



SIRIUS safety relay Basic unit Advanced series electronic enabling circuits 1 enabling circuit 0.5 A Us = 24 V DC screw terminal

product brand name	SIRIUS
product category	Safety relays
product designation	safety relays
design of the product	Solid-state enabling circuits
<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	90 ... 106 kPa
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 IEC 81346-2	F
power loss [W] maximum	2 W
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 feature cross-circuit-proof	Yes
Safety Integrity Level (SIL)	
• according to IEC 62061	3
• according to IEC 61508	3
performance level (PL)	
• according to ISO 13849-1	e
category according to EN ISO 13849-1	4
Safe failure fraction (SFF)	99 %
PFHD with high demand rate according to IEC 62061	1.3E-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 <ul style="list-style-type: none"> <li>as NO contact <ul style="list-style-type: none"> <li>safety-related instantaneous contact</li> <li>safety-related delayed switching</li> </ul> </li> </ul>	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>instantaneous contact</li> </ul> </li> </ul>	1
stop category according to IEC 60204-1	0
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>	0.5 A
design of the fuse link for short-circuit protection of the NO contacts of the relay outputs required	not required
wire length <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
make time with automatic start <ul style="list-style-type: none"> <li>at DC maximum</li> </ul>	85 ms
make time with automatic start after power failure <ul style="list-style-type: none"> <li>typical</li> <li>maximum</li> </ul>	6 500 ms 6 500 ms
make time with monitored start <ul style="list-style-type: none"> <li>maximum</li> </ul>	85 ms
backslide delay time after opening of the safety circuits typical	40 ms
recovery time after opening of the safety circuits typical	30 ms
recovery time after power failure typical	6.5 s
pulse duration <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>	
type of voltage of the control supply voltage	DC
control supply voltage <ul style="list-style-type: none"> <li>at DC rated value</li> <li>—</li> </ul>	24 V
operating range factor control supply voltage rated value of magnet coil <ul style="list-style-type: none"> <li>at DC</li> </ul>	0.8 ... 1.2
<b>Installation/ mounting/ dimensions</b>	
mounting position	any
required spacing for grounded parts at the side	5 mm
fastening method	screw and snap-on mounting
width	17.5 mm
height	100 mm
depth	121.6 mm
<b>Connections/ Terminals</b>	
type of electrical connection	screw terminal
type of connectable conductor cross-sections <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 (1.0 ... 1.5 mm <sup>2</sup> ) 1x (0.5 ... 2.5 mm <sup>2</sup> ), 2x (0.5 ... 1.0 mm <sup>2</sup> )
type of connectable conductor cross-sections for AWG cables <ul style="list-style-type: none"> <li>solid</li> </ul>	1x (20 ... 14), 2x (18 ... 16)

- stranded

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

#### Product Function

product function parameterizable	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	Yes
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

##### 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	Environment
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[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=3SK1120-1AB40>

##### Cax online generator

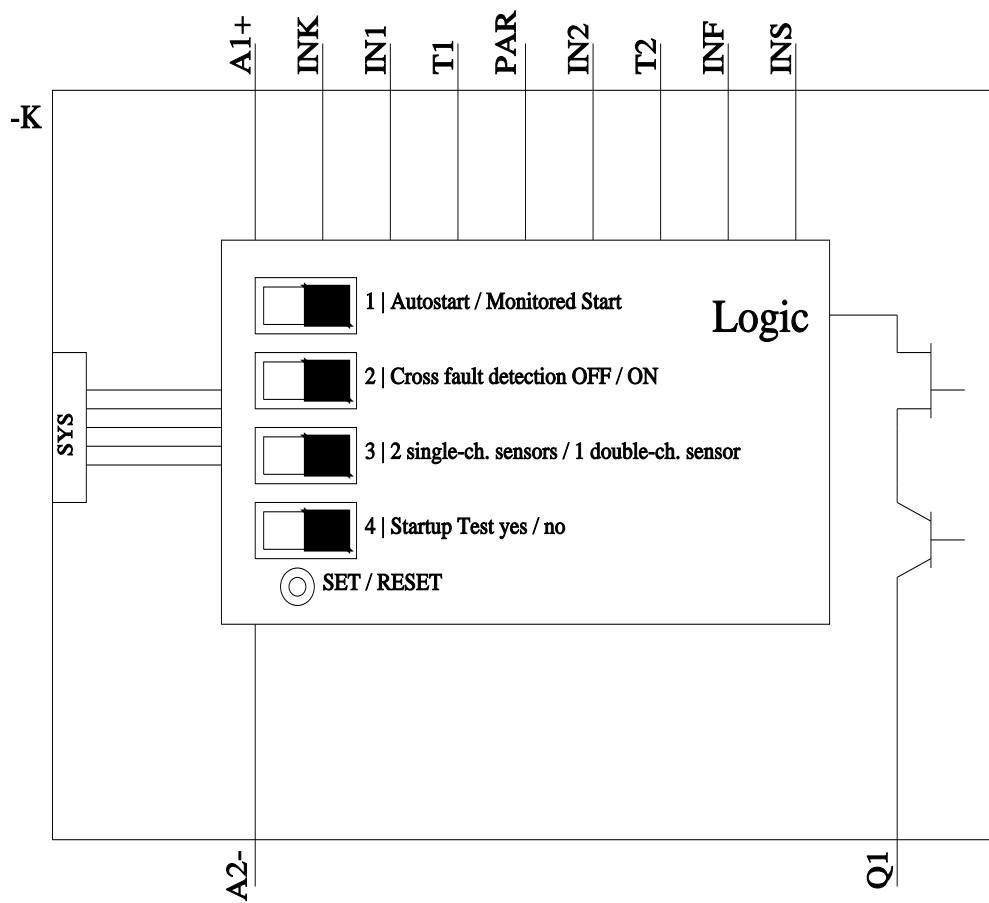
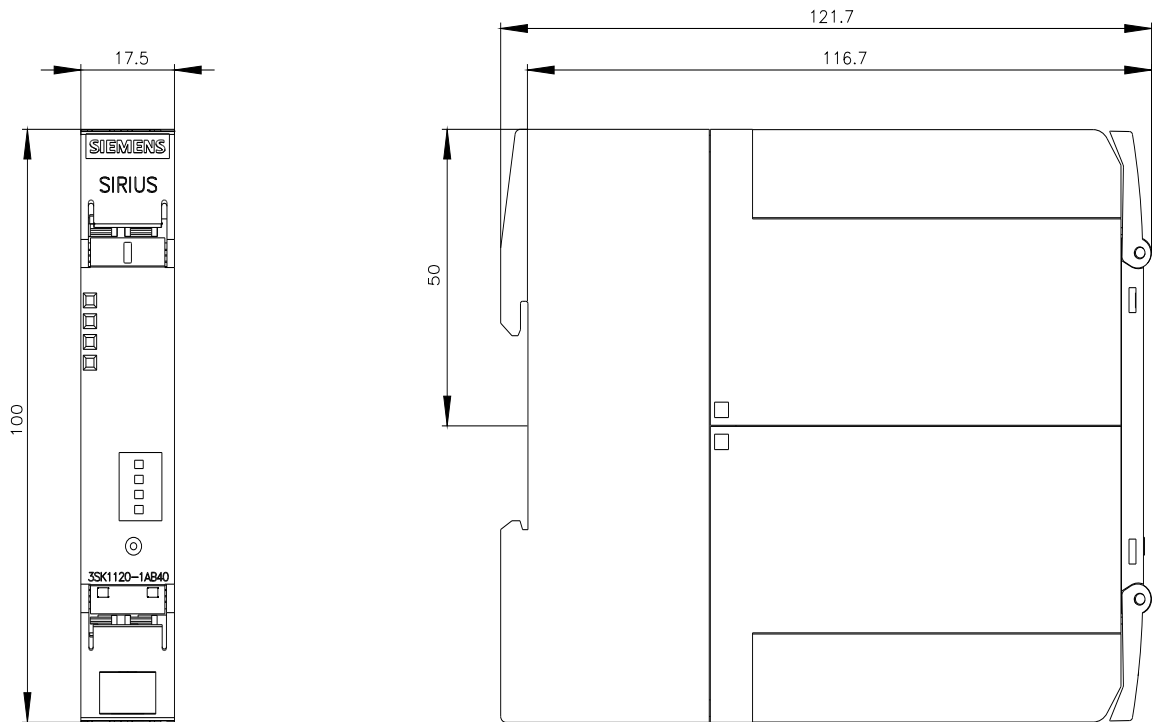
<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3SK1120-1AB40>

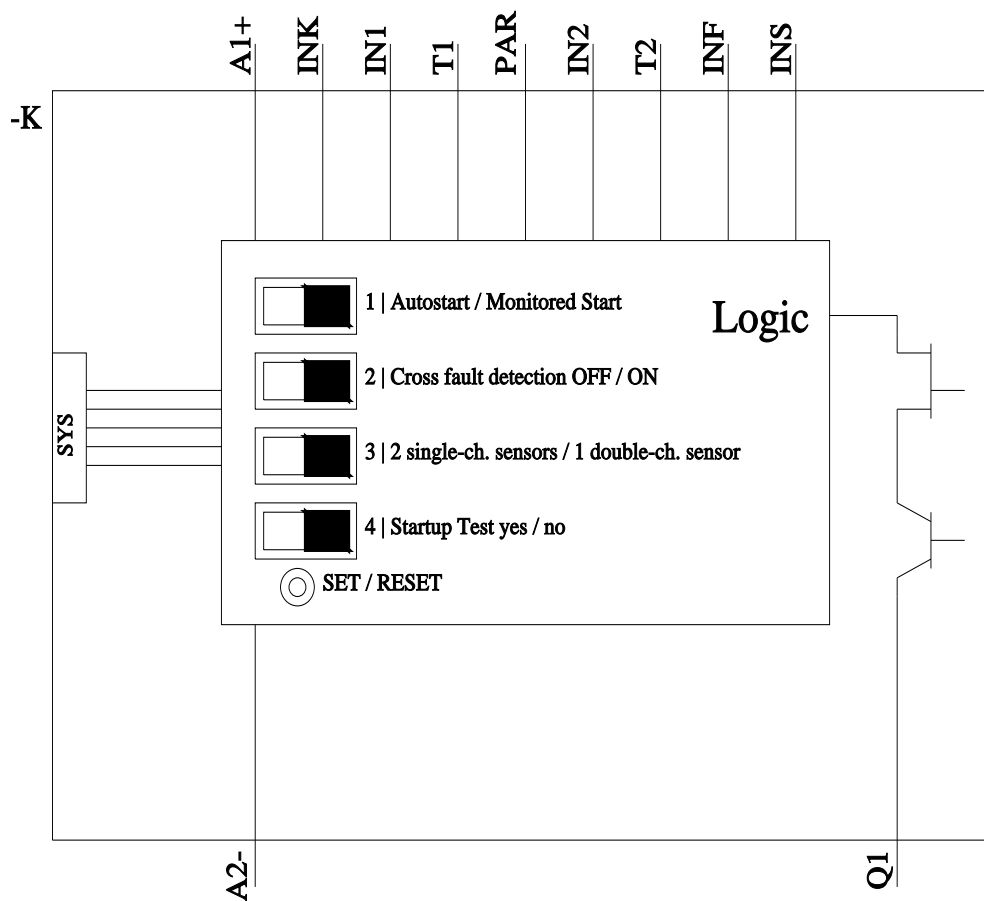
##### Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

<https://support.industry.siemens.com/cs/ww/en/ps/3SK1120-1AB40>

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

[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3SK1120-1AB40&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3SK1120-1AB40&lang=en)





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