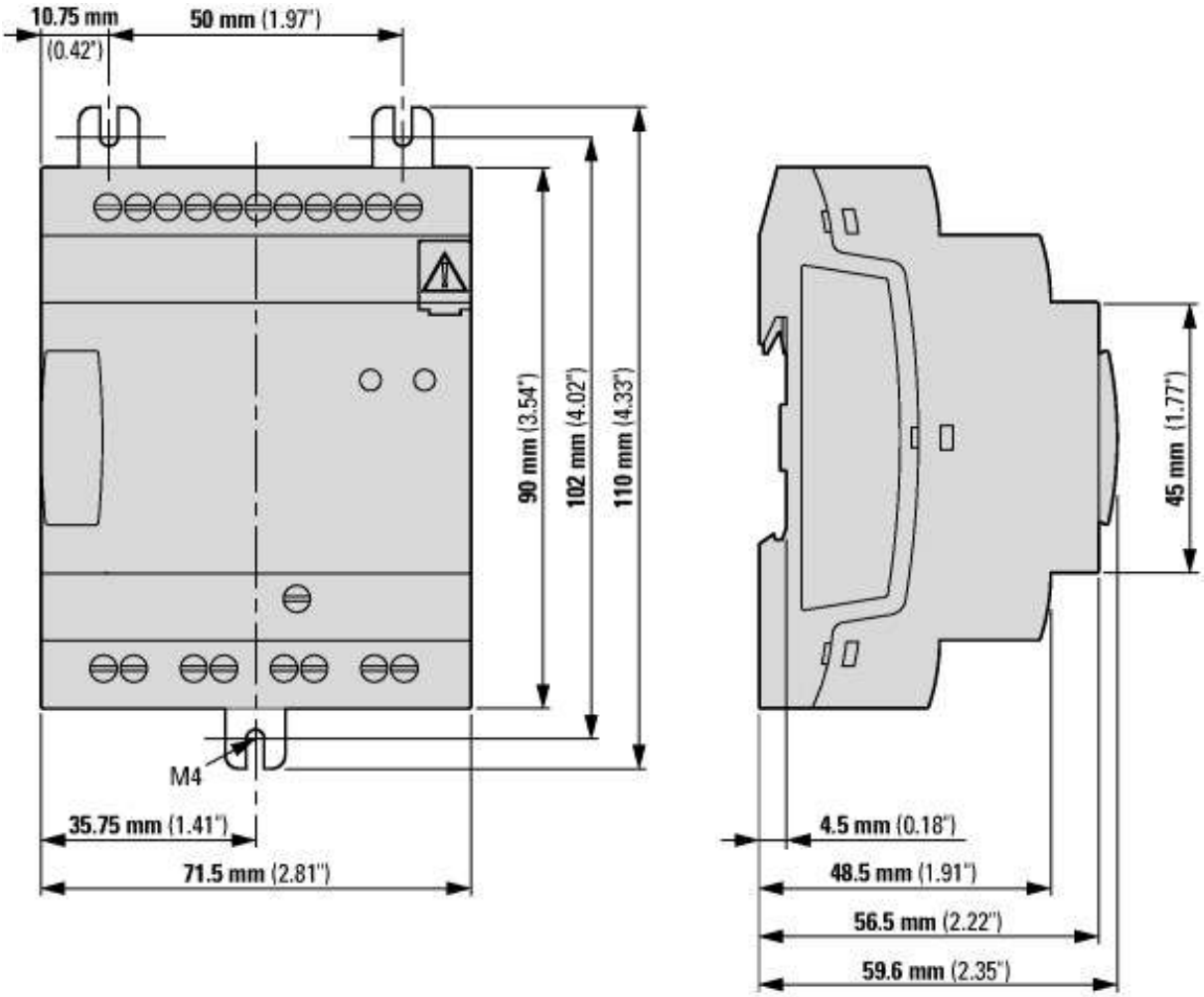
Number of HW-interfaces industrial Ethernet	1
Number of interfaces PROFINET	0
Number of HW-interfaces RS-232	0
Number of HW-interfaces RS-422	0
Number of HW-interfaces RS-485	0
Number of HW-interfaces serial TTY	0
Number of HW-interfaces USB	0
Number of HW-interfaces parallel	0
Number of HW-interfaces Wireless	0
Number of HW-interfaces other	1
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 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	Yes
Expandable	Yes
Expansion device	No
With timer	Yes
Rail mounting possible	Yes
Wall mounting/direct mounting	Yes
Front build in possible	Yes
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

Degree of Protection			IEC: IP20, UL/CSA Type: -

Dimensions



Assets (links)

Declaration of CE Conformity

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