



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	V	50
Ambient temperature		
• during storage	°C	-40 ... +80
• during operation	°C	-25 ... +60
Air pressure acc. to SN 31205	kPa	90 ... 106
Relative humidity during operation	%	10 ... 95
Installation altitude at height above sea level maximum	m	2 000
Vibration resistance acc. to IEC 60068-2-6		5 ... 500 Hz: 0,75 mm
Shock resistance		10g / 11 ms
Surge voltage resistance Rated value	V	500
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	1/h	0.000000001
Average probability of failure on demand (PFDavg) with low demand rate acc. to IEC 61508	1/y	0.000007
T1 value for proof test interval or service life acc. to IEC 61508	y	20
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	1/h	2 000
Switching capacity current <ul style="list-style-type: none"> <li>• of semiconductor outputs at DC-13 at 24 V</li> </ul>	A	2

<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>	m	4 000
<b>Make time with automatic start</b>		
<ul style="list-style-type: none"> <li>for DC maximum</li> </ul>	ms	85
<b>Make time with automatic start after power failure</b>		
<ul style="list-style-type: none"> <li>typical</li> <li>maximum</li> </ul>	ms	6 500
	ms	6 500
<b>Make time with monitored start</b>		
<ul style="list-style-type: none"> <li>maximum</li> </ul>	ms	85
<b>Backslide delay time after opening of the safety circuits typical</b>	ms	40
<b>Backslide delay time in the event of power failure</b>		
<ul style="list-style-type: none"> <li>typical</li> <li>maximum</li> </ul>	ms	0
	ms	0
<b>Recovery time after opening of the safety circuits typical</b>	ms	30
<b>Recovery time after power failure typical</b>	s	6.5
<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>	ms	60
	s	0.15

#### 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</li> <li>— Rated value</li> </ul>	V	24
<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>	W	2

#### Installation/ mounting/ dimensions:

<b>mounting position</b>		any
<b>Required spacing for grounded parts at the side</b>	mm	5
<b>Required spacing with side-by-side mounting at the side</b>	mm	0
<b>Mounting type</b>		screw and snap-on mounting
<b>Width</b>	mm	22.5
<b>Height</b>	mm	100
<b>Depth</b>	mm	91.6






#### 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 <ul style="list-style-type: none"> <li>— with core end processing</li> </ul> </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		1x (20 ... 14), 2x (18 ... 16)
<ul style="list-style-type: none"> <li>• solid</li> <li>• stranded</li> </ul>		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		Yes
<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**

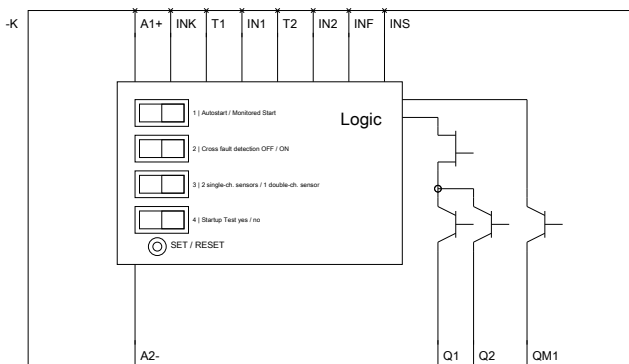
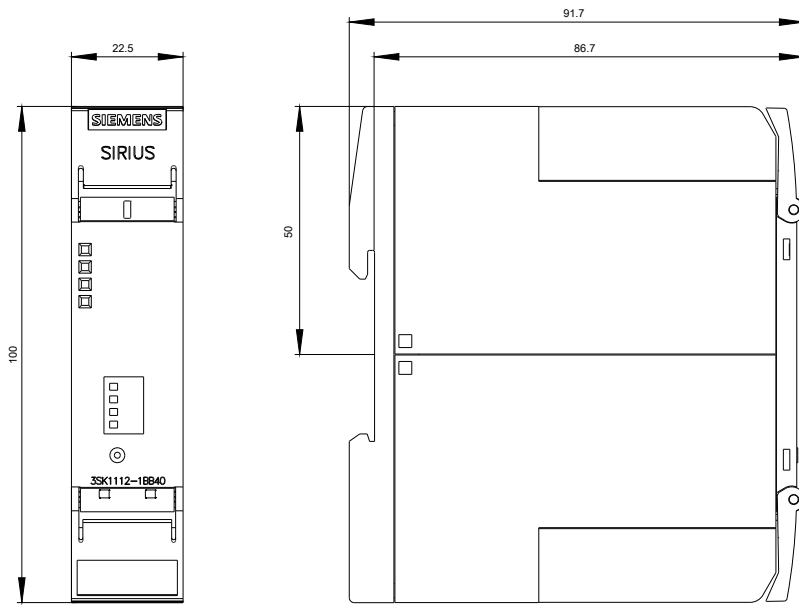
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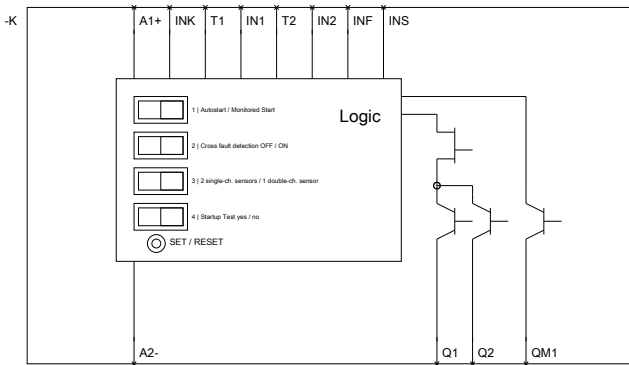
**Service&Support (Manuals, Certificates, Characteristics, FAQs,...)**

<http://support.automation.siemens.com/WW/view/en/3SK11121BB40/all>

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

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