SIEMENS

Product data sheet 3SK1121-2CB42

SIRIUS SAFETY RELAY BASIC UNIT ADVANCED SERIES WITH TIME DELAY 0.5-30S RELAY ENABLING CIRCUITS 2 INSTANTANEOUS NO CONTACTS 2 DELAYED NO CONTACTS US = 24 V DC SPRING-LOADED TERMINAL

General technical details:		
product brand name		SIRIUS
product designation		safety relays
protection class IP / of the housing		IP20
Protection against electrical shock		finger-safe
Insulation voltage / rated value	V	300
Ambient temperature		
• during storage	°C	-40 … +80
• during operating	°C	-25 … +60
Air pressure		
• according to SN 31205	kPa	90 … 106
Relative humidity		
• during operating phase	%	10 … 95
Installation altitude / at a height over sea level / maximum	m	2,000
Resistance against vibration / according to IEC 60068-2-6		5 ... 500 Hz: 0,75 mm
Resistance against shock		10g / 11 ms
Impulse voltage resistance / rated value	V	4,000
EMC emitted interference		IEC 60947-5-1, Class A

Installation environment relating to 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.
Overvoltage class		Installation category III
Degree of pollution		3
Number of sensor inputs		
• 1-channel or 2-channel		1
Design of the cascading		yes
Type of the safety-related wiring / of the inputs		single-channel and two-channel
Product feature / transverse contact-secure		Yes
Safety Integrity Level (SIL)		
• according to IEC 61508		SIL3
• for delayed release circuit / according to IEC 61508		SIL3
Performance Level (PL)		
• according to ISO 13849-1		e
• for delayed release circuit / according to ISO 13849-1		e
Category / according to ISO 13849-1		4
Probability of dangerous failure per hour (PFHD) / with high demand rate / according to EN 62061	1/h	0.37000000000000005E-8
Average probability of failure on demand (PFDavg) / with low demand rate / according to IEC 61508	1/y	0.7E-5
T1 value / for proof test interval or service life / according to IEC 61508	a	20
Hardware fault tolerance / according to IEC 61508		1
Safety device type / according to IEC 61508-2		Type B
Number of outputs / as contact-affected switching element		
• as NC contact / for reporting function / instantaneous switching		0
• as NO contact / for reporting function / instantaneous switching		0
• as NC contact / for reporting function / delayed switching		0
• as NO contact / for reporting function / delayed switching		0
• as NC contact / safety-related / instantaneous switching		0
• as NO contact / safety-related / instantaneous switching		2
• as NC contact / safety-related / delayed switching		0
• as NO contact / safety-related / delayed switching		2
Number of outputs / as contact-less semiconductor switching element		
• safety-related		
• delayed switching		0
• non-delayed		0
• for reporting function		
• non-delayed		0

Stop category / according to DIN EN 60204-1		0 / 1

General technical details:

Design of the input		
• cascading-input/functional switching		Yes
• feedback input		Yes
• start input		Yes
Design of the electrical connection / jumper socket		No
Operating cycles / maximum	1/h	360
Switching capacity current		
• of the NO contacts of the relay outputs		
• at DC-13		
• at 24 V	A	3
• at 115 V	A	0.2
• at 230 V	A	0.1
• at AC-15		
• at 115 V	A	3
• at 230 V	A	3
Thermal current / of the contact-affected switching element / maximum	A	5
Mechanical operating cycles as operating time / typical		10,000,000
Design of the fuse link / for short-circuit protection of the NO contacts of the relay outputs / required		gL/gG: 6A or circuit breaker type A: 3A or circuit breaker type B: 2A or circuit breaker type C: 1A
Cable length / between sensor and electronic evaluation device / with Cu 1.5 mm² and 150 nF/km / maximum	m	1,000
Make time / with automatic start		
• for DC / maximum	ms	110
Make time / with automatic start / after mains power cut		
• typical	ms	6,500
• maximum	ms	6,500
Make time / with monitored start		
• maximum	ms	110
Backslide delay time / after opening of the safety circuits / typical	ms	40
Backslide delay time / at mains power cut		
• typical	ms	30
• maximum	ms	40
Adjustable backslide delay time		
• after opening of the safety circuits	s	0.5 … 30
Recovery time / after opening of the safety circuits / typical	ms	30
Recovery time / after mains power cut / typical	s	6.5

Pulse duration		
• of the sensor input / minimum	ms	75
• of the ON pushbutton input / minimum	s	0.15

Control circuit:

Type of voltage / of the controlled supply voltage		DC
Control supply voltage		
• for DC / rated value	V	24
Operating range factor control supply voltage rated value / of the magnet coil		
• for DC		0.8 … 1.2
Active power loss / typical	W	2.5

Installation/mounting/dimensions:

mounting position		any
Distance, to be maintained, to earthed part / sidewards	mm	5
Distance, to be maintained, to the ranks assembly / sidewards	mm	0
Type of mounting		screw and snap-on mounting
Width	mm	22.5
Height	mm	100
Depth	mm	121.6

Connections:

Design of the electrical connection		spring-loaded terminals
Type of the connectable conductor cross-section		
• solid		1x (0.5 ... 1.5 mm²), 2x (0.5 ... 1.5 mm²)
• finely stranded		
• with wire end processing		1x (0.5 ... 1.0 mm²), 2x (0.5 ... 1.0 mm²)
• without wire end processing		1x (0.5 ... 1.5 mm²), 2x (0.5 ... 1.5 mm²)
Type of the connectable conductor cross-section / for AWG conductors		
• solid		1x (20 ... 16), 2x (20 ... 16)
• stranded		1x (20 ... 16), 2x (20 ... 16)

Product Function:

Product function / parameterizable		Sensor floating / sensor non-floating, monitored start / autostart, 1-channel / 2-channel sensor connection, cross-circuit detection, startup testing, antivalent sensors, 2-hand switches, time delay
Suitability for use / device connector 3ZY12		Yes
Suitability for interaction / pressing control		No
Suitability for use		

• safety cut-out switch	Yes
• monitoring of floating sensors	Yes
• monitoring of non-floating sensors	Yes
• magnetically operated switches monitoring	Yes
• safety-related circuits	Yes

Certificates/approvals:

Verification of suitability	
• TÜV (German technical inspectorate) certificate	Yes
• UL-registration	Yes

General Product Approval	EMC	Declaration of Conformity	Test Certificates
CSA UL	C-TICK	EG-Konf.	Type Test Certificates/Test Report

Further information:

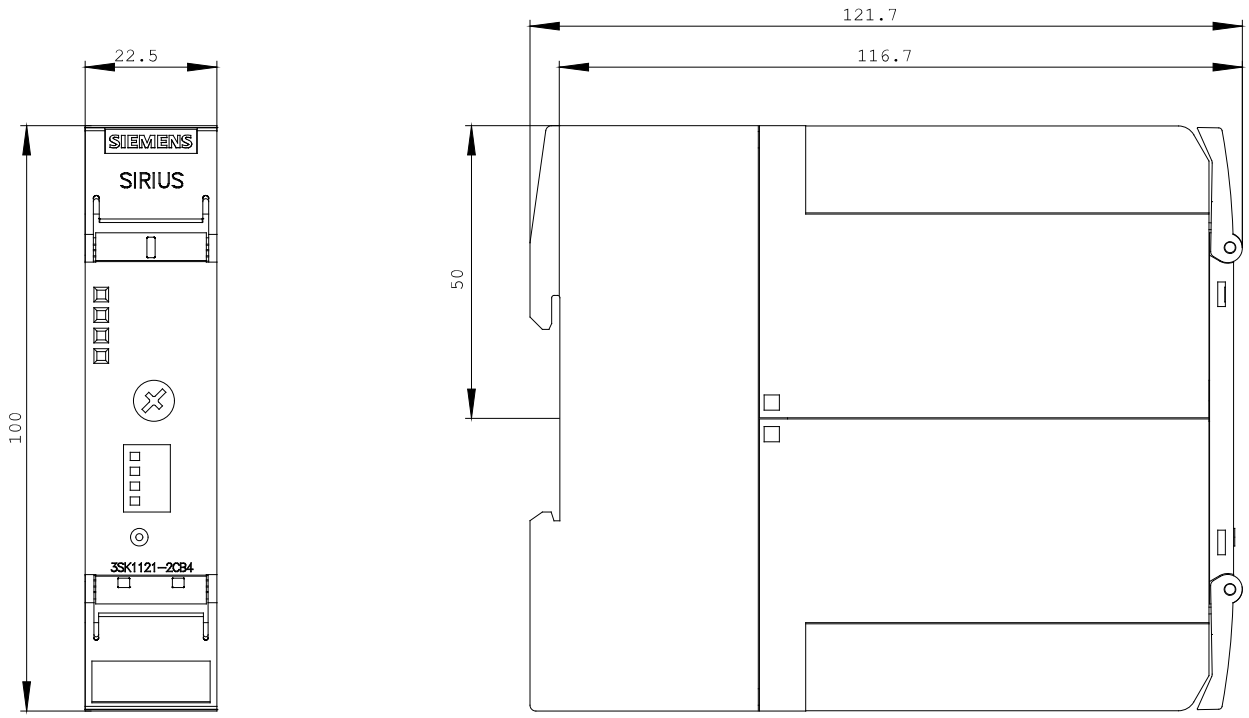
Information- and Downloadcenter (Catalogs, Brochures,…)
http://www.siemens.com/industrial-controls/catalogs

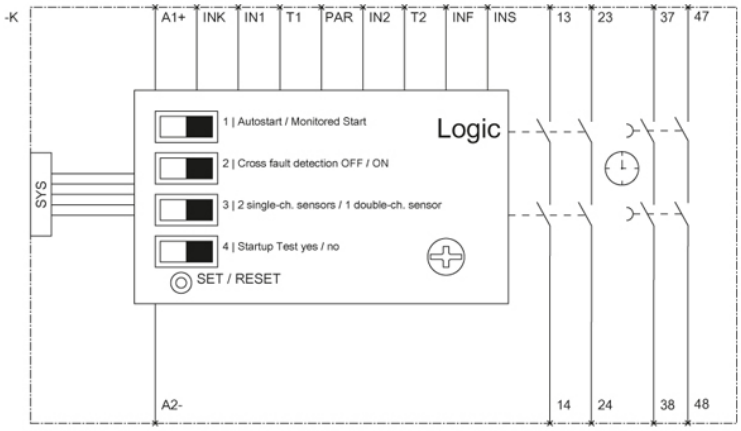
Industry Mall (Online ordering system)
http://www.siemens.com/industrial-controls/mall

Cax online generator:
http://www.siemens.com/cax

Service&Support (Manuals, Certificates, Characteristics, FAQs,...)
http://support.automation.siemens.com/WW/view/en/3SK1121-2CB42/all

Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, ...)
http://www.automation.siemens.com/bilddb/cax_en.aspx?mlfb=3SK1121-2CB42





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