



Figure similar

SIRIUS safety relay with relay enabling circuits (EC) 24 V AC/DC, 22.5 mm Spring-type terminal EC instantaneous: 3 NO EC delayed: 0 NO SC: 1NC Autostart/manual start Basic device Maximum achieved SIL: 1, PL: c as expansion unit up to maximum achieved SIL: 3, PL: e

product brand name	SIRIUS
product designation	safety relays
design of the product	for EMERGENCY-STOP and safety doors
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"> Yes No No Yes No No No No No Yes No No
suitability for interaction press control	No
suitability for use	
<ul style="list-style-type: none"> • monitoring of floating sensors • monitoring of non-floating sensors • 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"> Yes No Yes Yes No No No No No Yes Yes
General technical data	
certificate of suitability UL approval	Yes
product feature cross-circuit-proof	No
insulation voltage rated value	300 V
surge voltage resistance rated value	4 000 V
protection class IP	
<ul style="list-style-type: none"> • of the enclosure • of the terminal 	<ul style="list-style-type: none"> IP40 IP20

shock resistance	8g / 10 ms
vibration resistance according to IEC 60068-2-6	5 ... 500 Hz: 0,075 mm
operating frequency maximum	1 000 1/h
mechanical service life (operating cycles) typical	10 000 000
electrical endurance (operating cycles) typical	100 000
thermal current of the switching element with contacts maximum	5 A
Substance Prohibitance (Date)	05/28/2009
SVHC substance name	Lead monoxide (lead oxide) - 1317-36-8
Weight	0.24 kg
Ambient conditions	
installation altitude at height above sea level maximum	2 000 m
ambient temperature	
• during operation	-25 ... +60 °C
• during storage	-40 ... +80 °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	EN 60947-5-1
Safety related data	
stop category according to IEC 60204-1	0
IEC 62061	
SIL Claim Limit (subsystem) according to EN 62061	1
PFHD with high demand rate according to IEC 62061	1.1E-9 1/h
ISO 13849	
category according to EN ISO 13849-1	3
IEC 61508	
Safety Integrity Level (SIL)	
• according to IEC 61508	3
safety device type according to IEC 61508-2	Type A
Average probability of failure on demand (PFDavg) with low demand rate acc. to IEC 61508	9.9E-7 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
Short-circuit protection	
design of the fuse link for short-circuit protection of the NO contacts of the relay outputs required	gL/gG: 6 A, or quick: 10 A
Inputs	
design of input	
• cascading input/functional switching	No
• feedback input	Yes
• start input	Yes
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	1
• as NO contact	
— safety-related instantaneous contact	3
— safety-related delayed switching	0
number of outputs as contact-less semiconductor switching element	
• for signaling function	
— delayed switching	0
— instantaneous contact	0

<ul style="list-style-type: none"> ● safety-related <ul style="list-style-type: none"> — delayed switching — instantaneous contact 	0 0
switching capacity current of the NO contacts of the relay outputs at DC-13 <ul style="list-style-type: none"> ● at 24 V ● at 115 V ● at 230 V 	5 A 0.2 A 0.1 A
switching capacity current of the NO contacts of the relay outputs at AC-15 <ul style="list-style-type: none"> ● at 115 V ● at 230 V 	5 A 5 A
switching capacity current of the NC contacts of the relay outputs at DC-13 <ul style="list-style-type: none"> ● at 24 V ● at 115 V ● at 230 V 	5 A 0.2 A 0.1 A
switching capacity current of the NC contacts of the relay outputs at AC-15 <ul style="list-style-type: none"> ● at 115 V ● at 230 V 	5 A 5 A
wire length between sensor and electronics evaluation device with Cu 1.5 mm² and 150 nF/km maximum	1 000 m
Times	
make time with automatic start <ul style="list-style-type: none"> ● at DC maximum ● at AC maximum 	200 ms 200 ms
make time with automatic start after power failure <ul style="list-style-type: none"> ● maximum 	300 ms
backslide delay time after opening of the safety circuits typical	125 ms
backslide delay time in the event of power failure <ul style="list-style-type: none"> ● typical ● maximum 	125 ms 200 ms
recovery time after opening of the safety circuits typical	200 ms
recovery time after power failure typical	200 ms
pulse duration <ul style="list-style-type: none"> ● of the sensor input minimum ● of the ON pushbutton input minimum 	200 ms 0.15 s
Control circuit/ Control	
type of voltage of the control supply voltage	AC/DC
control supply voltage 1 at AC <ul style="list-style-type: none"> ● at 50 Hz rated value ● at 60 Hz rated value 	24 V 24 V
control supply voltage frequency <ul style="list-style-type: none"> ● 1 rated value ● 2 rated value 	50 Hz 60 Hz
control supply voltage 1 at DC rated value	24 V
operating range factor control supply voltage rated value of magnet coil at DC <ul style="list-style-type: none"> ● initial value ● full-scale value 	0.85 1.2
operating range factor control supply voltage rated value of magnet coil at AC <ul style="list-style-type: none"> ● at 50 Hz ● at 60 Hz 	0.85 ... 1.1 0.85 ... 1.1
Installation/ mounting/ dimensions	
mounting position	any
fastening method	screw and snap-on mounting
height	120 mm
width	22.5 mm
depth	120 mm
Connections/ Terminals	

type of electrical connection	spring-loaded terminals
type of connectable conductor cross-sections	
<ul style="list-style-type: none"> • solid • finely stranded with core end processing • finely stranded without core end processing • for AWG cables solid • for AWG cables stranded 	2x (0.25 ... 1.5 mm ²) 2 x (0.25 ... 1.5 mm ²) 2x (0.25 ... 1.5 mm ²) 2x (24 ... 16) 2x (24 ... 16)
connectable conductor cross-section	
<ul style="list-style-type: none"> • solid • finely stranded with core end processing • finely stranded without core end processing 	0.25 ... 1.5 mm ² 0.25 ... 1.5 mm ² 0.25 ... 1.5 mm ²
AWG number as coded connectable conductor cross section	
<ul style="list-style-type: none"> • solid • stranded 	24 ... 16 24 ... 16
DC resistance of the cable maximum	30 Ω
type of electrical connection plug-in socket	Yes

Approvals Certificates

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

[Special Test Certificate](#)

other	Environment
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[Confirmation](#)

[Environmental Confirmations](#)

Further information

Information on the packaging

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

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=3TK2821-2CB30>

Cax online generator

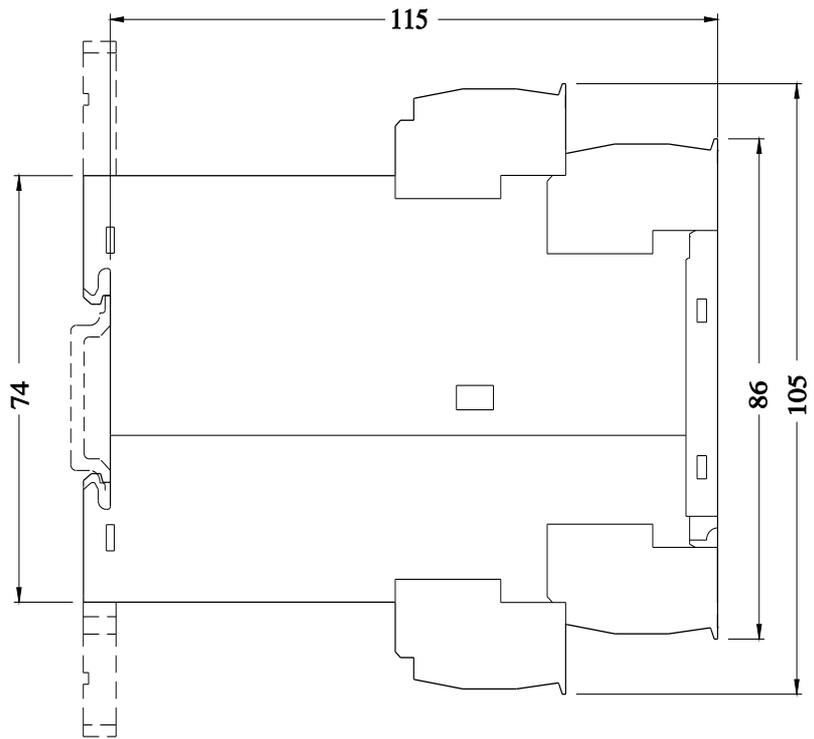
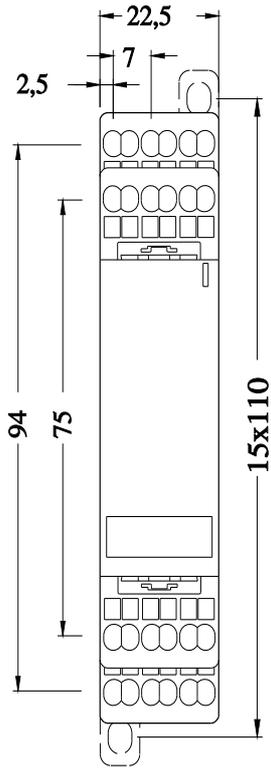
<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3TK2821-2CB30>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3TK2821-2CB30>

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

http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3TK2821-2CB30&lang=en



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