

SIRIUS safety relay Basic unit Standard series electronic enabling circuits 2 enabling circuits plus 1 signaling circuit  $U_s = 24\text{ V DC}$   
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>Overtoltage 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>	0.000000001 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	2
• for signaling function 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>	

<ul style="list-style-type: none"> <li>• of semiconductor outputs at DC-13 at 24 V</li> </ul>	2 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>	22.5 mm
<b>Height</b>	100 mm
<b>Depth</b>	91.6 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> <li>— with core end processing</li> </ul>	1x (0.5 ... 1.5 mm <sup>2</sup> ), 2x (0.5 ... 1.5 mm <sup>2</sup> )  1x (0.5 ... 1.0 mm <sup>2</sup> ), 2x (0.5 ... 1.0 mm <sup>2</sup> )

— without core end processing

1x (0.5 ... 1.5 mm<sup>2</sup>), 2x (0.5 ... 1.5 mm<sup>2</sup>)

**Type of connectable conductor cross-sections at AWG conductors**

- solid
- stranded

1x (20 ... 16), 2x (20 ... 16)  
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

**Suitability for operation Device connector 3ZY12**

No

**Suitability for interaction press control**

No

**Suitability for use**

- safety switch
- Monitoring of floating sensors
- Monitoring of non-floating sensors
- magnetically operated switch monitoring
- safety-related circuits

Yes  
Yes  
Yes  
Yes  
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**

[Confirmation](#)

[Confirmation](#)

**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=3SK1112-2BB40>

**Cax online generator**

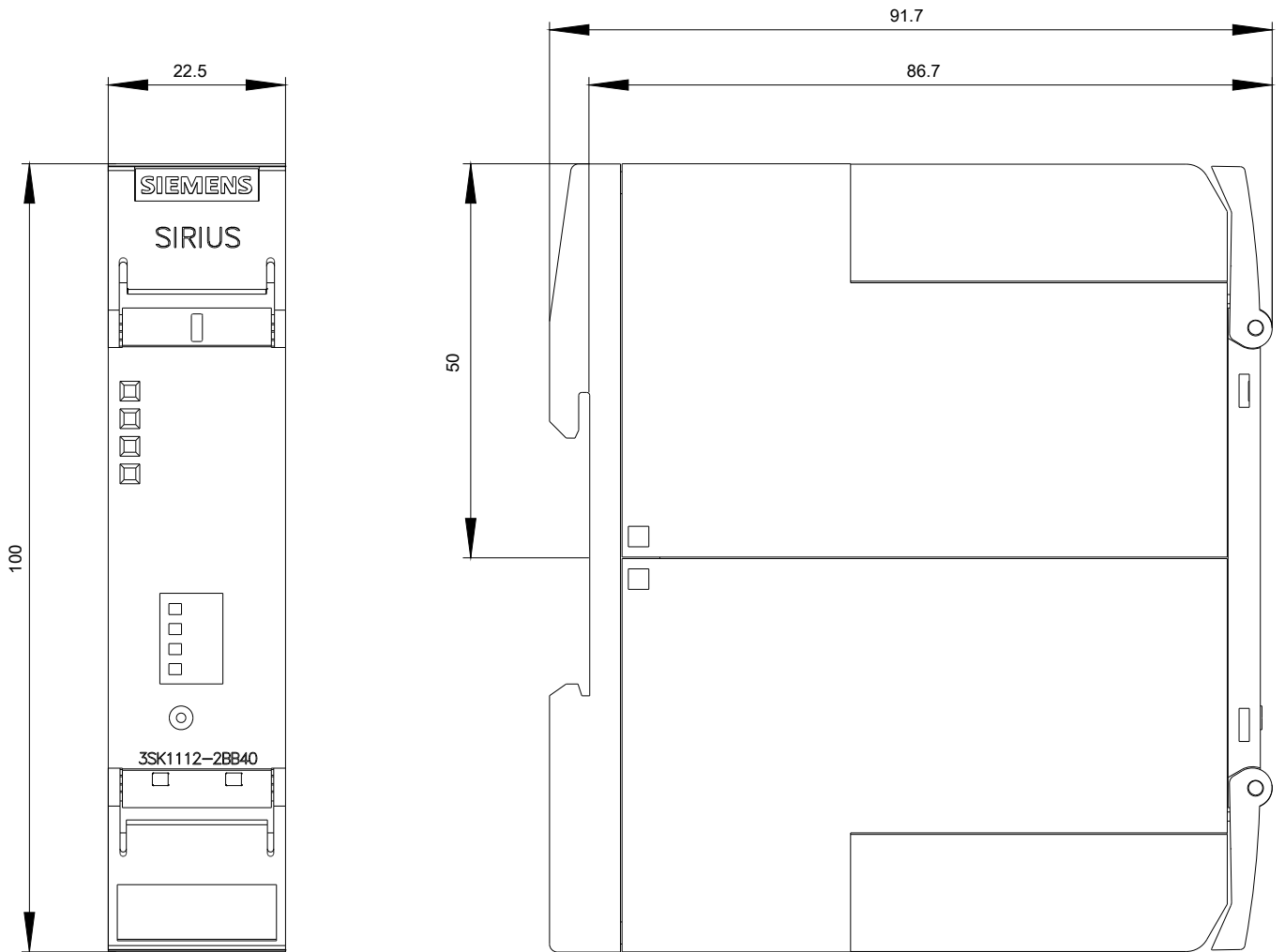
<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3SK1112-2BB40>

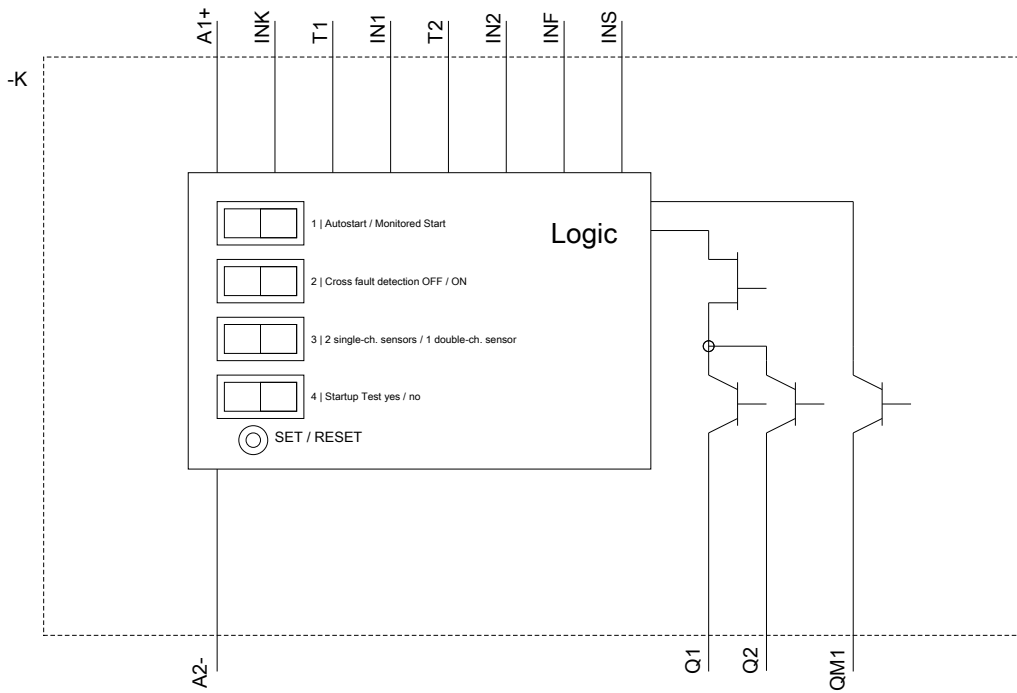
**Service&Support (Manuals, Certificates, Characteristics, FAQs,...)**

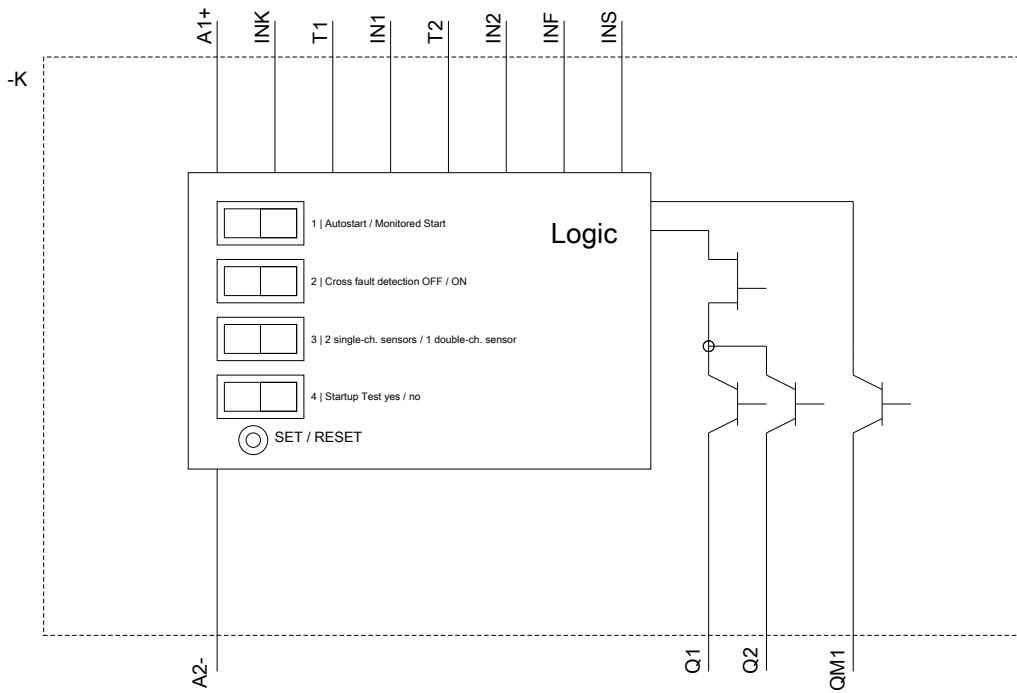
<https://support.industry.siemens.com/cs/ww/en/ps/3SK1112-2BB40>

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

[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3SK1112-2BB40&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3SK1112-2BB40&lang=en)







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