

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
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
EMC emitted interference	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>Reference code acc. to DIN EN 81346-2</b>	F
<b>Power loss [W] maximum</b>	2.5 W
<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 NO contact	
— safety-related instantaneous contact	2
— safety-related delayed switching	2
<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>Total current maximum</b>	12 A
<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
<b>Recovery time after opening of the safety circuits typical</b>	30 ms
<b>Recovery time after power failure typical</b>	6.5 s
<b>Pulse duration</b>	
• of the sensor input minimum	75 ms
• of the ON pushbutton input minimum	0.15 s
<b>Control circuit/ Control</b>	
<b>Type of voltage of the control supply voltage</b>	DC
<b>Control supply voltage</b>	
• at DC	
— rated value	24 V
<b>Operating range factor control supply voltage rated value of magnet coil</b>	

- at DC

0.8 ... 1.2

### Installation/ mounting/ dimensions

<b>Mounting position</b>	any
<b>Required spacing for grounded parts at the side</b>	5 mm
<b>Mounting type</b>	screw and snap-on mounting
<b>Width</b>	22.5 mm
<b>Height</b>	100 mm
<b>Depth</b>	121.6 mm

### Connections/ Terminals

<b>Type of electrical connection</b>	screw-type terminals
<b>Type of connectable conductor cross-sections</b>	
<ul style="list-style-type: none"> <li>• solid</li> </ul>	1x (0.5 ... 2.5 mm <sup>2</sup> ), 2x (1.0 ... 1.5 mm <sup>2</sup> )
<ul style="list-style-type: none"> <li>• finely stranded</li> <li>— with core end processing</li> </ul>	1x (0.5 ... 2.5 mm <sup>2</sup> ), 2x (0.5 ... 1.0 mm <sup>2</sup> )
<b>Type of connectable conductor cross-sections at AWG conductors</b>	
<ul style="list-style-type: none"> <li>• solid</li> </ul>	1x (20 ... 14), 2x (18 ... 16)
<ul style="list-style-type: none"> <li>• stranded</li> </ul>	1x (20 ... 16), 2x (20 ... 16)

### Product Function

<b>Product function parameterizable</b>	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
<b>Suitability for operation Device connector 3ZY12</b>	Yes
<b>Suitability for interaction press control</b>	Yes
<b>Suitability for use</b>	
<ul style="list-style-type: none"> <li>• safety switch</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• Monitoring of floating sensors</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• Monitoring of non-floating sensors</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• magnetically operated switch monitoring</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• safety-related circuits</li> </ul>	Yes

### Certificates/ approvals

General Product Approval	EMC	Functional Safety/Safety of Machinery
--------------------------	-----	---------------------------------------



[Type Examination Certificate](#)

Declaration of Conformity	Test Certificates	Shipping Approval
---------------------------	-------------------	-------------------



[Miscellaneous](#)

[Type Test Certificates/Test Report](#)



other	Railway
<a href="#">Confirmation</a>	<a href="#">Confirmation</a>

#### Further information

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

[www.siemens.com/ic10](http://www.siemens.com/ic10)

**Industry Mall (Online ordering system)**

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

**Cax online generator**

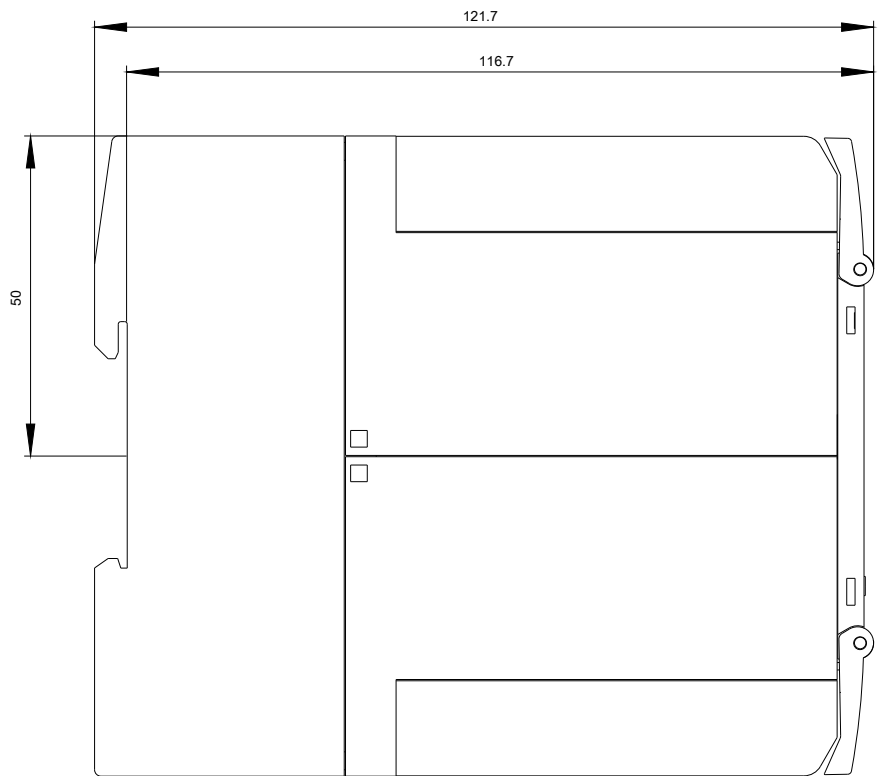
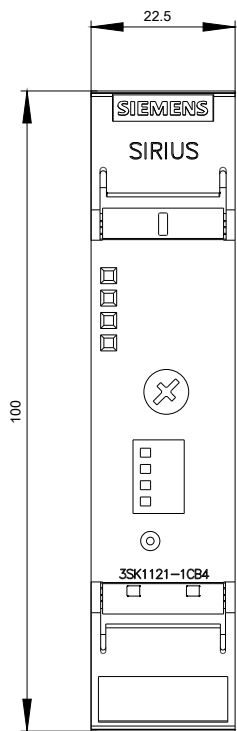
<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3SK1121-1CB42>

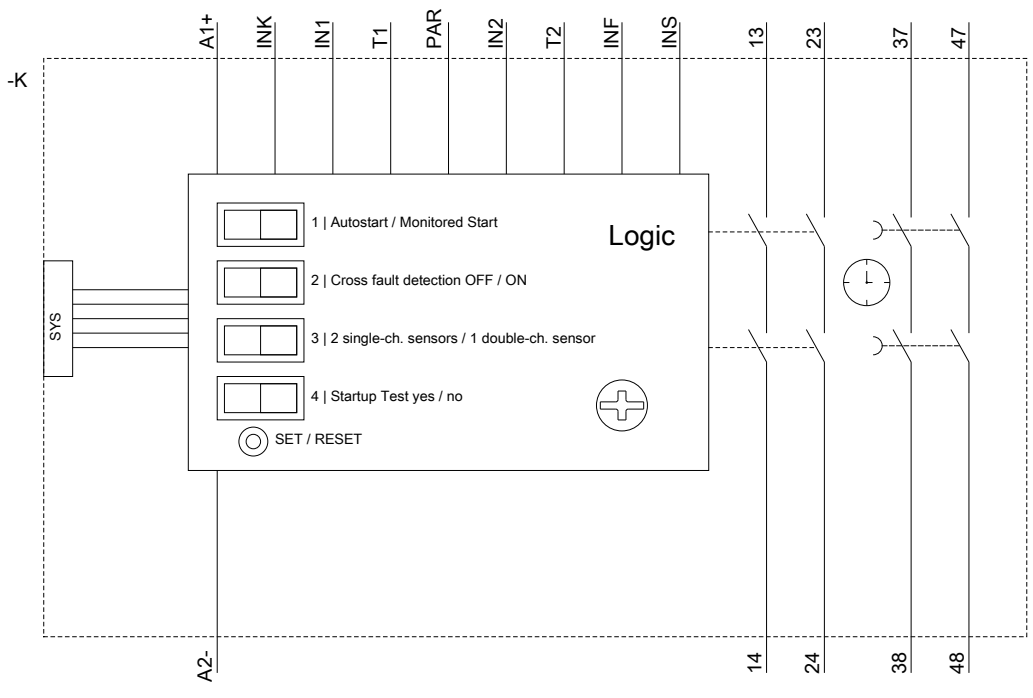
**Service&Support (Manuals, Certificates, Characteristics, FAQs,...)**

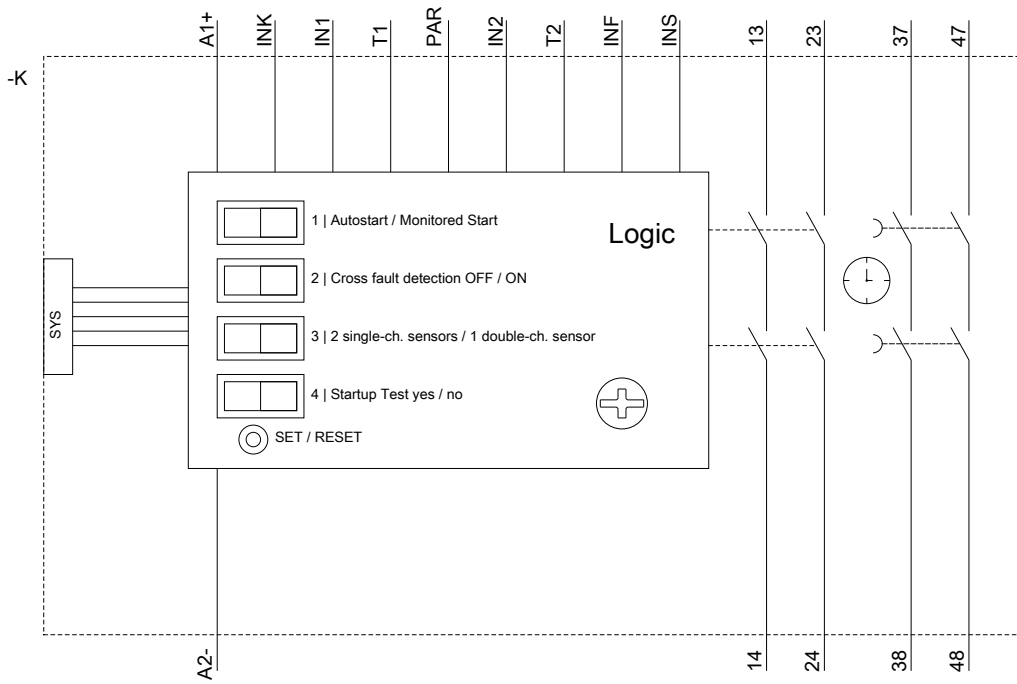
<https://support.industry.siemens.com/cs/ww/en/ps/3SK1121-1CB42>

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







last modified:

01/18/2020