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Data sheet 3SK1121-1CB42

SIRIUS safety relay Basic unit Advanced series with time delay 0.5-30 s Relay enabling circuits 2 NO instantaneous 2 NO delayed Us = 24 V DC screw terminal

General technical data	
product brand name	SIRIUS
product category	Safety relays
product designation	safety relays
design of the product	Relay enabling circuits
protection class IP of the enclosure	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	900 ... 1 060 hPa
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: 0.75 mm
shock resistance	10g / 11 ms
surge voltage resistance rated value	4 000 V
EMC emitted interference	IEC 60947-5-1, Class A
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.
overvoltage category	3
degree of pollution	3
reference code acc. to IEC 81346-2	F
power loss [W] maximum	2.5 W
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 cross-circuit-proof	Yes
Safety Integrity Level (SIL)	
● acc. to IEC 61508	3
● for delayed release circuit acc. to IEC 61508	SIL3
performance level (PL)	
● acc. to EN ISO 13849-1	e
● for delayed release circuit acc. to EN ISO 13849-1	e
category acc. to EN ISO 13849-1	4
Safe failure fraction (SFF)	99 %
PFHD with high demand rate acc. to EN 62061	0.0000000037 1/h
PFDavg with low demand rate acc. to IEC 61508	0.000007

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T1 value for proof test interval or service life acc. to IEC 61508	20 y
hardware fault tolerance acc. to IEC 61508	1
safety device type acc. to IEC 61508-2	Type B
number of outputs as contact-affected switching element	
● as NO contact	
— safety-related instantaneous contact	2
— safety-related delayed switching	2
stop category acc. to DIN EN 60204-1	0 / 1
General technical data	
design of input	
● cascading input/functional switching	Yes
● feedback input	Yes
● start input	Yes
type of electrical connection plug-in socket	No
operating frequency maximum	360 1/h
switching capacity current	
● of the NO contacts of the relay outputs	
— at DC-13	
— at 24 V	3 A
— at 115 V	0.2 A
— at 230 V	0.1 A
— at AC-15	
— at 115 V	3 A
— at 230 V	3 A
thermal current of the switching element with contacts maximum	5 A
operational current at 17 V minimum	5 mA
total current maximum	12 A
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: 6A or circuit breaker type A: 3A or circuit breaker type B: 2A or circuit breaker type C: 1A
wire length	
● with Cu 1.5 mm² and 150 nF/km per sensor circuit maximum	4 000 m
make time with automatic start	
● at DC maximum	110 ms
make time with automatic start after power failure	
● typical	6 500 ms
● maximum	6 500 ms
make time with monitored start	
● maximum	110 ms
backslide delay time after opening of the safety circuits typical	40 ms
backslide delay time in the event of power failure	
● typical	30 ms
● maximum	40 ms
adjustable OFF-delay time after opening of the safety circuits	0.5 ... 30
recovery time after opening of the safety circuits typical	30 ms
recovery time after power failure typical	6.5 s
pulse duration	
● of the sensor input minimum	75 ms
● of the ON pushbutton input minimum	0.15 s
Control circuit/ Control	
type of voltage of the control supply voltage	DC
control supply voltage	
● at DC	
— rated value	24 V
operating range factor control supply voltage rated	

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value of magnet coil	
● at DC	0.8 ... 1.2
Installation/ mounting/ dimensions	
mounting position	any
required spacing for grounded parts at the side	5 mm
fastening method	screw and snap-on mounting
width	22.5 mm
height	100 mm
depth	121.6 mm
Connections/ Terminals	
type of electrical connection	screw-type terminals
type of connectable conductor cross-sections	
● solid	1x (0.5 ... 2.5 mm²), 2x (1.0 ... 1.5 mm²)
● finely stranded	
— with core end processing	1x (0.5 ... 2.5 mm²), 2x (0.5 ... 1.0 mm²)
type of connectable conductor cross-sections at AWG cables	
● solid	1x (20 ... 14), 2x (18 ... 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 operation device connector 3ZY12	Yes
suitability for interaction press control	Yes
suitability for use	
● safety switch	Yes
● monitoring of floating sensors	Yes
● monitoring of non-floating sensors	Yes
● magnetically operated switch monitoring	Yes
● safety-related circuits	Yes

Certificates/ approvals

General Product Approval				EMC	Functional Safety/Safety of Machinery
CSA	CCC	UL	EAC	RCM	Type Examination Certificate

Declaration of Conformity	Test Certificates	Marine / Shipping			
EG-Konf.	Type Test Certific-ates/Test Report	LRS	RINA	RMRS	DNV·GL

other	Railway
Confirmation	Confirmation

Further information

Information- and Downloadcenter (Catalogs, Brochures,…)
https://www.siemens.com/ic10

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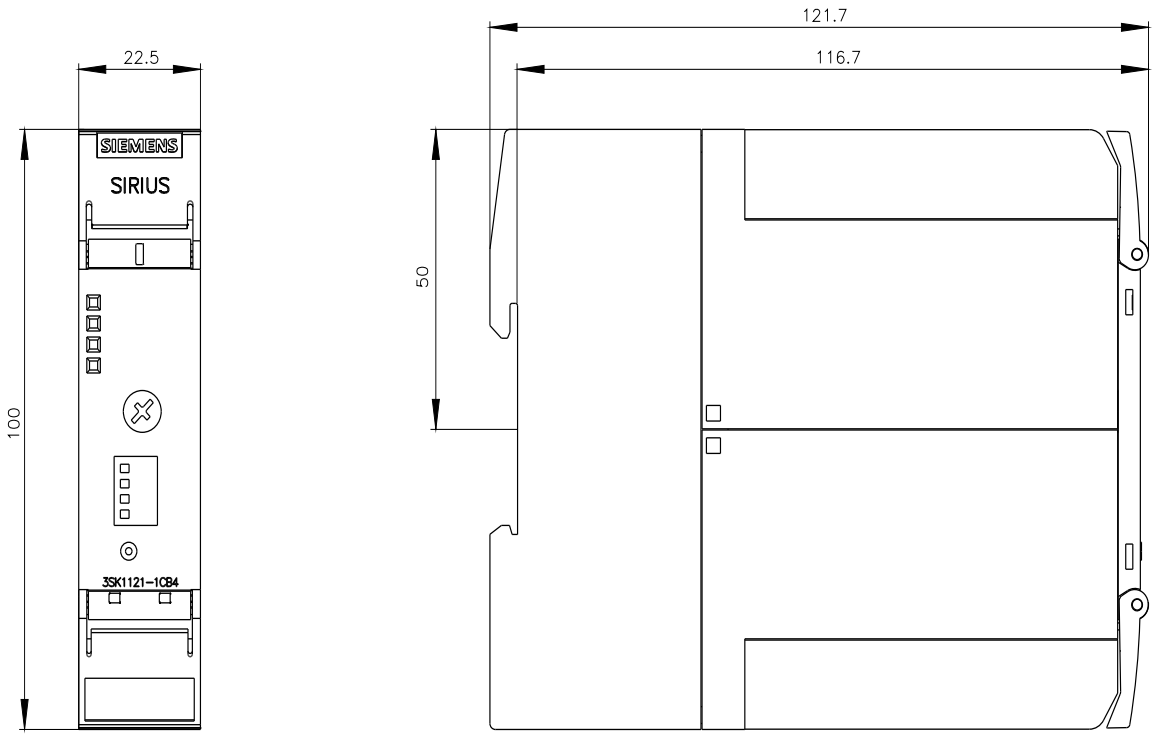
Industry Mall (Online ordering system)
https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3SK1121-1CB42
Cax online generator
http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3SK1121-1CB42
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)
https://support.industry.siemens.com/cs/ww/en/ps/3SK1121-1CB42
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3SK1121-1CB42&lang=en



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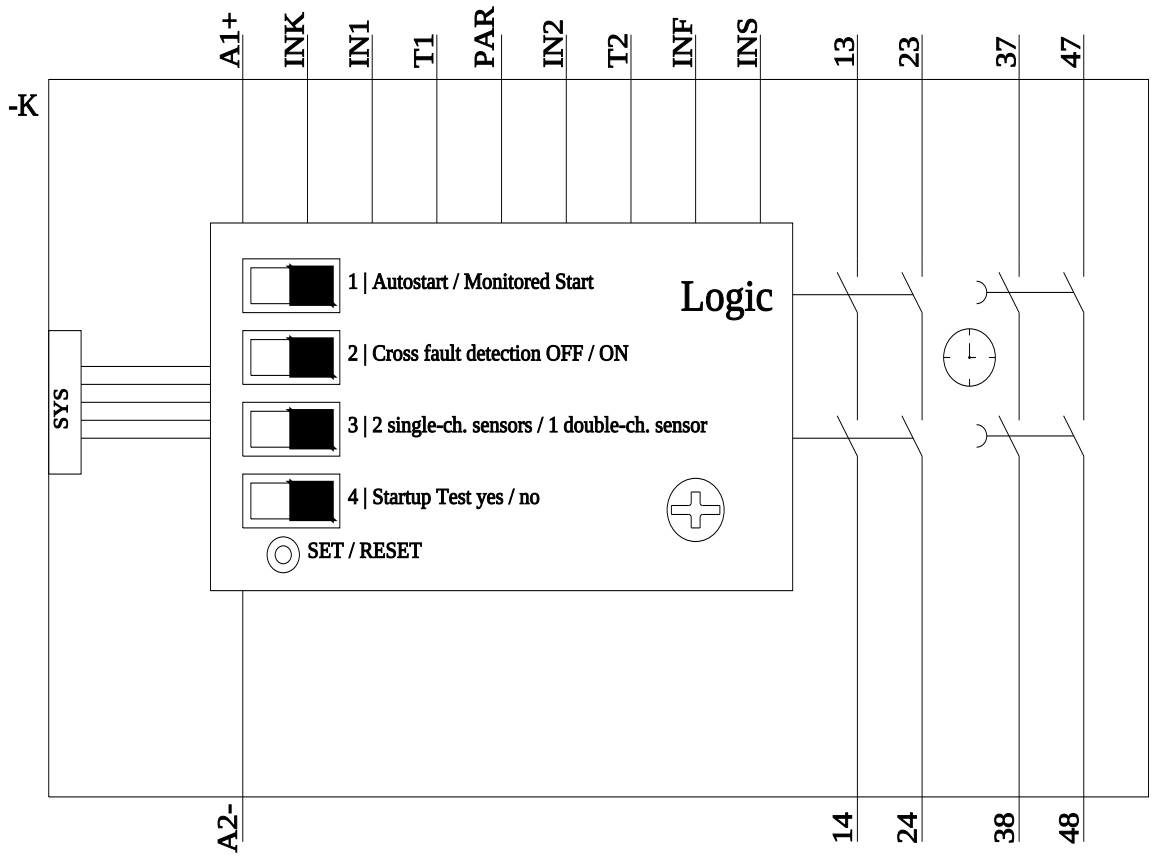

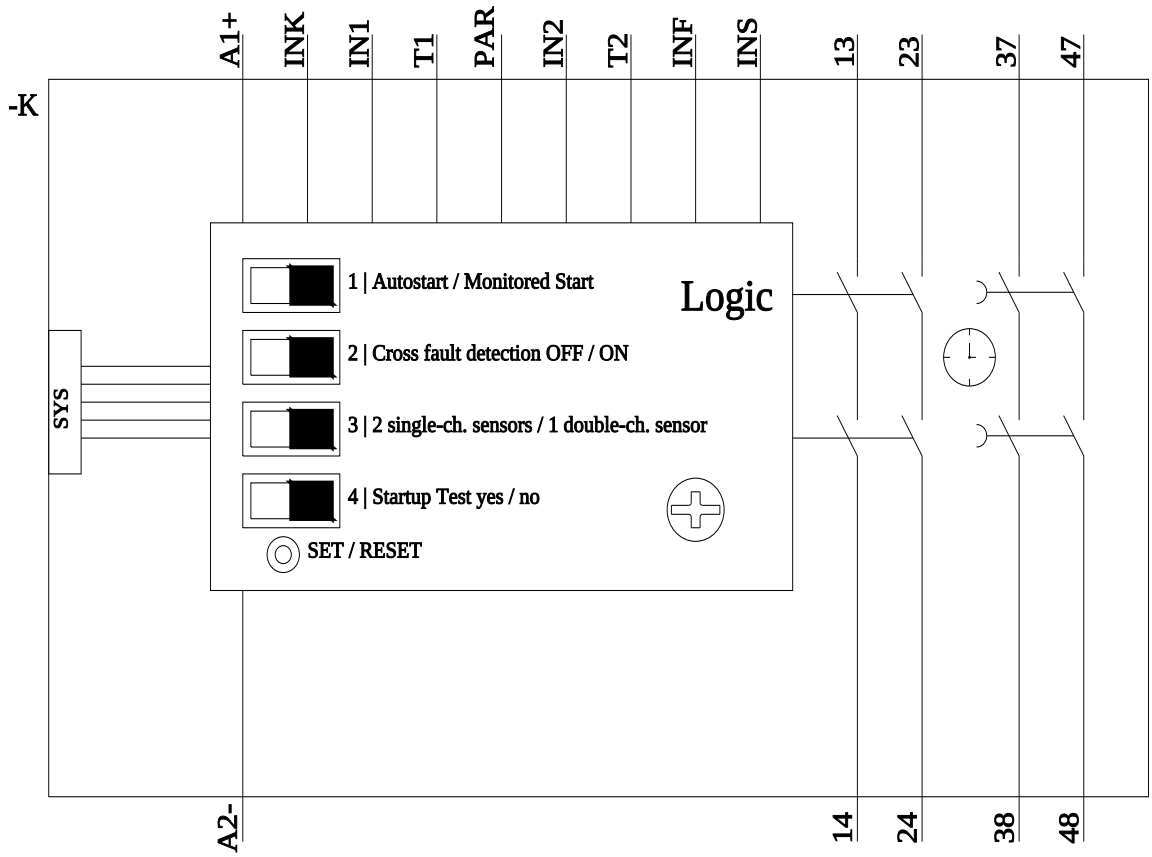

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