

SIRIUS SAFETY RELAY WITH AUXILIARY CONTACTOR  
 RELEASE CIRCUIT (RC),  
 DC 24V, 90.0MM, SCREW TERMINAL,  
 RC INSTANT.: 6S, 1HL, RC DELAYED: 0,  
 MC: 1NC, EXPANSION UNIT,  
 MAX. ACHIEVABLE PL: AS GG MAX. ACHIEVABLE SIL: AS  
 GG

General technical details:		
<b>product brand name</b>		SIRIUS
<b>product designation</b>		safety relays
<b>Design of the product</b>		extension unit
<b>protection class IP / of the housing</b>		IP20
<b>Protection class IP / of the terminal</b>		IP20
<b>Protection against electrical shock</b>		finger-safe
<b>Insulation voltage / rated value</b>	V	690
<b>Ambient temperature</b>		
• during storage	°C	-40 ... +80
• during operating	°C	-25 ... +60
<b>Air pressure</b>		
• according to SN 31205	kPa	90 ... 106
<b>Relative humidity</b>		
• during operating phase	%	10 ... 95
<b>Installation altitude / at a height over sea level / maximum</b>	m	2,000
<b>Resistance against vibration / according to IEC 60068-2-6</b>		5 ... 500 Hz: 0,075 mm
<b>Resistance against shock</b>		8g / 10 ms and 15g / 5 ms
<b>Impulse voltage resistance / rated value</b>	V	6,000
<b>EMC emitted interference</b>		IEC 60947-5-1, IEC 60000-4-3, IEC 60000-4-5, IEC 60000-4-6
<b>Installation environment relating to EMC</b>		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.
<b>Item designation</b>		
• according to DIN 40719 extendable after IEC 204-2 / according to IEC 750		KT
• according to DIN EN 61346-2		F
<b>Contact reliability</b>		one incorrect switching operation of 100 million switching operations (17 V, 5 mA)

<b>Design of the cascading</b>		cascading and in-service switching
<b>Product feature / transverse contact-secure</b>		No
<b>Safety Integrity Level (SIL)</b> • according to IEC 61508		SIL3
<b>SIL claim limit (for a subsystem) / according to EN 62061</b>		3
<b>Performance Level (PL)</b> • according to ISO 13849-1		e
<b>Category / according to EN 954-1</b>		corresponds to basic unit
<b>Category / according to ISO 13849-1</b>		4
<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 6 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 1 0 0
<b>Stop category / according to DIN EN 60204-1</b>		0

#### General technical details:

<b>Design of the input</b> • cascading-input/functional switching • feedback input • start input		Yes 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 • at DC-13 • at 24 V • at 115 V	A A	10 1

• at 230 V	A	0.3
• at AC-15		
• at 24 V	A	4
• at 115 V	A	6
• at 230 V	A	6
• of NC contacts of relay outputs		
• at DC-13		
• at 24 V	A	10
• at 115 V	A	1
• at 230 V	A	0.3
• at AC-15		
• at 24 V	A	4
• at 115 V	A	6
• at 230 V	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	500
<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 / after mains power cut</b>		
• typical	ms	6,000
• maximum	ms	7,000
<b>Backside delay time / after opening of the safety circuits / typical</b>	ms	50
<b>Backside delay time / at mains power cut</b>		
• typical	ms	120
• maximum	ms	120
<b>Recovery time / after opening of the safety circuits / typical</b>	ms	500
<b>Recovery time / after mains power cut / typical</b>	s	7
<b>Pulse duration</b>		
• of the cascading-entrance / minimum	s	0.045

#### Control circuit:

<b>Type of voltage / of the controlled supply voltage</b>		DC
<b>Control supply voltage / 1 / for DC / rated value</b>	V	24
<b>operating range factor control supply voltage rated value / of the magnet coil</b>		
• for DC		0.85 ... 1.1

#### Auxiliary circuit:

<b>Contact reliability / of the auxiliary contacts</b>		< 1 error per 100 million operating cycles
<b>Installation/mounting/dimensions:</b>		
<b>mounting position</b>		any
<b>Type of mounting</b>		screw and snap-on mounting
<b>Width</b>	mm	90
<b>Height</b>	mm	132
<b>Depth</b>	mm	146
<b>Connections:</b>		
<b>Design of the electrical connection</b>		screw-type terminals
<b>Type of the connectable conductor cross-section</b>		
<ul style="list-style-type: none"> <li>• solid</li> </ul>		1x (0.2 ... 2.5 mm <sup>2</sup> ), 2x (0.2 ... 1.0 mm <sup>2</sup> )
<ul style="list-style-type: none"> <li>• finely stranded</li> <li>• with wire end processing</li> </ul>		1x (0.25 ... 2.5 mm <sup>2</sup> ), 2x (0.25 ... 1.0 mm <sup>2</sup> )
<b>Type of the connectable conductor cross-section / for AWG conductors</b>		
<ul style="list-style-type: none"> <li>• solid</li> </ul>		2x (24 ... 18)
<ul style="list-style-type: none"> <li>• stranded</li> </ul>		2x (24 ... 18)
<b>Product Function:</b>		
<b>Product function</b>		
<ul style="list-style-type: none"> <li>• light barrier monitoring</li> </ul>		No
<ul style="list-style-type: none"> <li>• standstill monitoring</li> </ul>		No
<ul style="list-style-type: none"> <li>• protective door monitoring</li> </ul>		No
<ul style="list-style-type: none"> <li>• automatic start</li> </ul>		No
<ul style="list-style-type: none"> <li>• magnetic switch monitoring Normally closed contact-Normally open contact</li> </ul>		No
<ul style="list-style-type: none"> <li>• rotation speed monitoring</li> </ul>		No
<ul style="list-style-type: none"> <li>• laser scanner monitoring</li> </ul>		No
<ul style="list-style-type: none"> <li>• monitored start-up</li> </ul>		No
<ul style="list-style-type: none"> <li>• light grid monitoring</li> </ul>		No
<ul style="list-style-type: none"> <li>• magnetic switch monitoring Normally closed contact-Normally closed contact</li> </ul>		Yes
<ul style="list-style-type: none"> <li>• emergency stop function</li> </ul>		Yes
<ul style="list-style-type: none"> <li>• step mat monitoring</li> </ul>		No
<b>Suitability for interaction / pressing control</b>		No
<b>Acceptability for application</b>		
<ul style="list-style-type: none"> <li>• safety cut-out switch</li> </ul>		Yes
<ul style="list-style-type: none"> <li>• position switch monitoring</li> </ul>		Yes
<ul style="list-style-type: none"> <li>• EMERGENCY-OFF circuit monitoring</li> </ul>		Yes
<ul style="list-style-type: none"> <li>• valve monitoring</li> </ul>		No

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

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



##### Declaration of Conformity

##### Test Certificates

##### other



[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:

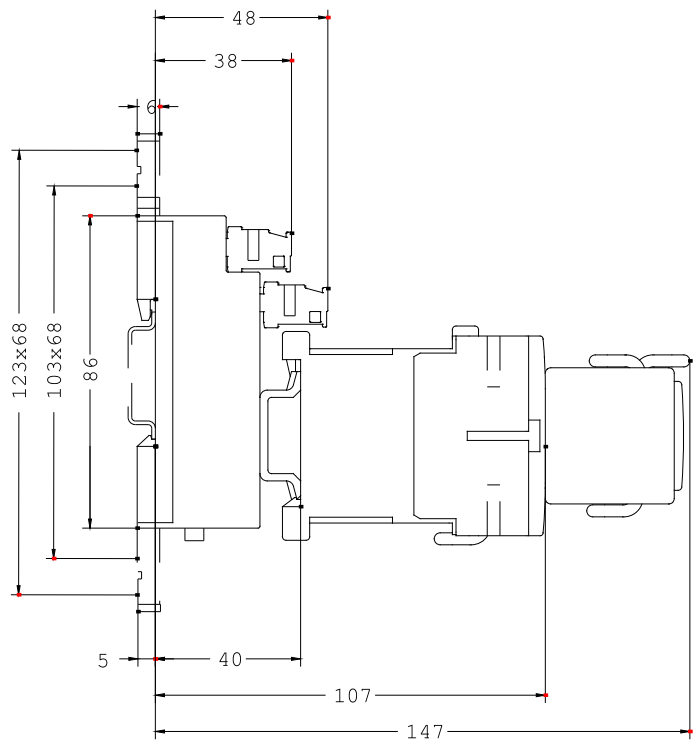
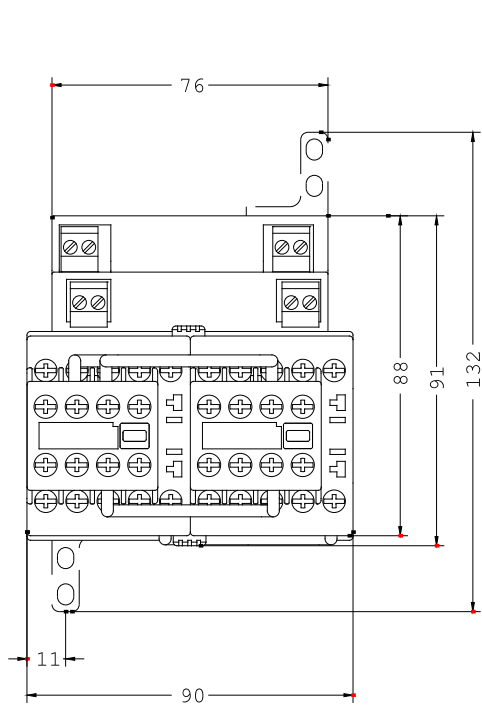
<http://www.siemens.com/cax>

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

<http://support.automation.siemens.com/WW/view/en/3TK2856-1BB40/all>

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

[http://www.automation.siemens.com/bilddb/cax\\_en.aspx?mlfb=3TK2856-1BB40](http://www.automation.siemens.com/bilddb/cax_en.aspx?mlfb=3TK2856-1BB40)



last change:

Feb 18, 2013