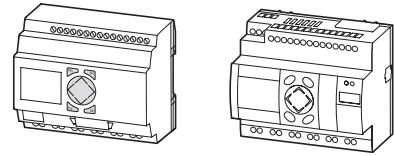


Contents

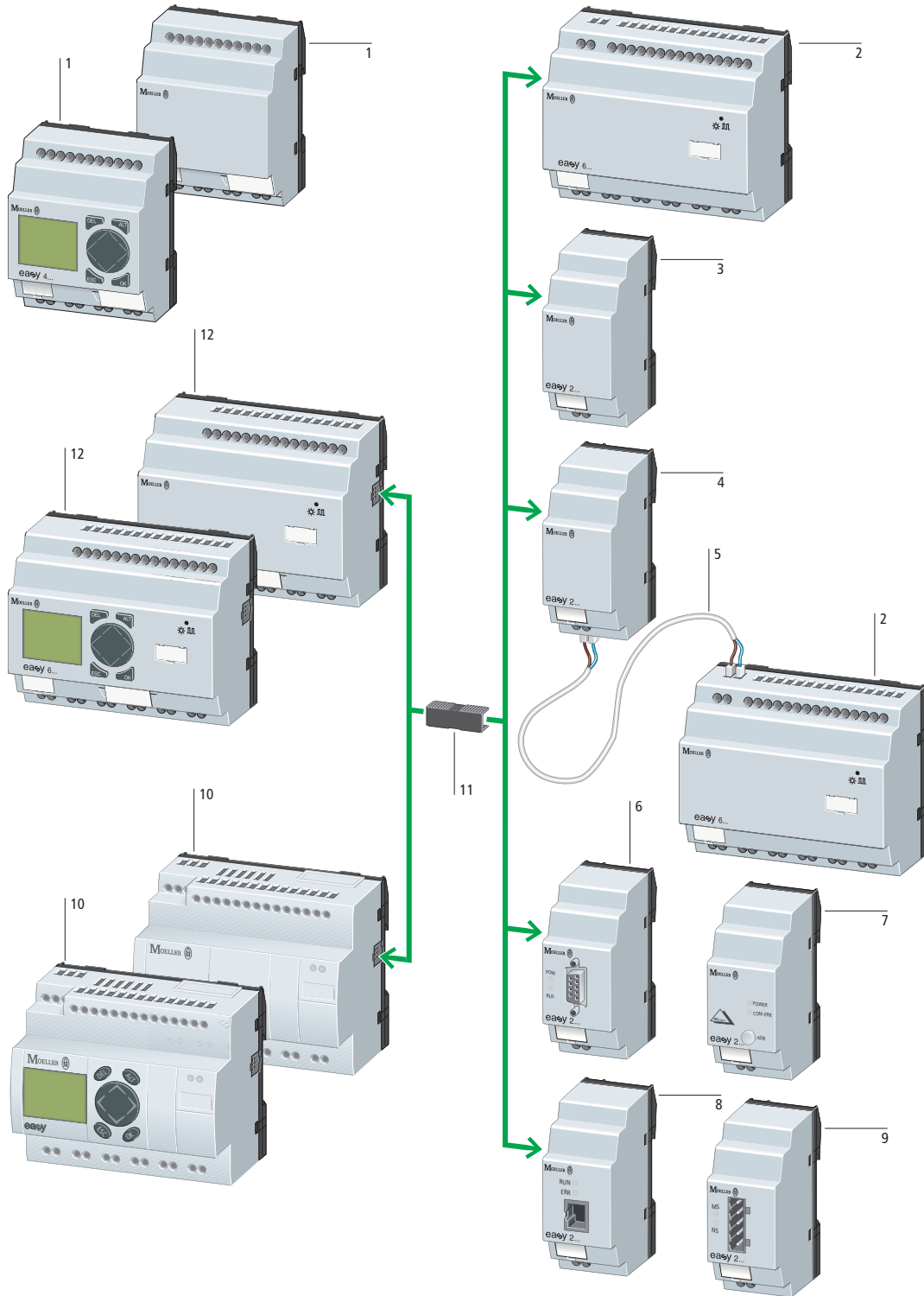
EASY Control Relay



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EASY800 networking	01/006
EASY control relay	
Basic units	01/007
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System overview EASY Control Relay

Moeller Electric Corporation



System overview

EASY Control Relay

Basic units	1
AC or DC operated	
Power supply	
AC 100 (115) – 240 V, 50/60 Hz	
DC 24 V DC	
DA 12 V DC	
8 digital inputs	
(2 inputs available as analog inputs [DC/DA variants only])	
4 relay outputs (max. 10 A)	
4 transistor outputs	
LCD display, X variants without LCD	
Screw fixing and snap fitting	
Screw terminals	
→ Page 01/007	

Expansion unit	2
I/O expansion	
AC or DC operated	
Power supply	
AC 100 – 240 V, 50/60 Hz	
DC 24 V DC	
12 digital inputs	
6 relay outputs (max. 10 A)	
8 transistor outputs	
Screw fixing and snap fitting	
Screw terminals	
→ Page 01/009	

Expansion unit	3
EASY202-RE	
Output expansion	
2 relay outputs (max. 10 A)	
Screw fixing and snap fitting	
Screw terminals	
→ Page 01/00 9	

Coupling unit	4
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Connection cable	5
e.g. NYM 3 × 1.5 mm ²	

Networking interfaces	6
EASY204-DP	
(in preparation for EASY800)	
PROFIBUS-DP slave connection	
EASY205-ASI	
AS-Interface slave connection	
EASY221-CO	
CANopen interface	
EASY222-DN	
DeviceNet interface	
→ Page 01/009	

Basic units, expandable EASY800	10
AC or DC operated	
Power supply	
AC 100 – 240 V, 50/60 Hz	
DC 24 V DC	
12 digital inputs	
(4 inputs available as analog inputs [DC variants only])	
6 relay outputs (max. 10 A)	
8 transistor outputs	
1 analog output 0 – 10 V (10 bit)	
LCD display, X variants without LCD	
Screw fixing and snap fitting	
Screw terminals	
NET network integrated	
→ Page 01/007	

EASY-LINK-DS data plug	11
For connecting the basic unit with the expansion unit	
→ Page 01/010	

Basic units, expandable EASY619/621	12
AC or DC operated	
Power supply	
AC 100 – 240 V, 50/60 Hz	
DC 24 V DC	
12 digital inputs	
(2 inputs available as analog inputs [DC variants only])	
6 relay outputs (max. 10 A)	
8 transistor outputs	
LCD display, X variants without LCD	
Screw fixing and snap fitting	
Screw terminals	
→ Page 01/007	

Features of the EASY control relay

- Wide operational temperature range -25 °C to +55 °C
- Standard front dimension for fitting into service distribution boards, 18 mm standard space unit
- Electronic wiring at the touch of a button, LCD and keypad or software (PC)
- Retentive internal and external storing of circuit diagram in EEPROM memory
- 3 contacts (EASY400, EASY600), 4 contacts (EASY800) (make or break) in series plus one coil per circuit connection
- Series and parallel connection
- 41 circuit connections EASY412
- 121 circuit connections EASY600
- 256 circuit connections EASY600
- Integral password protection for circuit diagram and relay value presets
- Current flow display for circuit diagram testing (LCD types)
- Ten menu languages (EASY600, EASY800) and five menu languages (EASY412) D, GB, F, I, E, (P, NL, S, PL, TR)
- With LCD types, the circuit diagram can be stored on memory card

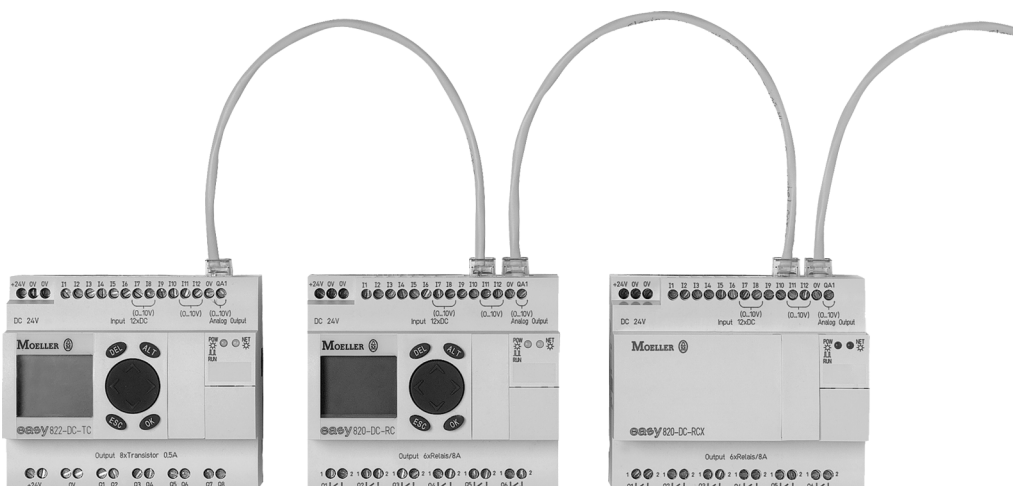
Functions

- 8 timing relays 0.01 s to 99 h 59 min
 - On-delay
 - On-delay with random switching
 - Off-delay
 - Off-delay with random switching
 - Single-pulse
 - Flashing
- 32 timing relays (EASY800)
 - On-delay
 - On-delay with random switching
 - Off-delay
 - Off-delay with random switching
 - On-delayed and off-delayed, random switching
 - Single-pulse
 - Flashing
- 8 up and down counter relays, 0000 to 9999
- 32 counter relays (EASY800)
 - Value range $\pm 2^{31}$
- 4 frequency counters (EASY800)
 - Max. counter frequency ~5kHz
- 4 high-speed counters (EASY800)
 - Max. counter frequency ~5kHz
- 2 incremental counters (EASY800)
 - Max. counter frequency ~3kHz
- 4 operating hours counters (EASY800), retentive
- 4 7-day time switches
 - (4 channels per time switch, one On/Off point per channel, optional on types with clock)
- 32 7-day time switches (EASY800)
 - (4 channels per time switch, one On/Off point per channel)
- 32 year time switches (EASY800)
 - (4 channels per time switch, one On/Off point per channel)
- 8 analog value comparators range 0 – 10 V (only EASY4...-D...; EASY6...-D types)
- 32 analog value comparators range 0 – 10 V (only EASY8...-D... types)
- 8 freely editable text displays (EASY600 with LCD), using EASY-SOFT
- 32 freely editable text displays (EASY800 with LCD), using EASY-SOFT
- 16 auxiliary relays (EASY412), up to 32 auxiliary relays (EASY600)
- 96 markers (EASY800)
- 32 arithmetic function blocks (EASY800)
 - ADD; SUB; MUL; DIV
- 32 Boolean sequences (EASY800)
 - AND; NOT; OR
- Retentive actual values EASY412-D...
 - 4 markers, 1 timing relay, 1 counter
- Retentive actual values EASY600
 - 12 markers, 2 timing relays, 4 counters (e.g. for operating hours counters)
- Retentive actual values EASY800
 - 184 bytes possible, data = MB (marker bytes) function blocks = C; CF; CH; CI; DB; T i.e. 80 MB and up to 40 function blocks depending on memory required
 - 4 operating hours counter 0 to 10 hours (resolution: minutes)

System overview EASY Control Relay

Start up and control –

SIMPLY easy



The new control relay, easy800, combines virtually all the performance features of a PLC with the handling convenience of easy. Together, with the easy400 and easy600, it forms a cohesive system with uniform accessories, software and operation, designed for intelligent solutions in machine and instrument control or in building services.

Rapid commissioning

The indication of where current is flowing in the circuit, during actual operation or testing, simplifies and speeds up commissioning and makes it more reliable. All the easy devices have a current flow indicator.

Great space savings

There is space for easy anywhere. The standard 1.8" (45mm) front dimension is equally suitable for use in service distribution boards in building services installations, or in control panels on machines and in industrial control systems. In each case, the easy replaces several conventional components and switching devices in a fraction of their space requirement.

easy – One for all

The easy series of programmable control relays offers the user three variations of each model, suitable for a wide range of applications. There are the AC devices with isolated relay outputs, and DC devices with the option of relay or transistor outputs. The voltage range for the input signals is always the same as the supply voltage. The easy relays are fully functional in temperature ranges from -25° to +55°C.

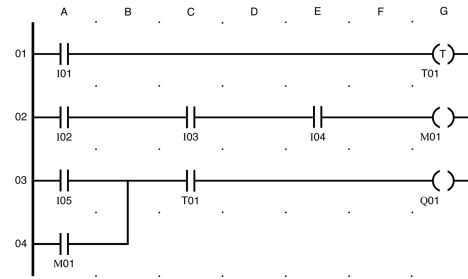


System overview

EASY Control Relay

Logic links instead of wiring

Circuit diagrams form the basis for all electrical applications. Normally, these circuits are then implemented by the wiring of switching and control devices. With the easy programmable control relay, these connections are made simply by using the keypad on the front of the easy or by the use of the convenient easy-soft software. The procedure is simple and menu-guided in either 5 or 10 languages. This saves mounting and wiring costs and above all, precious time, making the easy applicable in all markets.



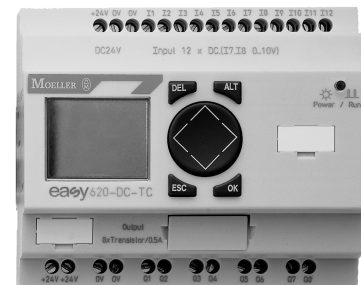
The easy400 control relay

Eight inputs, four relay or transistor outputs. In all the DC versions, there is the option of two analog inputs. The easy412 has three contacts and one coil for circuit configuration in each of up to 41 lines of logic.



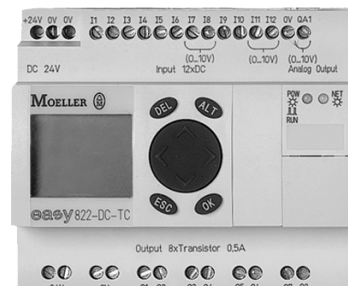
The easy600 control relay

Twelve inputs, six relay or eight transistor outputs. In all the DC versions, there is the option of two analog inputs. The easy600 has three contacts and one coil in series for circuit configuration in each of up to 121 lines of logic. The built-in display can show up to eight texts of 48 characters each. For each text, two variables or module parameters can be included in the display. The user can thus read texts and values on the display in plain text.



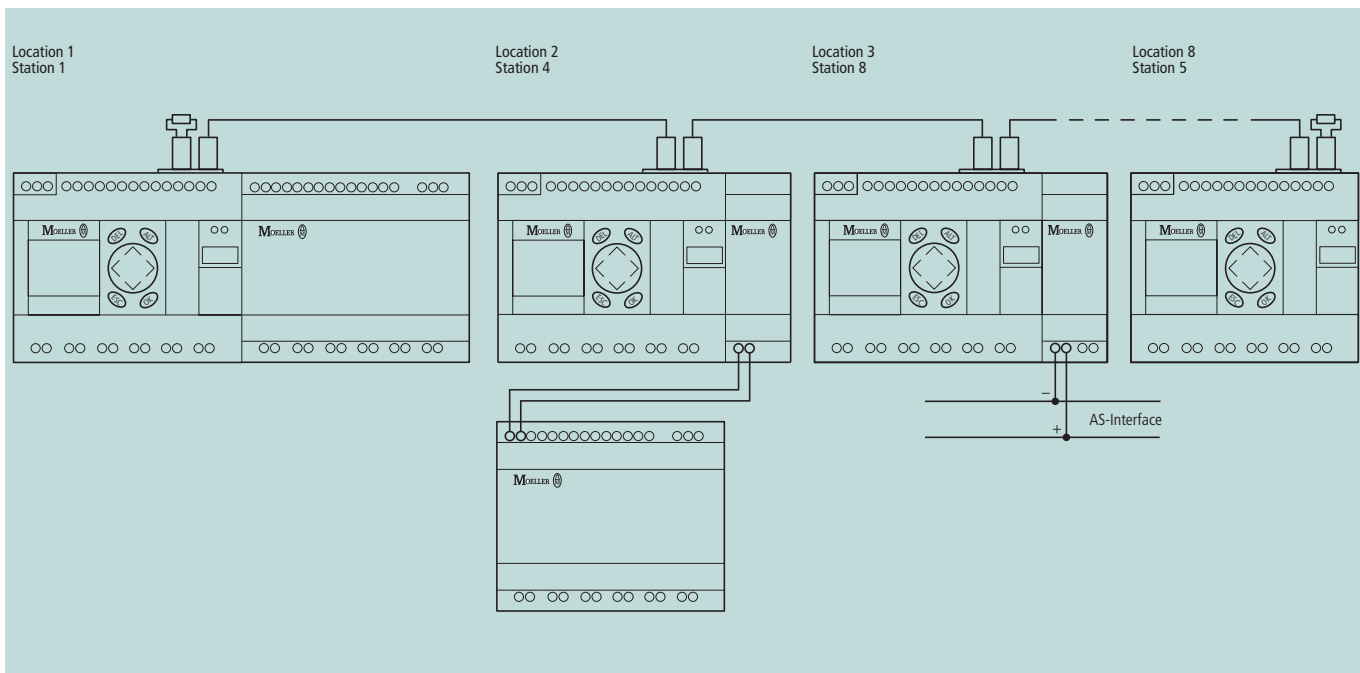
The easy800 control relay

Twelve inputs, six relay or eight transistor outputs. In all the DC versions, there is the option of four analog inputs and also of one analog output. The easy800 has four contacts and one coil in series for circuit configuration in each of up to 256 lines of logic. The built-in display can show up to 32 texts of 64 characters each. For each text, the user can include several variables or module parameters in the display at any point. He can thus read texts and values on the display in plain text. Counting high-speed signals, measuring frequency or evaluating incremental encoder readings are no problem with easy800. Computing, data storage or communication via the NET network - all simply easy.



Description

EASY800 Control Relay



Networking

Addressing of stations:

Once all stations are connected, the addresses can be assigned automatically with the station number the same as the geographical location. The stations can also be addressed individually. The geographical address does not have to be the same as the station address.

Example of a network topology:

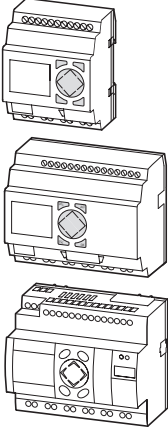
Four stations are connected up. Station address 1 is always the first location. All other station addresses do not correspond to the geographical location.

Technical data

- Up to 320 digital inputs and outputs are possible
- 8 stations
- Baud rate: 10 Kbit/s to 1000 Kbit/s
- Length: up to 1000 m possible
- Operating modes.
 - 1 master (location 1, station address 1), 7 I/O stations up to
 - 1 master (location 1, station address 1) and 7 I/O intelligent stations
- Transfer up to 32 double words
- Synchronise time, date
- Direct access to input and output
- Program download and upload via NET

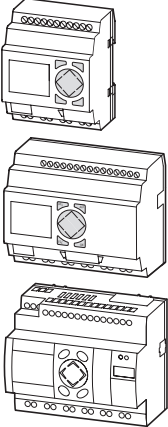
EASY Control Relay

Basic units

Description		Typ Article no.	Price See Price List
Basic units			
	24 V DC, retentive		
	• 8 digital inputs (2 inputs available as analog inputs) • 4 relay outputs • LCD display • Operating buttons • Screw terminals	EASY412-DC-R 202403	
	Features same as EASY412-DC-R, additional time switch	EASY412-DC-RC 202404	
	Features same as EASY412-DC-RC, without keypad and LCD display	EASY412-DC-RCX 221596	
	• 8 digital inputs (2 inputs available as analog inputs) • 4 transistor outputs • LCD display • Operating buttons • Screw terminals • Time switch	EASY412-DC-TC 207808	
	Features same as EASY412-DC-TC, without keypad and LCD display	EASY412-DC-TCX 212307	
	• 12 digital inputs (2 inputs available as analog inputs) • 6 relay outputs • LCD display • Operating buttons • Screw terminals • Time switch • Can be expanded using EASY expansion units	EASY619-DC-RC 224473	
	Features same as EASY619-DC-RC, without keypad and LCD display	EASY619-DC-RCX 224474	
	• 12 digital inputs (2 inputs available as analog inputs) • 8 transistor outputs • LCD display • Operating buttons • Screw terminals • Time switch • Can be expanded using EASY expansion units	EASY621-DC-TC 218719	
	Features same as EASY621-DC-TC, without keypad and LCD display	EASY621-DC-TCX 212311	
	• 12 digital inputs (4 inputs available as analog inputs) • 6 relay outputs • LCD display • Operating buttons • Screw terminals • Time and date switch • Can be expanded using EASY expansion units	EASY819-DC-RC 256269	
	Features same as EASY819-DC-RC, without keypad and LCD display	EASY819-DC-RCX 256270	
	• 12 digital inputs (4 inputs available as analog inputs) • 6 relay outputs • 1 analog output • LCD display • Operating buttons • Screw terminals • Time and date switch • Can be expanded using EASY expansion units	EASY820-DC-RC 256271	
	Features same as EASY820-DC-RC, without keypad and LCD display	EASY820-DC-RCX 256272	

EASY Control Relay

Basic units

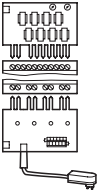
Description		Typ Article no.	Price See Price List
Basic units			
	24 V DC, retentive	• 12 digital inputs (4 inputs available as analog inputs) • 8 transistor outputs • LCD display • Operating buttons • Screw terminals • Time and date switch • Can be expanded using EASY expansion units	EASY821-DC-TC 256273
		Features same as EASY821-DC-TC, without keypad and LCD display	EASY821-DC-TCX 256274
		• 12 digital inputs (4 inputs available as analog inputs) • 8 transistor outputs • 1 analog output • LCD display • Operating buttons • Screw terminals • Time and date switch • Can be expanded using EASY expansion units	EASY822-DC-TC 256275
		Features same as EASY822-DC-TC, without keypad and LCD display	EASY822-DC-TCX 256276
	12 V DC, retentive	• 8 digital inputs (2 inputs available as analog inputs) • 4 relay outputs • LCD display • Operating buttons • Screw terminals • Time switch	EASY412-DA-RC 224471
	115/230 V AC	• 8 digital inputs • 4 relay outputs • LCD display • Operating buttons • Screw terminals	EASY412-AC-R 202405
		Features same as EASY412-AC-R, additional time switch	EASY412-AC-RC 202406
		Features same as EASY412-AC-RC, without keypad and LCD display	EASY412-AC-RCX 212308
	115/230 V AC, retentive	• 12 digital inputs • 6 relay outputs • LCD display • Operating buttons • Screw terminals • Time switch • Can be expanded using EASY expansion units • Replaces EASY618-AC-RC	EASY619-AC-RC 218721
		Features same as EASY619-AC-RC, without keypad and LCD display	EASY619-AC-RCX 212312
		• 12 digital inputs • 6 relay outputs • LCD display • Operating buttons • Screw terminals • Time and date switch • Can be expanded using EASY expansion units	EASY819-AC-RC 256267
		Features same as EASY819-AC-RC, without keypad and LCD display	EASY819-AC-RCX 256268

EASY Control Relay**Expansion units**

Description		Typ Article no.	Price See Price List
Expansion units			
24V DC	• 12 digital inputs	EASY620-DC-TE	
	• 8 transistor outputs	212313	
	• 12 digital inputs	EASY618-DC-RE	
	• 6 relay outputs	232112	
115/230 V AC	• 12 digital inputs	EASY618-AC-RE	
	• 6 relay outputs	212314	
Without power supply	• 2 relay outputs (common potential)	EASY202-RE	
		232186	
Coupling unit	• Coupling unit for connecting to an EASY619/621 basic unit	EASY200-EASY	
	• Terminals for remote expansion, up to 30 m to the expansion unit	212315	
Expansion units for networking			
AS-Interface	• AS-Interface connection	EASY205-ASI	
	• Slave	221598	
	• 4 inputs, 4 outputs, 4 parameter bits		
	• Addresses available: 0 to 31		
PROFIBUS-DP	• PROFIBUS-DP slave	EASY204-DP	
	• Addresses available: 1 to 126	212316	
CANopen	• CANopen interface	EASY221-CO	
	• Addresses available: 1 to 127	233539	
DeviceNet	• DeviceNet interface	EASY222-DN	
	• Addresses available: 0 to 63	233540	
DP accessories			
PROFIBUS-DP bus connector plug	• 9-pole (male),	ZB4-209-DS2	
	• Kit without cable for connecting the data cable	206982	
	• Metallised insulated housing	ZB4-209-DS3	
	• Maximum SP transfer rate 12 MBit/s	217820	
PROFIBUS-DP data cable	• Integrated switch (accessible from the outside) for the bus terminating resistors		
	• Terminal block for two cable inputs, optionally with straight or 90° angled cable entry		
	• Suitable for EASY204-DP		
	• 2-wire	ZB4-900-KB1	
	• 2 × 0.64 mm ² twisted	206983	
	• Length 100 m		

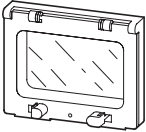
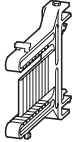
EASY Control Relay

Networking, Accessories

Description		Typ Article no.	Price See Price List
Accessories			
Software			
	CD, menu selection in 6 languages Installation WIN 98, WIN NT 4.0 (SP6), WIN ME, WIN2000 (SP2), WIN XP	EASY-SOFT 202407	
Memory card			
	8K memory card for storing the entire EASY circuit diagram for EASY412...	EASY-M-8K 202408	
	16K memory card for storing the entire EASY circuit diagram for EASY6...	EASY-M-16K 212317	
	256K memory module for storing the entire EASY circuit diagram for EASY8...	EASY-M-256K 256279	
Connection cable			
	2 m length, for connection to 9-pole serial PC interface with interface electronics for EASY412... and EASY6...	EASY-PC-CAB 202409	
	2 m length, for connection to 9-pole serial PC interface with interface electronics for EASY8...	EASY800-PC-CAB 256277	
Input/output simulator			
	Simulator with power supply unit, 120 V AC / 24 V DC output, plug suitable for North America	EASY412-DC-SIM-NA 222566	
Fixing bracket For screw fixing on mounting plate			
	For screw fixing on mounting plate • 3 brackets per EASY4... • 3 brackets per EASY6... • 3 brackets per EASY8... • 2 brackets per EASY2...	ZB4-101-GF1 061360	
Coupling piece			
	Spare link between basic unit and expansion units	EASY-LINK-DS 221607	
Telescopic adapter			
	With 35 mm top-hat rail to EN 50022 for equalization of the mounting depth of rear mounted devices in CI-K... enclosures and cabinets. Adjustable as required via scales of 75 – 115 mm. Screw and snap fastener (also suitable for PKZM0, FAZ, FIP, ETR, EMR4, etc.)	M22-TA 226161	
Switched-mode power supply unit Primary-switched mode, stabilized			
	• Rated input voltage: 50/60 Hz: 115/230 V • Rated output voltage: 24 V/12 V • Rated output current: 0.25 A/20 mA	EASY200-POW 229424	
	• Rated input voltage: 50/60 HZ: 115/230 V AC • Rated output voltage (residual ripple): 24 V DC ($\pm 3\%$) • Rated output current: 1.25 A	EASY400-POW 212319	
Upstream device To increase the AC input current			
	• 6 channels	EASY256-HCI 231168	

EASY Control Relay

Networking, Accessories, Documentation

Description	Typ Article no.	Price See Price List
Accessories		
Network connection cable (remote coupling) Completely prepared for EASY8... NET		
Length: 0.3 m	EASY-NT-30 256283	
Length: 0.8 m	EASY-NT-80 256284	
Length: 1.5 m	EASY-NT-150 256285	
Data cable		
• 4-wire • 4 × 0.18 mm², twisted pair, AWG 26 • Length 100 m	EASY-NT-CAB 256286	
Remote coupling		
Bus connector for NET network	EASY-NT-RJ45 256280	
• 8-pole, RJ45		
Bus terminating resistor, complete with connector for NET	EASY-NT-R 256281	
Crimping tool	EASY-RJ45-TOOL 256282	
• For 8-pin RJ45 connector		
(SKF) inspection flap window		
• Mounting frame with inspection flap • Material: transparent polycarbonate, UV-resistant • Self-extinguishing to ASTM-D 635/72, UNE 53315-75, UNE 20672/83 (2-1) and IEC-695-2-1 • Degree of protection IP65 to IEC-144 and 525		
	• 94 mm × 77 mm × 25 mm (4 space units)	SKF-FF4 233780
	• 130 mm × 77 mm × 25 mm (6 space units)	SKF-FF6 233781
Top-hat rail adapter for inspection flap window		
	• 12 mm × 66 mm × 82 mm • Mounting on inspection flap window when front mounting units	SKF-HA 233782
Language	Typ Article no.	Price See Price List
Documentation		
Manual for the EASY412 and EASY6... control relay		
English	AWB2528-1304-GB 205481	
Spanish	AWB2528-1304-E 205484	

Technical Data

				EASY200-EASY, EASY202-RE	EASY412-...
General					
Standards				EN 55011, EN 55022, IEC/EN 61000-4, IEC 60068-2-6, IEC 60068-2-27	
Dimensions (B × H × T)		mm		35.5 × 90 × 58 (2 space units)	71.5 × 90 × 58 (4 space units)
Weight		kg		0.07	0.2
Mounting				EN 50022 top-hat rail, 35 mm or screw mounting with ZB4-101-GF1 mounting brackets (accessories)	
Connection terminal capacity					
Solid		mm ²		0.2/4 (AWG 22 – 12)	0.2/4 (AWG 22 – 12)
Flexible with ferrule		mm ²		0.2/2.5 (AWG 22 – 12)	0.2/2.5 (AWG 22 – 12)
Standard screwdriver		mm		3.5 × 0.8	3.5 × 0.8
Max. tightening torque		Nm		0.6	0.6
Climatic environmental conditions					
Operating ambient temperature		°C		-25 – 55, low temperatures to IEC 60068-2-1, high temperatures to IEC 60068-2-2	
Condensation				Prevent condensation by means of suitable measures	
LCD display (clearly legible)		°C		0 – 55	0 – 55
Storage		°C		-40 – 70	-40 – 70
Relative humidity, non-condensing (IEC/EN 60068-2-30)		%		5 – 95	5 – 95
Air pressure (operation)		hPa		795 – 1080	795 – 1080
Corrosion resistance	IEC/EN 60068-2-42	4 days SO ₂	cm ³ /m ³	10	10
	IEC/EN 60068-2-43	4 days H ₂ S	cm ³ /m ³	1	1
Ambient conditions, mechanical					
Pollution degree				2	2
Degree of protection (IEC/EN 60529)				IP20	IP20
Vibrations (IEC/EN 60068-2-6)					
Constant amplitude 0.15 mm		Hz		10 – 57	10 – 57
Constant acceleration, 2 g		Hz		57 – 150	57 – 150
Mechanical shock resistance (IEC/EN 60068-2-27) semi-sinusoidal 15 g/11 ms		Impacts		18	18
Drop to IEC/EN 60068-2-31	Drop height	mm		50	50
Free fall, packaged (IEC/EN 60068-2-32)		m		1	1
Mounting position				horizontal/vertical	horizontal/vertical
Electromagnetic compatibility (EMC)					
Electrostatic discharge (IEC/EN 61000-4-2, Level 3, ESD)					
Air discharge		kV		8	8
Contact discharge		kV		6	6
Electromagnetic fields (IEC/EN 61000-4-3, RFI)		V/m		10	10
Radio interference suppression (EN 55011)				EN 55011 Class B, EN 55022 Class B	
Burst pulses	Supply cables	kV		2	2
(IEC/EN 61000-4-4, level 3)	Signal cables	kV		2	2
High-energy pulses (surge) (IEC/EN 61000-4-5)		kV		2 (supply cables, symmetrical, EASY...AC)	
High-energy pulses (surge) (IEC/EN 61000-4-5, level 2)		kV		0.5 (supply cables, symmetrical, EASY...DC)	
Immunity to line-conducted interference to (IEC/EN 61000-4-6)		V		10	10
Dielectric strength					
Clearance in air and creepage distances				EN 50178, UL 508, CSA C22.2, No. 142	
Insulation resistance				EN 50178	EN 50178
Backup/accuracy of the real-time clock					
Backup of clock	at 25 °C	h		–	Normally 64
	at 40 °C	h		–	Normally 24
Accuracy of the real-time clock				–	Normally ± 5 (± 0.5 h/year)
Repetition accuracy of timing relays					
Accuracy of timing relays (of values)		%		–	± 1
Resolution					
Range "S"		ms		–	10
Range "M:S"		s		–	1
Range "H:M"		min		–	1
Retentive memory					
Write cycles of the retentive memory				–	≥ 100000

Note

More Technical Data for EASY4... and EASY6... → AWB2528-1304-GB



1-866-595-9616
1-630-595-9515

Go to: <http://www.klocknermoeller.com>

Technical Data

				EASY6...-...	EASY8...-...
General					
Standards				EN 55011, EN 55022, IEC/EN 61000-4, IEC 60068-2-6, IEC 60068-2-27	
Dimensions (B × H × T)		mm		107.5 × 90 × 58 (6 space units)	107.5 × 90 × 72 (6 space units)
Weight		kg		0.3	0.3
Mounting				EN 50022 top-hat rail, 35 mm or screw fixing with ZB4-101-GF1 fixing brackets (accessories)	
Connection terminal capacity					
Solid		mm ²		0.2/4 (AWG 22 – 12)	0.2/4 (AWG 22 – 12)
Flexible with ferrule		mm ²		0.2/2.5 (AWG 22 – 12)	0.2/2.5 (AWG 22 – 12)
Standard screwdriver		mm		3.5 × 0.8	3.5 × 0.8
Max. tightening torque		Nm		0.6	0.6
Climatic environmental conditions					
Operating ambient temperature		°C		-25 – 55, low temperatures to IEC 60068-2-1, high temperatures to IEC 60068-2-2	
Condensation				Prevent condensation by means of suitable measures	
LCD display (clearly legible)		°C		0 – 55	0 – 55
Storage		°C		-40 – 70	-40 – 70
Relative humidity, non-condensing (IEC/EN 60068-2-30)		%		5 – 95	5 – 95
Air pressure (operation)		hPa		795 – 1080	795 – 1080
Corrosion resistance	IEC/EN 60068-2-42	4 days SO ₂	cm ³ /m ³	10	10
	IEC/EN 60068-2-43	4 days H ₂ S	cm ³ /m ³	1	1
Ambient conditions, mechanical					
Pollution degree				2	2
Degree of protection (IEC/EN 60529)				IP20	IP20
Vibrations (IEC/EN 60068-2-6)					
Constant amplitude 0.15 mm		Hz		10 – 57	10 – 57
Constant acceleration, 2 g		Hz		57 – 150	57 – 150
Mechanical shock resistance (IEC/EN 60068-2-27) semi-sinusoidal 15 g/11 ms		Schocks		18	18
Drop to IEC/EN 60068-2-31	Drop height	mm		50	50
Free fall, packaged (IEC/EN 60068-2-32)		m		1	1
Mounting position				horizontal/vertical	horizontal/vertical
Electromagnetic compatibility (EMC)					
Electrostatic discharge (IEC/EN 61000-4-2, Level 3, ESD)					
Air discharge		kV		8	8
Contact discharge		kV		6	6
Electromagnetic fields (IEC/EN 61000-4-3, RFI)		V/m		10	10
Radio interference suppression (EN 55011)				EN 55011 Class B, EN 55022 Class B	
Burst pulses	Supply cables	kV		2	2
(IEC/EN 61000-4-4, level 3)	Signal cables	kV		2	2
High-energy pulses (surge) (IEC/EN 61000-4-5)		kV		2 (supply cables, symmetrical, EASY...AC)	
High-energy pulses (surge) (IEC/EN 61000-4-5, level 2)		kV		0.5 (supply cables, symmetrical, EASY...DC)	
Immunity to line-conducted interference to (IEC/EN 61000-4-6)		V		10	10
Dielectric strength					
Clearance in air and creepage distances				EN 50178, UL 508, CSA C22.2, No. 142	
Insulation resistance				EN 50178	EN 50178
Backup/accuracy of the real-time clock					
Backup of clock	at 25 °C	h		Normally 64	Normally 64
	at 40 °C	h		Normally 24	Normally 24
Accuracy of the real-time clock				Normally ± 5 (± 0.5 h/year)	Normally ± 5 (± 0.5 h/year)
Repetition accuracy of timing relays					
Accuracy of timing relays (of values)		%		± 1	± 0.02
Resolution					
Range "S"		ms		10	5
Range "M:S"		s		1	1
Range "H:M"		min		1	1
Retentive memory					
Write cycles of the retentive memory				≥ 100000	≥ 10 ¹⁰ (read/write cycles)

Note

More Technical Data for EASY4... and EASY6... → AWB2528-1304-GB, EASY8... → AWB2528-1423-GB



1-866-595-9616
1-630-595-9515

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Technical Data

			EASY412-AC-...	EASY61.-AC-R..	EASY819-AC-RC.
Power supply					
Rated operational voltage	U_e	V	110/115/120/230/240 AC (+10/-15 %)	100/110/115/120/230/240 AC (+10/-15 %)	100/110/115/120/230/240 AC (+10/-15 %)
Admissible range		V AC	90 – 264	85 – 264	85 – 264
Frequency		Hz	50/60 (± 5%)	50/60 (± 5%)	50/60 (± 5%)
Input current					
at 115/120 V AC 60 Hz		mA	Normally 40	Normally 70	Normally 70
at 230/240 V AC 50 Hz		mA	Normally 20	Normally 35	Normally 35
Voltage dips (IEC/EN 61131-2)		ms	20	20	20
Heat dissipation					
at 115/120 V AC		VA	Normally 5	Normally 10	Normally 10
at 115/230 V AC		VA	Normally 5	Normally 10	Normally 10
			EASY412-AC-...	EASY618/619-AC-R..	EASY8.-AC-R..
Digital inputs at 115/230 V AC					
Number			8	12	12
Status indication			LCD display (if provided)	LCD display (if provided)	LCD display (if provided)
Potential isolation					
From power supply			No	No	No
Between digital inputs			No	No	No
From the outputs			Yes	Yes	Yes
From the PC interface, memory card NET network, EASY-Link			No	–	Yes
Rated voltage L (sinusoidal)					
On 0 signal		V AC	0 – 40	0 – 40	0 – 40
On 1 signal		V AC	79 – 264	79 – 264	79 – 264
Rated frequency		Hz	50 – 60	50 – 60	50 – 60
Input current on 1 signal					
R1 to R12		mA	–	12 × 0.25 (at 115 V AC, 60 Hz) 12 × 0.5 (at 230 V AC, 50 Hz)	–
I1 to I6		mA	6 × 0.25 (at 115 V AC, 60 Hz) 6 × 0.5 (at 230 V AC, 50 Hz)	6 × 0.25 (at 115 V AC, 60 Hz) 6 × 0.5 (at 230 V AC, 50 Hz)	6 × 0.25 (at 115 V AC, 60 Hz) 6 × 0.5 (at 230 V AC, 50 Hz)
I9 to I12		mA	–	4 × 0.25 (at 115 V AC, 60 Hz) 4 × 0.5 (at 230 V AC, 50 Hz)	4 × 0.25 (at 115 V AC, 60 Hz) 4 × 0.5 (at 230 V AC, 50 Hz)
I7 to I8		mA	2 × 4 (at 115 V AC, 60 Hz) 2 × 6 (at 230 V AC, 50 Hz)	2 × 4 (at 115 V AC, 60 Hz) 2 × 6 (at 230 V AC, 50 Hz)	2 × 4 (at 115 V AC, 60 Hz) 2 × 6 (at 230 V AC, 50 Hz)
Delay time					
Delay time (0 – 1/1 – 0) I1 to I6, I9 to I12, R1 to R12					
Debounce ON 50/60 Hz		ms	80/66⅔	80/66⅔	80/66⅔
Debounce OFF 50/60 Hz		ms	20/16⅔	20/16⅔	20/16⅔
Delay time I7, I8 (1 – 0)					
Debounce ON 50/60 Hz		ms	160/150	80/66⅔	120/100
Debounce OFF 50/60 Hz		ms	100/100	20/16⅔	40/33⅔
Delay time I7, I8 (0 – 1)					
Debounce ON 50/60 Hz		ms	80/66⅔	80/66⅔	80/66⅔
Debounce OFF 50/60 Hz		ms	20/16⅔	20/16⅔	20/16⅔
Max. admissible cable length (per input)					
R1 to R12		m	–	Normally 40	–
I1 to I6		m	Normally 40	Normally 40	Normally 60
I7, I8		m	Normally 100	Normally 100	Normally 100
I9 to I12		m	–	Normally 40	Normally 60

Note

More Technical Data for EASY4... and EASY6... → AWB2528-1304-GB,
EASY8... → AWB2528-1423-GB



Technical Data

			EASY412-DC-...	EASY412-DA-RC
Power supply				
Rated operational voltage	U_e	V	24 DC (-15/+20 %)	12 DC (-15/+30 %)
Admissible range		V DC	20.4 – 28.8	10.2 – 15.6
Residual ripple		%	≤ 5	≤ 5
Input current	at 24 V DC	mA	Normally 80	Normally 140
Voltage dips (IEC/EN 61131-2)		ms	10	10
Heat dissipation at 24 V DC		W	2	2

			EASY412-DC-...	EASY412-DA-RC
Digital inputs 24 V DC				
Number			8	8
Inputs can be used as analog inputs			I7, I8	I7, I8
Status indication			LCD display (if provided)	LCD display (if provided)
Potential isolation				
From power supply			No	No
Between digital inputs			No	No
From the outputs			Yes	Yes
Rated operational voltage				
Rated operational voltage	U_e	V DC	24	12
On 0 signal	U_e	V DC	< 5.0 (I1 – I8)	< 4.0 (I1 – I8)
On 1 signal	U_e	V DC	> 15.0 (I1 – I6), > 8.0 (I7, I8)	> 8.0 (I1 – I8)
Input current on 1 signal				
I1 to I6		mA	3.3 (at 24 V DC)	3.3 (at 12 V DC)
I7, I8		mA	2.2 (at 24 V DC)	1.1 (at 12 V DC)
Delay time from 0 to 1				
Debounce ON		ms	20	20
Debounce OFF		ms	Normally 0.25 (I1 – I6)	Normally 0.3 (I1 – I6), Normally 0.35 (I7, I8)
Delay time from 1 to 0				
Debounce ON		ms	20	20
Debounce OFF		ms	Normally 0.4 (I1 – I6), Normally 0.2 (I7, I8)	Normally 0.3 (I1 – I6), Normally 0.35 (I7, I8)
Cable length (unscreened)		m	100	100

			EASY412-D-...	EASY6...-DC-...	EASY8...-DC-...
Analog inputs					
Number			2	2	4
Potential isolation					
From power supply			No	No	No
From the digital inputs			No	No	No
From the outputs			Yes	Yes	Yes
From the PC interface, memory card NET network, EASY-Link			No	Yes	Yes
Input type			DC voltage	DC voltage	DC voltage
Signal range		V DC	0 – 10	0 – 10	0 – 10
Resolution, analog		V	0.1	0.1	0.1
Resolution, digital		V	0.1	0.1	0.1
Resolution, digital		Bit	–	–	10 (value 0 – 1023)
Input impedance		kΩ	11.2	11.2	11.2
Accuracy of actual value					
Two EASY devices		%	± 3	± 3	± 3
Within a single device		%	± 2 (I7, I8) ± 0.12 V	± 2 (I7, I8) ± 0.12 V	± 2 (I7, I8, I11, I12)
Conversion time, analog/digital		ms	Debounce ON: 20; Debounce OFF: every cycle time		Every CPU cycle
Input current		mA	< 1	< 1	< 1
Cable length, screened		m	< 30	< 30	< 30

Note

More Technical Data for EASY4... and EASY6... → AWB2528-1304-GB, EASY8... → AWB2528-1423-GB



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Technical Data

				EASY6...-DC-...	EASY8...-DC-...
Power supply					
Rated operational voltage	U_e	V		24 DC (-15/+20 %)	24 DC (-15/+20 %)
Admissible range		V DC		20.4 – 28.8	20.4 – 28.8
Residual ripple		mA		≤ 5	≤ 5
Input current at 24 V DC		mA		Normally 140	Normally 140
Voltage dips (IEC/EN 61131-2)		ms		10	10
Heat dissipation at 24 V DC		W		3.4	3.4
				EASY6...-DC-...	EASY8...-DC-...
Digital inputs 24 V DC					
Number				12 (on basic unit)	12
Inputs can be used as analog inputs				I7, I8	I7, I8, I11, I12
Status indication				LCD display (if provided)	LCD display (if provided)
Potential isolation					
From power supply				No	No
Between digital inputs				No	No
From the outputs				Yes	Yes
From the PC interface, memory card NET network, EASY-Link				Yes	Yes
Rated operational voltage					
Rated operational voltage	U_e	V DC		24	24
On 0 signal	U_e	V DC		< 5.0 (I1 – I12, R1 – R12)	< 5.0 (I1 – I6, I9 – I10), < 8 (I7, I8, I11, I12)
On 1 signal	U_e	V DC		> 15.0 (I1 – I6, I9 – I12, R1 – R12), > 8.0 (I7, I8)	> 15.0 (I1 – I6, I9 – I10), > 8.0 (I7, I8, I11, I12)
Input current on 1 signal					
R1 to R12				3.3 (at 24 V DC)	–
I1 to I6				3.3 (at 24 V DC)	3.3 (at 24 V DC)
I7, I8				2.2 (at 24 V DC)	2.2 (at 24 V DC)
I9, I10				3.3 (at 24 V DC)	3.3 (at 24 V DC)
I11, I12				3.3 (at 24 V DC)	2.2 (at 24 V DC)
Delay time from 0 to 1					
Debounce ON		ms		20	20
Debounce OFF		ms		Normally 0.25 (I1 – I6, I9 – I12)	Normally 0.1 (I1 – I4), Normally 0.25 (I5 – I12)
Delay time from 1 to 0					
Debounce ON		ms		20	20
Debounce OFF		ms		Normally 0.4 (I1 – I6, I9 – I12), Normally 0.2 (I7, I8)	Normally 0.1 (I1 – I4), Normally 0.4 (I5, I6, I9, I12), Normally 0.2 (I7, I8, I11, I12)
Cable length (unscreened)		m		100	100
Frequency counter					
Counter frequency		kHz		–	< 5
Pulse shape				–	Square wave
Pulse pause ratio				–	1:1
Incremental counter					
Counter frequency		kHz		–	< 3
Pulse shape				–	Square wave
Counter inputs I1 and I2, I3 and I4				–	2
Signal offset				–	90°
Pulse pause ratio				–	1:1
High-speed counter inputs, I1 to I4					
Number				–	4
Cable length, screened		m		–	< 20
High-speed up/down counter					
Counter frequency		kHz		–	< 5
Pulse shape				–	Square wave
Pulse pause ratio				–	1:1

Note

More Technical Data for EASY4... and EASY6... → AWB2528-1304-GB, EASY8... → AWB2528-1423-GB



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Technical Data

			EASY412-....R...	EASY202-RE
Relay outputs				
Number			4	2
Outputs in groups of			1	2
Parallel connection of outputs to increase output			Not admissible	Not admissible
Protection for an output relay			Miniature circuit-breaker B16 or fuse 8 A (slow)	
Potential isolation of the power supply, inputs				
Potential isolation			Yes	Yes
Safe isolation		V AC	300	300
Basic insulation		V AC	600	600
Lifespan, mechanical	Operations	$\times 10^6$	10	10
Contacts				
Conventional thermal current (10 A UL)		A	8	8
Recommended for load: 12 V AC/DC		mA	> 500	> 500
Short-circuit-proof $\cos \varphi = 1$, characteristic B16 at 600 A		A	16	16
Short-circuit-proof $\cos \varphi = 0.5$ to 0.7, characteristic B16 at 900 A		A	16	16
Rated impulse withstand voltage U_{imp} of contact coil		kV	6	6
Rated operational voltage	U_e	V AC	250	250
Rated insulation voltage	U_i	V AC	250	250
Safe isolation to EN 50178 between coil and contact		V AC	300	300
Safe isolation to EN 50178 between two contacts		V AC	300	300
Making capacity				
AC-15, 250 V DC, 3 A (600 Ops./h)	Operations		300000	300000
DC-13, $L/R \leq 150$ ms, 24 V DC, 1 A (500 Ops./h)	Operations		200000	200000
Breaking capacity				
AC-15, 250 V AC, 3 A (600 Ops./h)	Operations		300000	300000
DC-13, $L/R \leq 150$ ms, 24 V DC, 1 A (500 Ops./h)	Operations		200000	200000
Filament lamp load				
1000 W at 230/240 V AC	Operations		25000	25000
500 W at 115/120 V AC	Operations		25000	25000
Fluorescent lamp load				
Fluorescent lamp load 10×58 W at 230/240 V AC				
With upstream electrical device	Operations		25000	25000
Uncompensated	Operations		25000	25000
Fluorescent lamp load 1×58 W at 230/240 V AC, conventional, compensated	Operations		25000	25000
Operating frequency				
Mechanical operations		$\times 10^6$	10	10
Operating frequency		Hz	10	10
Resistive load/lamp load		Hz	2	2
Inductive load		Hz	0.5	0.5
UL/CSA				
Uninterrupted current at 240 V AC		A	10	10
Uninterrupted current at 24 V DC		A	8	8
AC				
Control Circuit Rating Codes (utilization category)			B 300 Light Pilot Duty	B 300 Light Pilot Duty
Max. rated operational voltage		V AC	300	300
Max. thermal uninterrupted current $\cos \varphi = 1$ at B 300		A	5	5
Max. making/breaking capacity $\cos \varphi \neq 1$ at B 300		VA	3600/360	3600/360
DC				
Control Circuit Rating Codes (utilization category)			R 300 Light Pilot Duty	R 300 Light Pilot Duty
Max. rated operational voltage		V DC	300	300
Max. thermal uninterrupted current at R 300		A	1	1
Max. make/break capacity at R 300		VA	28/28	28/28

Note

More Technical Data for EASY4... and EASY6... → AWB2528-1304-GB,



Technical Data

				EASY618/619-...-R...	EASY8...-...-R...
Relay outputs					
Number				6	6
Outputs in groups of				1	1
Parallel connection of outputs to increase output				Not admissible	Not admissible
Protection for an output relay				Miniature circuit-breaker B16 or fuse 8 A (slow)	
Potential isolation of the power supply, inputs					
Potential isolation				Yes	Yes
From the PC interface, memory card NET network, EASY-Link				–	Yes
Safe isolation		V AC		300	300
Basic insulation		V AC		600	600
Lifespan, mechanical	Operations	$\times 10^6$		10	10
Contacts					
Conventional thermal current (10 A UL)		A		8	8
Recommended for load: 12 V AC/DC		mA		> 500	> 500
Short-circuit-proof $\cos \varphi = 1$, characteristic B16 at 600 A		A		16	16
Short-circuit-proof $\cos \varphi = 0.5$ to 0.7, characteristic B16 at 900 A		A		16	16
Rated impulse withstand voltage U_{imp} of contact coil		kV		6	6
Rated operational voltage	U_e	V AC		250	250
Rated insulation voltage	U_i	V AC		250	250
Safe isolation to EN 50178 between coil and contact		V AC		300	300
Safe isolation to EN 50178 between two contacts		V AC		300	300
Making capacity					
AC-15, 250 V DC, 3 A (600 Ops./h)	Operations			300000	300000
DC-13, $L/R \leq 150$ ms, 24 V DC, 1 A (500 Ops./h)	Operations			200000	200000
Breaking capacity					
AC-15, 250 V AC, 3 A (600 Ops./h)	Operations			300000	300000
DC-13, $L/R \leq 150$ ms, 24 V DC, 1 A (500 Ops./h)	Operations			200000	200000
Filament lamp load					
1000 W at 230/240 V AC	Operations			25000	25000
500 W at 115/120 V AC	Operations			25000	25000
Fluorescent lamp load					
Fluorescent lamp load 10×58 W at 230/240 V AC					
With upstream electrical device	Operations			25000	25000
Uncompensated	Operations			25000	25000
Fluorescent lamp load 1×58 W at 230/240 V AC, conventional, compensated	Operations			25000	25000
Operating frequency					
Mechanical operations		$\times 10^6$		10	10
Operating frequency		Hz		10	10
Resistive load/lamp load		Hz		2	2
Inductive load		Hz		0.5	0.5
UL/CSA					
Uninterrupted current at 240 V AC		A		10	10
Uninterrupted current at 24 V DC		A		8	8
AC					
Control Circuit Rating Codes (utilization category)				B 300 Light Pilot Duty	B 300 Light Pilot Duty
Max. rated operational voltage		V AC		300	300
Max. thermal uninterrupted current $\cos \varphi = 1$ at B 300		A		5	5
Max. making/breaking capacity $\cos \varphi \neq 1$ at B 300		VA		3600/360	3600/360
DC					
Control Circuit Rating Codes (utilization category)				R 300 Light Pilot Duty	R 300 Light Pilot Duty
Max. rated operational voltage		V DC		300	300
Max. thermal uninterrupted current at R 300		A		1	1
Max. make/break capacity at R 300		VA		28/28	28/28

Note

More Technical Data for EASY4... and EASY6... → AWB2528-1304-GB, EASY8... → AWB2528-1423-GB



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Technical Data

			EASY412-DC-T...	EASY6...-DC-T...
Transistor outputs				
Number			4	8
Rated operational voltage				
Rated operational voltage	U_e	V DC	24	24
Admissible range	U_e	V DC	20.4 – 28.8	20.4 – 28.8
Residual ripple		%	≤ 5	≤ 5
Supply current				
On 0 signal	Normally/max.	mA	9 – 16	18 – 32
On 1 signal	Normally/max.	mA	12 – 22	22 – 44
Protection against polarity reversal			Yes	Yes
Potential isolation of the power supply, inputs				
Potential isolation			Yes	Yes
Rated operational current on 1 signal DC	I_e	A	Max. 0.5	Max. 0.5
Lamp load without R_v		W	5	5
Residual current on 0 signal per channel		mA	< 1	< 1
Max. output voltage				
On 0 signal with external load < 10 MΩ		V	2.5	2.5
On 1 signal with $I_e = 0.5$ A		V	$U = U_e - 1$ V	$U = U_e - 1$ V
Short-circuit protection			Yes (evaluation with diagnostics input I16, I15; R15, R16)	
Short-circuit tripping current for $R_a \leq 10$ mΩ		A	$0.7 \leq I_e \leq 2$	$0.7 \leq I_e \leq 2$
Total short-circuit current		A	8	16
Peak short-circuit current		A	16	32
Thermal cutout			Yes	Yes
Max. operating frequency with constant resistive load $R_L < 100$ kΩ (depending on number of active channels and their load)		S/h	40000	40000
Parallel connection of outputs				
with resistive load, inductive load with external suppressor circuit, combination within a group			Group 1: Q1 to Q4	Group 1: Q1 to Q4, S1 to S4 Group 2: Q5 to Q8, S5 to S8
Number of outputs	Max.		4	4
Total maximum current		A	2	2
Status indication of outputs			LCD display (if provided)	LCD display (if provided)

Note

More Technical Data for EASY4... and EASY6... → AWB2528-1304-GB

Technical Data

				EASY8...D.-T..
Transistor outputs				
Number				8
Rated operational voltage				
Rated operational voltage	U_e	V DC		24
Admissible range	U_e	V DC		20.4 – 28.8
Residual ripple		%		≤ 5
Supply current				
On 0 signal	Normally/max.	mA		18 – 32
On 1 signal	Normally/max.	mA		24 – 44
Protection against polarity reversal				Yes (caution: a short-circuit will occur if voltage is applied to the outputs on account of reverse polarity)
Potential isolation of the power supply, inputs				
Potential isolation				–
From the PC interface, memory card NET network, EASY-Link				Yes
Rated operational current on 1 signal DC	I_e	A		Max. 0.5
Lamp load without R_v		W		3 (Q1 – Q4) 5 (Q5 – Q8)
Residual current on 0 signal per channel		mA		< 0.1
Max. output voltage				
On 0 signal with external load < 10 M Ω		V		2.5
On 1 signal with $I_e = 0.5$ A		V		$U = U_e - 1$ V
Short-circuit protection				Yes, electronic (Q1 – Q4), thermal (Q5 – Q8), (evaluation using diagnostics input I16, I15)
Short-circuit tripping current for $R_a \leq 10$ m Ω		A		$0.7 \leq I_e \leq 2$
Total short-circuit current		A		16
Peak short-circuit current		A		32
Thermal cutout				Yes
Max. operating frequency with constant resistive load $R_L < 100$ k Ω (depending on number of active channels and their load)		S/h		40000
Parallel connection of outputs				
with resistive load, inductive load with external suppressor circuit, combination within a group				Group 1: Q1 to Q4 Group 2: Q5 to Q8
Number of outputs	Max.			4
Total maximum current		A		2
Status indication of outputs				LCD display (if provided)
Inductive load				
Without external suppressor circuit				
$T_{0.95} = 1$ ms, $R = 48$ Ω , $L = 16$ mH				
Utilization factor		g		0.25
Duty factor		% DF		100
Max. switching frequency $f = 0.5$ Hz (max. DF = 50 %)		Operations		1500
DC13, $T_{0.95} = 72$ ms, $R = 48$ Ω , $L = 1.15$ H				
Utilization factor		g		0.25
Duty factor		% DF		100
Max. switching frequency $f = 0.5$ Hz (max. DF = 50 %)		Operations		1500
$T_{0.95} = 15$ ms, $R = 48$ Ω , $L = 0.24$ H				
Utilization factor		g		0.25
Duty factor		% DF		100
Max. switching frequency $f = 0.5$ Hz (max. DF = 50 %)		Operations		1500
With external suppressor circuit				
Utilization factor		g		1
Duty factor		% DF		100
Max. switching frequency, max. duty factor		Operations		Depending on the suppressor circuit

Note

¹⁾ $T_{0.95}$ = time in ms, until 95 % of the stationary current has been reached. $T_{0.95} \approx 3 \times T_{0.65} = 3 \times L/R$.
More Technical Data for EASY8... → AWB2528-1423-GB



Technical Data

			EASY8...-...-...
NET network			
Stations		Number	Max. 8
Data transfer rate/distance ¹⁾			1000 Kbit/s, 6 m 500 Kbit/s, 25 m 250 Kbit/s, 60 m 125 Kbit/s, 125 m 50 Kbit/s, 300 m 20 Kbit/s, 700 m 10 Kbit/s, 1000 m
Potential isolation			
From power supply			Yes
From the inputs			Yes
From the outputs			Yes
From the PC interface, memory card NET network, EASY-Link			Yes
Bus termination (first and last station)			Yes
Terminals			RJ45, 8-pole
Analog outputs			
Number			1
Potential isolation			
From power supply			No
From the digital inputs			No
From the digital outputs			Yes
From the PC interface, memory card NET network, EASY-Link			Yes
Output type			DC voltage
Signal range		V DC	0 – 10
Max. output current		A	0.01
Load resistance			1 kΩ
Overload and short-circuit protection			Yes
Resolution, analog		V DC	0.01
Resolution, digital		Bit	10, (value: 0 – 1023)
Recovery time		μs	100
Accuracy			
-25°C – 55°C		%	2
25°C		%	1
Conversion time, digital/analog		ms	Every CPU cycle
Approvals			
Currently UL/CSA approved, others in preparation	EASY412-DC-R EASY412-DC-RC EASY412-DC-RCX EASY412-DC-TC EASY412-DC-TCX EASY412-DA-RC EASY412-AC-R EASY412-AC-RC EASY412-AC-RCX	EASY621-DC-TC EASY621-DC-TCX EASY619-DC-RC EASY619-DC-RCX EASY619-AC-RC EASY619-AC-RCX EASY620-DC-TE EASY618-AC-RE EASY618-DC-RE	EASY202-RE EASY256-HCI EASY200-EASY EASY204-DP EASY205-ASI EASY200-POW EASY400-POW
Hazardous Location CSA	EASY412-DC-R EASY412-DC-RC EASY412-DC-RCX EASY412-DC-TC EASY412-DC-TCX EASY412-DA-RC EASY412-AC-R EASY412-AC-RC	EASY412-AC-RC EASY412-AC-RCX EASY621-DC-TC EASY621-DC-TCX EASY619-DC-RC EASY619-DC-RCX EASY619-AC-RC	EASY619-AC-RCX EASY620-DC-TE EASY618-AC-RE EASY200-EASY EASY205-ASI EASY400-POW
RINA, Shipping approvals	EASY618-AC-RE EASY619-AC-RC EASY619-AC-RCX EASY619-DC-RC	EASY619-DC-RCX EASY620-DC-TE EASY621-DC-TC EASY621-DC-TCX	
Vibration test to EN 61 373 rail applications, passed test for railway vehicle equipment	EASY412-DC-RC EASY412-DC-TC	EASY618-DC-RC EASY620-DC-TC	

Notes:

¹⁾ Bus lengths of 40 m and over only attainable with cables with additional cross-section and connection adapter.
More Technical Data for EASY4... and EASY6... → AWB2528-1304-GB, EASY8... → AWB2528-1423-GB



Technical Data

			EASY205-ASI	EASY204-DP
General				
Standards			EN 55011, EN 55022, IEC/EN 61000-4..., IEC/EN 60068-2-27, EN 50295	EN 55011, EN 55022, IEC/EN 61000-4, IEC/EN 60068-2-27, IEC 61158
Dimensions (B × H × T)		mm	35.5 × 90 × 58 (2 space units)	35.5 × 90 × 58 (2 space units)
Weight		kg	0.12	0.15
Mounting			EN 50022 top-hat rail, 35 mm or screw fixing with ZB4-101-GF1 fixing brackets (accessories)	
Connection terminal capacity				
Solid		mm ²	0.2/4 (AWG 22 – 12)	0.2/4 (AWG 22 – 12)
Flexible with ferrule		mm ²	0.2/2.5 (AWG 22 – 12)	0.2/4 (AWG 22 – 12)
Standard screwdriver		mm	3.5 × 0.8	3.5 × 0.8
Max. tightening torque		Nm	0.6	0.6
Climatic environmental conditions				
Operating ambient temperature			-25 – 55, low temperatures to IEC 60068-2-1, high temperatures to IEC 60068-2-2	
Condensation			Prevent condensation by means of suitable measures	
Storage		°C	-40 – 70	-40 – 70
Relative humidity, non-condensing (IEC/EN 60068-2-30)		%	5 – 95	5 – 95
Air pressure (operation)		hPa	795 – 1080	795 – 1080
Corrosion resistance				
IEC/EN 60068-2-42	4 days SO ₂	cm ³ /m ³	10	10
IEC/EN 60068-2-43	4 days H ₂ S	cm ³ /m ³	1	1
Ambient conditions, mechanical				
Pollution degree			2	2
Degree of protection (IEC/EN 60529)			IP20	IP20
Vibrations (IEC/EN 60068-2-6)				
Constant amplitude 0.15 mm		Hz	10 – 57	10 – 57
Constant acceleration, 2 g		Hz	57 – 150	57 – 150
Mechanical shock resistance (IEC/EN 60068-2-27) semi-sinusoidal 15 g/11 ms		Impacts	18	18
Drop to IEC/EN 60068-2-31	Drop height	mm	50	50
Free fall, packaged (IEC/EN 60068-2-32)		m	1	1
Mounting position			horizontal/vertical	horizontal/vertical
Electromagnetic compatibility (EMC)				
Electrostatic discharge (IEC/EN 61000-4-2, Level 3, ESD)				
Air discharge		kV	8	8
Contact discharge		kV	6	6
Electromagnetic fields (IEC/EN 61000-4-3, RFI)		V/m	10	10
Radio interference suppression (EN 55011)			EN 55011 Class B, EN 55022 Class B	EN 55011 Class A, EN 55022 Class A
Burst pulses (IEC/EN 61000-4-4, level 3)				
AS-Interface cables		kV	2	–
Supply cables		kV	–	2
Signal cables		kV	–	2
High-energy pulses (surge) (IEC/EN 61000-4-5, level 2)		kV	–	0.5 (supply cables, symmetrical)
Immunity to line-conducted interference to (IEC/EN 61000-4-6)		V	10	10

Technical Data

				EASY205-ASI	EASY204-DP
Dielectric strength					
Clearance in air and creepage distances				EN 50178, UL 508, CSA C22.2, No. 142	EN 50178, UL 508, CSA C22.2, No. 142
Insulation resistance				EN 50178	EN 50178
Power supply					
Rated operational voltage					
Rated operational voltage		U_e	V	26.5 – 31.6	24 (-15/+20 %)
Admissible range			V DC	–	20.4 – 28.8
Total power consumption AS-Interface			mA	30	–
Residual ripple			%	–	< 5
at 24 V DC			mA	–	Normally 200
Voltage dips (IEC/EN 61131-2)			ms	–	10
Heat dissipation at 24 V DC			W	–	4.8
Protection against polarity reversal					
AS-Interface interface protection against polarity reversal				Yes	–
AS-Interface profile				7F (hex)	–
Slave address				0 – 31	–
Addressing unit interface				3.5 mm socket	–
Power supply				–	yes
LED displays					
Power supply				Power: green	Power LED (POW): green
LED display				Com-Error: red	LED-PROFIBUS-DP (BUS): red
Logic links					
EASY600 contact/coil ↔ AS-Interface				S1 → input 0 S1 → input 1 S3 → input 2 S4 → input 3 R1 ← output 0 R2 ← output 1 R3 ← output 2 R4 ← output 3 R5 ← PARAMETER OUTPUT 0 R6 ← PARAMETER OUTPUT 1 R7 ← PARAMETER OUTPUT 2 R8 ← PARAMETER OUTPUT 3	–
PROFIBUS-DP					
Terminals				–	SUB-D 9-pole, socket
Potential isolation				–	Between bus and power supply (simple), between bus and power supply and EASY basic unit (safe isolation)
Function				–	PROFIBUS-DP slave
Interface				–	RS 485
Bus protocol				–	PROFIBUS-DP
Baud rates				–	Automatic search up to 12 Mbit/s
Bus termination resistors				–	Can be connected via plug
Bus addresses				–	1 – 126 addressable via EASY basic unit with display or EASY-SOFT
Services					
Cyclical				–	All data R1 – R16, S1 – S8
Acyclical				–	Read/write, time, data, summer/winter time, all parameters of EASY function relays

Technical Data

			EASY221-CO	EASY222-DN
General				
Standards			EN 55011, EN 55022, IEC/EN 61000-4, IEC 60068-2-6, IEC 60068-2-27	
Dimensions (B × H × T)		mm	35.5 × 90 × 58 (2 space units)	35.5 × 90 × 58 (2 space units)
Weight		kg	0.15	0.15
Mounting			EN 50022 top-hat rail, 35 mm or screw fixing with ZB4-101-GF1 fixing brackets (accessories)	
Connection terminal capacity				
Solid		mm ²	0.2/4 (AWG 22 – 12)	0.2/4 (AWG 22 – 12)
Flexible with ferrule		mm ²	0.2/2.5 (AWG 22 – 12)	0.2/2.5 (AWG 22 – 12)
Standard screwdriver		mm	3.5 × 0.8	3.5 × 0.8
Max. tightening torque		Nm	0.6	0.6
Climatic environmental conditions				
Operating ambient temperature		°C	-25 – 55, low temperatures to IEC 60068-2-1, high temperatures to IEC 60068-2-2	
Condensation			Prevent condensation by means of suitable measures	
Storage		°C	-40 – 70	-40 – 70
Relative humidity, non-condensing (IEC/EN 60068-2-30)		%	5 – 95	5 – 95
Air pressure (operation)		hPa	795 – 1080	795 – 1080
Corrosion resistance				
IEC/EN 60068-2-42	4 days SO ₂	cm ³ /m ³	10	10
IEC/EN 60068-2-43	4 days H ₂ S	cm ³ /m ³	1	1
Ambient conditions, mechanical				
Pollution degree			2	2
Degree of protection (IEC/EN 60529)			IP20	IP20
Vibrations (IEC/EN 60068-2-6)				
Constant amplitude 0.15 mm		Hz	10 – 57	10 – 57
Constant acceleration, 2 g		Hz	57 – 150	57 – 150
Mechanical shock resistance (IEC/EN 60068-2-27)		Impacts	18	18
semi-sinusoidal 15 g/11 ms				
Drop to IEC/EN 60068-2-31	Drop height	mm	50	50
Free fall, packaged (IEC/EN 60068-2-32)		m	1	1
Mounting position			horizontal/vertical	horizontal/vertical
Electromagnetic compatibility (EMC)				
Electrostatic discharge (IEC/EN 60000-4-2, Level 3, ESD)				
Air discharge		kV	8	8
Contact discharge		kV	6	6
Electromagnetic fields (IEC/EN 61000-4-3, RFI)		V/m	10	10
Radio interference suppression (EN 55011)			EN 55011 Class B, EN 55022 Class B	EN 55011 Class B, EN 55022 Class B
Burst pulses (IEC/EN 61000-4-4, level 3)				
Supply cables		kV	2	2
Signal cables		kV	2	2
High-energy pulses (surge) (IEC/EN 61000-4-5, level 2)		kV	0.5 (supply cables, symmetrical)	0.5 (supply cables, symmetrical)
Immunity to line-conducted interference to (IEC/EN 61000-4-6)		V	10	10

Technical Data

			EASY221-CO	EASY222-DN
Dielectric strength				
Clearance in air and creepage distances			EN 50178, UL 508, CSA C22.2, No. 142	EN 50178, UL 508, CSA C22.2, No. 142
Insulation resistance			EN 50178	EN 50178
Power supply				
Rated operational voltage				
Rated operational voltage	U_e	V	24 (-15/+20 %)	24 (-15/+20 %)
Admissible range		V DC	20.4 – 28.8	20.4 – 28.8
Residual ripple		%	< 5	< 5
at 24 V DC		mA	Normally 200	Normally 200
Voltage dips (IEC/EN 61131-2)		ms	10	10
Heat dissipation at 24 V DC		W	4.8	4.8
Protection against polarity reversal				
Power supply		V DC	Yes	Yes
LED displays				
Power supply			RUN LED (RUN): green	Module Status LED (MS): green
LED display			LED-ERROR (ERR): red	LED-Network-Status (NS): red/green
Network				
Terminals			RJ45	5-pole, pluggable screw terminal
Potential isolation			Between bus and power supply (simple), between bus and power supply and EASY basic unit (safe isolation)	
Function			CANopen slave	DeviceNet slave
Interface			CAN	CAN
Bus protocol			CANopen	DeviceNet
Baud rates			Automatic search up to 1 Mbit/s	Automatic search up to 500 Kbit/s
Bus termination resistors			Separate, external bus termination required (120 Ω)	Separate, external bus termination required (120 Ω)
Bus addresses			1 – 127 addressable via EASY basic unit with display or EASY-SOFT	0 – 63 addressable via EASY basic unit with display or EASY-SOFT
Services				
Cyclical			All data R1 – R16, S1 – S8	All data R1 – R16, S1 – S8
Acyclical			Read/write, time, data, summer/winter time, all parameters of EASY function relays	Read/write, time, data, summer/winter time, all parameters of EASY function relays

Technical Data

			EASY200-POW	EASY400-POW
General				
Standards			EN 55011, EN 55022, IEC/EN 60000-4..., IEC/EN 60068-2-27	
Dimensions (B × H × T)		mm	35.5 × 90 × 58 (2 space units)	71.5 × 90 × 58 (4 space units)
Weight		kg	0.1	0.25
Mounting			35 mm DIN rail, or screw mounting with ZB4-101-GF1 mounting brackets (accessories)	
Connection terminal capacity				
Solid		mm ²	0.2/4 (AWG 22 – 12)	0.2/4 (AWG 22 – 12)
Flexible with ferrule		mm ²	0.2/2.5 (AWG 22 – 12)	0.2/2.5 (AWG 22 – 12)
Standard screwdriver		mm	3.5 × 0.8	3.5 × 0.8
Max. tightening torque		Nm	0.6	0.6
Climatic environmental conditions				
Operating ambient temperature		°C	-25 – 55, low temperatures to IEC 60068-2-1, high temperatures to IEC 60068-2-2	
Condensation			Prevent condensation by means of suitable measures	
Storage		°C	-40 – 70	-40 – 70
Relative humidity, non-condensing (IEC/EN 60068-2-30)		%	5 – 95	5 – 95
Air pressure (operation)		hPa	795 – 1080	795 – 1080
Corrosion resistance				
IEC/EN 60068-2-42	4 days SO ₂	cm ³ /m ³	10	10
IEC/EN 60068-2-43	4 days H ₂ S	cm ³ /m ³	1	1
Max. installation altitude above sea level, observe derating with higher altitudes		m	2000	2000
Ambient conditions, mechanical				
Pollution degree			2	2
Degree of protection (IEC/EN 60529)			IP20	IP20
Vibrations (IEC/EN 60068-2-6)				
Constant amplitude 0.15 mm		Hz	10 – 57	10 – 57
Constant acceleration, 2 g		Hz	57 – 150	57 – 150
Mechanical shock resistance (IEC/EN 60068-2-27) semi-sinusoidal 15 g/11 ms		Schocks	18	18
Drop to IEC/EN 60068-2-31	Drop height	mm	50	50
Free fall, packaged (IEC/EN 60068-2-32)		m	1	1
Mounting position			horizontal/vertical	horizontal/vertical
Electromagnetic compatibility (EMC)				
Electrostatic discharge (IEC/EN 61000-4-2, Level 3, ESD)				
Air discharge		kV	8	8
Contact discharge		kV	6	6
Electromagnetic fields (IEC/EN 61000-4-3, RFI)		V/m	10	10
Radio interference suppression (EN 55011)			EN 50011 Class B; EN 50022 Class B, EN 50081-2 Class B	
Burst pulses (IEC/EN 61000-4-4, level 3)		kV	2	2
High-energy pulses (surge) (IEC/EN 61000-4-5)		kV	2 (supply cables, symmetrical)	2 (supply cables, symmetrical, EASY...AC)
High-energy pulses (surge) (IEC/EN 61000-4-5, level 2), 24 V		kV	0.5 (output cables, symmetrical)	0.5 (output cables, symmetrical)
Immunity to line-conducted interference to IEC/EN 61000-4-6		V	10	10
Surge voltage (EN 50178), 24 V		kV	6	6
Dielectric strength				
Clearance in air and creepage distances			EN 50178	EN 50178
Insulation resistance			EN 50178	EN 50178
Protection class U_{out} to U_{in}			Class II to IEC 60536	Class II to IEC 60536
Potential isolation primary/secondary			Yes, SELV (VDE 0100 T410; IEC 60364-4-41, HD 384.4.41 S2) EN 60950	
Input voltage				
Rated input voltage		V AC	100/120/230/240 (-15/+10 %)	100/120/230/240 (-15/+10 %)
Voltage range		V AC	85 – 264	85 – 264
Frequency range		Hz	47 – 63	47 – 63
Power failure bridging 115/230 V		ms	10/> 20	10/> 20
Fuse 115/230 V		A	1.5 slow	2/1 slow
Miniature circuit-breaker			FAZ-C1 or FAZ-B6	FAZ-C2 or FAZ-B6



Technical Data

			EASY200-POW	EASY400-POW
Rating data				
Efficiency	%		> 81	> 87
Power consumption	W		Normally 7	Normally 35
Heat dissipation	W		Normally 1	Normally 5
Input current				
Input current rated value 115/230 V AC	A		Approx. 0.17/0.05	Approx. 0.3/0.15
Inrush current at 25°C, 230 V	A		< 5	< 5
Output voltage				
12 V DC (reference voltage)				
Rated value	V DC		12	–
Tolerance	%		4	–
Switching peaks	mV _{SS}		7	–
Effect of input voltage	%		1	–
Effect with 25 – 100 % load change	%		1	–
24V DC				
Rated value	V DC		24	24
Tolerance	%		± 3	± 5
Switching peaks 115/230	mV _{SS}		< 50/30	< 5
Effect of input voltage	%		± 1	± 1
Effect with 25 – 100 % load change	%		± 1	± 2
Output current				
12 V DC (reference voltage)				
Output current	mA		0 – 20	–
Effectiveness of current limitation	mA		20	–
Reduction of output voltage after current limitation	V		12	–
Overload proof			Yes, by current limitation proof against sustained short-circuits	–
Proof against sustained short circuit			Yes	–
24V DC				
Output current	A		0 – 0.25	0 – 1.25
Effectiveness of current limitation	A		> 0.3	> 1.25
Reduction of output voltage after current limitation	V		–	< 18
Overload proof			Yes, by current limitation	Yes, by current limitation
Proof against sustained short circuit			Yes, hickup-mode	Yes, hickup-mode approx. 10 Hz
Special load conditions				
Lamp load, cold, 24 V DC	W		2	10
Base load present	W		2	5
Behaviour on emergency-stop in 24 V circuit, disconnection with contactor (contactor load, no damage)	W		6	30
Displays				
Indication of output voltage (LED, continuous green light = OK)	V DC		24	24

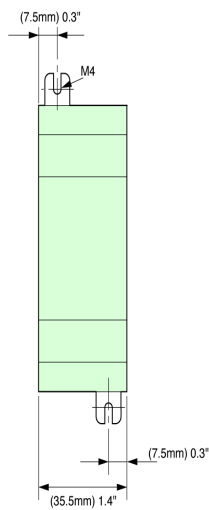
Technical Data

				EASY256-HCI
General				
Standards				EN 55011, EN 55022, IEC/EN 61000-4, IEC 60068-2-6, IEC 60068-2-27
Dimensions (B × H × T)		mm		35.5 × 90 × 58 (2 space units)
Mounting				EN 50022 top-hat rail, 35 mm or screw fixing with ZB4-101-GF1 fixing brackets (accessories)
Channels		Number		6
Voltage range at U_e				0 – 264
Current increase 115/230 V AC		mA		4/6
Extension of off-delay per EASY input (1 to 0) 50/60 Hz		ms		40/37
Cable length		m		100
Parallel connection of outputs to increase output				Several possible (off-delay extended according to the number of parallel channels)
Type of resistance				Capacitive
Connection terminal capacity				
Solid		mm ²		0.2/4 (AWG 22 – 12)
Flexible with ferrule		mm ²		0.2/2.5 (AWG 22 – 12)
Standard screwdriver		mm		3.5 × 0.8
Max. tightening torque		Nm		0.6
Climatic environmental conditions				
Operating ambient temperature		°C		-25 – 55, low temperatures to IEC 60068-2-1, high temperatures to IEC 60068-2-2
Condensation				Prevent condensation by means of suitable measures
LCD display (clearly legible)		°C		0 – 55
Storage		°C		-40 – 70
Relative humidity, non-condensing (IEC/EN 60068-2-30)		%		5 – 95
Air pressure (operation)		hPa		795 – 1080
Corrosion resistance				
IEC/EN 60068-2-42	4 days SO ₂	cm ³ /m ³		10
IEC/EN 60068-2-43	4 days H ₂ S	cm ³ /m ³		1
Ambient conditions, mechanical				
Pollution degree				2
Degree of protection (IEC/EN 60529)				IP20
Vibrations (IEC/EN 60068-2-6)				
Constant amplitude 0.15 mm		Hz		10 – 57
Constant acceleration, 2 g		Hz		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		1
Mounting position				horizontal/vertical
Electromagnetic compatibility (EMC)				
Electrostatic discharge (IEC/EN 61000-4-2, Level 3, ESD)				
Air discharge		kV		8
Contact discharge		kV		6
Electromagnetic fields (IEC/EN 61000-4-3, RFI)		V/m		10
Radio interference suppression (EN 55011)				EN 55011 Class B, EN 55022 Class B
High-energy pulses (surge) (IEC/EN 61000-4-5)		kV		2 (supply cables, symmetrical, EASY...AC)
Immunity to line-conducted interference to (IEC/EN 61000-4-6)		V		10
Dielectric strength				
Clearance in air and creepage distances				EN 50178, UL 508, CSA C22.2, No. 142
Insulation resistance				EN 50178

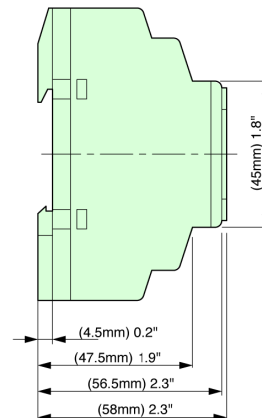
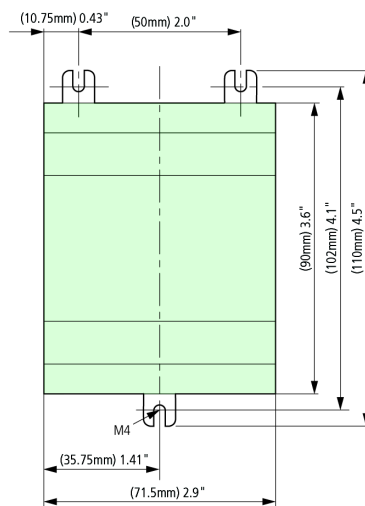
Dimensions

All dimensions shown in inches (millimeters)

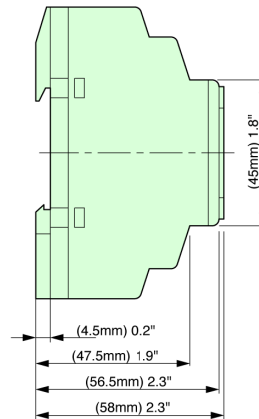
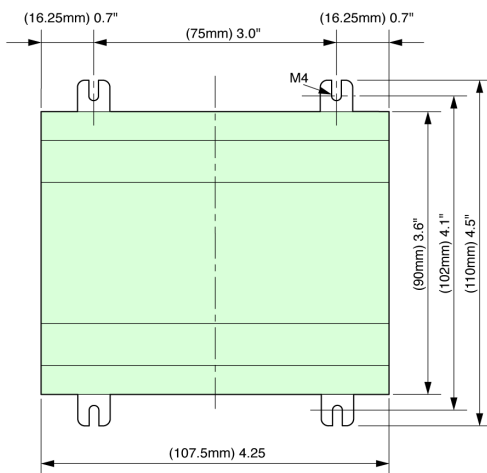
EASY2...



EASY4...



EASY6...



EASY8...

