

SIRIUS SAFETY RELAY FOR SAFETY-ORIENTED  
STANDSTILL MONITORING,  
230V AC, 45.0MM,  
SPRING-LOADED TERMINAL,  
FK INSTANT.: 3NO 1NC, FK DELAYED: 0,  
MK: 3, AUTO START, BASIC UNIT,  
MAX. ACHIEV. CAT. EN954-1: 4,  
MAX. ACHIEV. SIL TO IEC61508:3,

### General technical details:

Product brand name		SIRIUS
product designation		safety relays
Design of the product		for safe stoppage monitoring
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 ... +75
• 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		10 ... 55 Hz: 0.35 mm
Resistance against shock		8g / 10 ms
Impulse voltage resistance / rated value	V	6,000
EMC emitted interference		IEC 61000-6-2, IEC 61000-6-3

<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>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>		measuring inputs
<b>Product feature / transverse contact-secure</b>		No
<b>safety Integrated Level / according to IEC 61508</b>		SIL3
<b>SIL claim limit (for a subsystem) / according to EN 62061</b>		3
<b>Performance level (PL) / according to ISO 13849-1</b>		e
<b>Category / according to EN 954-1</b>		4
<b>Category / according to ISO 13849-1</b>		4
<b>Probability of dangerous failure per hour (PFHD) / with high demand rate / according to EN 62061</b>	1/h	0.15E-8
<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		2
• as NO contact / safety-related / instantaneous switching		4
• as NO contact / safety-related/ delayed switching		0
<b>Number of outputs / as contact-less semiconductor switching element</b>		
• safety-related		
• delayed switching		0
• non-delayed		0
• for reporting function		
• delayed switching		0
• non-delayed		2
<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		No
• reducing-entrance		Yes
• start-up entrance		No
<b>Design of the electrical connection / jumper socket</b>		Yes
<b>Operating cycles / maximum</b>	1/h	1,200
<b>Switching capacity current / of semiconductor outputs</b>		
• for signaling function / for DC-13 / at 24 V	A	0.1

<b>Switching capacity current / of the NO contacts of the relay outputs</b>		
• at DC-13		
• at 24 V	A	2
• at AC-15		
• at 115 V	A	3
• at 230 V	A	3
<b>Switching capacity current / of the NC contacts of the relay outputs</b>		
• at DC-13		
• at 24 V	A	2
• at AC-15		
• at 115 V	A	2
• at 230 V	A	2
<b>Thermal current / of the contact-affected switching element / maximum</b>	A	5
<b>Electrical operating cycles as operating time / typical</b>		200,000
<b>Mechanical operating cycles as operating time / typical</b>		50,000,000
<b>Design of the fuse link / for short-circuit protection of the NO contacts of the relay outputs / required</b>		quick: 5 A

#### Control circuit:

<b>Type of voltage / of the controlled supply voltage</b>		AC
<b>Control supply voltage frequency</b>		
• 1 / rated value	Hz	50
• 2 / rated value	Hz	60
<b>Control supply voltage / 1 / at 50 Hz / for AC / rated value</b>	V	230
<b>Control supply voltage / 1 / at 60 Hz / for AC / rated value</b>	V	230
<b>Working range factor supply voltage rated value / of the magnet coil</b>		
• at 50 Hz		
• for AC		0.8 ... 1.1
• at 60 Hz		
• for AC		0.8 ... 1.1

#### Installation/mounting/dimensions:

<b>Built in orientation</b>		any
<b>Type of mounting</b>		screw and snap-on mounting
<b>Width</b>	mm	45
<b>Height</b>	mm	138.5
<b>Depth</b>	mm	120

**Connections:****Design of the electrical connection**

spring-loaded terminals

**Type of the connectable conductor cross-section**

- solid
- finely stranded
  - with wire end processing
  - without wire end processing

2x (0.25 ... 1.5 mm<sup>2</sup>)2x (0.25 ... 1 mm<sup>2</sup>)2x (0.25 ... 1.5 mm<sup>2</sup>)**Product Function:****Product function**

- light barrier monitoring
- standstill monitoring
- protective door monitoring
- automatic start
- magnetic switch monitoring Normally closed contact-Normally open contact
- rotation speed monitoring
- laser scanner monitoring
- monitored start-up
- light grid monitoring
- magnetic switch monitoring Normally closed contact-Normally closed contact
- emergency stop function
- step mat monitoring

No

Yes

No

No

No

No

No

No

No

No

No

No

**Suitability for interaction / pressing control**

No

**Acceptability for application**

- safety cut-out switch
- position switch monitoring
- EMERGENCY-OFF circuit monitoring
- opto-electronical protection device monitoring
- magnetically operated switches monitoring
- proximity switches monitoring
- safety-related circuits

Yes

No

No

No

No

No

Yes

**Certificates/approvals:****Verification of suitability**

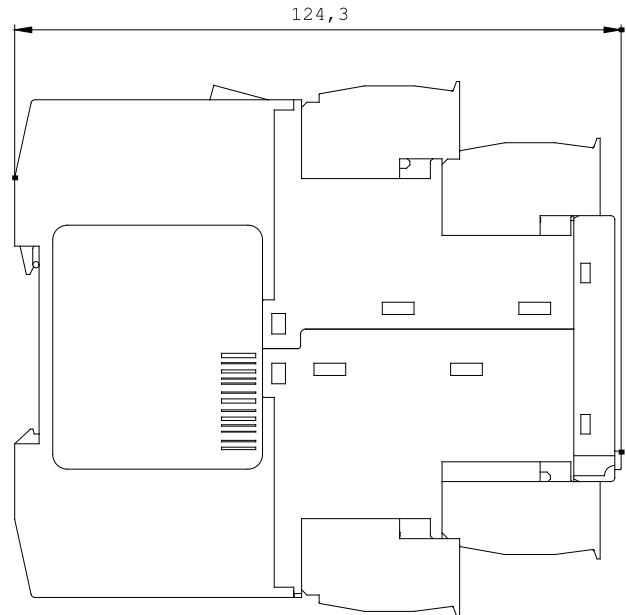
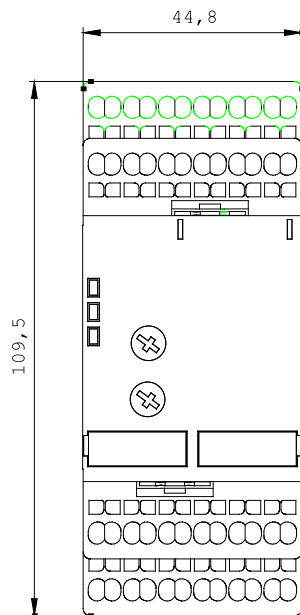
- TÜV (German technical inspectorate) certificate
- UL-registration
- BG BIA certificate

UL, CSA, EN 60204-1, EN ISO 12100, EN 954-1, IEC 61508

Yes

Yes

Yes

**General Product Approval**[ROSTEST](#)**Functional Safety / Safety of Machinery**[BG](#)[TÜV](#)**Test Certificates**[Manufacturer](#)**other**[Manufacturer](#)**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/VW/view/en/3TK2810-0GA02/all>**Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, ...)**[http://www.automation.siemens.com/bilddb/cax\\_en.aspx?mlfb=3TK2810-0GA02](http://www.automation.siemens.com/bilddb/cax_en.aspx?mlfb=3TK2810-0GA02)**last change:**

Dec 14, 2011