



SIRIUS safety relay Basic unit Standard series Relay enabling circuits 3 NO contacts plus Relay signaling circuit 1 NC contact  $U_s = 110 - 240 \text{ V AC/DC } 50/60 \text{ Hz}$  Spring-type terminal (push-in)

product brand name	SIRIUS
product category	Safety relays
product designation	safety relays
design of the product	Relay enabling circuits
product type designation	3SK1
product line	Standard basic unit
<b>Product Function</b>	
product function parameterizable	Sensor floating / monitored start / automatic start
product function	
• automatic start	Yes
• light barrier monitoring	No
• protective door monitoring	Yes
• magnetically operated switch monitoring NC-NO	No
• magnetically operated switch monitoring NC-NC	Yes
• laser scanner monitoring	No
• light array monitoring	No
• EMERGENCY OFF function	Yes
• monitored start-up	Yes
• pressure-sensitive mat monitoring	No
suitability for interaction press control	No
suitability for operation device connector 3ZY12	No
suitability for use	
• monitoring of floating sensors	Yes
• monitoring of non-floating sensors	No
• position switch monitoring	Yes
• EMERGENCY-OFF circuit monitoring	Yes
• opto-electronic protection device monitoring	No
• magnetically operated switch monitoring	No
• safety switch	Yes
• safety-related circuits	Yes
<b>General technical data</b>	
certificate of suitability UL approval	Yes
product feature cross-circuit-proof	Yes
power loss [W] maximum	2.5 W
insulation voltage rated value	300 V
degree of pollution	3
overvoltage category	3
surge voltage resistance rated value	4 000 V
protection class IP of the enclosure	IP20
shock resistance	10g / 11 ms

vibration resistance according to IEC 60068-2-6	5 ... 500 Hz: 0.75 mm
operating frequency maximum	360 1/h
mechanical service life (operating cycles) typical	10 000 000
thermal current of the switching element with contacts maximum	5 A
reference code according to IEC 81346-2	F
Substance Prohibitance (Date)	11/05/2012
SVHC substance name	Lead - 7439-92-1 Lead monoxide (lead oxide) - 1317-36-8 2-methyl-1-(4-methylthiophenyl)-2-morpholinopropan-1-one - 71868-10-5 4,4'-isopropylidenediphenol (Bisphenol A, BPA) - 80-05-7
Weight	0.261 kg
<b>Ambient conditions</b>	
installation altitude at height above sea level maximum	4 000 m; Derating, see Product Notification 109792701
ambient temperature	
• 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>	
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.
EMC emitted interference	IEC 60947-5-1, Class A
<b>Safety related data</b>	
stop category according to IEC 60204-1	0
IEC 62061	
SIL Claim Limit (subsystem) according to EN 62061	3
Safety Integrity Level (SIL) according to IEC 62061	SIL 3
PFHD with high demand rate according to IEC 62061	1.5E-9 1/h
ISO 13849	
category according to EN ISO 13849-1	4
performance level (PL)	
• according to ISO 13849-1	PL e
IEC 61508	
Safety Integrity Level (SIL)	
• according to IEC 61508	3
safety device type according to IEC 61508-2	Type A
Average probability of failure on demand (PFDavg) with low demand rate acc. to IEC 61508	1E-6 1/y
PFDavg with low demand rate according to IEC 61508	1E-6
Safe failure fraction (SFF)	99 %
hardware fault tolerance according to IEC 61508	1
T1 value for proof test interval or service life according to IEC 61508	20 a
<b>Electrical Safety</b>	
touch protection against electrical shock	finger-safe
<b>Short-circuit protection</b>	
design of the fuse link	
• 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>	
design of input	
• 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>	
number of outputs as contact-affected switching element	
• 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	110 ms
• at DC maximum	130 ms
• at AC maximum	130 ms
<b>make time with automatic start after power failure</b>	
• typical	110 ms
• maximum	130 ms
<b>make time with monitored start</b>	
• typical	15 ms
• maximum	15 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	200 ms
• maximum	300 ms
<b>recovery time after opening of the safety circuits typical</b>	10 ms
<b>recovery time after power failure typical</b>	0.32 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	110 ... 240 V
• at 60 Hz rated value	110 ... 240 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>	110 ... 240 V
<b>operating range factor control supply voltage rated value of magnet coil at DC</b>	
• initial value	0.85
• full-scale value	1.1
<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	
• for grounded parts at the side	5 mm
Connections/ Terminals	
type of electrical connection	spring-loaded terminal (push-in)
wire length	
• for total of all sensor circuits with Cu 1.5 mm² and 150 nF/km maximum	2 000 m
type of connectable conductor cross-sections	
• 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)
• finely stranded without core end processing	1x (0.5 ... 1.5 mm²), 2x (0.5 ... 1.5 mm²)
• for AWG cables solid	1x (20 ... 16), 2x (20 ... 16)
• for AWG cables stranded	1x (20 ... 16), 2x (20 ... 16)
type of electrical connection plug-in socket	No
Approvals Certificates	
General Product Approval	



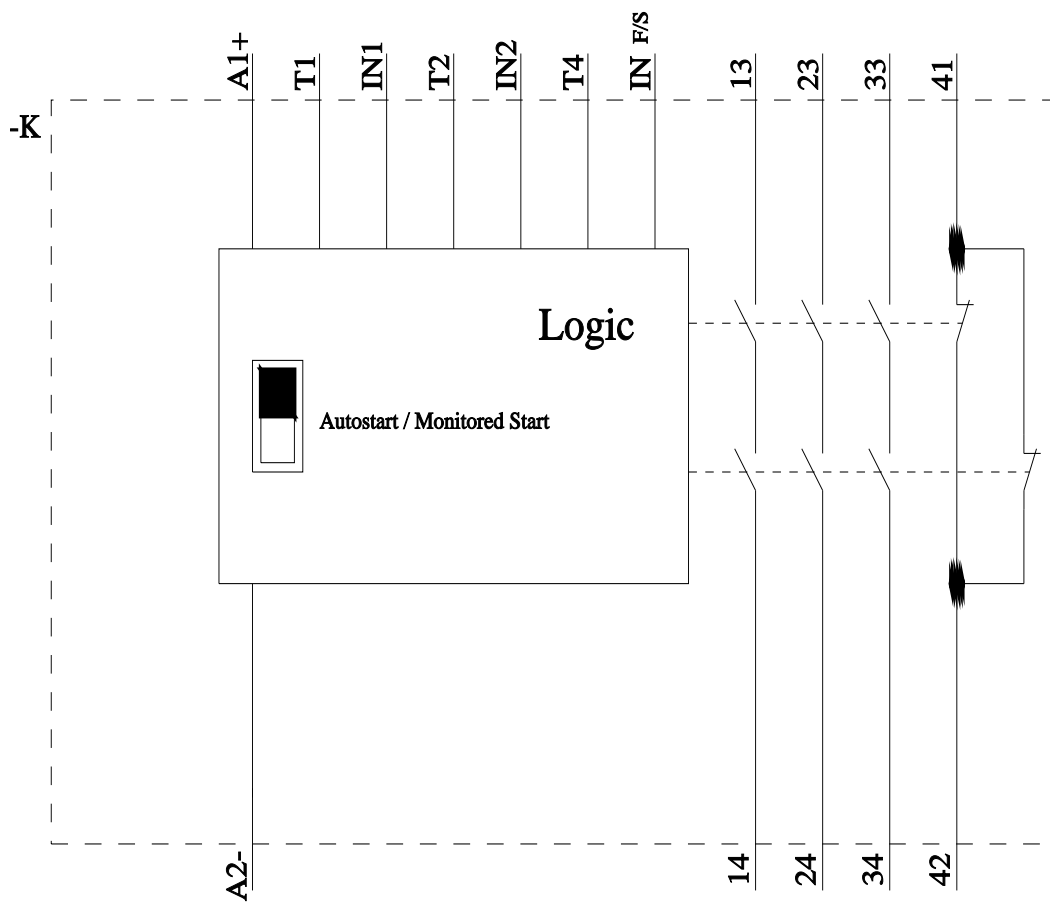
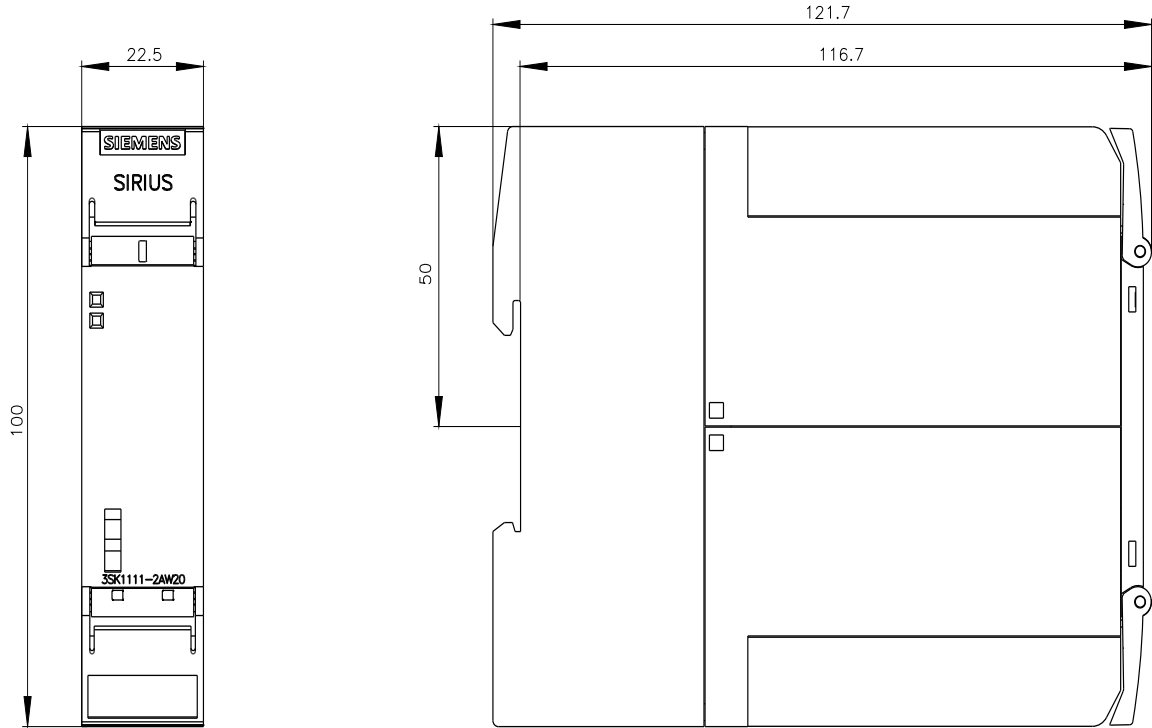
[Confirmation](#)

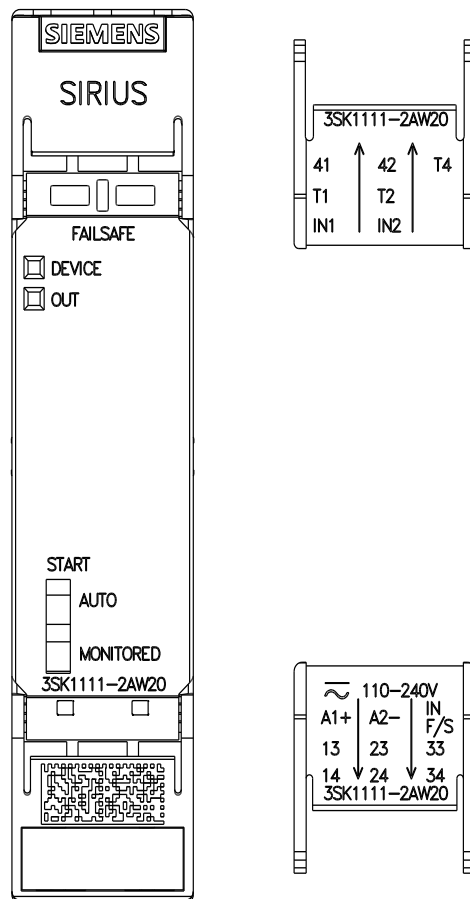


EMV	Functional Safety	Test Certificates	Marine / Shipping
	<a href="#">Type Examination Certificate</a>	<a href="#">Type Test Certificates/Test Report</a>	

Marine / Shipping	other	Railway	Environment
	<a href="#">Confirmation</a>	<a href="#">Confirmation</a>	<a href="#">Environmental Confirmations</a>

Further information
<p>Information on the packaging  <a href="https://support.industry.siemens.com/cs/ww/en/view/109813875">https://support.industry.siemens.com/cs/ww/en/view/109813875</a></p> <p>Information- and Downloadcenter (Catalogs, Brochures,...)  <a href="https://www.siemens.com/ic10">https://www.siemens.com/ic10</a></p> <p>Industry Mall (Online ordering system)  <a href="https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3SK1111-2AW20">https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3SK1111-2AW20</a></p> <p>Cax online generator  <a href="http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&amp;mlfb=3SK1111-2AW20">http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&amp;mlfb=3SK1111-2AW20</a></p> <p>Service&amp;Support (Manuals, Certificates, Characteristics, FAQs,...)  <a href="https://support.industry.siemens.com/cs/ww/en/ps/3SK1111-2AW20">https://support.industry.siemens.com/cs/ww/en/ps/3SK1111-2AW20</a></p> <p>Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)  <a href="http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3SK1111-2AW20&amp;lang=en">http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3SK1111-2AW20&amp;lang=en</a></p>





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