

SIRIUS SAFETY RELAY WITH REL.- U. EL. RELEASE CIRCUIT (RC), DC 24V, 45.0MM, SCREW TERMINAL, RC INSTANT.: 2S, RC DELAYED: 2, MK: 1, MONITORED START, BASIC DEVICE, MAX. ACHIEVABLE PL TO EN13849-1: E, MAX. ACHIEVABLE SIL TO IEC61508:3,

General technical data:	
product brand name	SIRIUS
Product designation	safety relays
Design of the product	double monitored start
Protection class IP of the enclosure	IP20
Protection class IP of the terminal	IP20
Protection against electrical shock	finger-safe
Insulation voltage rated value	300 V
Ambient temperature	
• during storage	-40 ... +80 °C
• during operation	-25 ... +60 °C
Air pressure acc. to SN 31205	90 ... 106 kPa
Relative humidity during operation	10 ... 95 %
Installation altitude at height above sea level maximum	2 000 m
Vibration resistance acc. to IEC 60068-2-6	5 ... 500 Hz: 0,075 mm
Shock resistance	8g / 10 ms and 15g / 5 ms
Surge voltage resistance rated value	4 000 V
EMC emitted interference	IEC 60947-5-1, IEC 60000-4-3, IEC 60000-4-5, IEC 60000-4-6
Installation environment regarding EMC	This product is suitable for Class A environments only. It can cause undesired radio-frequency interference in residential environments. If this is the case, the user must take appropriate measures.
Equipment marking acc. to DIN 40719 extended according to IEC 204-2 acc. to IEC 750	KT
Equipment marking acc. to DIN EN 61346-2	F
Number of sensor inputs	
• 1-channel or 2-channel	2
Design of the cascading	cascading or in-service switching
Type of the safety-related wiring of the inputs	single-channel and two-channel
Product feature cross-circuit-proof	Yes
Safety Integrity Level (SIL)	
• acc. to IEC 61508	SIL3
• for delayed release circuit acc. to IEC 61508	SIL3

SIL Claim Limit (subsystem) acc. to EN 62061	3
Performance level (PL)	
• acc. to EN ISO 13849-1	e
• for delayed release circuit acc. to EN ISO 13849-1	e
Category acc. to EN 954-1	4
Category acc. to EN ISO 13849-1	4
Hardware fault tolerance acc. to IEC 61508	1
Safety device type acc. to IEC 61508-2	Type B
PFHD with high demand rate acc. to EN 62061	0.0000000069 1/h
T1 value for proof test interval or service life acc. to IEC 61508	20 y
Number of outputs as contact-affected switching element	
• as NC contact	
— for signaling function instantaneous contact	0
• as NO contact	
— safety-related instantaneous contact	1
— safety-related delayed switching	1
Number of outputs as contact-less semiconductor switching element	
• safety-related	
— delayed switching	1
— instantaneous contact	1
• for signaling function	
— delayed switching	0
— instantaneous contact	1
Stop category acc. to DIN EN 60204-1	0 + 1

General technical data:

Design of input	
• cascading input/functional switching	Yes
• feedback input	Yes
• Start input	Yes
Type of electrical connection Plug-in socket	Yes
Operating frequency maximum	2 000 1/h
Switching capacity current	
• of semiconductor outputs	
— for signaling function at DC-13 at 24 V	0.5 A
— for enabling circuit at DC-13 at 24 V	1 A
• of the NO contacts of the relay outputs	
— at DC-13	

— at 24 V	1 A
— at 115 V	0.1 A
— at 230 V	0.1 A
— at AC-15	
— at 115 V	3 A
— at 230 V	3 A
Mechanical service life (switching cycles) typical	100 000
Design of the fuse link for short-circuit protection of the NO contacts of the relay outputs required	gL/gG: 4 A or fast-acting: 4A
DC resistance of the cable maximum	1 000 Ω
Wire length between sensor and electronic evaluation device with Cu 1.5 mm² and 150 nF/km maximum	1 000 m
Make time with automatic start	
• typical	60 ms
• at DC maximum	100 ms
Make time with monitored start	
• maximum	100 ms
• typical	60 ms
Backslide delay time in the event of power failure	
• typical	25 ms
• maximum	30 ms
Adjustable OFF-delay time after opening of the safety circuits	5 ... 300 s
Recovery time after opening of the safety circuits typical	400 ms
Recovery time after power failure typical	8 000 ms
Pulse duration	
• of the sensor input minimum	45 ms
• of the ON pushbutton input minimum	0.2 s
• of the cascading input minimum	0.045 s

Control circuit/ Control:

Type of voltage of the control supply voltage	DC
Control supply voltage 1	
• at DC rated value	24 V
Operating range factor control supply voltage rated value of magnet coil	
• at DC	0.85 ... 1.15

Installation/ mounting/ dimensions:

Mounting position	any
Mounting type	screw and snap-on mounting
Width	45 mm

Height	138.5 mm
Depth	88 mm
Connections/ Terminals:	
Type of electrical connection	screw-type terminals
Type of connectable conductor cross-sections	
• solid	1x (0.5 ... 4.0 mm ²), 2x (0.5 ... 2.5 mm ²)
• finely stranded — with core end processing	1x (0.5 ... 2.5 mm ²), 2x (0.5 ... 1.5 mm ²)
Type of connectable conductor cross-sections at AWG conductors	
• solid	2x (20 ... 14)
• stranded	2x (20 ... 14)
Product Function:	
Product function	
• Light barrier monitoring	Yes
• Standstill monitoring	No
• protective door monitoring	Yes
• Automatic start	No
• magnetically operated switch monitoring NC-NO	No
• rotation speed monitoring	No
• laser scanner monitoring	Yes
• monitored start-up	Yes
• Light array monitoring	Yes
• magnetically operated switch monitoring NC-NC	Yes
• EMERGENCY OFF function	Yes
• Pressure-sensitive mat monitoring	Yes
Suitability for interaction press control	No
Suitability for use	
• Monitoring of floating sensors	Yes
• Monitoring of non-floating sensors	Yes
• safety switch	Yes
• position switch monitoring	Yes
• EMERGENCY-OFF circuit monitoring	Yes
• valve monitoring	No
• tactile sensor monitoring	Yes
• magnetically operated switch monitoring	Yes
• safety-related circuits	Yes
Certificates/ approvals:	
Certificate of suitability	UL, CSA, EN 60204-1, EN ISO 12100, EN 954-1, IEC 61508

- TÜV (German technical inspectorate) certificate
- UL approval
- BG BIA certificate

Yes
Yes
Yes

General Product Approval	EMC	Functional Safety/Safety of Machinery
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[Baumusterprüfbescheinigung](#)

Declaration of Conformity	Test Certificates	other
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[spezielle Prüfbescheinigungen](#)

[Bestätigungen](#)

[Umweltbestätigung](#)

Further information

Information- and Downloadcenter (Catalogs, Brochures,...)

<http://www.siemens.com/industrial-controls/catalogs>

Industry Mall (Online ordering system)

<http://www.siemens.com/industrymall>

Cax online generator

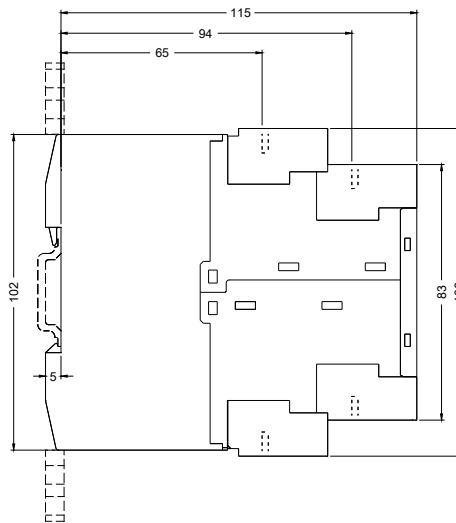
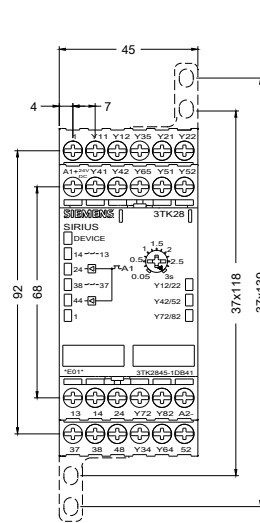
<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3TK2845-1DB44>

Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

<https://support.industry.siemens.com/cs/ww/en/ps/3TK2845-1DB44>

Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)

http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3TK2845-1DB44&lang=en



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