SIEMENS

Data sheet 3TK2821-1CB30



SIRIUS safety relay with relay enabling circuits (EC) 24 V AC/DC, 22.5 mm Screw 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

General technical data	
product brand name	SIRIUS
product designation	safety relays
design of the product	for EMERGENCY-STOP and safety doors
protection class IP of the enclosure	IP40
protection class IP of the terminal	IP20
touch protection against electrical shock	finger-safe
insulation voltage rated value	300 V
ambient temperature	
 during storage 	-40 +80 °C
during operation	-25 +60 °C
air pressure acc. to SN 31205	90 106 kPa
relative humidity during operation	10 95 %
installation altitude at height above sea level maximum	2 000 m
vibration resistance acc. to IEC 60068-2-6	5 500 Hz: 0,075 mm
shock resistance	8g / 10 ms
surge voltage resistance rated value	4 000 V
EMC emitted interference	EN 60947-5-1
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.
reference code acc. to DIN 40719 extended according to IEC 204-2 acc. to IEC 750	KT
reference code acc. to DIN EN 61346-2	F
number of sensor inputs	
• 1-channel or 2-channel	1
design of the cascading	none
type of the safety-related wiring of the inputs	single-channel or single-channel and two-channel
product feature cross-circuit-proof	No
Safety Integrity Level (SIL)	
• acc. to IEC 61508	3
SIL Claim Limit (subsystem) acc. to EN 62061	1
performance level (PL)	
• acc. to EN ISO 13849-1	е
category acc. to EN ISO 13849-1	3
hardware fault tolerance acc. to IEC 61508	1
safety device type acc. to IEC 61508-2	Type A
PFHD with high demand rate acc. to EN 62061	0.000000011 1/h

Average probability of failure on demand (PFDavg) with low demand rate acc. to IEC 61508	0.00000099 1/y
T1 value for proof test interval or service life acc. to IEC 61508	20 y
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	
safety-related	
delayed switching	0
 instantaneous contact 	0
 for signaling function 	
 delayed switching 	0
instantaneous contact	0
stop category acc. to DIN EN 60204-1	0
Inputs	
design of input	
cascading input/functional switching	No
feedback input	Yes
start input	Yes
Outputs	163
•	Yes
type of electrical connection plug-in socket	1 000 1/h
operating frequency maximum	1 000 1/11
switching capacity current	
 of the NO contacts of the relay outputs at DC-13 — at 24 V 	5 A
— at 24 V — at 115 V	
	0.2 A
— at 230 V	0.1 A
of the NO contacts of the relay outputs at AC-15	F. A.
— at 115 V	5 A
— at 230 V	5 A
of the NC contacts of the relay outputs at DC-13	5.4
— at 24 V	5 A
— at 115 V	0.2 A
— at 230 V	0.1 A
of the NC contacts of the relay outputs at AC-15	
— at 115 V	5 A
— at 230 V	5 A
thermal current of the switching element with contacts maximum	5 A -
electrical endurance (switching cycles) typical	100 000
mechanical service life (switching cycles) typical	10 000 000
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
DC resistance of the cable maximum	30 Ω
wire length between sensor and electronics evaluation device with Cu 1.5 mm² and 150 nF/km maximum	1 000 m
make time with automatic start	
at DC maximum	200 ms
at AC maximum	200 ms
make time with automatic start after power failure	
maximum	300 ms
backslide delay time after opening of the safety	125 ms
circuits typical	

backside delay time in the event of power failure * typical * maximum * convery time after opening of the safety circuits typical pulse duration * of the same ringut minimum * of the ON pushbutton input minimum * of the ON pushbutto		
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suitability for interaction press control suitability for use		
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monitoring of floating sensors Yes		V
	 monitoring of floating sensors 	Yes

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Certificates/ approvals	
safety-related circuits	Yes
 magnetically operated switch monitoring 	No
tactile sensor monitoring	No
valve monitoring	No
EMERGENCY-OFF circuit monitoring	Yes
position switch monitoring	Yes
safety switch	Yes
 monitoring of non-floating sensors 	No

certificate of suitability BG, SUVA, UL, CSA, EN 60204-1, EN ISO 12100, EN 954-1, IEC 61508 • TÜV (German technical inspectorate) certificate Yes UL approval Yes • BG BIA approval Yes

Approvals Certificates

Further information

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=3TK2821-1CB30

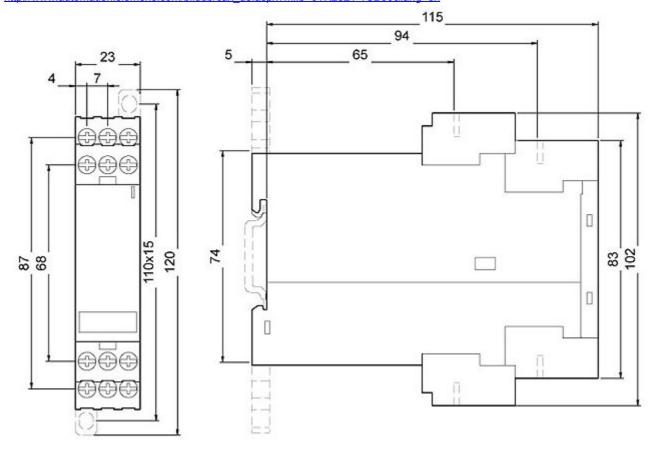
Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3TK2821-1CB30

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

https://support.industry.siemens.com/cs/ww/en/ps/3TK2821-1CB30

Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...) http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3TK2821-1CB30&lang=en



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