

SIRIUS SAFETY RELAY WITH AUXILIARY CONTACTOR  
 RELEASE CIRCUIT (RC),  
 DC 24V, 90.0MM, SCREW TERMINAL,  
 RC INSTANT.: 2S, RC DELAYED: 0,  
 MC: 1NC, AUTOSTART / MONITORED START,  
 BASIC DEVICE, MAX. ACHIEVABLE SIL: 2,  
 PL: D

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	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		5g / 11 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)

<b>Number of sensor inputs</b> • 1-channel or 2-channel		1
<b>Design of the cascading</b>		none
<b>Type of the safety-related wiring / of the inputs</b>		single-channel and two-channel
<b>Product feature / transverse contact-secure</b>		Yes
<b>safety Integrated Level</b> • according to IEC 61508		SIL2
<b>SIL claim limit (for a subsystem) / according to EN 62061</b>		2
<b>Performance Level (PL)</b> • according to ISO 13849-1		d
<b>Category / according to EN 954-1</b>		3
<b>Category / according to ISO 13849-1</b>		3
<b>Hardware fault tolerance / according to IEC 61508</b>		1
<b>Safety device type / according to IEC 61508-2</b>		Type B
<b>Probability of dangerous failure per hour (PFHD) / with high demand rate / according to EN 62061</b>	1/h	0.11E-7
<b>T1 value / for proof test interval or service life / according to IEC 61508</b>	a	20
<b>Number of outputs / as contact-affected switching element</b> • as NC contact / for reporting function / instantaneous switching • as NO contact / safety-related / instantaneous switching • as NO contact / safety-related/ delayed switching		1 2 0
<b>Number of outputs / as contact-less semiconductor switching element</b> • safety-related • delayed switching • non-delayed • for reporting function • delayed switching • non-delayed		0 0 0 0
<b>Stop category / according to DIN EN 60204-1</b>		0

#### General technical details:

<b>Design of the input</b> • cascading-entrance/operation-even switching • reducing-entrance • start-up entrance		No Yes Yes
<b>Design of the electrical connection / jumper socket</b>		Yes
<b>Operating cycles / maximum</b>	1/h	1,000
<b>Switching capacity current</b> • of NO contacts of relay outputs		

<ul style="list-style-type: none"> <li>• at DC-13 <ul style="list-style-type: none"> <li>• at 24 V</li> <li>• at 115 V</li> <li>• at 230 V</li> </ul> </li> <li>• at AC-15 <ul style="list-style-type: none"> <li>• at 115 V</li> <li>• at 230 V</li> </ul> </li> </ul>	A	10
	A	1
	A	0.3
<ul style="list-style-type: none"> <li>• of NC contacts of relay outputs <ul style="list-style-type: none"> <li>• at DC-13 <ul style="list-style-type: none"> <li>• at 24 V</li> <li>• at 115 V</li> <li>• at 230 V</li> </ul> </li> <li>• at AC-15 <ul style="list-style-type: none"> <li>• at 115 V</li> <li>• at 230 V</li> </ul> </li> </ul> </li> </ul>	A	6
	A	6
	A	10
	A	1
	A	0.3
	A	6
	A	6
<b>Mechanical operating cycles as operating time / typical</b>		30,000,000
<b>Max. permissible voltage for safe isolation / between electronic evaluation device and enabling circuit / according to EN 60947-1</b>	V	400
<b>Design of the fuse link / for short-circuit protection of the NO contacts of the relay outputs / required</b>		gL/gG: 10 A
<b>Resistance to direct current / of the cable / maximum</b>	Ω	250
<b>Cable length / between sensor and electronic evaluation device / with Cu 1.5 mm<sup>2</sup> and 150 nF/km / maximum</b>	m	2,000
<b>Make time / with automatic start</b>		
<ul style="list-style-type: none"> <li>• typical</li> </ul>	ms	100
<ul style="list-style-type: none"> <li>• for DC / maximum</li> </ul>	ms	200
<b>Make time / with automatic start / after mains power cut</b>		
<ul style="list-style-type: none"> <li>• typical</li> </ul>	ms	350
<ul style="list-style-type: none"> <li>• maximum</li> </ul>	ms	500
<b>Make time / with monitored start</b>		
<ul style="list-style-type: none"> <li>• maximum</li> </ul>	ms	100
<ul style="list-style-type: none"> <li>• typical</li> </ul>	ms	60
<b>Backslide delay time / after opening of the safety circuits / typical</b>	ms	30
<b>Backslide delay time / at mains power cut</b>		
<ul style="list-style-type: none"> <li>• typical</li> </ul>	ms	100
<ul style="list-style-type: none"> <li>• maximum</li> </ul>	ms	120
<b>Recovery time / after opening of the safety circuits / typical</b>	ms	20
<b>Recovery time / after mains power cut / typical</b>	s	0.02
<b>Pulse duration</b>		
<ul style="list-style-type: none"> <li>• of the sensor input / minimum</li> </ul>	ms	20
<ul style="list-style-type: none"> <li>• of the ON pushbutton input / minimum</li> </ul>	s	0.02

- of the cascading-entrance / minimum

s	0.02
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#### Control circuit:

Type of voltage / of the controlled supply voltage		DC
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Control supply voltage / 1 / for DC / rated value	V	24
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operating range factor control supply voltage rated value / of the magnet coil		
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- for DC

	0.85 ... 1.1
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#### 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
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Type of mounting		screw and snap-on mounting
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Width	mm	90
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Height	mm	132
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Depth	mm	108
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#### Connections:

Design of the electrical connection		screw-type terminals
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Type of the connectable conductor cross-section		
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- solid

	1x (0.2 ... 2.5 mm <sup>2</sup> ), 2x (0.2 ... 1 mm <sup>2</sup> )
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- finely stranded

- with wire end processing

	1x (0.25 ... 2.5 mm <sup>2</sup> ), 2x (0.25 ... 1 mm <sup>2</sup> )
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Type of the connectable conductor cross-section / for AWG conductors		
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- solid

	2x (24 ... 12)
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- stranded

	2x (24 ... 12)
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#### Product Function:

Product function		
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- light barrier monitoring

	No
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- standstill monitoring

	No
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- protective door monitoring

	Yes
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- automatic start

	Yes
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- magnetic switch monitoring Normally closed contact-Normally open contact

	No
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- rotation speed monitoring

	No
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- laser scanner monitoring

	No
--	----

- monitored start-up

	Yes
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- light grid monitoring

	No
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• magnetic switch monitoring Normally closed contact-Normally closed contact	Yes
• emergency stop function	Yes
• step mat monitoring	No
<b>Suitability for interaction / pressing control</b>	No
<b>Acceptability for application</b>	
• monitoring of floating sensors	Yes
• monitoring of non-floating sensors	No
• safety cut-out switch	Yes
• position switch monitoring	Yes
• EMERGENCY-OFF circuit monitoring	Yes
• valve monitoring	No
• tactile sensor monitoring	No
• magnetically operated switches monitoring	No
• safety-related circuits	Yes

**Certificates/approvals:**

<b>Verification of suitability</b>	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

<b>General Product Approval</b>	<b>EMC</b>	<b>Functional Safety / Safety of Machinery</b>	<b>Test Certificates</b>
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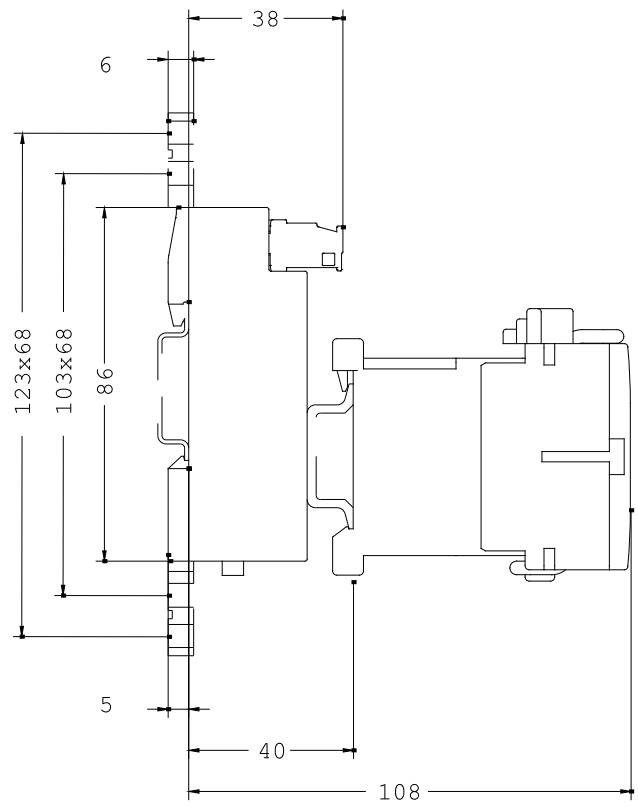
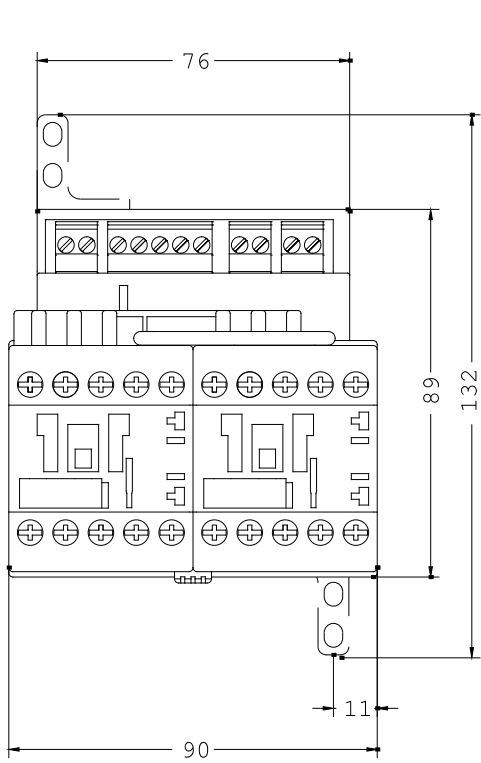
[Special Test Certificate](#)

other

[Confirmation](#)

**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/3TK2851-1BB40/all>
- 
- Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, ...)**  
[http://www.automation.siemens.com/bilddb/cax\\_en.aspx?mlfb=3TK2851-1BB40](http://www.automation.siemens.com/bilddb/cax_en.aspx?mlfb=3TK2851-1BB40)



last change:

Jul 17, 2012