



SIRIUS safety relay Input expansion Advanced Input expansion for an additional 2-channel or two 1-channel sensors  $U_s = 24\text{ V DC}$  screw terminal

General technical data	
product brand name	SIRIUS
product category	Safety relays
product designation	Sensor extension
protection class IP of the enclosure	IP20
touch 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	900 ... 1 060 hPa
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
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	3
degree of pollution	3
reference code acc. to DIN EN 61346-2	F
reference code acc. to IEC 81346-2	F
power loss [W] maximum	1.2 W
number of sensor inputs 1-channel or 2-channel	1
type of the safety-related wiring of the inputs	single-channel and two-channel
product feature cross-circuit-proof	Yes
Safety Integrity Level (SIL) acc. to IEC 61508	3
performance level (PL) acc. to EN ISO 13849-1	e
category acc. to EN ISO 13849-1	4
PFHD with high demand rate acc. to EN 62061	0.000000001 1/h
PFDavg with low demand rate acc. to IEC 61508	0.000007
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	

<b>element</b>	
<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> <li>safety-related instantaneous contact</li> <li>safety-related delayed switching</li> </ul> </li> </ul>	0 0 0 0 0 0 0 0
<b>number of outputs as contact-less semiconductor switching element</b>	
<ul style="list-style-type: none"> <li>for signaling function <ul style="list-style-type: none"> <li>delayed switching</li> </ul> </li> </ul>	0
<b>stop category acc. to DIN EN 60204-1</b>	0
<b>General technical data</b>	
<b>design of input start input</b>	Yes
<b>type of electrical connection plug-in socket</b>	No
<b>wire length between sensor and electronics evaluation device with Cu 1.5 mm<sup>2</sup> and 150 nF/km maximum</b>	4 000 m
<b>make time with automatic start</b>	
<ul style="list-style-type: none"> <li>typical</li> <li>at DC maximum</li> </ul>	60 ms 60 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> <li>typical</li> </ul>	60 ms 60 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>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
<b>Control circuit/ Control</b>	
<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 <ul style="list-style-type: none"> <li>rated value</li> </ul> </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
<b>Installation/ mounting/ dimensions</b>	
<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>fastening method</b>	screw and snap-on mounting
<b>width</b>	17.5 mm
<b>height</b>	100 mm
<b>depth</b>	121.6 mm
<b>Connections/ Terminals</b>	
<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 mm²), 2x (0.5 ... 1.0 mm²)	
<b>type of connectable conductor cross-sections at AWG cables</b>		
<ul style="list-style-type: none"><li>solid</li></ul>	1x (20 ... 14), 2x (18 ... 16)	
<b>Product Function</b>		
<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>	No	
<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	
<b>Certificates/ approvals</b>		
<b>certificate of suitability</b>		
<ul style="list-style-type: none"><li>TÜV (German technical inspectorate) certificate</li></ul>	Yes	
<ul style="list-style-type: none"><li>UL approval</li></ul>	Yes	
<b>General Product Approval</b>	<b>EMC</b>	<b>Functional Safety/Safety of Machinery</b>



[Type Examination Certificate](#)

<b>Declaration of Conformity</b>	<b>Test Certificates</b>	<b>Marine / Shipping</b>
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[Type Test Certificates/Test Report](#)



<b>other</b>	<b>Railway</b>
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[Confirmation](#)

[Confirmation](#)

#### Further information

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

<https://www.siemens.com/ic10>

Industry Mall (Online ordering system)

<https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3SK1220-1AB40>

Cax online generator

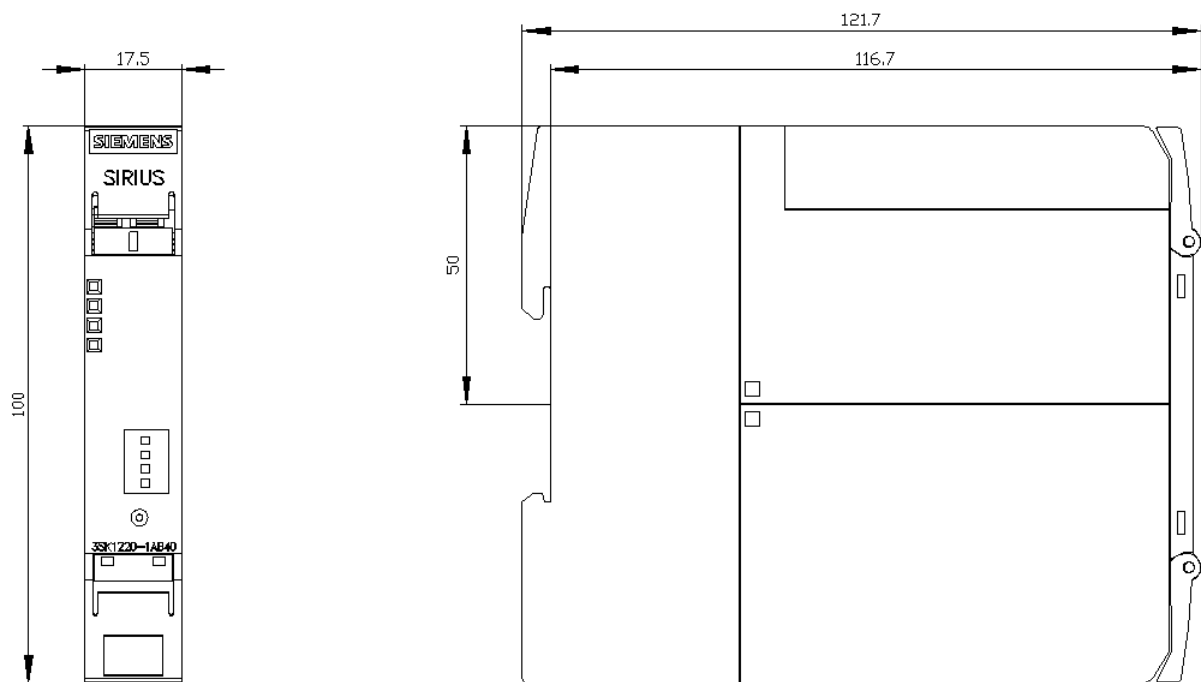
<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3SK1220-1AB40>

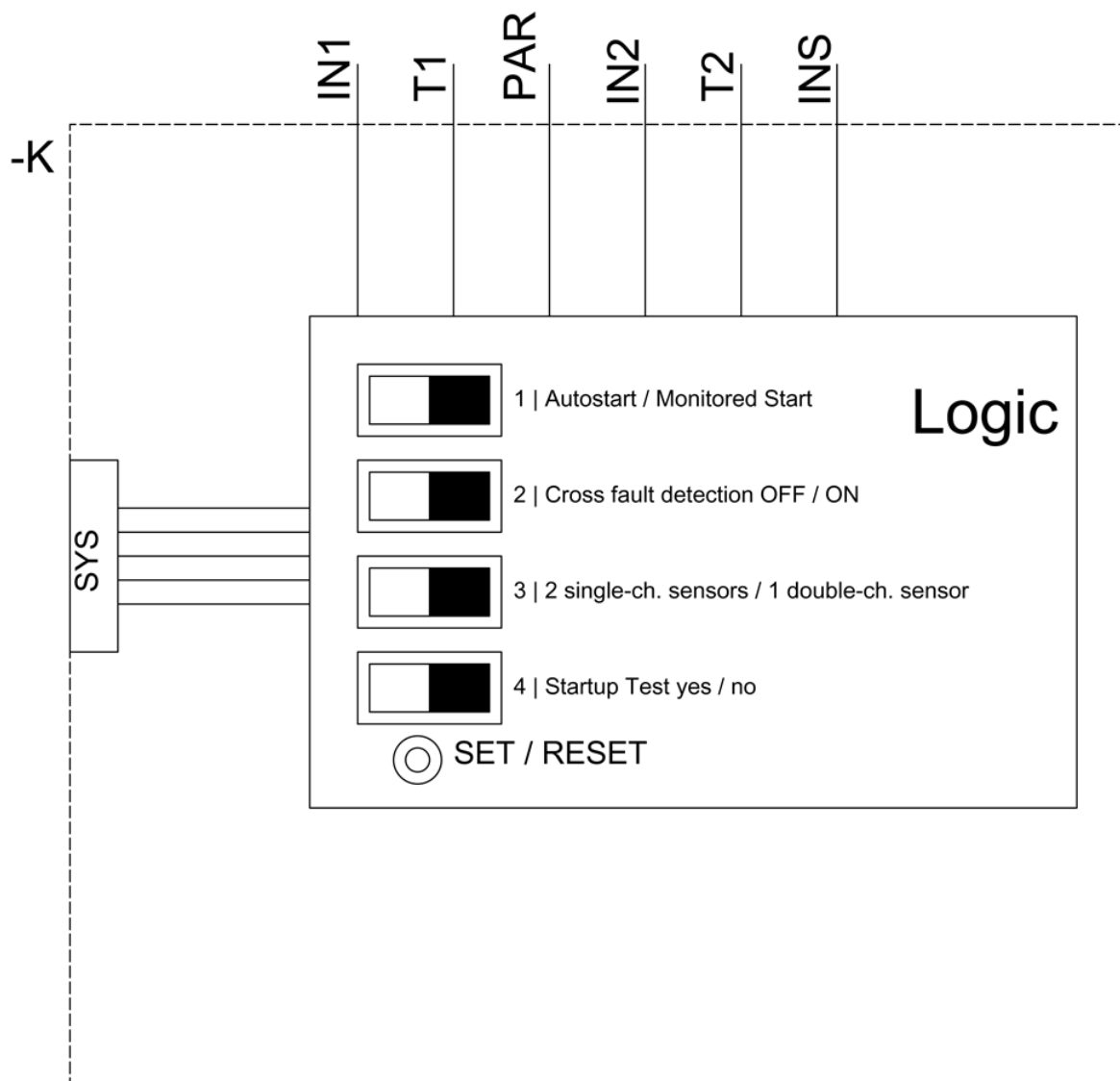
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

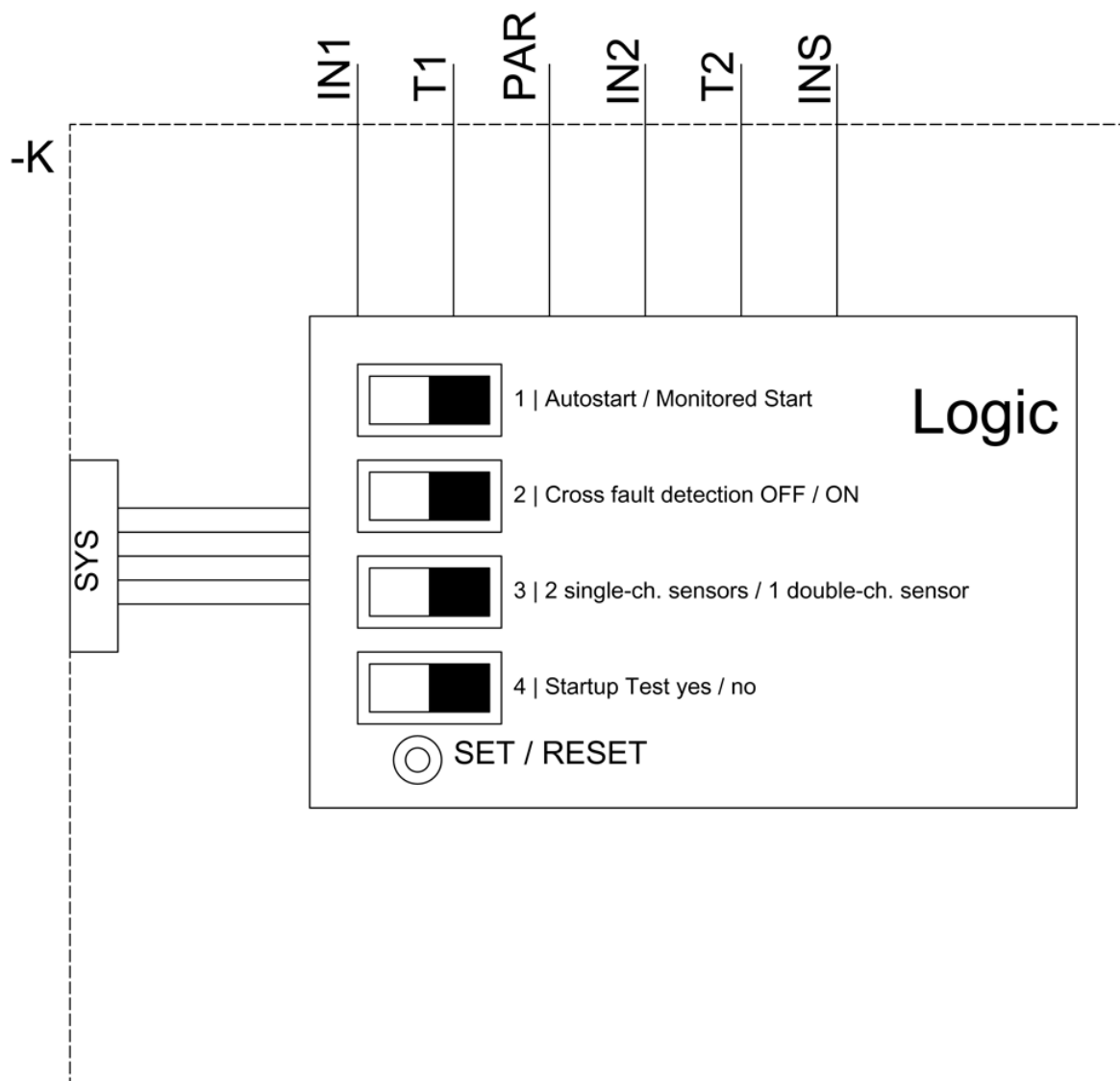
<https://support.industry.siemens.com/cs/ww/en/ps/3SK1220-1AB40>

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

[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3SK1220-1AB40&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3SK1220-1AB40&lang=en)







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