

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 data:		
product brand name		SIRIUS
Product designation		safety relays
Design of the product		for safe stoppage monitoring
Protection class IP of the enclosure		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 operation	°C	-25 ... +60
Air pressure acc. to SN 31205	kPa	90 ... 106
Relative humidity during operation	%	10 ... 95
Installation altitude at height above sea level maximum	m	2 000
Vibration resistance acc. to IEC 60068-2-6		10 ... 55 Hz: 0.35 mm
Shock resistance		8g / 10 ms
Surge voltage resistance Rated value	V	6 000
EMC emitted interference		IEC 61000-6-2, IEC 61000-6-3
Installation environment regarding 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.
Equipment marking acc. to DIN 40719 extended according to IEC 204-2 acc. to IEC 750		KT
Equipment marking acc. 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 property cross-circuit-proof</b>		No
<b>Safety Integrity Level (SIL)</b> • acc. to IEC 61508 • for delayed release circuit acc. to IEC 61508		SIL3 SIL3
<b>SIL Claim Limit (subsystem) acc. to EN 62061</b>		3
<b>Performance level (PL)</b> • acc. to EN ISO 13849-1 • for delayed release circuit acc. to EN ISO 13849-1		e e
<b>Category acc. to EN 954-1</b>		4
<b>Category acc. to EN ISO 13849-1</b>		4
<b>Hardware fault tolerance acc. to IEC 61508</b>		1
<b>Safety device type acc. to IEC 61508-2</b>		Type B
<b>PFHD with high demand rate acc. to EN 62061</b>	1/h	0.0000000015
<b>T1 value for proof test interval or service life acc. to IEC 61508</b>	y	20
<b>Number of outputs as contact-affected switching element</b> • as NC contact — for signaling function instantaneous contact • as NO contact — safety-related instantaneous contact — safety-related delayed switching		2 4 0
<b>Number of outputs as contact-less semiconductor switching element</b> • safety-related — delayed switching — instantaneous contact • for signaling function — delayed switching — instantaneous contact		0 0 0 2
<b>Stop category acc. to DIN EN 60204-1</b>		0

#### General technical data:

<b>Design of input</b> • cascading input/functional switching • feedback input • Start input		No Yes No
<b>Type of electrical connection Plug-in socket</b>		Yes

<b>Operating frequency maximum</b>	1/h	1 200
<b>Switching capacity current</b>		
<ul style="list-style-type: none"> <li>• of semiconductor outputs <ul style="list-style-type: none"> <li>— for signaling function at DC-13 at 24 V</li> </ul> </li> </ul>	A	0.1
<ul style="list-style-type: none"> <li>• of the NO contacts of the relay outputs <ul style="list-style-type: none"> <li>— at DC-13 <ul style="list-style-type: none"> <li>— at 24 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	2
	A	3
	A	3
<ul style="list-style-type: none"> <li>• of the NC contacts of the relay outputs <ul style="list-style-type: none"> <li>— at DC-13 <ul style="list-style-type: none"> <li>— at 24 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	2
	A	2
	A	2
<b>Thermal current of the switching element with contacts maximum</b>	A	5
<b>Electrical endurance (switching cycles) typical</b>		200 000
<b>Mechanical service life (switching cycles) 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/ Control:

<b>Type of voltage of the control supply voltage</b>		AC
<b>Control supply voltage frequency</b>		
<ul style="list-style-type: none"> <li>• 1 Rated value</li> </ul>	Hz	50
<ul style="list-style-type: none"> <li>• 2 Rated value</li> </ul>	Hz	60
<b>Control supply voltage 1 with AC</b>		
<ul style="list-style-type: none"> <li>• at 50 Hz Rated value</li> </ul>	V	230
<ul style="list-style-type: none"> <li>• at 60 Hz Rated value</li> </ul>	V	230
<b>Operating range factor control supply voltage rated value of the magnet coil</b>		
<ul style="list-style-type: none"> <li>• with AC <ul style="list-style-type: none"> <li>— at 50 Hz</li> <li>— at 60 Hz</li> </ul> </li> </ul>		0.8 ... 1.1
		0.8 ... 1.1

#### Installation/ mounting/ dimensions:

<b>mounting position</b>		any
<b>Mounting type</b>		screw and snap-on mounting
<b>Width</b>	mm	45
<b>Height</b>	mm	138.5
<b>Depth</b>	mm	120

### Connections/ Terminals:

<b>Type of electrical connection</b>		spring-loaded terminals
<b>Type of connectable conductor cross-section</b>		
<ul style="list-style-type: none"> <li>• solid</li> </ul>		2x (0.25 ... 1.5 mm <sup>2</sup> )
<ul style="list-style-type: none"> <li>• finely stranded                             <ul style="list-style-type: none"> <li>— with core end processing</li> <li>— without core end processing</li> </ul> </li> </ul>		2 x (0.25 ... 1.5 mm <sup>2</sup> ) 2x (0.25 ... 1.5 mm <sup>2</sup> )
<b>Type of connectable conductor cross-section for AWG conductors</b>		
<ul style="list-style-type: none"> <li>• solid</li> </ul>		2x (24 ... 16)
<ul style="list-style-type: none"> <li>• stranded</li> </ul>		2x (20 ... 16)

### Product Function:

<b>Product function</b>		
<ul style="list-style-type: none"> <li>• Light barrier monitoring</li> <li>• Standstill monitoring</li> <li>• protective door monitoring</li> <li>• Automatic start</li> <li>• magnetically operated switch monitoring NC-NO</li> <li>• rotation speed monitoring</li> <li>• laser scanner monitoring</li> <li>• monitored start-up</li> <li>• Light array monitoring</li> <li>• magnetically operated switch monitoring NC-NC</li> <li>• EMERGENCY OFF function</li> <li>• Pressure-sensitive mat monitoring</li> </ul>		No Yes No No No No No No No No No No
<b>Suitability for interaction press control</b>		No
<b>Suitability for use</b>		
<ul style="list-style-type: none"> <li>• safety switch</li> <li>• position switch monitoring</li> <li>• EMERGENCY-OFF circuit monitoring</li> <li>• valve monitoring</li> <li>• tactile sensor monitoring</li> <li>• magnetically operated switch monitoring</li> <li>• safety-related circuits</li> </ul>		Yes No No No No No Yes

### Certificates/ approvals:

<b>Certificate of suitability</b>		UL, CSA, EN 60204-1, EN ISO 12100, EN 954-1, IEC 61508
<ul style="list-style-type: none"> <li>• TÜV (German technical inspectorate) certificate</li> <li>• UL approval</li> </ul>		Yes Yes

- BG BIA certificate

Yes

<b>General Product Approval</b>	<b>Functional Safety/Safety of Machinery</b>	<b>Declaration of Conformity</b>
---------------------------------	--	----------------------------------



[Type Examination](#)



<b>Test Certificates</b>	<b>other</b>
--------------------------	--------------

[Special Test Certificate](#)

[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/industrymall>

**Cax online generator**

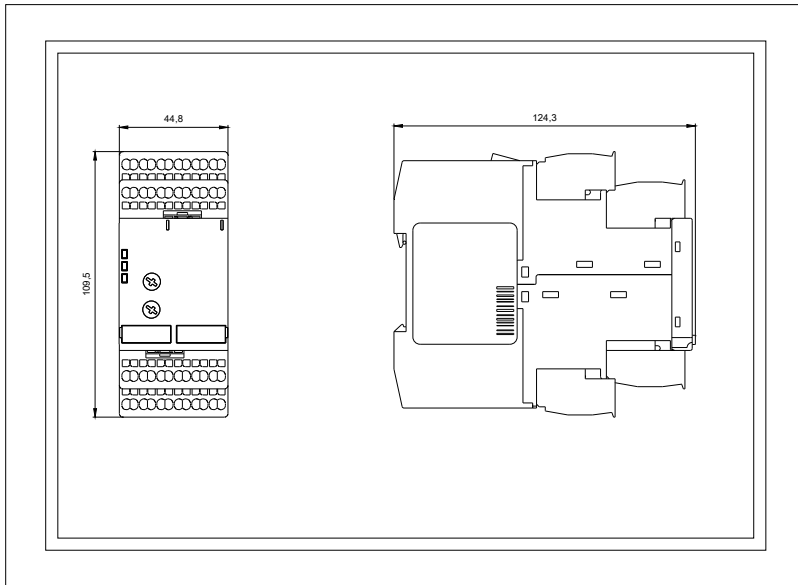
<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3TK28100GA02>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3TK28100GA02>

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

[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3TK28100GA02&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3TK28100GA02&lang=en)



last modified:

16.03.2015