



SIRIUS safety relay Basic unit Standard series Relay enabling circuits 3 NO contacts plus Relay signaling circuit 1 NC contact  $U_s = 24\text{ V AC/DC}$  screw terminal

<b>product brand name</b>	SIRIUS
<b>product category</b>	Safety relays
<b>product designation</b>	safety relays
<b>design of the product</b>	Relay enabling circuits
<b>product type designation</b>	3SK1
<b>product line</b>	Standard basic unit
<b>Product Function</b>	
<b>product function parameterizable</b>	sensor floating / sensor non-floating, monitored start-up / automatic start
<b>product function</b>	
<ul style="list-style-type: none"> <li>• automatic start</li> <li>• light barrier monitoring</li> <li>• protective door monitoring</li> <li>• magnetically operated switch monitoring NC-NO</li> <li>• magnetically operated switch monitoring NC-NC</li> <li>• laser scanner monitoring</li> <li>• light array monitoring</li> <li>• EMERGENCY OFF function</li> <li>• monitored start-up</li> <li>• pressure-sensitive mat monitoring</li> </ul>	<ul style="list-style-type: none"> <li>Yes</li> <li>Yes</li> <li>Yes</li> <li>No</li> <li>Yes</li> <li>Yes</li> <li>Yes</li> <li>Yes</li> <li>Yes</li> <li>No</li> </ul>
<b>suitability for interaction press control</b>	No
<b>suitability for operation device connector 3ZY12</b>	No
<b>suitability for use</b>	
<ul style="list-style-type: none"> <li>• monitoring of floating sensors</li> <li>• monitoring of non-floating sensors</li> <li>• position switch monitoring</li> <li>• EMERGENCY-OFF circuit monitoring</li> <li>• opto-electronic protection device monitoring</li> <li>• magnetically operated switch monitoring</li> <li>• safety switch</li> <li>• safety-related circuits</li> </ul>	<ul style="list-style-type: none"> <li>Yes</li> <li>Yes</li> <li>Yes</li> <li>Yes</li> <li>Yes</li> <li>Yes</li> <li>Yes</li> <li>Yes</li> </ul>
<b>General technical data</b>	
certificate of suitability UL approval	Yes
<b>product feature cross-circuit-proof</b>	Yes
<b>power loss [W] maximum</b>	2 W
<b>insulation voltage rated value</b>	300 V
<b>degree of pollution</b>	3
<b>overvoltage category</b>	3
<b>surge voltage resistance rated value</b>	4 000 V
protection class IP of the enclosure	IP20
<b>shock resistance</b>	10g / 11 ms

<b>vibration resistance according to IEC 60068-2-6</b>	5 ... 500 Hz: 0.75 mm
<b>operating frequency maximum</b>	360 1/h
<b>mechanical service life (operating cycles) typical</b>	10 000 000
<b>thermal current of the switching element with contacts maximum</b>	5 A
<b>reference code according to IEC 81346-2</b>	F
<b>Substance Prohibittance (Date)</b>	11/05/2012
<b>SVHC substance name</b>	Lead - 7439-92-1 Lead monoxide (lead oxide) - 1317-36-8 4,4'-isopropylidenediphenol (Bisphenol A, BPA) - 80-05-7
<b>Weight</b>	0.264 kg
<b>Ambient conditions</b>	
installation altitude at height above sea level maximum	4 000 m; Derating, see Product Notification 109792701
<b>ambient temperature</b>	
• during operation	-25 ... +60 °C
• during storage	-40 ... +80 °C
relative humidity during operation	10 ... 95 %
air pressure according to SN 31205	90 ... 106 kPa
<b>Electromagnetic compatibility</b>	
<b>installation environment regarding EMC</b>	This product is suitable for Class B environments and can also be used in domestic environments.
<b>EMC emitted interference</b>	IEC 60947-5-1, IEC 61000
<b>Safety related data</b>	
<b>stop category according to IEC 60204-1</b>	0
IEC 62061	
SIL Claim Limit (subsystem) according to EN 62061	3
<b>Safety Integrity Level (SIL) according to IEC 62061</b>	3
PFHD with high demand rate according to IEC 62061	1.7E-9 1/h
ISO 13849	
category according to EN ISO 13849-1	4
<b>performance level (PL)</b>	
• according to ISO 13849-1	e
IEC 61508	
<b>Safety Integrity Level (SIL)</b>	
• according to IEC 61508	3
<b>safety device type according to IEC 61508-2</b>	Type A
<b>Average probability of failure on demand (PFDavg) with low demand rate acc. to IEC 61508</b>	1E-6 1/y
PFDavg with low demand rate according to IEC 61508	1E-6
<b>Safe failure fraction (SFF)</b>	99 %
hardware fault tolerance according to IEC 61508	1
T1 value for proof test interval or service life according to IEC 61508	20 a
Electrical Safety	
<b>touch protection against electrical shock</b>	finger-safe
<b>Short-circuit protection</b>	
<b>design of the fuse link</b>	
• for short-circuit protection of the NO contacts of the relay outputs required	gL/gG: 6A or circuit breaker type A: 3A or circuit breaker type B: 2A or circuit breaker type C: 1A
• for short circuit protection of the NC contacts of the relay outputs required	Diazed or Neozed fuses, operating class gL/gG: 6 A or MCB type A: 2 A or MCB type B: 2 A or MCB type C: 1 A
<b>Inputs</b>	
<b>design of input</b>	
• cascading input/functional switching	No
• feedback input	Yes
• start input	Yes
pulse duration of the sensor input minimum	150 ms
number of sensor inputs 1-channel or 2-channel	1
<b>Outputs</b>	
<b>number of outputs as contact-affected switching element</b>	
• as NC contact — for signaling function instantaneous contact	1
• as NO contact	

— safety-related instantaneous contact	3
— safety-related delayed switching	0
<b>switching capacity current of the NO contacts of the relay outputs at DC-13</b>	
• at 24 V	5 A
• at 115 V	0.2 A
• at 230 V	0.1 A
<b>switching capacity current of the NO contacts of the relay outputs at AC-15</b>	
• at 115 V	5 A
• at 230 V	5 A
<b>switching capacity current of the NC contacts of the relay outputs at DC-13</b>	
• at 24 V	1 A
• at 115 V	0.2 A
• at 230 V	0.1 A
<b>switching capacity current of the NC contacts of the relay outputs at AC-15</b>	
• at 24 V	2 A
• at 115 V	1.5 A
• at 230 V	1.5 A
<b>total current maximum</b>	12 A
<b>Times</b>	
<b>make time with automatic start</b>	
• typical	200 ms
• at DC maximum	320 ms
• at AC maximum	320 ms
<b>make time with automatic start after power failure</b>	
• typical	200 ms
• maximum	320 ms
<b>make time with monitored start</b>	
• typical	15 ms
• maximum	20 ms
<b>backslide delay time after opening of the safety circuits typical</b>	10 ms
<b>backslide delay time in the event of power failure</b>	
• typical	65 ms
• maximum	75 ms
<b>recovery time after opening of the safety circuits typical</b>	10 ms
<b>recovery time after power failure typical</b>	0.09 s
<b>pulse duration</b>	
• of the ON pushbutton input minimum	0.015 s
<b>Main circuit</b>	
<b>operational current at 17 V minimum</b>	5 mA
<b>Control circuit/ Control</b>	
<b>type of voltage of the control supply voltage</b>	AC/DC
<b>control supply voltage at AC</b>	
• at 50 Hz rated value	24 V
• at 50 Hz rated value	24 ... 24 V
• at 60 Hz rated value	24 V
• at 60 Hz rated value	24 ... 24 V
<b>control supply voltage frequency</b>	
• 1 rated value	50 Hz
• 2 rated value	60 Hz
<b>control supply voltage at DC rated value</b>	24 V
<b>control supply voltage at DC rated value</b>	24 ... 24 V
<b>operating range factor control supply voltage rated value of magnet coil at DC</b>	
• initial value	0.85
• full-scale value	1.2
<b>operating range factor control supply voltage rated value of magnet coil at AC</b>	
• at 50 Hz	0.85 ... 1.1

- at 60 Hz

0.85 ... 1.1

### Installation/ mounting/ dimensions

mounting position	any
fastening method	screw and snap-on mounting
height	100 mm
width	22.5 mm
depth	121.6 mm
required spacing	
<ul style="list-style-type: none"> <li>• for grounded parts at the side</li> </ul>	5 mm

### Connections/ Terminals

type of electrical connection	screw terminal
type of connectable conductor cross-sections	
<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 with core end processing</li> </ul>	1x (0.5 ... 2.5 mm <sup>2</sup> ), 2x (0.5 ... 1.0 mm <sup>2</sup> )
<ul style="list-style-type: none"> <li>• for AWG cables solid</li> </ul>	1x (20 ... 14), 2x (18 ... 16)
<ul style="list-style-type: none"> <li>• for AWG cables stranded</li> </ul>	1x (20 ... 16), 2x (20 ... 16)
type of electrical connection plug-in socket	No

### Approvals Certificates

#### General Product Approval



[Confirmation](#)



EG-Konf.



CCC



#### EMV

#### Functional Safety

#### Test Certificates

#### Marine / Shipping



RCM

[Type Examination Certificate](#)

[Type Test Certificates/Test Report](#)



DNV



LRS



RINA

#### Marine / Shipping

#### other

#### Railway

#### Environment



RMRS

[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=3SK1111-1AB30>

#### Cax online generator

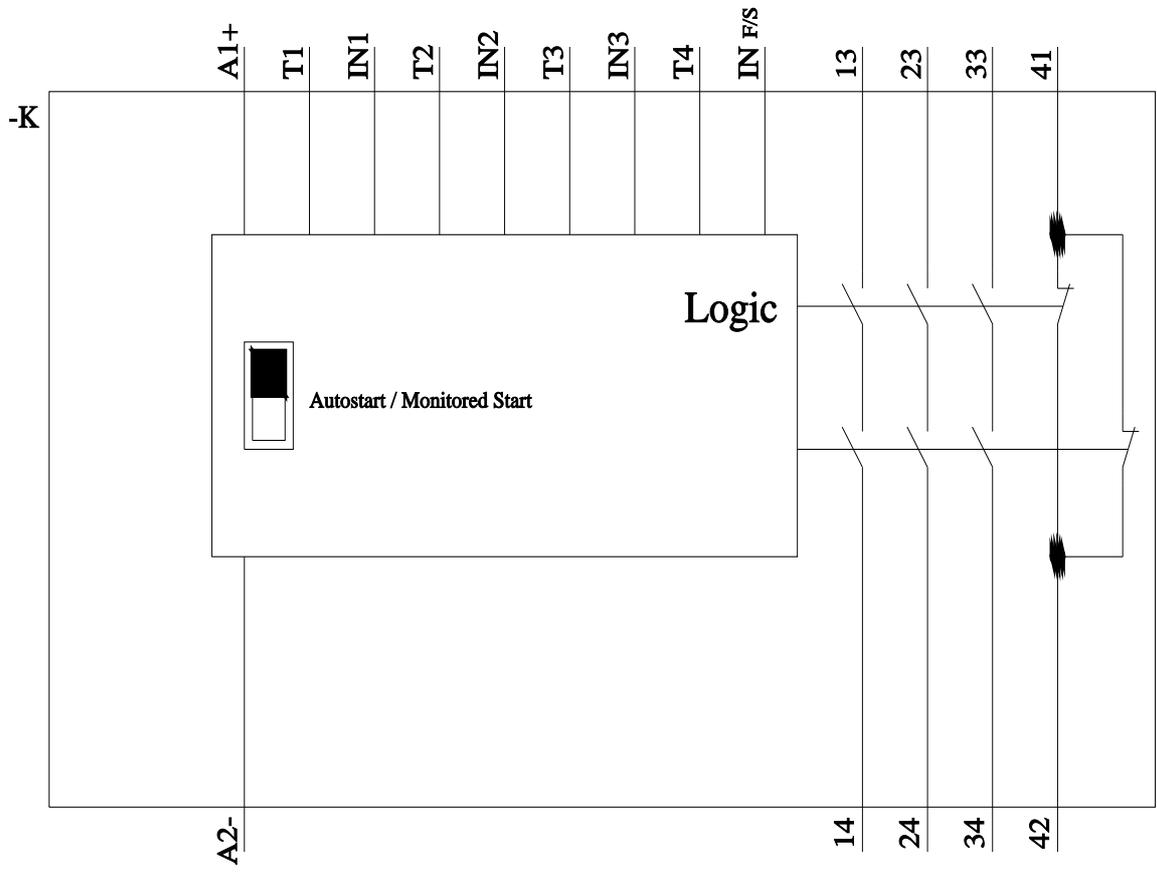
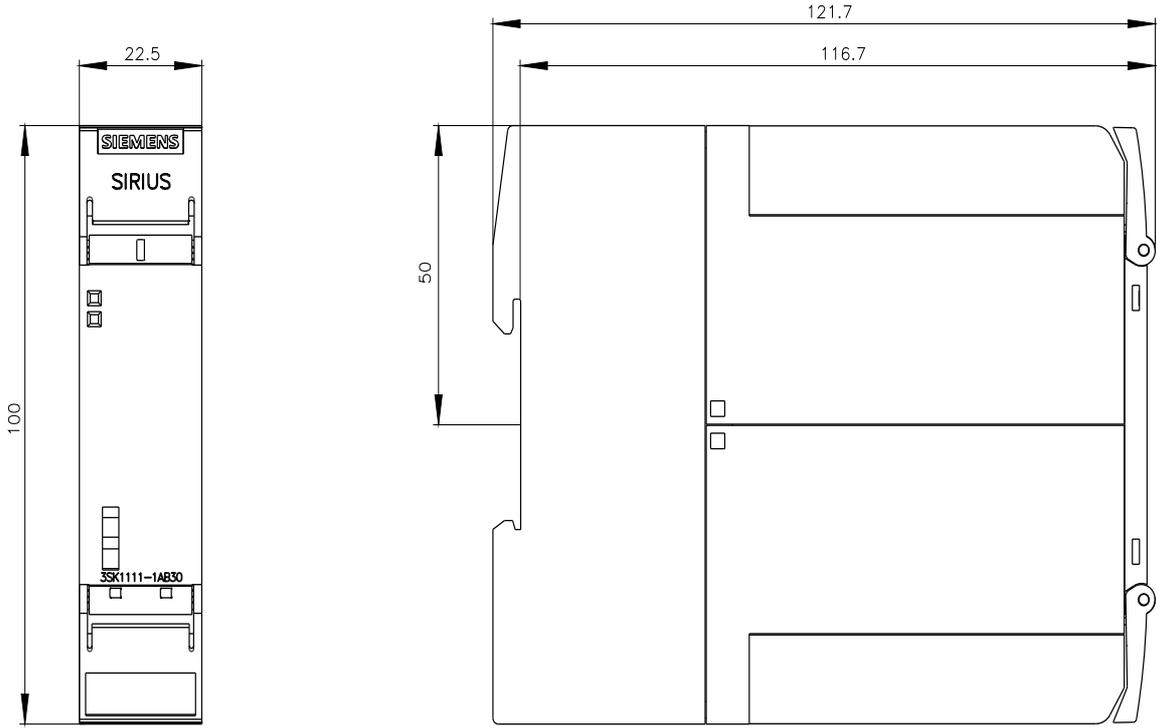
<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3SK1111-1AB30>

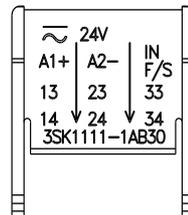
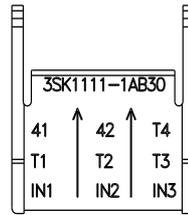
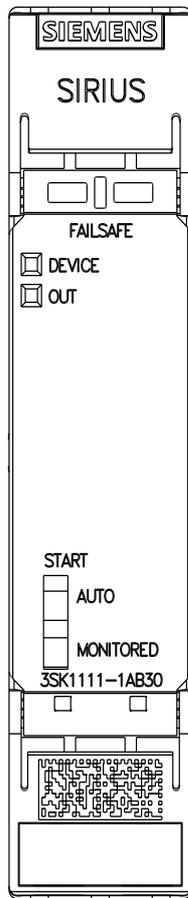
#### Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

<https://support.industry.siemens.com/cs/ww/en/ps/3SK1111-1AB30>

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

[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3SK1111-1AB30&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3SK1111-1AB30&lang=en)





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