



SIRIUS SAFETY RELAY WITH RELAY RELEASE CIRCUITS (RC),
 DC 24V, 45.0MM, SCREW TERMINAL,
 RC INSTANT.: 2NO, RC DELAYED: 2, MK: 4,
 8-FUNCTION SWITCH, 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		for EMERGENCY-STOP units
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
Impulse voltage resistance / rated value	V	4,000
EMC emitted interference		EN 60947-5-1

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		
<ul style="list-style-type: none"> • according to DIN 40719 extendable after IEC 204-2 / according to IEC 750 • according to DIN EN 61346-2 		KT
		F
Number of sensor inputs		
<ul style="list-style-type: none"> • 1-channel or 2-channel 		1
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)		
<ul style="list-style-type: none"> • 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)		
<ul style="list-style-type: none"> • 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	0.78E-8
Average probability of failure on demand (PFDavg) / with low demand rate / according to IEC 61508	1/y	0.15E-4
T1 value / for proof test interval or service life / according to IEC 61508	a	20
Number of outputs / as contact-affected switching element		
<ul style="list-style-type: none"> • as NC contact / for reporting function / instantaneous switching • as NC contact / for reporting function / delayed switching • as NO contact / for reporting function / delayed switching • as NO contact / safety-related / instantaneous switching • as NO contact / safety-related / delayed switching 		1
		1
		1
		2
		2
Number of outputs / as contact-less semiconductor switching element		
<ul style="list-style-type: none"> • safety-related <ul style="list-style-type: none"> • delayed switching • non-delayed • for reporting function 		0
		0

• delayed switching	0
• non-delayed	2
Stop category / according to DIN EN 60204-1	0 + 1

General technical details:		
Design of the input		
• cascading-input/functional switching		Yes
• feedback input		Yes
• start input		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	A	0.2
• of NO contacts of relay outputs		
• at DC-13		
• at 24 V	A	4
• at 115 V	A	0.2
• at 230 V	A	0.1
• at AC-15		
• at 24 V	A	4
• at 115 V	A	4
• at 230 V	A	4
• of NC contacts of relay outputs		
• at DC-13		
• at 24 V	A	1
• at 115 V	A	0.2
• at 230 V	A	0.1
• at AC-15		
• at 24 V	A	4
• at 115 V	A	3
• at 230 V	A	3
Thermal current / of the contact-affected switching element / maximum	A	5
Electrical operating cycles as operating time / typical		100,000
Mechanical operating cycles as operating time / typical		10,000,000
Design of the fuse link / for short-circuit protection of the NO contacts of the relay outputs / required		gL/gG: 4 A, or quick: 6 A
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	2,000

Make time / with automatic start		
• typical	ms	50
• for DC / maximum	ms	100
• for AC / maximum	ms	100
Make time / with automatic start / after mains power cut		
• typical	ms	8,000
• maximum	ms	8,200
Make time / with monitored start		
• maximum	ms	100
• typical	ms	50
Backslide delay time / at mains power cut		
• typical	ms	75
• maximum	ms	125
Adjustable backslide delay time		
• after opening of the safety circuits	s	5 ... 300
Recovery time / after mains power cut / typical	s	8.2
Pulse duration		
• of the sensor input / minimum	ms	30
• of the ON pushbutton input / minimum	s	0.2
• of the cascading-entrance / minimum	s	0.2

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 ... 1.2

Installation/mounting/dimensions:

mounting position		any
Type of mounting		screw and snap-on mounting
Width	mm	45
Height	mm	138.5
Depth	mm	120

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		Yes
• standstill monitoring		No
• protective door monitoring		Yes
• automatic start		Yes
• magnetic switch monitoring Normally closed contact-Normally open contact		Yes
• rotation speed monitoring		No
• laser scanner monitoring		Yes
• monitored start-up		Yes
• light grid monitoring		Yes
• magnetic switch monitoring Normally closed contact-Normally closed contact		Yes
• emergency stop function		Yes
• step mat monitoring		Yes

Suitability for interaction / pressing control		No
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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		No
• tactile sensor monitoring		Yes
• magnetically operated switches monitoring		Yes
• safety-related circuits		Yes

Certificates/approvals:

Verification of suitability		UL, CSA, EN 60204-1, EN ISO 12100, EN 954-1, IEC 61508
• TÜV (German technical inspectorate) certificate		Yes
• UL-registration		Yes
• BG BIA certificate		Yes

General Product Approval			EMC	Functional Safety / Safety of Machinery	Declaration of Conformity
					
CCC	GOST	UL	C-TICK	VDE	EG-Konf.

Test Certificates	other
Special Test Certificate	Environmental Confirmations

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/WWW/view/en/3TK2826-1BB44/all>

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

http://www.automation.siemens.com/bilddb/cax_en.aspx?mlfb=3TK2826-1BB44

last change:

Feb 18, 2013