

SIRIUS SAFETY RELAY WITH AUXILIARY CONTACTOR
 RELEASE CIRCUIT (RC),
 DC 24V, 90.0MM, SPRING-LOADED TERMINAL,
 RC INSTANT.: 0,
 RC DELAYED: 3S 0.5...30S, MK: 0,
 EXPANSION UNIT,
 MAX. ACHIEVABLE PL: AS GG,
 MAX. ACHIEVABLE SIL: AS GG,

General technical details:		
product brand name		SIRIUS
product designation		safety relays
Design of the product		extension unit
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	690
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	6,000
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

Contact reliability		one incorrect switching operation of 100 million switching operations (17 V, 5 mA)
Design of the cascading		cascading and in-service switching
Product feature / transverse contact-secure		No
Safety Integrity Level (SIL)		SIL3
<ul style="list-style-type: none"> • according to IEC 61508 • for delayed release circuit / according to IEC 61508 		SIL3
SIL claim limit (for a subsystem) / according to EN 62061		3
Performance Level (PL)		e
<ul style="list-style-type: none"> • according to ISO 13849-1 • for delayed release circuit / according to ISO 13849-1 		e
Category / according to EN 954-1		corresponds to basic unit
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	0.11E-7
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 NO contact / safety-related / instantaneous switching • as NO contact / safety-related / delayed switching 		0 0 3
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 <ul style="list-style-type: none"> • delayed switching • non-delayed 		0 1 0 0
Stop category / according to DIN EN 60204-1		1

General technical details:

Design of the input		
<ul style="list-style-type: none"> • cascading-input/functional switching • feedback input • start input 		Yes Yes Yes
Design of the electrical connection / jumper socket		Yes
Operating cycles / maximum	1/h	1,000
Switching capacity current		

<ul style="list-style-type: none"> • of NO contacts of relay outputs <ul style="list-style-type: none"> • at DC-13 <ul style="list-style-type: none"> • at 24 V • at 115 V • at 230 V • at AC-15 <ul style="list-style-type: none"> • at 115 V • at 230 V • of NC contacts of relay outputs <ul style="list-style-type: none"> • at DC-13 <ul style="list-style-type: none"> • at 24 V • at 115 V • at 230 V • at AC-15 <ul style="list-style-type: none"> • at 115 V • at 230 V 	A	10
	A	1
	A	0.3
	A	6
	A	6
	A	10
	A	1
	A	0.3
	A	6
	A	6
Mechanical operating cycles as operating time / typical		30,000,000
Max. permissible voltage for safe isolation / between electronic evaluation device and enabling circuit / according to EN 60947-1	V	400
Design of the fuse link / for short-circuit protection of the NO contacts of the relay outputs / required		gL/gG: 10 A
Resistance to direct current / of the cable / maximum	Ω	500
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 / after mains power cut		
<ul style="list-style-type: none"> • typical 	ms	6,000
<ul style="list-style-type: none"> • maximum 	ms	7,000
Backslide delay time / at mains power cut		
<ul style="list-style-type: none"> • typical 	ms	120
<ul style="list-style-type: none"> • maximum 	ms	120
Adjustable backslide delay time		
<ul style="list-style-type: none"> • after opening of the safety circuits 	s	0.5 ... 30
Recovery time / after opening of the safety circuits / typical	ms	500
Recovery time / after mains power cut / typical	s	7
Pulse duration		
<ul style="list-style-type: none"> • 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 ... 1.1

Auxiliary circuit:

Contact reliability / of the auxiliary contacts		< 1 error per 100 million operating cycles
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Installation/mounting/dimensions:

mounting position		any
Type of mounting		screw and snap-on mounting
Width	mm	90
Height	mm	132
Depth	mm	108

Connections:

Design of the electrical connection		spring-loaded terminals
Type of the connectable conductor cross-section		
• solid		1x (0.2 ... 2.5 mm ²)
• finely stranded		
• without wire end processing		1x (0.25 ... 1.5 mm ²)
Type of the connectable conductor cross-section / for AWG conductors		
• solid		1x (24 ... 18)
• stranded		1x (24 ... 18)

Product Function:

Product function		
• light barrier monitoring		No
• standstill monitoring		No
• protective door monitoring		No
• automatic start		No
• magnetic switch monitoring Normally closed contact-Normally open contact		No
• rotation speed monitoring		No
• laser scanner monitoring		No
• monitored start-up		No
• light grid monitoring		No
• magnetic switch monitoring Normally closed contact-Normally closed contact		Yes
• emergency stop function		Yes
• step mat monitoring		No
Suitability for interaction / pressing control		No
Acceptability for application		

- safety cut-out switch
- position switch monitoring
- EMERGENCY-OFF circuit monitoring
- valve monitoring
- tactile sensor monitoring
- magnetically operated switches monitoring
- safety-related circuits

Yes
Yes
Yes
No
No
No
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



TUV



C-TICK



VDE

Declaration of Conformity

Test Certificates

other



EG-Konf.

[Special Test Certificate](#)

[Confirmation](#)

[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:

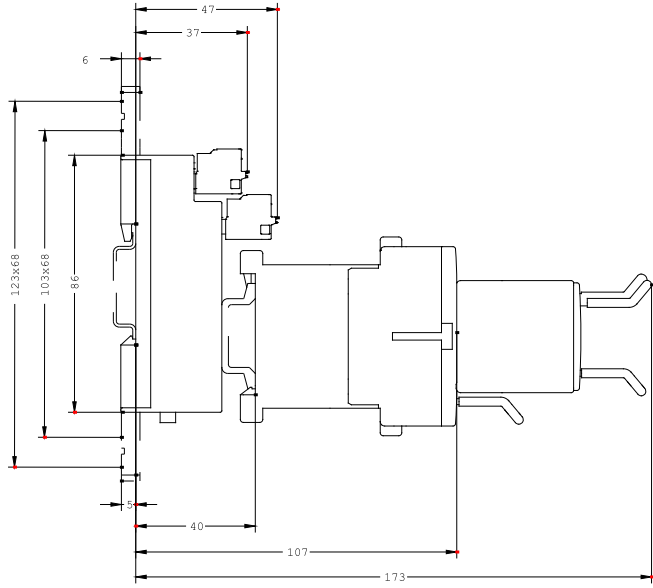
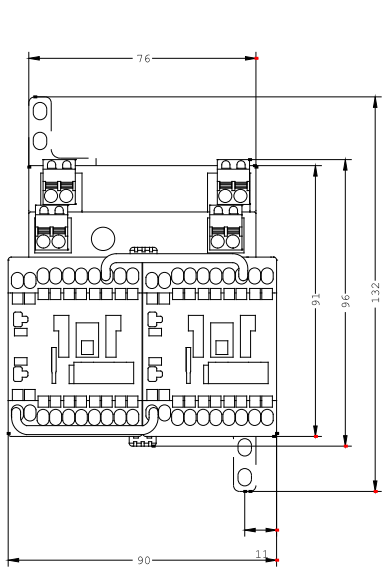
<http://www.siemens.com/cax>

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

<http://support.automation.siemens.com/WWW/view/en/3TK2857-2BB42/all>

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

http://www.automation.siemens.com/bilddb/cax_en.aspx?mlfb=3TK2857-2BB42



last change:

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