



Control relay, 24 V DC, 8DI(2AI), 4DO-Trans, time



Powering Business Worldwide™

Part no.
Article no.
Catalog No.

EASY512-DC-TCX
274112

Delivery programme

Product range	Control relays easyRelay
Basic function	easy500
Description	Stand alone
	customized laser inscription or delivery with user program possible with EASY-COMBINATION-* product (article No. 2010781)
Inputs	
Digital input count	digital: 8
	digital: 8; of which can be used as analog: 2
	8
Digital of which can be used as analog	2
Outputs	
Type	Transistor
Quantity of outputs	Transistor: 4
Outputs	4
Transistor	4
Additional features	
Display	without display, without keypad
Supply voltage	24 V DC
Software	EASY-SOFT-BASIC/-PRO

Approvals

Product Standards	IEC/EN see Technical Data; UL 508; CSA C22.2 No. 142-M1987; CSA C22.2 No. 213-M1987; CE marking
UL File No.	E135462
UL Category Control No.	NRAQ
CSA File No.	012528
CSA Class No.	2252-01 + 2258-02
North America Certification	UL listed, CSA certified
Degree of Protection	IEC: IP20, UL/CSA Type: -
shipping classification	BV
	DNV
	GL
	LR



General

Standards		EN 55011, EN 55022, IEC/EN 61000-4, IEC 60068-2-6, IEC 60068-2-27
Dimensions (W x H x D)	mm	71.5 x 90 x 58 (4 PE)
Weight	kg	0.2
Mounting		Top-hat rail IEC/EN 60715, 35 mm or screw fixing using fixing brackets ZB4-101-GF1 (accessories)

Terminal capacities

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 x 0.8
Max. tightening torque	Nm	0.6

Climatic environmental conditions

Operating ambient temperature	°C	In accordance with IEC 60068-2-1, -25 - +55
Condensation		Take appropriate measures to prevent condensation
Storage	θ	°C
relative humidity	%	-40 - +70
		in accordance with IEC 60068-2-30, IEC 60068-2-78
Air pressure (operation)	hPa	5 - 95
		795 - 1080

Ambient conditions, mechanical

Protection type (IEC/EN 60529, EN50178, VBG 4)

Vibrations

Mechanical shock resistance (IEC/EN 60068-2-27) semi-sinusoidal 15 g/11 ms

Drop to IEC/EN 60068-2-31

Free fall, packaged (IEC/EN 60068-2-32)

Mounting position

Electromagnetic compatibility (EMC)

Overvoltage category/pollution degree

Electrostatic discharge (ESD)

applied standard

Air discharge

Contact discharge

Electromagnetic fields (RFI) to IEC EN 61000-4-3

Radio interference suppression

Burst

power pulses (Surge)

Immunity to line-conducted interference to (IEC/EN 61000-4-6)

Insulation resistance

Clearance in air and creepage distances

Insulation resistance

Back-up of real-time clock

Back-up of real-time clock

Accuracy of real-time clock to inputs

Repetition accuracy of timing relays

Accuracy of timing relays (of values)

Resolution

Range "S"

Range "M:S"

Range "H:M"

Retentive memory

Write cycles of the retentive memory

Power supply

Rated operational voltage

Permissible range

Residual ripple

Siemens MPI, (optional)

Input current

Voltage dips

Fuse

Digital inputs 24 V DC

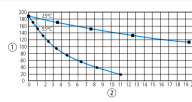
Number

Inputs can be used as analog inputs

		IP20
	Hz	In accordance with IEC 60068-2-6 constant amplitude 0.15 mm: 10 - 57 constant acceleration 2 g: 57 - 150
	Impacts	18
Drop height	mm	50
	m	1
		Vertical or horizontal



		III/2
		according to IEC EN 61000-4-2
	kV	8
	kV	6
	V/m	10
		EN 55011 Class B, EN 55022 Class B
	kV	according to IEC/EN 61000-4-4 Supply cables: 2 Signal cables: 2
		according to IEC/EN 61000-4-5 1 kV (supply cables, symmetrical)
	V	10

		EN 50178, UL 508, CSA C22.2, No. 142
		EN 50178







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

	%	± 1
	ms	10
	s	1
	min	1


		1000000 (10 ⁶)
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U _e	V	24 DC (-15/+20%)
U _e		20.4 - 28.8 V DC
	%	 5
		yes (Notice: A short-circuit will result if 0 V or earth is applied to the outputs in the event that the supply voltage is connected to the wrong poles.)
		normally 80 mA at U _e
	ms	≤ In accordance with IEC 61131-2 ≤ 10
	A	 1A (T)

		8
		2 (I7,I8)




Potential isolation			from power supply: no between digital inputs: no from the outputs: yes to interface/memory card: no
Rated operational voltage	U _e	V DC	24
Input voltage		V DC	Signal 0:  5 (I1 - I8) Signal 1:  15 (I1 - I6),  8 (I7, I8)
Input current at signal 1		mA	I1 - I6: 3.3 (at 24 V DC) I7, I8: 2.2 (at 24 V DC)
Deceleration time		ms	20 (0 -> 1/1 -> 0, Debounce ON) normally 0.25 (0 -> 1, Debounce OFF, I1 - I8)
Cable length		m	100 (unshielded)
Frequency counter			
Number			2 (I3, I4)
Counter frequency		kHz	 1
Pulse shape			Square
Pulse pause ratio			1:1
Cable length		m	 20 (screened)
Rapid counter inputs			
Number			2 (I1, I2)
Cable length		m	 20 (screened)
Counter frequency		kHz	< 1
Pulse shape			Square
Pulse pause ratio			1:1

Analog inputs

Number			2 (I7, I8)
Potential isolation			from power supply: no between digital inputs: no from the outputs: yes to interface/memory card: no
Input type			DC voltage
Signal range			0-10 V DC
Resolution			0.01 V analog 0.01 V digital 10 Bit (value 0 - 1023)
Input impedance		kΩ	11.2
Accuracy of actual value			
Two EASY devices		%	± 3
Within a single device		%	± 2, (I7, I8, I11, I12) ± 0.12 V
Conversion time, analog/digital		ms	Input delay ON: 20; Input delay OFF: each cycle time
Input current		mA	< 1
Cable length		m	 30, screened

Transistor outputs

Number			4
Rated operational voltage	U _e	V DC	24
Permissible range	U _e		20.4 - 28.8 V DC
Residual ripple		%	5
Supply current		mA	Norm./max. 9/16 at signal 0 12/22 at signal 1
Siemens MPI, (optional)			yes (Notice: A short-circuit will result if 0 V or earth is applied to the outputs in the event that the supply voltage is connected to the wrong poles.)
Potential isolation			from power supply: yes From the inputs: yes to the interface: yes to the memory card: yes
Rated operational current at signal „1“ DC per channel	I _e	A	Max. 0.5
Residual current on 0 signal per channel		mA	< 0.1

Max. output voltage	V	2.5 (signal 0 at external load < 10 MΩ) U = U _e - 1 V (signal 1 at I _e = 0.5 A)
Short-circuit protection		Yes, thermal (analysis via diagnostics input I16, I15; R15, R16)
Short-circuit tripping current for R _a  10 mΩ	A	0.7  I _e  2 per output
Total short-circuit current	A	8
Peak short-circuit current	A	16
Thermal cutout		Yes
Max. operating frequency with constant resistive load		Operations 40000 h
Parallel connection of outputs		
With resistive load, inductive load with external suppressor circuit, combination within a group		Group 1: Q1 to Q4
Number of outputs	max.	4
Max. total current	A	2 (Caution! Outputs must be actuated simultaneously and for the same length of time.)
Output status indication		LCD-display
Inductive load to EN 60947-5-1		
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
DC-13, 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

Supply voltage U_{Aux}

Siemens MPI, (optional)

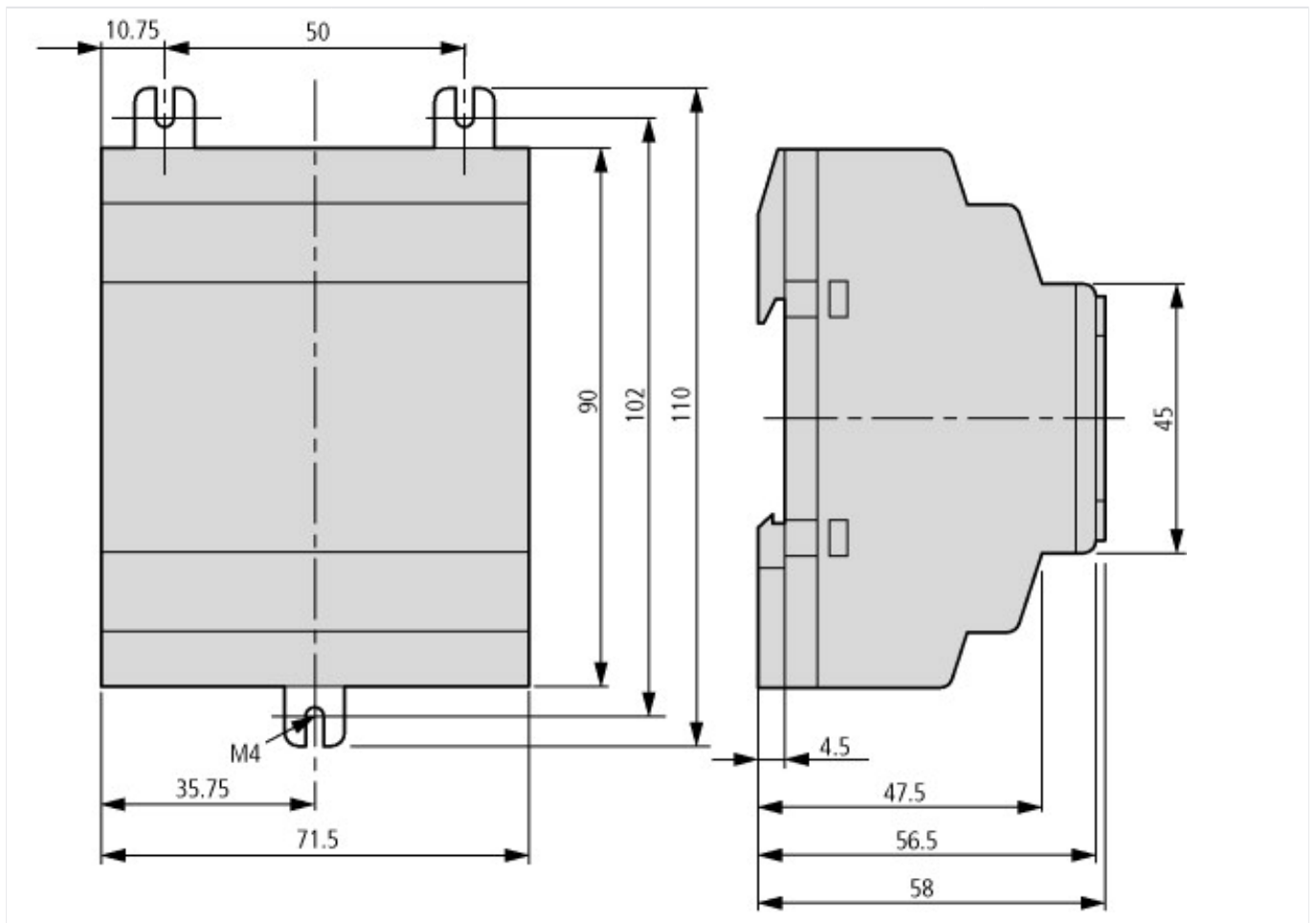
yes (Notice: A short-circuit will result if 0 V or earth is applied to the outputs in the event that the supply voltage is connected to the wrong poles.)

Technical data ETIM 5.0

PLC's (EG000024) / Logic module (EC001417)		
Electric engineering, automation, process control engineering / Control / Programmable logic control (SPS) / Logic module (ecl@ss8-27-24-22-16 [AKE539010])		
Supply voltage AC 50 Hz	V	0 - 0
Supply voltage AC 60 Hz	V	0 - 0
Supply voltage DC	V	20.4 - 28.8
Voltage type of supply voltage		DC
Switching current	A	0.5
Number of analogue inputs		2
Number of analogue outputs		0
Number of digital inputs		8
Number of digital outputs		4
With relay output		No
Number of HW-interfaces industrial Ethernet		0
Number of HW-interfaces PROFINET		0
Number of HW-interfaces RS-232		0
Number of HW-interfaces RS-422		0
Number of HW-interfaces RS-485		0
Number of HW-interfaces serial TTY		0
Number of HW-interfaces USB		0
Number of HW-interfaces parallel		0
Number of HW-interfaces Wireless		0
Number of HW-interfaces other		1
With optical interface		No
Supporting protocol for TCP/IP		No
Supporting protocol for PROFIBUS		No
Supporting protocol for CAN		No

Supporting protocol for INTERBUS		No
Supporting protocol for ASI		No
Supporting protocol for KNX		No
Supporting protocol for MODBUS		No
Supporting protocol for Data-Highway		No
Supporting protocol for DeviceNet		No
Supporting protocol for SUCONET		No
Supporting protocol for LON		No
Supporting protocol for PROFINET IO		No
Supporting protocol for PROFINET CBA		No
Supporting protocol for SERCOS		No
Supporting protocol for Foundation Fieldbus		No
Supporting protocol for EtherNet/IP		No
Supporting protocol for AS-Interface		No
Safety at Work		
Supporting protocol for DeviceNet Safety		No
Supporting protocol for INTERBUS- Safety		No
Supporting protocol for PROFIsafe		No
Supporting protocol for SafetyBUS p		No
Supporting protocol for other bus systems		No
Radiostandard Bluetooth		No
Radiostandard WLAN 802.11		No
Radiostandard GPRS		No
Radiostandard GSM		No
Radiostandard UMTS		No
IO link master		No
Redundancy		No
With display		No
Degree of protection (IP)		IP20
Basic device		Yes
Expandable		No
Expansion device		No
With timer		Yes
Rail mounting possible		Yes
Wall mounting/direct mounting		Yes
Front build in possible		No
Rack-assembly possible		No
Suited for safety functions		No
Category according to EN 954-1		-
SIL according to IEC 61508		0
Performance level acc. to EN ISO 13849-1		-
Appendant operation agent (Ex ia)		No
Appendant operation agent (Ex ib)		No
Explosion safety category for gas		None
Explosion safety category for dust		None
Width	mm	72
Height	mm	90
Depth	mm	60

Dimensions



Additional product information (links)

IL05013015Z (AWA2528-2105) Control relay easy	
IL05013015Z (AWA2528-2105) Control relay easy	ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL05013015Z2010_11.pdf
MN05013003Z-EN (AWB2528-1508) control relay easy500, easy700	
MN05013003Z-DE (AWB2528-1508) Steuerrelais easy500, easy700 - Deutsch	ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN05013003Z_DE.pdf
MN05013003Z-EN (AWB2528-1508) control relay easy500, easy700 - English	ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN05013003Z_EN.pdf
Labeleditor	http://downloadcenter.moeller.net/de/software.f6023a63-5acb-42c7-a51c-ccf99091cace