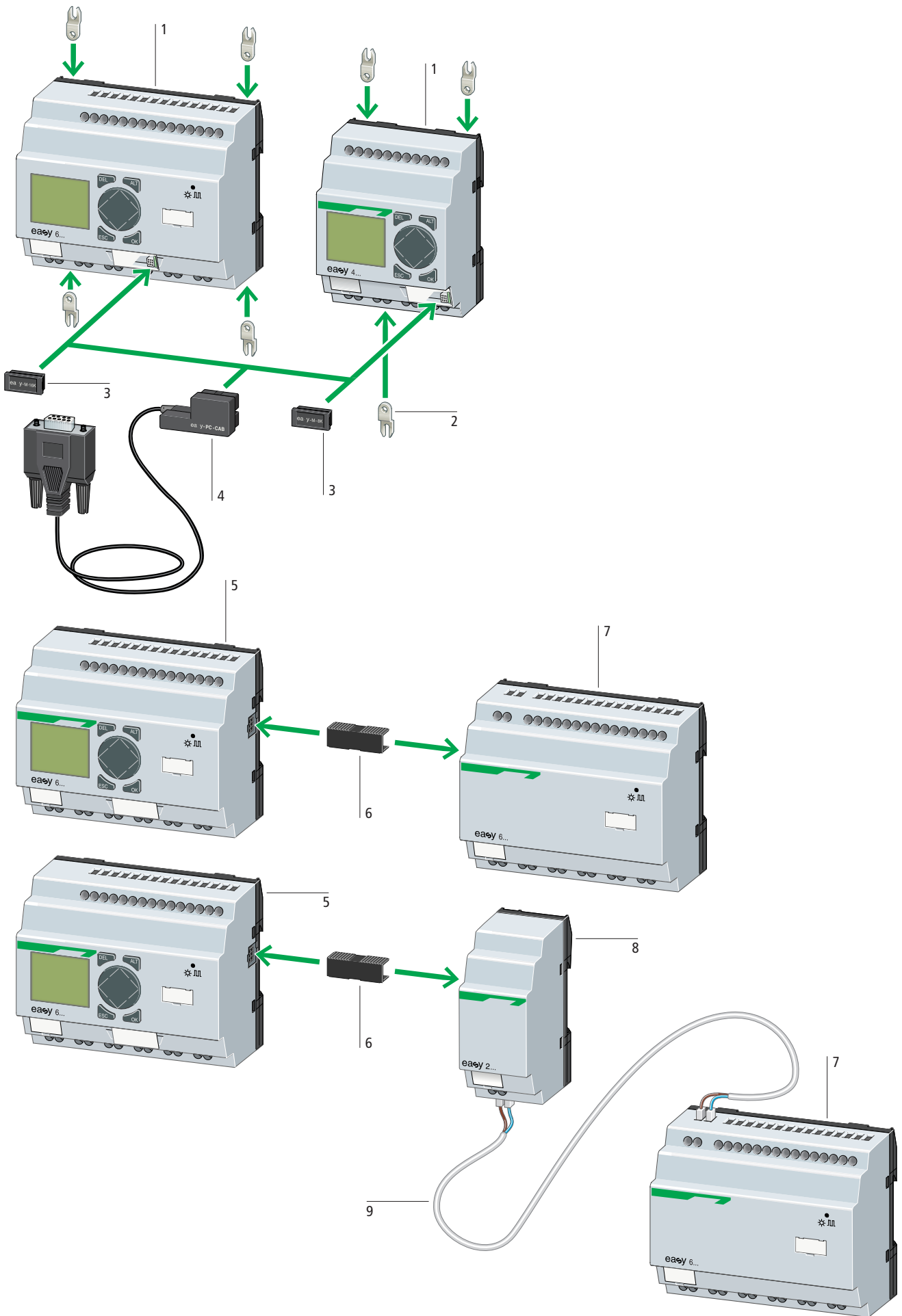


"Easy" Control Relays System Overview

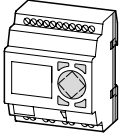
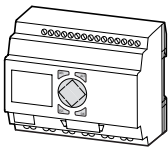


"Easy" Control Relays System Overview

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 or 12 digital inputs (2 inputs usable as analog inputs [DC/DA variants only]) 4 or 6 relay outputs (max. 10 A) 4 or 8 transistor outputs LCD display, X variants without LCD Screw fixing and snap fitting Screw terminals → Page 04/006	Basic units, expandable EASY619/621 5 AC or DC operated Power supply AC 100 – 240 V, 50/60 Hz DC 24 V DC 12 digital inputs (2 inputs usable 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 04/008	Distinguishing features of the EASY control relay <ul style="list-style-type: none"> • Wide operational temperature range –25 °C to +55 °C • Standard front dimension for fitting into service distribution boards, 18 mm standard slot • Electronic "wiring" by keystroke, LCD (4 lines of 12 characters) and keypad or via software from the PC • Zero-voltage safe internal and external circuit configuration storage in EEPROM memory • 3 contacts (make or break contacts) in series plus one coil in each current path • Series and parallel connection • 41 current paths / lines of logic EASY412 • 121 current paths / lines of logic EASY600 • Integral password protection for circuit configuration and relay value presets • Current flow display for circuit configuration testing (LCD Types) • Selection option from ten different menu languages (EASY600) and five different menu languages (EASY412) D, GB, F, I, E, (P, NL, S, PL, TR)
Fixing brackets 2 For optional screw fixing, 3 brackets per relay for EASY4... minimum of 3 brackets per relay for EASY6... → Page 04/008	EASY-LINK-DS data plug 6 For connecting the basic unit with the expansion unit → Page 04/006	Functions <ul style="list-style-type: none"> • 8 timing relays 0.01 s to 99 h 59 min <ul style="list-style-type: none"> – On-delay – On-delay with random switching – Off-delay – Off-delay with random switching – Pulse shaping – Flashing • 8 up- and down-counter relays, 0000 to 9999 • 4 weekly timers (4 channels per timer, one On/Off point per channel, optional on Types with clock) • 8 analog value comparators, range 0 – 10 V (EASY...-D...-... Types only) • 8 lines of text, can be freely edited (EASY600 with display) • 16 auxiliary relays (EASY412), up to 32 auxiliary relays (EASY600) • Retentive actual values EASY412-D... <ul style="list-style-type: none"> – 4 markers – 1 timing relay – 1 counter • Retentive actual values EASY600 <ul style="list-style-type: none"> – 12 markers – 2 timing relays – 4 counters, e. g. as hours-run meters
External memory card 3 For safe storage of the circuit configuration and all parameters → Page 04/008	Expansion unit 7 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 04/006	
Connection cable 4 Safe isolation between "easy" and PC → Page 04/008	Networking / Bus interfaces EASY204-DP PROFIBUS-DP slave connection EASY205-ASI AS-Interface slave connection → Page 04/008	
	Coupling unit 8 → Page 04/007	
	Connection cable 9 e. g. NYM 3 × 1.5 mm ² → Page 04/008	

"Easy" Control Relays

Basic Units

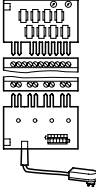
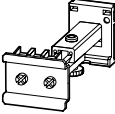
		Description	Type Article no.	Price See Price List	Std. pack
Basic units					
	24 V DC, retentive	<ul style="list-style-type: none"> • 8 digital inputs (2 inputs usable as analog inputs) • 4 relay outputs • LCD display • Operating buttons • Screw terminals 	EASY412-DC-R 202403		1 off
		Features same as EASY 412-DC-R plus built-in timer/time switch	EASY412-DC-RC 202404		
		Features same as EASY412-DC-RC, without keypad and LCD display	EASY412-DC-RCX 221596		
		<ul style="list-style-type: none"> • 8 digital inputs (2 inputs usable as analog inputs) • 4 transistor outputs • LCD display • Operating buttons • Screw terminals • Time switch/Timer 	EASY412-DC-TC 207808		
		Features same as EASY412-DC-TC, without keypad and LCD display	EASY412-DC-TCX 212307		
		<ul style="list-style-type: none"> • 12 digital inputs (2 inputs usable as analog inputs) • 6 relay outputs • LCD display • Operating buttons • Screw terminals • Time switch/Timer 	EASY618-DC-RC 224472		
		<ul style="list-style-type: none"> • 12 digital inputs (2 inputs usable as analog inputs) • 6 relay outputs • LCD display • Operating buttons • Screw terminals • Time switch/Timer • Can be expanded using EASY expansion units 	EASY619-DC-RC 224473		
		Features same as EASY412-DC-RC, without keypad and LCD display	EASY619-DC-RCX 224474		
		<ul style="list-style-type: none"> • 12 digital inputs (2 inputs usable as analog inputs) • 8 transistor outputs • LCD display • Operating buttons • Screw terminals • Time switch/Timer 	EASY620-DC-TC 212309		
		<ul style="list-style-type: none"> • 12 digital inputs (2 inputs usable as analog inputs) • 8 transistor outputs • LCD display • Operating buttons • Screw terminals • Time switch/Timer • Can be expanded using EASY expansion units 	EASY621-DC-TC 218719		
Features same as EASY412-DC-TC, without keypad and LCD display	EASY621-DC-TCX 212311				
	12 V DC, retentive	<ul style="list-style-type: none"> • 8 digital inputs (2 inputs usable as analog inputs) • 4 relay outputs • LCD display • Operating buttons • Screw terminals • Time switch/Timer 	EASY412-DA-RC 224471		

"Easy" Control Relays

Basic Units, Expansion Units, Accessories

Description		Type Article no.	Price See Price List	Std. pack
Basic units				
115/230 V AC	<ul style="list-style-type: none"> • 8 digital inputs, 115/230 V AC • 4 relay outputs • LCD display • Operating buttons • Screw terminals 	EASY412-AC-R 202405		1 off
	Features same as EASY 412-AC-R, plus timer	EASY412-AC-RC 202406		
	Features same as EASY412-AC-RC, without keypad and LCD display	EASY412-AC-RCX 212308		
115/230 V AC, retentive	<ul style="list-style-type: none"> • 12 digital inputs, 115/230 V AC • 6 relay outputs • LCD display • Operating buttons • Screw terminals • Time switch/Timer 	EASY618-AC-RC 212310		
	<ul style="list-style-type: none"> • 12 digital inputs, 115/230 V AC • 6 relay outputs • LCD display • Operating buttons • Screw terminals • Time switch/Timer • Can be expanded using EASY expansion units 	EASY619-AC-RC 218721		
	Features same as EASY619-AC-RC, without keypad and LCD display	EASY619-AC-RCX 212312		
Expansion units				
24 V DC	<ul style="list-style-type: none"> • 12 digital inputs • 8 transistor outputs • With connector 	EASY620-DC-TE 212313		1 off
115/230 V AC	<ul style="list-style-type: none"> • 12 digital inputs, 115/230 V AC • 6 relay outputs • With connector 	EASY618-AC-RE 212314		
Coupling unit	<ul style="list-style-type: none"> • Coupling unit for connecting to an EASY619/621 basic unit • Terminals for remote expansion, up to 30 m to/from the expansion unit • With connector 	EASY200-EASY 212315		
Expansion units for networking				
AS-Interface	<ul style="list-style-type: none"> • Linked directly to EASY619/621 • AS-Interface connection • Slave • 4 inputs, 4 outputs, 4 parameter bits • Addresses available: 0 to 31 • With connector 	EASY205-ASI 221598		1 off
PROFIBUS DP	<ul style="list-style-type: none"> • Linked directly to EASY619/621 • PROFIBUS-DP slave • Addresses available: 0 to 126 • With connector 	EASY204-DP 212316		1 off
Accessories for DP				
PROFIBUS DP bus connector plug	9-pole (pins), comes as a kit without cable, for connection of the data cable	ZB4-209-DS2 206982		1 off
PROFIBUS DP bus connector plug	<ul style="list-style-type: none"> • Metallised insulated housing • Maximum transfer rate 12 MBit/s • Built-in switch (accessible from the outside) for the bus termination resistances • Terminal block for two cables, optionally with straight or 90° angled cable entry • Suitable for EASY204-DP 	ZB4-209-DS3 217820		
PROFIBUS DP data cable	Twisted pair cable, 2 × 0.64 mm ² , length: 100 m	ZB4-900-KB1 206983		

"Easy" Control Relays Networking, Accessories

	Description	Type Article no.	Price See Price List	Std. pack
Accessories				
Software	CD, menu selection from 6 languages Installation under WIN 95, 98, WIN NT 4.0 Service Pack 3 and above	EASY-SOFT 202407		1 off
Memory card	8K memory card for storing the entire circuit configuration for EASY412	EASY-M-8K 202408		
	16K memory card for storing the entire circuit configuration for EASY6..	EASY-M-16K 212317		
Connection cable	Length: 2 m, for connection to 9-pole serial PC interface with interface electronics	EASY-PC-CAB 202409		
Input-output simulator 	Simulator with power supply unit, 115/230 V AC/output 24 V DC, suitable/ designed for EASY412-DC...	EASY412-DC-SIM 212318		
	Same as EASY412-DC-SIM, with 120 V AC plug-in power supply unit/ 24 V DC output, plug suitable for North America	EASY412-DC-SIM-NA 222566		
Fixing bracket	For screw fixing onto mounting plate: 3 brackets per EASY4..., 3 brackets per EASY6..., 2 brackets per EASY2...	ZB4-101-GF1 061360		9 off
Coupling piece	Spare link between basic unit and expansion units	EASY-LINK-DS 221607		1 off
Telescopic adapter 	With 45 mm EN 50 022 top-hat rail, for equalization of the mounting depth of rear mounted devices in CI-K... enclosures and cabinets. Steplessly adjustable via scales, from 75 – 115 mm. For screw and snap fixing (also suitable for PKZM0, FAZ, FIP, ETR, EMR4 etc.)	M22-TA 226161		10 off
		Switched-mode power supply unit	Primary-switched mode, regulated • Rated input voltage 50/60 HZ: 115/230 V AC • Rated output voltage: 24 V DC • Rated output current: 1.25 A	EASY400-POW 212319

"Easy" Control Relays

Documentation

Description	Type Article no.	Price See Price List	Std. pack
Documentation			
Manual for the "Easy" control relay			
German	AWB2528-1304-D 205375		1 off
English	AWB2528-1304-GB 205481		
French	AWB2528-1304-F 205482		
Italian	AWB2528-1304-I 205483		
Spanish	AWB2528-1304-E 205484		
Brief introduction to the "Easy" control relay			
German	AWB2528-1316-D 205376		1 off
English	AWB2528-1316-GB 205485		
French	AWB2528-1316-F 205486		
Italian	AWB2528-1316-I 205487		
Spanish	AWB2528-1316-E 205488		

"Easy" Control Relays

Technical Data

			EASY200-EASY	EASY412-...	EASY6...-...
General technical data					
Standards			EN 55 011, EN 55 022, IEC/EN 61 000-4, IEC 60 068-2-6, IEC 60 068-2-7		
Dimensions					
W × H × D	mm		35.5 × 90 × 53 (2 space units)	71.5 × 90 × 53 (4 space units)	107.5 × 90 × 53 (6 space units)
Weight	kg		0.07	0.2	0.3
Mounting			On EN 50 022 top-hat rail, 35 mm, or screw fixing, using ZB4-101-GF1 fixing brackets (accessories)		
Terminal capacity					
Solid	Min./Max.	mm ²	0.2/4 (AWG 22 – 12)		
Flexible with ferrule	Min./Max.	mm ²	0.2/2.5 (AWG 22 – 12)		
Width of standard screwdriver		mm	3.5 × 0.8	3.5 × 0.8	3.5 × 0.8
Tightening torque		Nm	0.6	0.6	0.6
Ambient climatic conditions					
Operational ambient temperature: horizontal / vertical installation		°C	–25/+55, low temperatures to IEC 60 068-2-1, high temperatures to IEC 60 068-2-2		
Condensation			Prevent condensation by suitable measures		
LCD display (clearly legible)		°C	0/+55	0/+55	0/+55
Storage/transport temperature		°C	–40/+70	–40/+70	–40/+70
Relative humidity, non-condensing (IEC 60 068-2-30)		%	5 – 95	5 – 95	5 – 95
Air pressure (operation)		hPa	795 – 1080	795 – 1080	795 – 1080
Corrosion resistance					
IEC 60 068-2-42	4 days SO ₂	cm ³ /m ³	10	10	10
IEC 60 068-2-43	4 days H ₂ S	cm ³ /m ³	1	1	1
Ambient conditions, mechanical					
Pollution degree			2	2	2
Degree of protection (EN 50 178, IEC 60 529, VBG 4)			IP20	IP20	IP20
Vibration resistance to IEC 60 068-2-6					
Constant amplitude 0.15 mm	Hz		10 – 57	10 – 57	10 – 57
Constant acceleration, 2 g	Hz		57 – 150	57 – 150	57 – 150
Mechanical shock resistance (half-sinusoidal shock 15 g/11 ms) to IEC 60 068-2-32		Impacts	18	18	18
Drop to IEC 60 068-2-31	drop height	mm	50	50	50
Free fall, packaged (IEC 60 068-2-32)		m	1	1	1
Electromagnetic compatibility (EMC)					
Electrostatic discharge (IEC/EN 61 000-4-2, severity level 3, ESD)					
Air discharge	kV		8	8	8
Contact discharge	kV		6	6	6
Electromagnetic fields (IEC/EN 61 000-4-3, RFI)		V/m	10	10	10
Radio interference suppression			EN 55 011 Class B, EN 55 022 Class B		
Burst pulses (IEC/EN 61 000-4-4, Level 3)					
Supply cables	kV		2	2	2
Signal lines	kV		2	2	2
High-energy pulses (surge) EASY-AC (IEC/EN 61 000-4-5)		kV	2 (supply cable, balanced)		
High-energy pulses (surge) EASY-DC (IEC/EN 61 000-4-5, severity level 2)		kV	0.5 (supply cable, balanced)		
Immunity to line-conducted interference to IEC EN 61 000-4-6		V	10	10	10
Dielectric strength					
Clearance in air and creepage distances dimensioned to			EN 50 178, UL 508, CSA C22.2, No 142		
Dielectric strength			EN 50 178	EN 50 178	EN 50 178
Back-up/accuracy of real-time clock (only on EASY-...C)					
Clock battery back-up					
at 25 °C	h		–	Normally 64	Normally 64
at 40 °C	h		–	Normally 24	Normally 24
Accuracy of the real-time clock		s/day	–	Normally ± 5 (~ ± 0.5 h/year)	Normally ± 5 (± 0.5 h/year)
Repetition accuracy of timing relays					
Accuracy of timing relays (of values)		%	–	± 1	± 1
Resolution					
Range "s"	ms		–	10	10
Range "M:S"	s		–	1	1
Range "H:M"	min		–	1	1
Retentive memory					
Write cycles of the retentive memory			–	≧ 100 000	≧ 100 000

"Easy" Control Relays

Technical Data

		EASY412-AC-...	EASY61...-AC-R...
Power supply			
Rated operational voltage	V AC	110/115/120/230/240 (+10/-15 %)	100/110/115/120/230/240 (+10/-15 %)
Admissible range	V AC	90 – 264	85 – 264
Frequency, rated value, tolerance	Hz	50/60 (± 5 %)	50/60 (± 5 %)
Input current			
at 115/120 V AC 60 Hz	mA	Normally 40	Normally 70
at 230/240 V AC 50 Hz	mA	Normally 20	Normally 35
Voltage dips (IEC/EN 61 131-2)	ms	20	20
Heat dissipation			
at 115/120 V AC	VA	Normally 5	Normally 10
at 230/240 V AC	VA	Normally 5	Normally 10

		EASY412-DC-...	EASY412-DA-RC	EASY6...-DC-...
Power supply				
Rated operational voltage	V DC	24 (-15/+20 %)	12 (-15/+30 %)	24 (-15/+20 %)
Admissible range	V DC	20.4 – 28.8	10.2 – 15.6	20.4 – 28.8
Residual ripple	%	≤ 5	±5	≤ 5
Input current at 24 VDC	mA	Normally 80	Normally 140	Normally 140
Voltage dips (IEC/EN 61 131-2)	ms	10	10	10
Heat dissipation at 24 V DC	W	Normally 2	Normally 2	Normally 5

		EASY412-AC-...	EASY618/619-AC-R...
Digital inputs 115/230 V AC			
Number		8	12
Status display		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 voltage L (sinusoidal)			
at signal "0"	V AC	0 – 40	0 – 40
at signal "1"	V AC	79 – 264	79 – 264
Rated frequency	Hz	50/60	50/60
Input current at signal "1" R1 to R12, I1 to I6 (EASY6... also I9 to I12)	mA	6 × 0.5 (at 230 V AC 50 Hz) 6 × 0.25 (at 115 V AC 60 Hz)	10 (12) × 0.5 (at 230 V AC 50 Hz) 10 (12) × 0.25 (at 115 V AC 60 Hz)
Input current at signal "1" I7, I8	mA	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)
Delay time I1 to I6/I9 to I12 From 0 to 1 and from 1 to 0			
Debounce ON	50/60 Hz	ms	80/66 ² / ₃
Debounce OFF	50/60 Hz	ms	20/16 ² / ₃
Delay time I7, I8 from 1 to 0			
Debounce ON	50/60 Hz	ms	160/150
Debounce OFF	50/60 Hz	ms	100/100
Delay time I7, I8 from 0 to 1			
Debounce ON	50/60 Hz	ms	80/66 ² / ₃
Debounce OFF	50/60 Hz	ms	20/16 ² / ₃
Max. admissible cable length (per input)			
R1 to R12, I1 to I6 (with EASY 6... also I9 to I12)	m	Normally 40	Normally 40
I7, I8	m	Normally 100	Normally 100

"Easy" Control Relays

Technical Data

		EASY412-DC-...	EASY412-DA-RC	EASY6...-DC...
Digital inputs 24 V DC				
Quantity, of which 2 inputs (I7, I8) can be used as analog inputs		8	8	12 (on basic unit)
Status display		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
Rated operational voltage	V DC	24	12	24
at signal "0"	V DC	< 5.0 (I1 – I8)	< 4.0 (I1 – I8)	< 5.0 (I1 – I12, R1 – R12)
at signal "1"	V DC	> 15.0 (I1 – I6) > 8.0 (I7 – I8)	> 8.0 (I1 – I8)	> 15.0 (I1 – I6, I9 – I12, R1 – R12) > 8.0 (I7 – I8)
Input current at signal "1" R1 to R12, I1 to I6 (EASY620/621 also I9 to I12)	mA	3.3 (at 24 V DC)	3.3 (at 12 V DC)	3.3 (at 24 V DC)
Input current at signal "1" (I7, I8)	mA	2.2 (at 24 V DC)	1.1 (at 12 V DC)	2.2 (at 24 V DC)
Delay time from 0 to 1				
Debounce On	ms	20	20	20
Debounce Off	ms	Normally 0.25 (I1 – I6)	Normally 0.30 (I1 – I6) Normally 0.35 (I7, I8)	Normally 0.25 (I1 – I6, I9 – I12)
Delay time from 1 to 0				
Debounce On	ms	20	20	20
Debounce Off	ms	Normally 0.4 (I1 – I6) Normally 0.2 (I7, I8)	Normally 0.30 (I1 – I6) Normally 0.15 (I7, I8)	Normally 0.4 (I1 – I6, I9 – I12) Normally 0.2 (I7, I8)
Cable length (unscreened)	m	100	100	100

		EASY412-D...	EASY6...-DC-...
Analog inputs			
Number		2	2
Potential isolation			
From power supply		No	No
From the digital inputs		No	No
From the outputs		Yes	Yes
Input type		DC voltage	DC voltage
Signal range	V DC	0 – 10	0 – 10
Resolution, analog	V	0.1	0.1
Resolution, digital		0.1	0.1
Input impedance	kΩ	11.2	11.2
Accuracy of actual value			
Two EASY devices	%	± 3	± 3
Within a single device	%	± 2 (I7, I8) ± 0.12 V	± 2 (I7, I8) ± 0.12 V
Conversion time, analog/digital	ms	Input delay On: 20 Debounce Off: every cycle	Input delay ON: 20 Debounce OFF: every cycle
Input current	mA	< 1	< 1
Cable length (unscreened)	m	30	30

"Easy" Control Relays

Technical Data

		EASY412-...-R...	EASY618/619-...-R...
Relay outputs			
Number		4	6
in groups of		1	1
Parallel connection of outputs to increase performance		Not admissible	Not admissible
Protection for one output relay		Miniature circuit-breaker B16 or 8 A fuse (slow)	
Potential isolation from mains supply, inputs		Yes	Yes
Safe isolation	V AC	300	300
Basic insulation	V AC	600	600
Lifespan, mechanical operations	$\times 10^6$	10	10
Relay contacts			
Conventional thermal current (10 A UL)	A	8	8
Recommended for load: 12 V AC/DC	mA	> 500	> 500
Protection against short circuit, $\cos \varphi = 1$, characteristic B16 at 600 A	A	16	16
Protection against short circuit, $\cos \varphi = 0.5 - 0.7$, characteristic B16 at 900 A	A	16	16
Rated impulse withstand voltage U_{imp} contact to coil	kV	6	6
Rated insulation voltage U_i	V AC	250	250
Rated operational voltage U_e	V AC	250	250
Safe isolation to EN 50 178 between coil and contact	V AC	300	300
Safe isolation to EN 50 178 between two contacts	V AC	300	300
Making capacity			
AC-15 250 V AC, 3 A (600 Ops/h)	Operations	300 000	300 000
DC-13 L/R ≤ 150 ms 24 V DC, 1 A (500 Ops/h)	Operations	200 000	200 000
Breaking capacity			
AC-15 250 V AC, 3 A (600 Ops/h)	Operations	300 000	300 000
DC-13 L/R ≤ 150 ms 24 V DC, 1 A (500 Ops/h)	Operations	200 000	200 000
Filament lamp load			
1000 W at 230/240 V AC	Operations	25 000	25 000
500 W at 115/120 V AC	Operations	25 000	25 000
Fluorescent tubes			
10 \times 58 W at 230/240 V AC			
With upstream electrical device	Operations	25 000	25 000
Uncompensated	Operations	25 000	25 000
1 \times 58 W at 230/240 V AC			
Conventional, compensated	Operations	25 000	25 000
Operating frequency, relays			
Mechanical operations	$\times 10^6$	10	10
Mechanical switching 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/24 V DC	A	10/8	10/8
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 at B 300	A	5	5
Max. Make/Break 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 B 300	A	1	1
Max. Make/Break at R 300	VA	28/28	28/28

"Easy" Control Relays

Technical Data

		EASY412-DC-T...	EASY6...-DC-T...
Transistor outputs			
Number		4	8
Rated operational voltage U_e	V DC	24	24
Admissible range	V DC	20.4 – 28.8	20.4 – 28.8
Residual ripple	%	≤ 5	≤ 5
Supply current			
at "0" signal	Normally/max. mA	9/16	18/32
at "1" signal	Normally/max. mA	12/22	24/44
Protection against polarity reversal		Yes	Yes
Potential isolation from power supply, inputs		Yes	Yes
Rated current I_e at "1" signal, DC	max. A	0.5	0.5
Lamp load without R_v	W	5	5
Residual current at signal "0", per channel	mA	< 1.0	< 1.0
Max. output voltage			
at signal "0" with external load < 10 MΩ	V DC	2.5	2.5
at signal "1", $I_e = 0.5$ A	V DC	$U = U_e - 1$ V	$U = U_e - 1$ V
Short-circuit protection		Yes (detected via diagnostics input I16, I15; R15, R16)	
Short-circuit tripping current for $R_a \leq 10$ mΩ	A	$0.7 \leq I_e \leq 2$	$0.7 \leq I_e \leq 2$
Max. total short-circuit current	A	8	16
Peak short-circuit current	A	16	32
Thermal cutout		Yes	Yes
Max. operating frequency at constant resistive load (depending on circuit configuration and load), $R_L < 100$ kΩ	Ops./h	40 000	40 000
Parallel connection of outputs with resistive load; inductive load with external suppression 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
Quantity of outputs	max.	4	4
Total maximum current	A	2.0	2.0
Status display of the outputs		LCD display (if provided)	LCD display (if provided)

Approvals

Currently UL/CSA approved; others in preparation:

EASY200-EASY
 EASY412-DC-R
 EASY412-DC-RC
 EASY412-DC-TC
 EASY412-DC-TCX
 EASY412-AC-R
 EASY412-AC-RC
 EASY412-AC-RCX
 EASY618-DC-RC
 EASY618-AC-RC
 EASY618-AC-RE
 EASY619-DC-RC
 EASY619-DC-RCX
 EASY619-AC-RC
 EASY619-AC-RCX
 EASY620-DC-TC
 EASY620-DC-TE
 EASY621-DC-TC
 EASY621-DC-TCX

Oscillation test to EN 61 373 for railway applications, passed

EASY412-DC-RC
 EASY412-DC-TC
 EASY618-DC-RC
 EASY620-DC-TC

Notes

For more detailed Technical Data → AWB2528-1304-GB

“Easy” Control Relays

Technical Data

			EASY205-ASI	EASY204-DP
General technical data				
Standards			EN 55 011, EN 55 022, IEC/EN 61 000-4..., IEC 60 068-2-27, EN 50 295	EN 55 011, EN 55 022, IEC/EN 61 000-4, IEC 60 068-2-27, IEC 61 158
Dimensions	mm		35.5 × 90 × 53	35.5 × 90 × 53
Weight	kg		0.12	0.15
Mounting			On EN 50 022 top-hat rail, 35 mm, or screw fixing, using ZB4-101-GF1 fixing brackets (accessories)	
Ambient climatic conditions				
Operational ambient temperature: horizontal/vertical installation				
Cold to IEC 60 068-2-1	°C		–25/+55	–25/+55
Heat to IEC 60 068-2-2				
Condensation				
			Prevent condensation by suitable measures	Prevent condensation by suitable measures
Storage/transport temperature				
	°C		–40/+70	–40/+70
Relative humidity				
IEC 60 068-2-30, non-condensing	%		5 – 95	5 – 95
Air pressure (operation)				
	hPa		795 – 1080	795 – 1080
Corrosion resistance				
IEC 60 068-2-42	4 days SO ₂	cm ³ /m ³	10	10
IEC 60 068-2-43	4 days H ₂ S	cm ³ /m ³	1	1
Ambient conditions, mechanical				
Pollution degree				
			2	2
Degree of protection				
EN 50 178, IEC 60 529 VBG 4			IP20	IP20
Vibration resistance to IEC 60 068-2-6				
Constant amplitude 0.15 mm	Hz		10 – 57	10 – 57
Constant acceleration, 2 g	Hz		57 – 150	57 – 150
Mechanical shock resistance (half-sinusoidal shock 15 g/11 ms)				
to IEC 60 068-2-27	Impacts		18	18
Drop				
to IEC 60 068-2-31	drop height	mm	50	50
Free fall, packaged				
to IEC 60 068-2-32	m		1	1
Electromagnetic compatibility (EMC)				
Electrostatic discharge to IEC/EN 61 000-4-2, severity level 3				
Air discharge	kV		8	8
Contact discharge	kV		6	6
Electromagnetic fields				
to IEC/EN 61 000-4-3	field strength	V/m	10	10
Radio interference suppression				
to EN 55011, EN 55022			Limit value Class B	Limit value Class B
Burst pulses				
to IEC/EN 61 000-4-4, severity level 3	kV		2 (AS-Interface cables)	2 (power supply-, signal cables)
High-energy pulses (surge) EASY...-DC...				
to IEC/EN 61 000-4-5, severity level 2	kV		–	0.5 (supply cable, balanced)
Immunity to line-conducted interference				
to IEC/EN 61 000-4-6	V		10	10
Dielectric strength				
Clearance in air and creepage distances dimensioned to			EN 50 178, UL 508, CSA C22.2 No 142	EN 50 178, UL 508, CSA C22.2 No 142
Dielectric strength			EN 50 178	EN 50 178
Terminal capacity				
Solid	Min./Max.	mm ²	0.2/4 (AWG 22 – 12)	0.2/4 (AWG 22 – 12)
Flexible with ferrule	Min./Max.	mm ²	0.2/2.5 (AWG 22 – 12)	0.2/4 (AWG 22 – 12)
Width of standard screwdriver			3.5 × 0.8	3.5 × 0.8
Tightening torque			0.6	0.6

"Easy" Control Relays

Technical Data

		EASY205-ASI	EASY204-DP
Power supply			
Rated operational voltage	V DC	26.5 – 31.6	24 (–15/+20 %)
Total power consumption (from yellow AS-Interface cable)	mA	30	–
Admissible range	V DC	–	20.4 – 28.8
Residual ripple	%	–	< 5
Input current at 24 VDC	mA	–	Normally 200
Voltage dips (IEC/EN 61 131-2)	ms	–	10
Heat dissipation at 24 V DC	W	–	Normally 4.8
Protection against polarity reversal			
AS-Interface protected against polarity reversal		Yes	–
AS-Interface profile cable		7F (hex)	–
Slave addresses		0. 1 – 31	–
Addressing unit interface		3.5 mm socket	–
Power supply			Yes
LED displays			
		Power: green	Power LED (POW): green
		Com-Error: red	PROFIBUS-DP LED (BUS): red
Logic links			
EASY600 contact/coil ↔ AS-Interface		S1 → Input 0 S2 → Input 1 S3 → Input 2 S4 → Input 3 R1 ← Output 0 R2 ← Output 1 R3 ← Output 2 R4 ← Output 3 R5 ← PARAMETEROUTPUT 0 R6 ← PARAMETEROUTPUT 1 R7 ← PARAMETEROUTPUT 2 R8 ← PARAMETEROUTPUT 3	
PROFIBUS-DP			
Connection device		–	SUB-D 9-pole, socket
Potential isolation		–	Bus to power supply Bus and power supply to EASY basic unit (safe isolation)
Function		–	PROFIBUS-DP slave
Interface		–	RS 485
Bus protocol		–	PROFIBUS-DP
Baud rates		–	Automatic search up to 12 MBd
Bus termination resistors		–	Can be connected via plug
Bus addresses		–	1 – 126, can be addressed via EASY basic unit with display or via EASY-SOFT
Services			
Cyclical		–	All data R1 – R12, S1 – S8
Acyclical		–	Read/write, real-time, day, summer time/winter time. All parameters of the "Easy" function relay

"Easy" Control Relays

Technical Data

		EASY400-POW
General technical data		
Standards		EN 55 011, EN 55 022, IEC/EN 61 000-4, IEC 60 068-2-27,
Dimensions		71.5 × 90 × 53
Weight	kg	0.25
Mounting position		Horizontal and vertical on top-hat rail or fixing brackets
Mounting		On EN 50 022 top-hat rail, 35 mm, or screw fixing, using ZB4-101-GF1 fixing brackets (accessories)
Ambient climatic conditions		
Operational ambient temperature: horizontal/vertical installation		
Cold to IEC 60 068-2-1	°C	-25/+55
Heat to IEC 60 068-2-2		
Condensation		
Prevent condensation by suitable measures		
Storage/transport temperature	°C	-40/+70
Relative humidity		
IEC 60 068-2-30, non-condensing	%	5 – 95
Air pressure (operation)	hPa	795 – 1080
Corrosion resistance		
IEC 60 068-2-42	4 days SO ₂	cm ³ /m ³ 10
IEC 60 068-2-43	4 days H ₂ S	cm ³ /m ³ 1
Max. altitude above sea level; above this, note derating	m	2000
Ambient conditions, mechanical		
Pollution degree		2
Degree of protection		
EN 50 178, IEC 60 529, VBG 4		
IP20		
Vibration resistance to IEC 60 068-2-6		
Constant amplitude 0.15 mm	Hz	10 – 57
Constant acceleration, 2 g	Hz	57 – 150
Mechanical shock resistance (half-sinusoidal shock 15 g/11 ms)		
to IEC 60 068-2-27	Impacts	18
Drop		
to IEC 60 068-2-31	drop height	mm 50
Free fall, packaged		
to IEC 60 068-2-32	m	1
Electromagnetic compatibility (EMC)		
Radio interference suppression		
EN 55011, EN 55022, EN 50 081-2		
Limit value Class B		
Electrostatic discharge (IEC/EN 61 000-4-2, severity level 3, ESD)		
Air discharge	kV	8
Contact discharge	kV	6
Electromagnetic fields (RFI)		
to IEC/EN 61 000-4-3	field strength	V/m 10
Burst pulses		
to IEC/EN 61 000-4-4, severity level 3	kV	2
High-energy pulses (surge)		
to IEC/EN 61 000-4-5, supply cable balanced	kV	2
High-energy pulses (surge)		
to IEC/EN 61 000-4-5, severity level 2, output cable balanced	kV	0.5
Immunity to line-conducted interference		
to IEC/EN 61 000-4-6	V	10
Surge voltage		
to IEC/EN 60 947	kV	4.9

"Easy" Control Relays

Technical Data

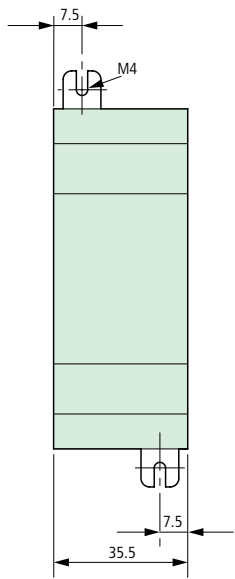
			EASY400-POW
Dielectric strength, potential isolation			
Clearance in air and creepage distances dimensioned to			to EN 50 178
Dielectric strength			to EN 50 178
Protection class U_{out} against U_{in}			Class II to IEC 60 536
Potential isolation primary/secondary			Yes, SELV to VDE 0100 Part 410, IEC 60 364-4-41, HD 384.4.41 S2
Terminal capacity			
Solid	Min./Max.	mm ²	0.2/4 (AWG 22 – 12)
Flexible with ferrule	Min./Max.	mm ²	0.2/2.5 (AWG 22 – 12)
Width of standard screwdriver			3.5 × 0.8
Tightening torque			0.6
Input voltage			
Rated input voltage			V AC 100/120/230/240 (–15/+10 %)
Voltage range			V AC 85 – 264
Frequency range			Hz 47 – 63
Input current nominal value	115/230 V	Approx. A	0.3/0.15
Inrush current at 25°C	230 V	A	< 5
Power failure bridging	115/230 V	ms	>10/>20
Fuse	115/230 V	A	2/1 slow
Protective switch, min.			FAZ-C1 or FAZ-B6
Rating data			
Efficiency			% ≤ 87
Power consumption			W Normally 35
Heat dissipation			W Normally 5
Input current			
Input current	115/230 V AC	A	0.3/0.15
Output voltage			
Rated value			V DC 24
Tolerance range			% ± 2
Switching peaks (peak to peak)			mV < 240
Influence of input voltage	115 – 230 V	%	± 1
Influence at 25 – 100 % load fluctuation			% ± 2
Output current			
Output current			A 0 – 1.25
Effectiveness of current limitation			A > 1.25
Reduction of output voltage after current limitation			V < 18
Overload proof			Yes, by current limitation
Proof against sustained short circuit			Yes, "hiccup mode", approx. 10 Hz
Special load conditions			
Lamp load, cold	24 V DC	W	10
Base load present			W 5
Behaviour at Emergency-Stop in 24 V DC circuit, disconnection by contactor (contactor load, no damage)			W 30
Displays			
Indication of output voltage (LED, continuous green light = OK)			V DC 24

"Easy" Control Relays

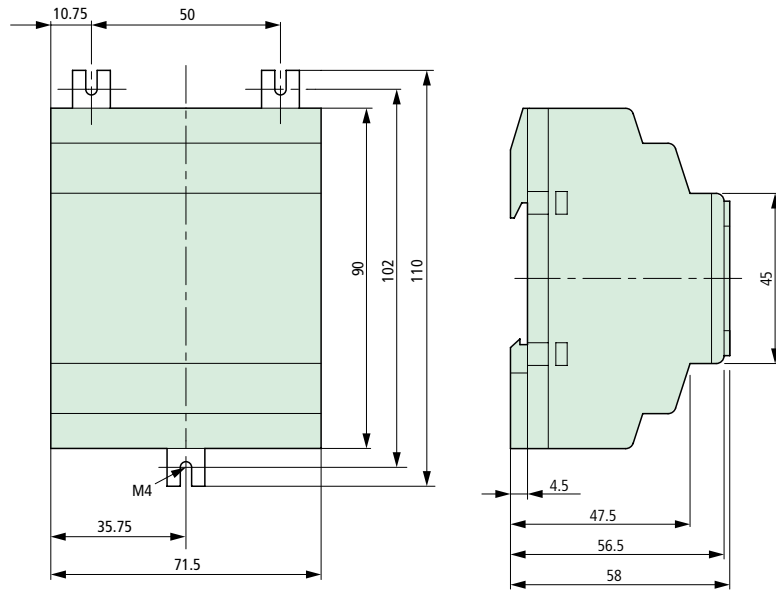
Dimensions

Control relay

EASY2...



EASY4...



EASY6...

