



SIRIUS SAFETY RELAY STANDARD SERIES DEVICE  
ELECTRONIC OUTPUTS 2 ENABLING CIRCUITS + 1 SIGNALING  
CIRCUIT US = 24 V DC SCREW TERMINAL

Figure similar

General technical data:	
product brand name	SIRIUS
Product designation	safety relays
Design of the product	For autonomous safety applications
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 ... 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	500 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	Installation category III
Degree of pollution	3
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 property cross-circuit-proof	Yes
Safety Integrity Level (SIL) <ul style="list-style-type: none"> <li>• acc. to IEC 61508</li> </ul>	SIL3
Performance level (PL) <ul style="list-style-type: none"> <li>• acc. to EN ISO 13849-1</li> </ul>	e
Category acc. to EN ISO 13849-1	4
Safe failure fraction (SFF)	99 %
PFHD with high demand rate acc. to EN 62061	0.000000001 1/h
Average probability of failure on demand (PFDavg) with low demand rate acc. to IEC 61508	0.000007 1/y
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 <ul style="list-style-type: none"> <li>• as NC contact <ul style="list-style-type: none"> <li>— for signaling function instantaneous contact</li> <li>— for signaling function delayed switching</li> <li>— safety-related instantaneous contact</li> <li>— safety-related delayed switching</li> </ul> </li> <li>• as NO contact <ul style="list-style-type: none"> <li>— for signaling function instantaneous contact</li> <li>— for signaling function delayed switching</li> </ul> </li> </ul>	0 0 0 0 0 0
Number of outputs as contact-less semiconductor switching element <ul style="list-style-type: none"> <li>• safety-related <ul style="list-style-type: none"> <li>— delayed switching</li> <li>— instantaneous contact</li> </ul> </li> <li>• for signaling function instantaneous contact</li> </ul>	0 2 1
Stop category acc. to DIN EN 60204-1	0

#### General technical data:

Design of input <ul style="list-style-type: none"> <li>• cascading input/functional switching</li> <li>• feedback input</li> <li>• Start input</li> </ul>	Yes Yes Yes
Type of electrical connection Plug-in socket	No
Operating frequency maximum	2 000 1/h
Switching capacity current <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>Cable 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>• for 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>Backslide delay time in the event of power failure</b> <ul style="list-style-type: none"> <li>• typical</li> <li>• maximum</li> </ul>	0 ms 0 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>• for DC  — Rated value</li> </ul>	24 V
<b>Operating range factor control supply voltage rated value of the magnet coil</b> <ul style="list-style-type: none"> <li>• for DC</li> </ul>	0.8 ... 1.2
<b>Active power loss typical</b>	2 W

#### Installation/ mounting/ dimensions:

<b>mounting position</b>	any
<b>Required spacing for grounded parts at the side</b>	5 mm
<b>Required spacing with side-by-side mounting at the side</b>	0 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:

Type of electrical connection	screw-type terminals
Type of connectable conductor cross-section	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>• solid</li> <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> )
Type of connectable conductor cross-section for AWG conductors	
<ul style="list-style-type: none"> <li>• solid</li> <li>• stranded</li> </ul>	1x (20 ... 14), 2x (18 ... 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	
<ul style="list-style-type: none"> <li>• safety switch</li> <li>• Monitoring of floating sensors</li> <li>• Monitoring of non-floating sensors</li> <li>• magnetically operated switch monitoring</li> <li>• safety-related circuits</li> </ul>	Yes Yes Yes Yes Yes

#### Certificates/ approvals:

General Product Approval	EMC	Functional Safety/Safety of Machinery	Declaration of Conformity
 CCC	 C-TICK	<a href="#">Type Examination</a>	 EG-Konf.
 CSA	 UL		

Test Certificates	other
<a href="#">Type Test Certificates/Test Report</a>	<a href="#">Confirmation</a>

#### Further information

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

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

Industry Mall (Online ordering system)

<http://www.siemens.com/industrymall>

**Cax online generator**

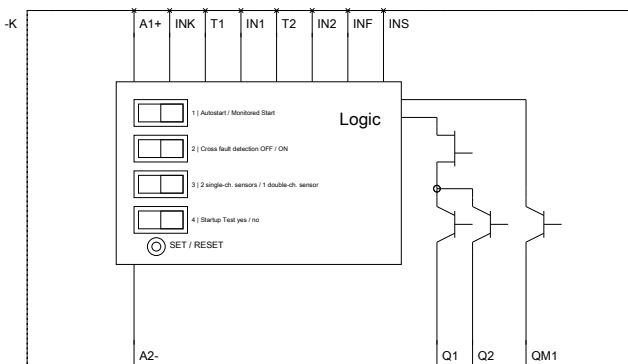
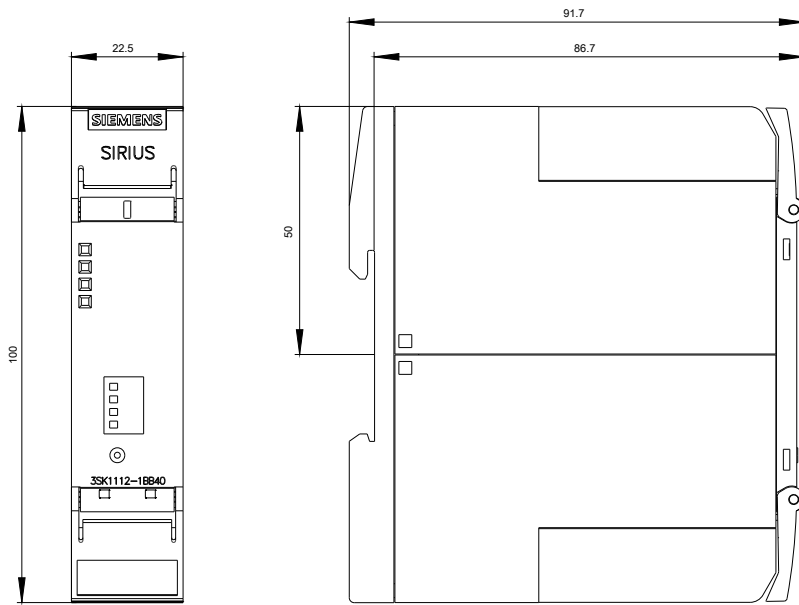
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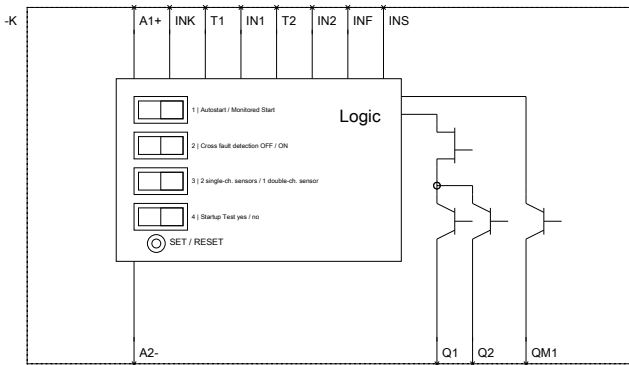
**Service&Support (Manuals, Certificates, Characteristics, FAQs,...)**

<https://support.industry.siemens.com/cs/ww/en/ps/3SK11121BB40>

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

[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3SK11121BB40&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3SK11121BB40&lang=en)





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