



SIRIUS safety relay safety-oriented Standstill monitoring 24 V DC, 45 mm Spring-type 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

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

operating frequency maximum	1 200 1/h
electrical endurance (operating cycles) typical	200 000
Substance Prohibition (day/month/year)	05/01/2012
Net Weight	0.386 kg
Ambient conditions	
installation altitude at height above sea level maximum	2 000 m
ambient temperature	
• 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
Electromagnetic compatibility	
installation environment regarding EMC	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.
EMC emitted interference	IEC 61000-6-2, IEC 61000-6-3
Safety related data	
stop category according to IEC 60204-1	0
average diagnostic coverage level (DCavg)	99 %
IEC 62061	
SIL Claim Limit (subsystem) according to EN 62061	3
Safety Integrity Level (SIL) according to IEC 62061	SIL 3
PFHD with high demand rate according to IEC 62061	1.5E-9 1/h
ISO 13849	
category according to EN ISO 13849-1	4
performance level (PL)	
• according to ISO 13849-1	PL e
IEC 61508	
Safety Integrity Level (SIL)	
• according to IEC 61508	3
• for delayed release circuit according to IEC 61508	SIL3
safety device type according to IEC 61508-2	Type B
Average probability of failure on demand (PFDAvg) with low demand rate acc. to IEC 61508	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	
touch protection against electrical shock	finger-safe
adjustable response value voltage for standstill detection	20 ... 400 mV
adjustable downtime	0.2 ... 6 s
Short-circuit protection	
design of the fuse link for short-circuit protection of the NO contacts of the relay outputs required	quick: 5 A
Inputs	
design of input	
• cascading input/functional switching	No
• feedback input	Yes
• start input	No
number of sensor inputs	
• 1-channel or 2-channel	1
Outputs	
number of outputs as contact-affected switching element	
• as NC contact	
— for signaling function instantaneous contact	2
• as NO contact	
— safety-related instantaneous contact	4
— safety-related delayed switching	0
mechanical service life (operating cycles) typical	50 000 000
thermal current of the switching element with contacts	5 A

maximum	
number of outputs as contact-less semiconductor switching element	
• for signaling function	
— delayed switching	0
— instantaneous contact	2
• safety-related	
— delayed switching	0
— instantaneous contact	0
switching capacity current of semiconductor outputs	
• for signaling function at DC-13 at 24 V	0.1 A
switching capacity current of the NO contacts of the relay outputs at DC-13	
• at 24 V	2 A
switching capacity current of the NO contacts of the relay outputs at AC-15	
• at 115 V	3 A
• at 230 V	3 A
switching capacity current of the NC contacts of the relay outputs at DC-13	
• at 24 V	2 A
switching capacity current of the NC contacts of the relay outputs at AC-15	
• at 115 V	2 A
• at 230 V	2 A
voltage measuring range at the measurement inputs at AC according to UL maximum	600 V
voltage measuring range at the measurement inputs at AC maximum	690 V
adjustable response value voltage for standstill detection	20 ... 400 mV
input resistance at the measurement inputs	500 kΩ
Times	
adjustable OFF-delay time after opening of the safety circuits	0.2 ... 6 s
adjustable downtime initial value	0.2 s
adjustable downtime full-scale value	6 s
Control circuit/ Control	
type of voltage of the control supply voltage	DC
control supply voltage 1 at DC rated value	24 V
operating range factor control supply voltage rated value of magnet coil at DC	
• initial value	0.9
• full-scale value	1.2
Installation/ mounting/ dimensions	
mounting position	any
fastening method	screw and snap-on mounting
height	138.5 mm
width	45 mm
depth	120 mm
Connections/ Terminals	
type of electrical connection	spring-loaded terminals
type of connectable conductor cross-sections	
• solid	2x (0.25 ... 1.5 mm ²)
• finely stranded with core end processing	2 x (0.25 ... 1.5 mm ²)
• finely stranded without core end processing	2x (0.25 ... 1.5 mm ²)
• for AWG cables solid	2x (24 ... 16)
• for AWG cables stranded	2x (20 ... 16)
connectable conductor cross-section	
• solid	0.25 ... 1.5 mm ²
• finely stranded with core end processing	0.25 ... 1.5 mm ²
• finely stranded without core end processing	0.25 ... 1.5 mm ²

AWG number as coded connectable conductor cross section	
<ul style="list-style-type: none"> • solid • stranded 	24 ... 16
type of electrical connection plug-in socket	Yes

Approvals Certificates

Environment	General Product Approval
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[Environmental Confirmations](#)



Functional Safety	Test Certificates	other	Railway
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[Type Examination Certificate](#)

[Special Test Certificate](#)

[Confirmation](#)

[Confirmation](#)



[Confirmation](#)

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=3TK2810-0BA02>

Cax online generator

<https://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3TK2810-0BA02>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3TK2810-0BA02>

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

https://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3TK2810-0BA02&lang=en



