



SIRIUS safety relay safety-oriented Standstill monitoring 230 V AC, 45 mm screw terminal EC instantaneous: 3 NO + 1 NC EC delayed: 0 SC: 3 Auto-start Basic unit max. error category EN 954-1: 4 Maximum achievable PL according to EN 13849-1: Maximum achievable SIL according to IEC 61508: 3

<b>product brand name</b>	SIRIUS
<b>product designation</b>	Standstill monitor
<b>design of the product</b>	for safe stoppage monitoring
<b>product type designation</b>	3TK28
<b>Product Function</b>	
<b>product function</b>	
<ul style="list-style-type: none"> <li>• automatic start</li> <li>• light barrier monitoring</li> <li>• standstill monitoring</li> <li>• protective door monitoring</li> <li>• magnetically operated switch monitoring NC-NO</li> <li>• magnetically operated switch monitoring NC-NC</li> <li>• rotation speed monitoring</li> <li>• laser scanner monitoring</li> <li>• light array monitoring</li> <li>• EMERGENCY OFF function</li> <li>• monitored start-up</li> <li>• pressure-sensitive mat monitoring</li> </ul>	<ul style="list-style-type: none"> <li>No</li> <li>No</li> <li>Yes</li> <li>No</li> <li>No</li> <li>No</li> <li>No</li> <li>No</li> <li>No</li> <li>No</li> <li>No</li> <li>No</li> </ul>
<b>suitability for interaction press control</b>	No
<b>suitability for use</b>	
<ul style="list-style-type: none"> <li>• position switch monitoring</li> <li>• EMERGENCY-OFF circuit monitoring</li> <li>• valve monitoring</li> <li>• opto-electronic protection device monitoring</li> <li>• tactile sensor monitoring</li> <li>• magnetically operated switch monitoring</li> <li>• proximity switch monitoring</li> <li>• safety switch</li> <li>• safety-related circuits</li> </ul>	<ul style="list-style-type: none"> <li>No</li> <li>No</li> <li>No</li> <li>No</li> <li>No</li> <li>No</li> <li>No</li> <li>Yes</li> <li>Yes</li> </ul>
<b>General technical data</b>	
certificate of suitability UL approval	Yes
<b>product feature cross-circuit-proof</b>	No
<b>insulation voltage rated value</b>	690 V
<b>surge voltage resistance rated value</b>	6 000 V
<b>protection class IP</b>	
<ul style="list-style-type: none"> <li>• of the enclosure</li> <li>• of the terminal</li> </ul>	<ul style="list-style-type: none"> <li>IP20</li> <li>IP20</li> </ul>
<b>shock resistance</b>	8g / 10 ms
<b>vibration resistance according to IEC 60068-2-6</b>	10 ... 55 Hz: 0.35 mm

<b>operating frequency maximum</b>	1 200 1/h
<b>mechanical service life (operating cycles) typical</b>	50 000 000
electrical endurance (operating cycles) typical	200 000
<b>thermal current of the switching element with contacts maximum</b>	5 A
<b>Substance Prohibitance (Date)</b>	05/01/2012
<b>SVHC substance name</b>	Lead - 7439-92-1 Lead monoxide (lead oxide) - 1317-36-8
<b>Weight</b>	0.521 kg
<b>Ambient conditions</b>	
installation altitude at height above sea level maximum	2 000 m
<b>ambient temperature</b>	
• during operation	-25 ... +60 °C
• during storage	-40 ... +75 °C
relative humidity during operation	10 ... 95 %
air pressure according to SN 31205	90 ... 106 kPa
<b>Electromagnetic compatibility</b>	
<b>installation environment regarding EMC</b>	This product is suitable for Class A environments only. In household environments, this device can cause unwanted radio interference. The user is required to implement appropriate measures in this case.
<b>EMC emitted interference</b>	IEC 61000-6-2, IEC 61000-6-3
<b>Safety related data</b>	
<b>stop category according to IEC 60204-1</b>	0
<b>average diagnostic coverage level (DCavg)</b>	99 %
IEC 62061	
SIL Claim Limit (subsystem) according to EN 62061	3
<b>Safety Integrity Level (SIL) according to IEC 62061</b>	SIL 3
PFHD with high demand rate according to IEC 62061	0 1/h
ISO 13849	
category according to EN ISO 13849-1	4
<b>performance level (PL)</b>	
• according to ISO 13849-1	PL e
IEC 61508	
<b>Safety Integrity Level (SIL)</b>	
• according to IEC 61508	3
• for delayed release circuit according to IEC 61508	SIL3
<b>safety device type according to IEC 61508-2</b>	Type B
<b>Average probability of failure on demand (PFDavg) with low demand rate acc. to IEC 61508</b>	0.002 1/y
hardware fault tolerance according to IEC 61508	1
T1 value for proof test interval or service life according to IEC 61508	20 a
Electrical Safety	
<b>touch protection against electrical shock</b>	finger-safe
<b>adjustable response value voltage for standstill detection</b>	20 ... 400 mV
<b>adjustable downtime</b>	0.2 ... 6 s
<b>Short-circuit protection</b>	
design of the fuse link for short-circuit protection of the NO contacts of the relay outputs required	quick: 5 A
<b>Inputs</b>	
<b>design of input</b>	
• cascading input/functional switching	No
• feedback input	Yes
• start input	No
<b>number of sensor inputs</b>	
• 1-channel or 2-channel	1
<b>Outputs</b>	
<b>number of outputs as contact-affected switching element</b>	
• as NC contact — for signaling function instantaneous contact	2
• as NO contact	

— safety-related instantaneous contact	4
— safety-related delayed switching	0
<b>number of outputs as contact-less semiconductor switching element</b>	
• for signaling function	
— delayed switching	0
— instantaneous contact	2
• safety-related	
— delayed switching	0
— instantaneous contact	0
<b>switching capacity current of semiconductor outputs</b>	
• for signaling function at DC-13 at 24 V	0.1 A
<b>switching capacity current of the NO contacts of the relay outputs at DC-13</b>	
• at 24 V	2 A
<b>switching capacity current of the NO contacts of the relay outputs at AC-15</b>	
• at 115 V	3 A
• at 230 V	3 A
<b>switching capacity current of the NC contacts of the relay outputs at DC-13</b>	
• at 24 V	2 A
<b>switching capacity current of the NC contacts of the relay outputs at AC-15</b>	
• at 115 V	2 A
• at 230 V	2 A
<b>voltage measuring range at the measurement inputs at AC according to UL maximum</b>	600 V
<b>voltage measuring range at the measurement inputs at AC maximum</b>	690 V
<b>adjustable response value voltage for standstill detection</b>	20 ... 400 mV
<b>input resistance at the measurement inputs</b>	500 kΩ
<b>Times</b>	
adjustable downtime initial value	0.2 s
adjustable downtime full-scale value	6 s
<b>Control circuit/ Control</b>	
<b>type of voltage of the control supply voltage</b>	AC
<b>control supply voltage 1 at AC</b>	
• at 50 Hz rated value	230 V
• at 60 Hz rated value	230 V
<b>control supply voltage frequency</b>	
• 1 rated value	50 Hz
• 2 rated value	60 Hz
<b>operating range factor control supply voltage rated value of magnet coil at AC</b>	
• at 50 Hz	0.8 ... 1.1
• at 60 Hz	0.8 ... 1.1
<b>Installation/ mounting/ dimensions</b>	
<b>mounting position</b>	any
<b>fastening method</b>	screw and snap-on mounting
<b>height</b>	138.5 mm
<b>width</b>	45 mm
<b>depth</b>	120 mm
<b>Connections/ Terminals</b>	
<b>type of electrical connection</b>	screw terminal
<b>type of connectable conductor cross-sections</b>	
• solid	1x (0.5 ... 4.0mm <sup>2</sup> ), 2x (0.5 ... 2.5 mm <sup>2</sup> )
• finely stranded with core end processing	1x (0.5 ... 2.5 mm <sup>2</sup> ), 2x (0.5 ... 1.5 mm <sup>2</sup> )
• for AWG cables solid	2x (20 ... 14)
• for AWG cables stranded	2x (20 ... 14)
<b>connectable conductor cross-section</b>	

<ul style="list-style-type: none"> <li>• solid</li> </ul>	0.5 ... 4 mm <sup>2</sup>
<ul style="list-style-type: none"> <li>• finely stranded with core end processing</li> </ul>	0.5 ... 2.5 mm <sup>2</sup>
<b>AWG number as coded connectable conductor cross section</b>	
<ul style="list-style-type: none"> <li>• solid</li> </ul>	20 ... 14
<ul style="list-style-type: none"> <li>• stranded</li> </ul>	20 ... 14
<b>type of electrical connection plug-in socket</b>	Yes

#### Approvals Certificates

General Product Approval	Functional Safety
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[Type Examination Certificate](#)

Test Certificates	other	Railway	Environment
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[Special Test Certificate](#)



[Confirmation](#)

[Confirmation](#)

[Environmental Conformations](#)

#### Further information

Information on the packaging

<https://support.industry.siemens.com/cs/ww/en/view/109813875>

Information for data generation and storage

<https://support.industry.siemens.com/cs/ww/en/view/109995012>

Information- and Downloadcenter (Catalogs, Brochures,...)

<https://www.siemens.com/ic10>

Industry Mall (Online ordering system)

<https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3TK2810-0GA01>

Cax online generator

<https://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3TK2810-0GA01>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3TK2810-0GA01>

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

[https://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3TK2810-0GA01&lang=en](https://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3TK2810-0GA01&lang=en)



