



SIRIUS SAFETY RELAY WITH RELAY RELEASE CIRCUITS (FK),  
 24V AC/DC, 22.5MM, SCREW TERMINAL,  
 FK INSTANT.: 4S, FK DELAYED: 0,  
 MC FOR FEEDBACK: 1, EXPANSION UNIT,  
 MAX. ERR. SIL / PL: 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>		IP40
<b>Protection class IP / of the terminal</b>		IP20
<b>Protection against electrical shock</b>		finger-safe
<b>Insulation voltage / rated value</b>	V	300
<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
<b>Impulse voltage resistance / rated value</b>	V	4,000
<b>EMC emitted interference</b>		EN 60947-5-1

<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>		
<ul style="list-style-type: none"> <li>• according to DIN 40719 extendable after IEC 204-2 / according to IEC 750</li> <li>• according to DIN EN 61346-2</li> </ul>		KT
		F
<b>Design of the cascading</b>		none
<b>Product feature / transverse contact-secure</b>		No
<b>safety Integrated Level</b>		
<ul style="list-style-type: none"> <li>• according to IEC 61508</li> </ul>		SIL3
<b>SIL claim limit (for a subsystem) / according to EN 62061</b>		3
<b>Performance Level (PL)</b>		
<ul style="list-style-type: none"> <li>• according to ISO 13849-1</li> </ul>		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 A
<b>Probability of dangerous failure per hour (PFHD) / with high demand rate / according to EN 62061</b>	1/h	0.12E-8
<b>Average probability of failure on demand (PFDavg) / with low demand rate / according to IEC 61508</b>	1/y	0.1E-5
<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>		
<ul style="list-style-type: none"> <li>• as NC contact / for reporting function / instantaneous switching</li> <li>• as NO contact / safety-related / instantaneous switching</li> <li>• as NO contact / safety-related/ delayed switching</li> </ul>		0 4 0
<b>Number of outputs / as contact-less semiconductor switching element</b>		
<ul style="list-style-type: none"> <li>• safety-related <ul style="list-style-type: none"> <li>• delayed switching</li> <li>• non-delayed</li> </ul> </li> <li>• for reporting function <ul style="list-style-type: none"> <li>• delayed switching</li> <li>• non-delayed</li> </ul> </li> </ul>		0 0 0 0
<b>Stop category / according to DIN EN 60204-1</b>		0

#### General technical details:

<b>Design of the input</b>		
<ul style="list-style-type: none"> <li>• cascading-entrance/operation-even switching</li> <li>• reducing-entrance</li> </ul>		No Yes

• start-up entrance		No
<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	A	5
• at 115 V	A	0.2
• at 230 V	A	0.1
• at AC-15		
• at 115 V	A	5
• at 230 V	A	5
• of NC contacts of relay outputs		
• at DC-13		
• at 24 V	A	5
• at 115 V	A	0.2
• at 230 V	A	0.1
• at AC-15		
• at 115 V	A	5
• at 230 V	A	5
<b>Thermal current / of the contact-affected switching element / maximum</b>	A	5
<b>Electrical operating cycles as operating time / typical</b>		100,000
<b>Mechanical operating cycles as operating time / typical</b>		10,000,000
<b>Design of the fuse link / for short-circuit protection of the NO contacts of the relay outputs / required</b>		gL/gG: 6 A, or quick: 10 A
<b>Resistance to direct current / of the cable / maximum</b>	Ω	30
<b>Cable length / between sensor and electronic evaluation device / with Cu 1.5 mm<sup>2</sup> and 150 nF/km / maximum</b>	m	1,000
<b>Make time / with automatic start</b>		
• for DC / maximum	ms	30
• for AC / maximum	ms	30
<b>Make time / with automatic start / after mains power cut</b>		
• maximum	ms	30
<b>Backside delay time / at mains power cut</b>		
• maximum	ms	25
<b>Recovery time / after mains power cut / typical</b>	s	50
<b>Control circuit:</b>		
<b>Type of voltage / of the controlled supply voltage</b>		AC/DC
<b>Control supply voltage frequency</b>		

• 1 / rated value	Hz	50
• 2 / rated value	Hz	60
<b>Control supply voltage / 1 / for DC / rated value</b>	V	24
<b>Control supply voltage / 1 / at 50 Hz / for AC / rated value</b>	V	24
<b>Control supply voltage / 1 / at 60 Hz / for AC / rated value</b>	V	24
<b>operating range factor control supply voltage rated value / of the magnet coil</b>		
• at 50 Hz		0.85 ... 1.1
• for AC		
• at 60 Hz		0.85 ... 1.1
• for AC		
• for DC		0.85 ... 1.2

#### Installation/mounting/dimensions:

<b>mounting position</b>		any
<b>Type of mounting</b>		screw and snap-on mounting
<b>Width</b>	mm	22.5
<b>Height</b>	mm	120
<b>Depth</b>	mm	120

#### Connections:

<b>Design of the electrical connection</b>		screw-type terminals
<b>Type of the connectable conductor cross-section</b>		
• solid		1x (0.5 ... 4 mm <sup>2</sup> ), 2x (0.5 ... 2.5 mm <sup>2</sup> )
• finely stranded		
• with wire end processing		1x (0.5 ... 2.5 mm <sup>2</sup> ), 2x (0.5 ... 1.5 mm <sup>2</sup> )
<b>Type of the connectable conductor cross-section / for AWG conductors</b>		
• solid		2x (24 ... 16)
• stranded		2x (24 ... 16)

#### Product Function:

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

### Certificates/approvals:

<b>Verification of suitability</b>	BG, SUVA, 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	No

### General Product Approval

Functional Safety /  
Safety of Machinery

Declaration of  
Conformity



CCC



CSA



GOST



UL



VDE



EG-Konf.

### 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:

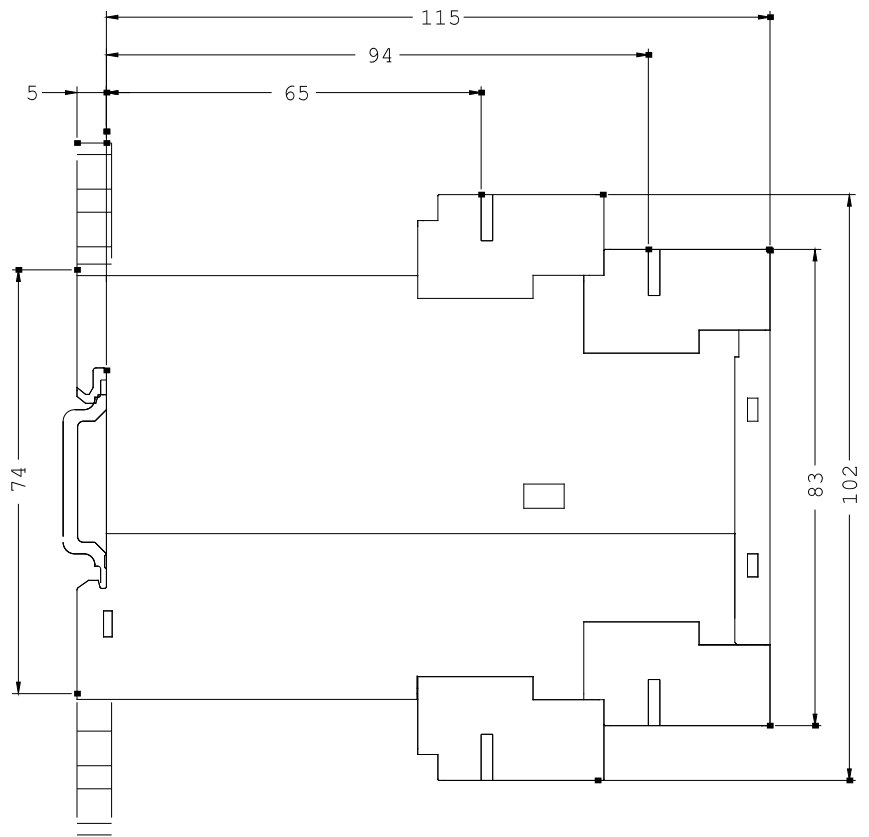
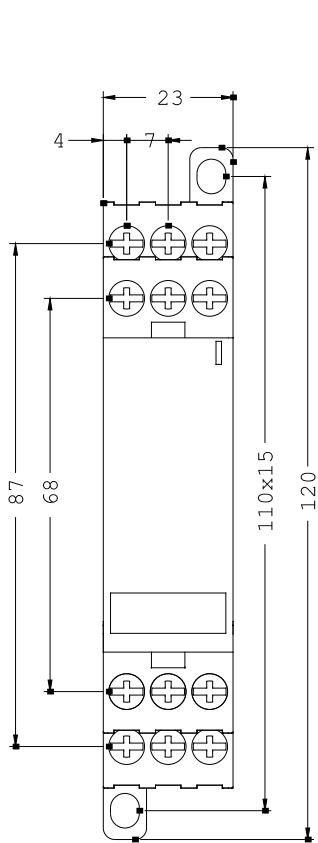
<http://www.siemens.com/cax>

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

<http://support.automation.siemens.com/WW/view/en/3TK2830-1CB30/all>

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

[http://www.automation.siemens.com/bilddb/cax\\_en.aspx?mlfb=3TK2830-1CB30](http://www.automation.siemens.com/bilddb/cax_en.aspx?mlfb=3TK2830-1CB30)



last change:

Jun 25, 2012