



SIRIUS safety relay Input expansion Advanced Input expansion for an additional 2-channel or two 1-channel sensors  $U_s = 24\text{ V DC}$  Spring-type terminal (push-in)

product brand name	SIRIUS
product category	Safety relays
product designation	Sensor extension
<b>General technical data</b>	
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 according to SN 31205	900 ... 1 060 hPa
relative humidity during operation	10 ... 95 %
installation altitude at height above sea level maximum	4 000 m; Derating, see Product Notification 109792701
vibration resistance according 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. In household environments, this device can cause unwanted radio interference. The user is required to implement appropriate measures in this case.
overvoltage category	3
degree of pollution	3
reference code according to EN 61346-2	F
reference code according 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) according to IEC 62061	3
Safety Integrity Level (SIL) according to IEC 61508	3
performance level (PL) according to ISO 13849-1	e
category according to EN ISO 13849-1	4
PFHD with high demand rate according to IEC 62061	1E-9 1/h
PFDavg with low demand rate according to IEC 61508	7E-6
T1 value for proof test interval or service life according to IEC 61508	20 a
hardware fault tolerance according to IEC 61508	1
safety device type according to IEC 61508-2	Type B
<b>Inputs/ Outputs</b>	
number of outputs as contact-affected switching element	
• as NC contact	

— for signaling function instantaneous contact	0
— for signaling function delayed switching	0
— safety-related instantaneous contact	0
— safety-related delayed switching	0
• as NO contact	
— for signaling function instantaneous contact	0
— for signaling function delayed switching	0
— safety-related instantaneous contact	0
— safety-related delayed switching	0
<b>number of outputs as contact-less semiconductor switching element</b>	
• for signaling function	
— delayed switching	0
<b>stop category according to IEC 60204-1</b>	0
<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 mm² and 150 nF/km maximum</b>	4 000 m
<b>make time with automatic start</b>	
• typical	60 ms
• at DC maximum	60 ms
<b>make time with automatic start after power failure</b>	
• typical	6 500 ms
• maximum	6 500 ms
<b>make time with monitored start</b>	
• maximum	60 ms
• typical	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>	
• of the sensor input minimum	60 ms
• of the ON pushbutton input minimum	0.15 s
<b>Control circuit/ Control</b>	
<b>type of voltage of the control supply voltage</b>	DC
<b>control supply voltage</b>	
• at DC rated value	24 V
<b>operating range factor control supply voltage rated value of magnet coil</b>	
• at DC	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>	spring-loaded terminal (push-in)
<b>type of connectable conductor cross-sections</b>	
• solid	1x (0.5 ... 1.5 mm²), 2x (0.5 ... 1.5 mm²)
• finely stranded	
— with core end processing	1x (0.5 ... 1.0 mm²), 2x (0.5 ... 1.0 mm²)
— without core end processing	1x (0.5 ... 1.5 mm²), 2x (0.5 ... 1.5 mm²)
<b>type of connectable conductor cross-sections for AWG cables</b>	
• solid	1x (20 ... 16), 2x (20 ... 16)
• stranded	1x (20 ... 16), 2x (20 ... 16)
<b>Product Function</b>	
<b>product function parameterizable</b>	sensor floating / sensor non-floating, monitored start-up / automatic start, 1-channel / 2-channel sensor connection, cross-circuit detection, startup testing, antivalent sensors, 2-hand switches

suitability for operation device connector 3ZY12	Yes
suitability for interaction press control	No
suitability for use	
• safety switch	Yes
• monitoring of floating sensors	Yes
• monitoring of non-floating sensors	Yes
• magnetically operated switch monitoring	Yes
• safety-related circuits	Yes

#### Certificates/ approvals

certificate of suitability	
• TÜV (German technical inspectorate) certificate	Yes
• UL approval	Yes

#### General Product Approval



[Confirmation](#)



General Product Approval	EMV	Functional Safety	Test Certificates	Marine / Shipping
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[Type Examination Certificate](#)

[Type Test Certificates/Test Report](#)



Marine / Shipping	other	Railway	Environment
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[Confirmation](#)

[Confirmation](#)

[Environmental Confirmations](#)

#### Further information

Information on the packaging

<https://support.industry.siemens.com/cs/ww/en/view/109813875>

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=3SK1220-2AB40>

Cax online generator

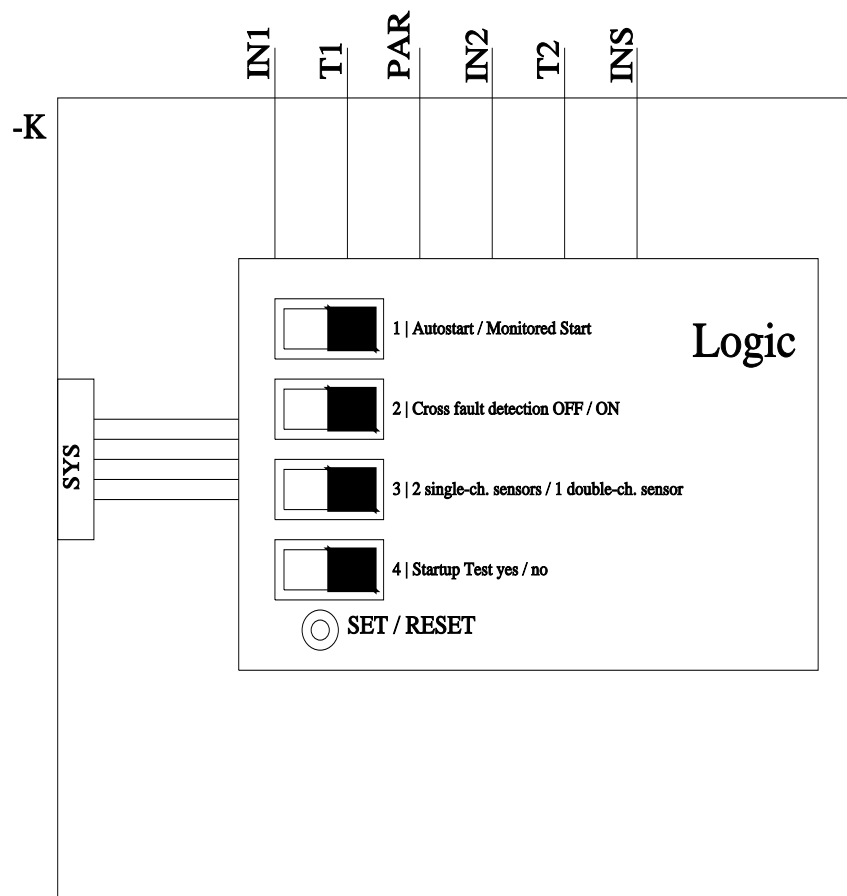
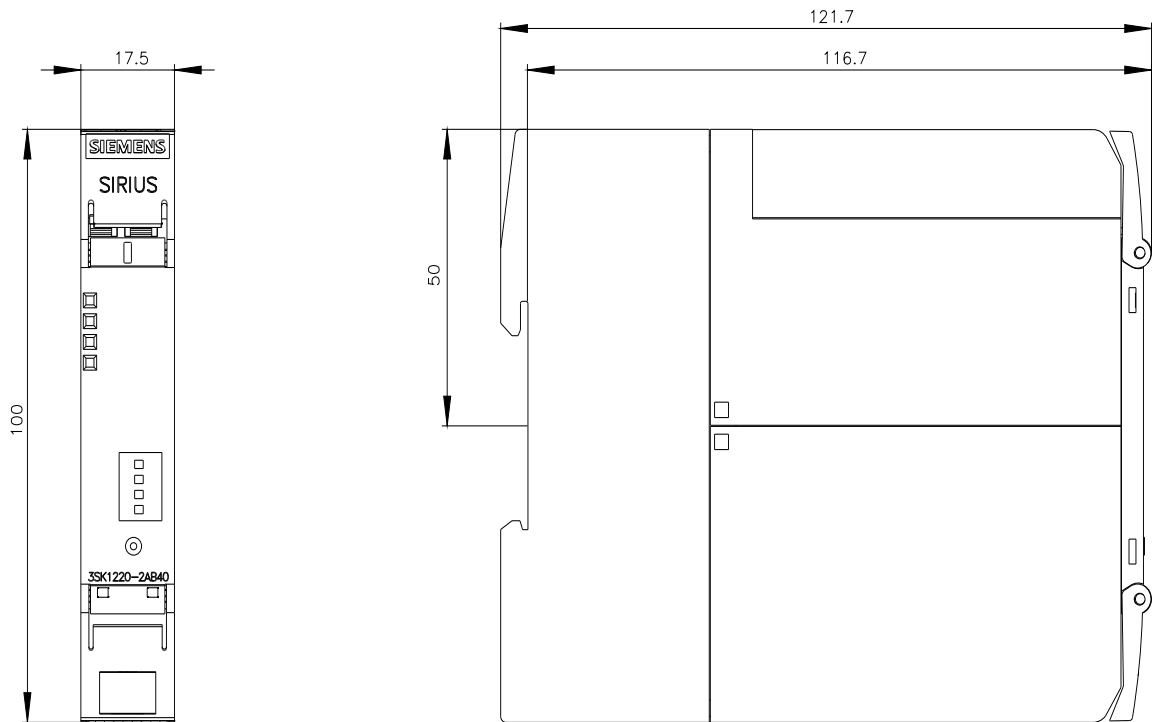
<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3SK1220-2AB40>

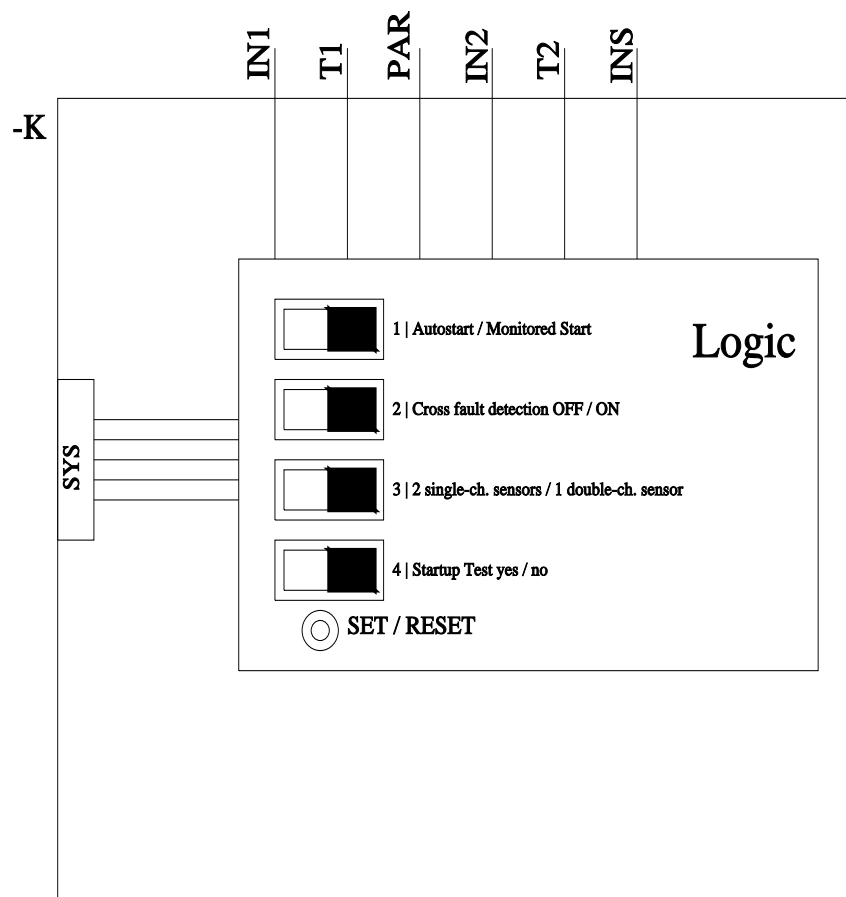
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

<https://support.industry.siemens.com/cs/ww/en/ps/3SK1220-2AB40>

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

[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3SK1220-2AB40&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3SK1220-2AB40&lang=en)





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