

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



Figure similar

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
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 kPa ... 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: 0.75 mm
Shock resistance	10g / 11 ms
Surge voltage resistance rated value	4 000 V

<b>EMC emitted interference</b>	IEC 60947-5-1, Class A
<b>Installation environment regarding EMC</b>	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.
<b>Overvoltage category</b>	3
<b>Degree of pollution</b>	3
<b>Number of sensor inputs 1-channel or 2-channel</b>	1
<b>Design of the cascading</b>	yes
<b>Type of the safety-related wiring of the inputs</b>	single-channel and two-channel
<b>Product feature cross-circuit-proof</b>	Yes
<b>Safety Integrity Level (SIL)</b>	
• acc. to IEC 61508	3
• for delayed release circuit acc. to IEC 61508	SIL3
<b>Performance level (PL)</b>	
• acc. to EN ISO 13849-1	e
• for delayed release circuit acc. to EN ISO 13849-1	e
<b>Category acc. to EN ISO 13849-1</b>	4
<b>Safe failure fraction (SFF)</b>	99 %
<b>PFHD with high demand rate acc. to EN 62061</b>	0.0000000037 1/h
<b>PFDavg with low demand rate acc. to IEC 61508</b>	0.000007
<b>T1 value for proof test interval or service life acc. to IEC 61508</b>	20 y
<b>Hardware fault tolerance acc. to IEC 61508</b>	1
<b>Safety device type acc. to IEC 61508-2</b>	Type B
<b>Number of outputs as contact-affected switching element</b>	
• as NC contact	
— for signaling function instantaneous contact	0
— for signaling function delayed switching	0
— safety-related instantaneous contact	0
— safety-related delayed switching	0
• as NO contact	
— for signaling function instantaneous contact	0
— for signaling function delayed switching	0
— safety-related instantaneous contact	2
— safety-related delayed switching	2
<b>Number of outputs as contact-less semiconductor switching element</b>	
• safety-related	
— delayed switching	0

— instantaneous contact	0
• for signaling function instantaneous contact	0
<b>Stop category acc. to DIN EN 60204-1</b>	0 / 1

### General technical data

<b>Design of input</b>	
• cascading input/functional switching	Yes
• feedback input	Yes
• Start input	Yes
<b>Type of electrical connection Plug-in socket</b>	No
<b>Operating frequency maximum</b>	360 1/h
<b>Switching capacity current</b>	
• 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
<b>Thermal current of the switching element with contacts maximum</b>	5 A
<b>Operating current at 17 V minimum</b>	5 mA
<b>Mechanical service life (switching cycles) typical</b>	10 000 000
<b>Design of the fuse link for short-circuit protection of the NO contacts of the relay outputs required</b>	gL/gG: 6A or circuit breaker type A: 3A or circuit breaker type B: 2A or circuit breaker type C: 1A
<b>Wire length</b>	
• with Cu 1.5 mm <sup>2</sup> and 150 nF/km per sensor circuit maximum	4 000 m
<b>Make time with automatic start</b>	
• at DC maximum	110 ms
<b>Make time with automatic start after power failure</b>	
• typical	6 500 ms
• maximum	6 500 ms
<b>Make time with monitored start</b>	
• maximum	110 ms
<b>Backslide delay time after opening of the safety circuits typical</b>	40 ms
<b>Backslide delay time in the event of power failure</b>	
• typical	30 ms
• maximum	40 ms
<b>Adjustable OFF-delay time after opening of the safety circuits</b>	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 value of magnet coil	
• at DC	0.8 ... 1.2
Power loss [W] typical	2.5 W

Installation/ mounting/ dimensions	
Mounting position	any
Required spacing for grounded parts at the side	5 mm
Required spacing with side-by-side mounting at the side	0 mm
Mounting type	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 mm <sup>2</sup> ), 2x (1.0 ... 1.5 mm <sup>2</sup> )
• finely stranded	
— with core end processing	1x (0.5 ... 2.5 mm <sup>2</sup> ), 2x (0.5 ... 1.0 mm <sup>2</sup> )
Type of connectable conductor cross-sections at AWG conductors	
• 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
- Monitoring of non-floating sensors
- magnetically operated switch monitoring
- safety-related circuits

Yes  
Yes  
Yes  
Yes

## Certificates/approvals

<b>General Product Approval</b>	<b>EMC</b>	<b>Functional Safety/Safety of Machinery</b>
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CCC



CSA



UL



C-Tick

[Type Examination](#)

<b>Declaration of Conformity</b>	<b>Test Certificates</b>	<b>Shipping Approval</b>	<b>other</b>
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EG-Konf.

[Type Test Certificates/Test Report](#)



LRS



RINA



RMRS

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## Railway

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## Further information

**Information- and Downloadcenter (Catalogs, Brochures,...)**

<http://www.siemens.com/industrial-controls/catalogs>

**Industry Mall (Online ordering system)**

<https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3SK1121-1CB42>

**Cax online generator**

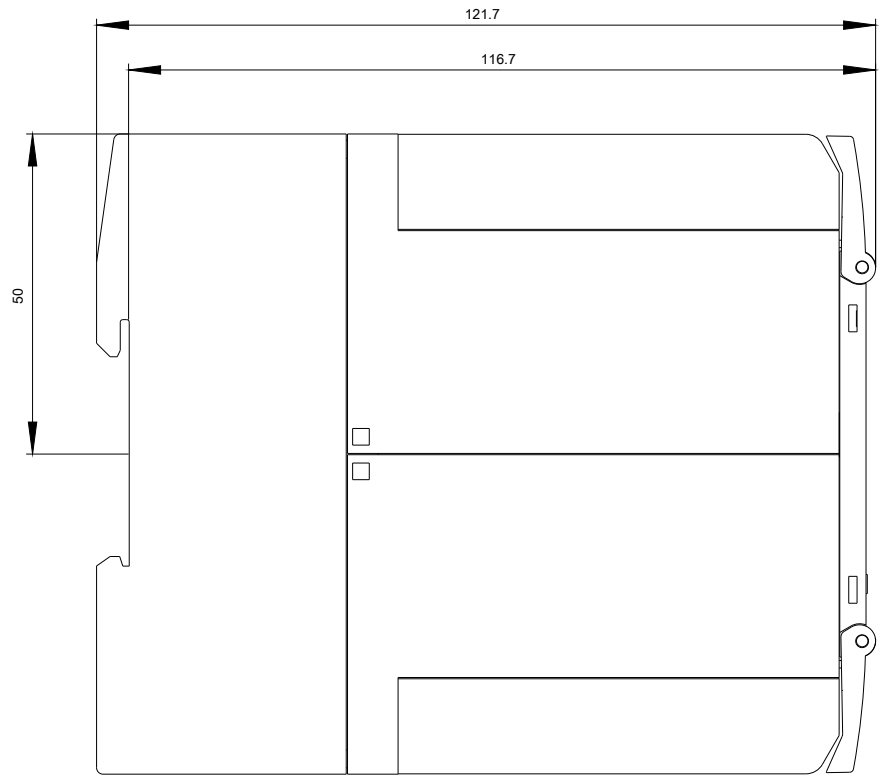
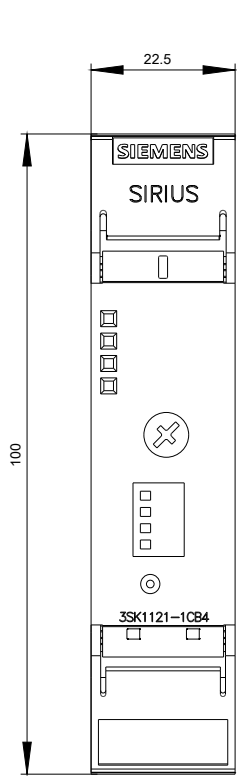
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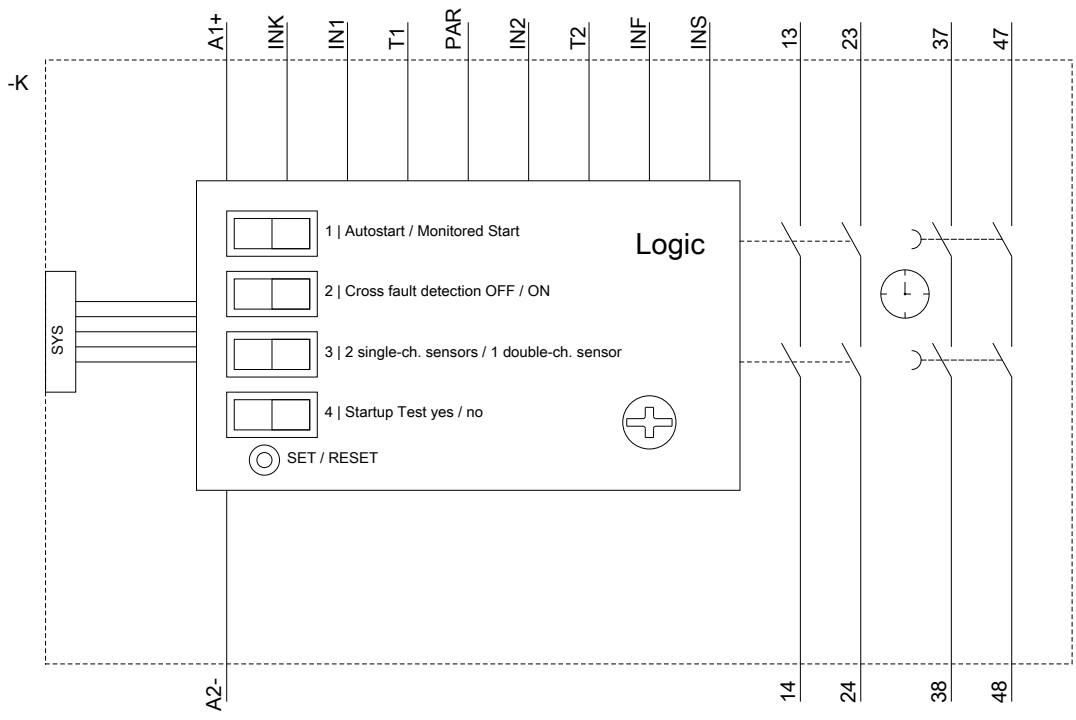
**Service&Support (Manuals, Certificates, Characteristics, FAQs,...)**

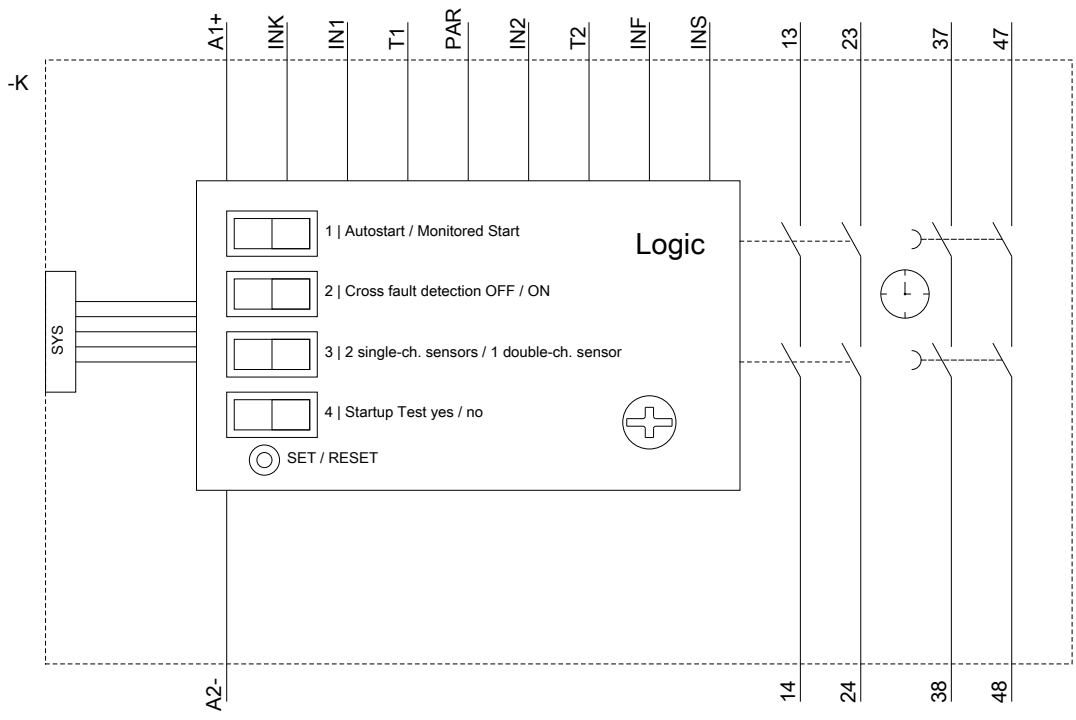
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**Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)**

[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3SK1121-1CB42&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3SK1121-1CB42&lang=en)







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