

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

General technical details:

product brand name		SIRIUS
product designation		safety relays
Design of the product		magnetic field locked tumbler
protection class IP / of the housing		IP20
Protection class IP / of the terminal		IP20
Protection against electrical shock		finger-safe
Insulation voltage / rated value	V	300
Ambient temperature		
• during storage	°C	-40 ... +80
• during operating	°C	-25 ... +60
Air pressure		
• according to SN 31205	kPa	90 ... 106
Relative humidity		
• during operating phase	%	10 ... 95
Installation altitude / at a height over sea level / maximum	m	2,000
Resistance against vibration / according to IEC 60068-2-6		5 ... 500 Hz: 0,075 mm
Resistance against shock		8g / 10 ms and 15g / 5 ms
Impulse voltage resistance / rated value	V	4,000
EMC emitted interference		IEC 60947-5-1, IEC 60000-4-3, IEC 60000-4-5, IEC 60000-4-6
Installation environment relating to 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.
Item designation		
• according to DIN 40719 extendable after IEC 204-2 / according to IEC 750		KT
• according 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 / transverse contact-secure		Yes
Safety Integrity Level (SIL) • according to IEC 61508 • for delayed release circuit / according to IEC 61508		SIL3 SIL3
SIL claim limit (for a subsystem) / according to EN 62061		3
Performance Level (PL) • according to ISO 13849-1 • for delayed release circuit / according to ISO 13849-1		e e
Category / according to EN 954-1		4
Category / according to ISO 13849-1		4
Hardware fault tolerance / according to IEC 61508		1
Safety device type / according to IEC 61508-2		Type B
Probability of dangerous failure per hour (PFHD) / with high demand rate / according to EN 62061	1/h	0.69E-8
T1 value / for proof test interval or service life / according to IEC 61508	a	20
Number of outputs / as contact-affected switching element • as NC contact / for reporting function / instantaneous switching • as NO contact / safety-related / instantaneous switching • as NO contact / safety-related / delayed switching		0 1 1
Number of outputs / as contact-less semiconductor switching element • safety-related • delayed switching • non-delayed • for reporting function • delayed switching • non-delayed		1 1 0 1
Stop category / according to DIN EN 60204-1		0 + 1

General technical details:

Design of the input • cascading-input/functional switching • feedback input • start input		Yes Yes Yes
Design of the electrical connection / jumper socket		Yes
Operating cycles / maximum	1/h	2,000
Switching capacity current • of semiconductor outputs		

• for signaling function / for DC-13 / at 24 V • for enabling circuit / for DC-13 / at 24 V	A	0.5
• of NO contacts of relay outputs	A	1
• at DC-13	A	1
• at 24 V	A	0.1
• at 115 V	A	0.1
• at 230 V	A	3
• at AC-15	A	3
• at 115 V	A	3
• at 230 V		
Mechanical operating cycles as operating time / 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
Resistance to direct current / of the cable / maximum	Ω	1,000
Cable length / between sensor and electronic evaluation device / with Cu 1.5 mm² and 150 nF/km / maximum	m	1,000
Make time / with automatic start		
• typical	ms	60
• for DC / maximum	ms	100
Make time / with monitored start		
• maximum	ms	100
• typical	ms	60
Backslide delay time / at mains power cut		
• typical	ms	25
• maximum	ms	30
Adjustable backslide delay time		
• after opening of the safety circuits	s	0.05 ... 3
Recovery time / after opening of the safety circuits / typical	ms	400
Recovery time / after mains power cut / typical	s	8
Pulse duration		
• of the sensor input / minimum	ms	45
• of the ON pushbutton input / minimum	s	0.2
• of the cascading-entrance / minimum	s	0.045
Control circuit:		
Type of voltage / of the controlled supply voltage		DC
Control supply voltage / 1 / for DC / rated value	V	24
operating range factor control supply voltage rated value / of the magnet coil		
• for DC		0.85 ... 1.15

Installation/mounting/dimensions:		
mounting position		any
Type of mounting		screw and snap-on mounting
Width	mm	45
Height	mm	138.5
Depth	mm	88

Connections:		
Design of the electrical connection		screw-type terminals
Type of the connectable conductor cross-section		
• solid		1x (0.5 ... 4 mm ²), 2x (0.5 ... 2.5 mm ²)
• finely stranded • with wire end processing		1x (0.5 ... 2.5 mm ²), 2x (0.5 ... 1.5 mm ²)
Type of the connectable conductor cross-section / for AWG conductors		
• solid		2x (20 ... 14)
• stranded		2x (20 ... 14)

Product Function:		
Product function		
• light barrier monitoring		No
• standstill monitoring		No
• protective door monitoring		Yes
• automatic start		No
• magnetic switch monitoring Normally closed contact-Normally open contact		No
• rotation speed monitoring		No
• laser scanner monitoring		No
• monitored start-up		Yes
• light grid monitoring		No
• magnetic switch monitoring Normally closed contact-Normally closed contact		No
• emergency stop function		Yes
• step mat monitoring		No
Suitability for interaction / pressing control		No
Acceptability for application		
• monitoring of floating sensors		Yes
• monitoring of non-floating sensors		Yes
• safety cut-out switch		Yes
• position switch monitoring		Yes
• EMERGENCY-OFF circuit monitoring		Yes

- valve monitoring
- tactile sensor monitoring
- magnetically operated switches monitoring
- safety-related circuits

No
Yes
Yes
Yes

Certificates/approvals:

Verification of suitability

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

UL, CSA, EN 60204-1, EN ISO 12100, EN 954-1, IEC 61508
Yes
Yes
Yes

General Product Approval

EMC

Functional Safety / Safety of Machinery



CCC



CSA



GOST



UL



C-TICK



VDE

Declaration of Conformity

Test Certificates

other



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Further information:

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

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

Industry Mall (Online ordering system)

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

Cax online generator:

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

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

<http://support.automation.siemens.com/WW/view/en/3TK2845-1GB41/all>

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

http://www.automation.siemens.com/bilddb/cax_en.aspx?mlfb=3TK2845-1GB41

