

SIRIUS safety relay Basic unit Advanced series electronic enabling circuits 1 enabling circuit 0.5 A Us = 24 V DC Spring-type terminal (push-in)



General technical data	
Product brand name	SIRIUS
Product category	Safety relays
Product designation	safety relays
Design of the product	Solid-state enabling circuits
Protection class IP of the enclosure	IP20
Protection against electrical shock	finger-safe
Insulation voltage rated value	50 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	800 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 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
<b>Performance level (PL)</b>	
• 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>	0.0000000013 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	0
— safety-related delayed switching	0
<b>Number of outputs as contact-less semiconductor switching element</b>	
• safety-related	
— instantaneous contact	1
<b>Stop category acc. to DIN EN 60204-1</b>	0

#### 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>	2 000 1/h
<b>Switching capacity current</b>	
• of semiconductor outputs at DC-13 at 24 V	0.5 A

<b>Design of the fuse link for short-circuit protection of the NO contacts of the relay outputs required</b>	not required
<b>Wire length</b>	
<ul style="list-style-type: none"> <li>with Cu 1.5 mm<sup>2</sup> and 150 nF/km per sensor circuit maximum</li> </ul>	4 000 m
<b>Make time with automatic start</b>	
<ul style="list-style-type: none"> <li>at DC maximum</li> </ul>	85 ms
<b>Make time with automatic start after power failure</b>	
<ul style="list-style-type: none"> <li>typical</li> <li>maximum</li> </ul>	6 500 ms 6 500 ms
<b>Make time with monitored start</b>	
<ul style="list-style-type: none"> <li>maximum</li> </ul>	85 ms
<b>Backslide delay time after opening of the safety circuits typical</b>	40 ms
<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>	
<ul style="list-style-type: none"> <li>of the sensor input minimum</li> <li>of the ON pushbutton input minimum</li> </ul>	60 ms 0.15 s

#### Control circuit/ Control

<b>Type of voltage of the control supply voltage</b>	DC
<b>Control supply voltage</b>	
<ul style="list-style-type: none"> <li>at DC</li> <li>— rated value</li> </ul>	24 V
<b>Operating range factor control supply voltage rated value of magnet coil</b>	
<ul style="list-style-type: none"> <li>at DC</li> </ul>	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>	17.5 mm
<b>Height</b>	100 mm
<b>Depth</b>	121.6 mm




#### Connections/ Terminals

<b>Type of electrical connection</b>	Push-in terminal
<b>Type of connectable conductor cross-sections</b>	
<ul style="list-style-type: none"> <li>solid</li> <li>finely stranded</li> </ul>	1x (0.5 ... 1.5 mm <sup>2</sup> ), 2x (0.5 ... 1.5 mm <sup>2</sup> )
<ul style="list-style-type: none"> <li>— with core end processing</li> <li>— without core end processing</li> </ul>	1x (0.5 ... 1.0 mm <sup>2</sup> ), 2x (0.5 ... 1.0 mm <sup>2</sup> ) 1x (0.5 ... 1.5 mm <sup>2</sup> ), 2x (0.5 ... 1.5 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 ... 16), 2x (20 ... 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
<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		
<b>General Product Approval</b>	<b>EMC</b>	<b>Functional Safety/Safety of Machinery</b>
 CCC	 CSA	 UL
 EAC		 RCM
<a href="#">Type Examination Certificate</a>		

<b>Declaration of Conformity</b>	<b>Test Certificates</b>	<b>Shipping Approval</b>
 EG-Konf.	<a href="#">Miscellaneous</a> <a href="#">Type Test Certificates/Test Report</a>	 LRS
		 RINA
		 RMRS

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

Further information
<b>Information- and Downloadcenter (Catalogs, Brochures,...)</b> <a href="http://www.siemens.com/ic10">www.siemens.com/ic10</a>
<b>Industry Mall (Online ordering system)</b> <a href="https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3SK1120-2AB40">https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3SK1120-2AB40</a>

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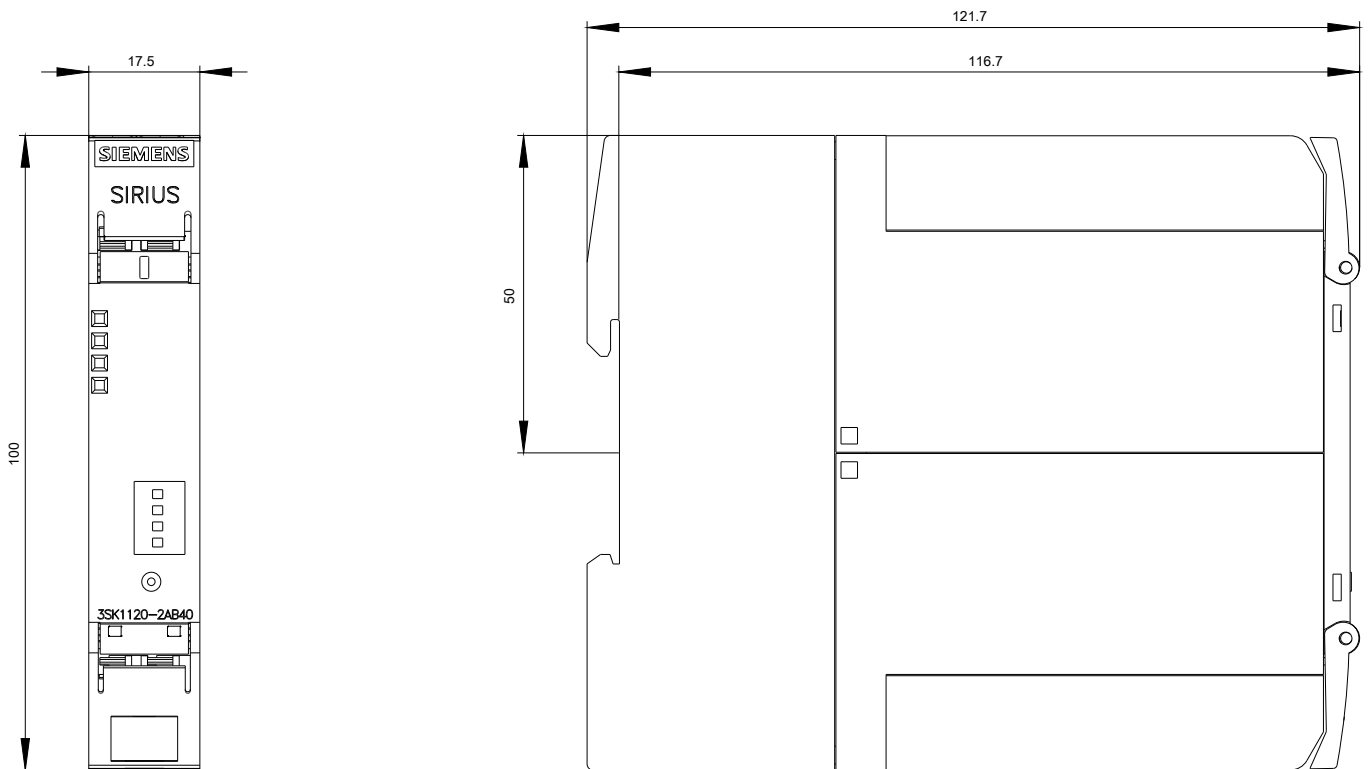
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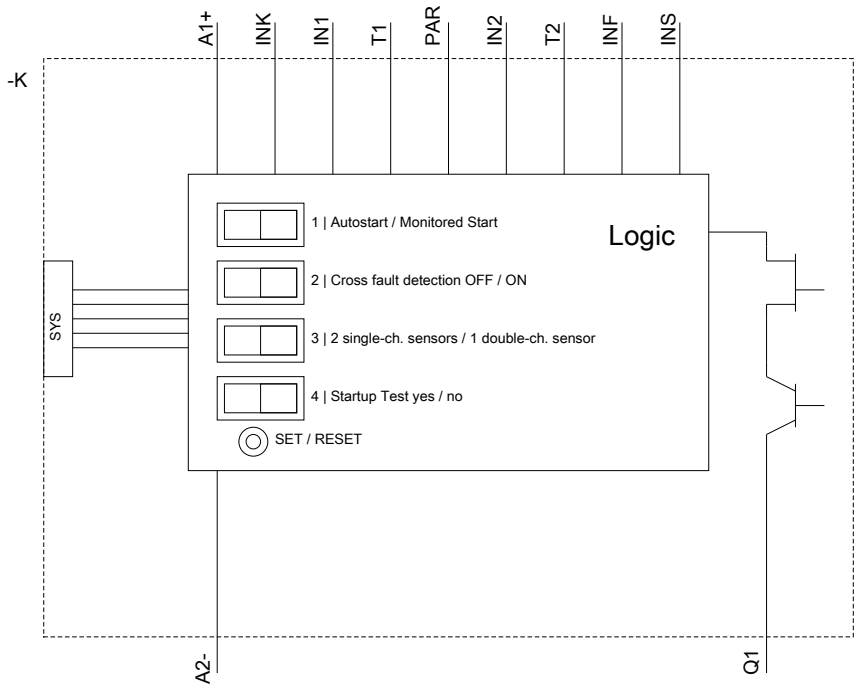
**Service&Support (Manuals, Certificates, Characteristics, FAQs,...)**

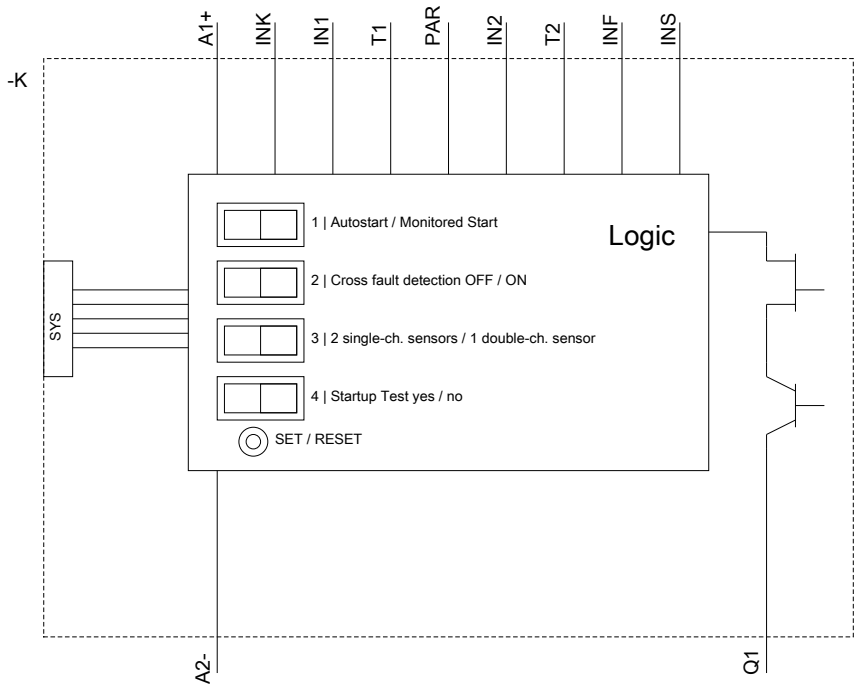
<https://support.industry.siemens.com/cs/ww/en/ps/3SK1120-2AB40>

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

[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mfb=3SK1120-2AB40&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mfb=3SK1120-2AB40&lang=en)







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