SIEMENS

Product data sheet 3SK1111-1AB30



SIRIUS SAFETY RELAY STANDARD SERIES DEVICE RELAY ENABLING CIRCUITS 3 NO CONTACTS + RELAY SIGNALING CIRCUIT 1 NC CONTACT US = 24 V AC/DC SCREW TERMINAL

General technical details:		
product brand name		SIRIUS
product designation		safety relays
protection class IP / of the housing		IP20
Protection against electrical shock		finger-safe
Insulation voltage / rated value	V	300
Ambient temperature		
during storage	°C	-40 +80
during operating	°C	-25 +60
Air pressure		
according to SN 31205	kPa	90 106
Relative humidity		
during operating phase	%	10 95
Installation altitude / at a height over sea level / maximum	m	2,000
Resistance against vibration / according to IEC 60068-2-6		5 500 Hz: 0,75 mm
Resistance against shock		10g / 11 ms
Impulse voltage resistance / rated value	V	4,000
EMC emitted interference		IEC 60947-5-1, IEC 61000
Installation environment relating to EMC		This product is suitable for Class B environments and can also be used in domestic environments.

Overvoltage class		Installation category III
Degree of pollution		3
Number of sensor inputs		
• 1-channel or 2-channel		1
Design of the cascading		none
Type of the safety-related wiring / of the inputs		single-channel and two-channel
Product feature / transverse contact-secure		Yes
Safety Integrity Level (SIL)		
according to IEC 61508		SIL3
Performance Level (PL)		
according to ISO 13849-1		е
Category / according to ISO 13849-1		4
Probability of dangerous failure per hour (PFHD) / with high demand rate / according to EN 62061	1/h	0.1700000000000004E-8
Average probability of failure on demand (PFDavg) / with low demand rate / according to IEC 61508	1/y	0.1E-5
T1 value / for proof test interval or service life / according to IEC 61508	а	20
Hardware fault tolerance / according to IEC 61508		1
Safety device type / according to IEC 61508-2		Type A
Number of outputs / as contact-affected switching element		
• as NC contact / for reporting function / instantaneous switching		1
• as NO contact / for reporting function / instantaneous switching		0
as NC contact / for reporting function / delayed switching		0
as NO contact / for reporting function / delayed switching		0
as NC contact / safety-related / instantaneous switching		0
as NO contact / safety-related / instantaneous switching		3
as NC contact / safety-related / delayed switching		0
Number of outputs / as contact-less semiconductor switching element		
safety-related		
delayed switching		0
• non-delayed		0
for reporting function		
• non-delayed		0
Stop category / according to DIN EN 60204-1		0

General technical details:		
Design of the input		
 cascading-input/functional switching 		No
• feedback input		Yes

Design of the electrical connection / jumper socket	• start input		Yes
Switching capacity current of the NO contacts of the relay outputs *at DC-13 at 24 V at 115 V at 230 V of the NC contacts of the relay outputs *at DC-13 at 24 V of the NC contacts of the relay outputs *at DC-13 at 24 V at 115 V at 230 V of the NC contacts of the relay outputs *at DC-13 at 24 V at 115 V at 115 V at 230 V A	Design of the electrical connection / jumper socket		No
• of the NO contacts of the relay outputs • at DC-13 • at 24 V • at 115 V • at 230 V • at 115 V • at 230 V • at 115 V • at 230 V • of the NC contacts of the relay outputs • at DC-13 • at 24 V • at 115 V • at 230 V • of the NC contacts of the relay outputs • at DC-13 • at 24 V • at 115 V • at 230 V • at A DC-15 • at 115 V • at 230 V • at A DC-15 • at 115 V • at 230 V • at 115 V • at 230 V • at 115 V • at 230 V • A D.1 Thermal current / of the contact-affected switching element / maximum Mechanical operating cycles as operating time / typical Design of the fuse link / for short-circuit protection of the NO contacts of the relay outputs / required Cable length / between sensor and electronic evaluation device / with Cu 1.5 mm² and 150 nF/km / maximum Make time / with automatic start • typical Make time / with automatic start / after mains power cut • typical Make time / with nonitored start • maximum ms 200 ms 320 Make time / with monitored start • maximum ms 200 ms 320 Make time / with nonitored start • maximum ms 200 ms 320 Make time / with monitored start • maximum ms 200 ms 320 Make time / with monitored start • maximum ms 200 ms 15 Backsilde delay time / atter opening of the safety circuits / typical Backsilde delay time / atter opening of the safety circuits / typical	Operating cycles / maximum	1/h	360
* at DC-13 * at 24 V * at 115 V * at 230 V * at 230 V * at 24 DC-15 * at 115 V * at 230 V * of the NC contacts of the relay outputs * at DC-13 * at 24 V * at 115 V * at 230 V * at AC-15 * at 115 V * at 230 V * at AC-15 * at 115 V * at 230 V * at AC-15 * at 115 V * at 230 V * at AC-15 * at 115 V * at 300 V * at AC-15 * at 115 V * at 230 V * at 115 V * at 250	Switching capacity current		
- at 24 V - at 115 V - at 230 V - at 230 V - at 115 V - at 230 V - of the NC contacts of the relay outputs - at 24 V - at 115 V - at 230 V - of the NC contacts of the relay outputs - at 15 V - at 24 V - at 115 V - at 24 V - at 115 V - at 250	of the NO contacts of the relay outputs		
- at 115 V - at 230 V - at AC-15 - at 115 V - at 230 V - of the NC contacts of the relay outputs - at 230 V - of the NC contacts of the relay outputs - at 230 V - at 115 V - at 230 V - at 115 V - at 230 V - at 115 V - at 230 V - at AC-15 - at 115 V - at 230 V - at AC-15 - at 115 V - at 230 V - at 320 V - a	• at DC-13		
• at 230 V • at AC-15 • at 115 V • at 230 V • of the NC contacts of the relay outputs • at DC-13 • at 24 V • at 115 V • at 230 V • of the NC contacts of the relay outputs • at 115 V • at 230 V • at AC-15 • at 115 V • at 230 V • at AC-15 • at 115 V • at 230 V • A • 1.5 Thermal current / of the contact-affected switching element / maximum Mechanical operating cycles as operating time / typical Design of the fuse link / for short-circuit protection of the NO contacts of the relay outputs / required Cable length / between sensor and electronic evaluation device / with Cu 1.5 mm² and 150 nF/km / maximum Make time / with automatic start • typical • for DC / maximum Make time / with automatic start / after mains power cut • typical • maximum Make time / with nonitored start • maximum Make time / with monitored start • maximum Make time / with m	• at 24 V	Α	5
• at AC-15 • at 115 V • at 230 V • of the NC contacts of the relay outputs • at DC-13 • at 24 V • at 115 V • at 230 V • A A A 1 • at 24 V • at 115 V A A A 2 • at 115 V A A A A A A A A A A A A A A A A A A A	• at 115 V	Α	0.2
• at 115 V • at 230 V • of the NC contacts of the relay outputs • at DC-13 • at 24 V • at 115 V • at 230 V • at AC-15 • at 115 V • at 230 V • at AC-16 • at 115 V • at 230 V • at AC-15 • at 115 V • at 230 V • A	• at 230 V	Α	0.1
• at 230 V • of the NC contacts of the relay outputs • at DC-13 • at 24 V • at 115 V • at 230 V • at 15 V • at 115 V • at 230 V • A	• at AC-15		
• of the NC contacts of the relay outputs • at DC-13 • at 24 V • at 115 V • at 230 V • at 230 V • at 115 V • at 115 V • at 115 V • at 115 V • at 230 V • at 250 V • at 250 V Thermal current / of the contact-affected switching element / maximum Mechanical operating cycles as operating time / typical Design of the fuse link / for short-circuit protection of the NO contacts of the relay outputs / required Cable length / between sensor and electronic evaluation device / with Cu 1.5 mm² and 150 nf/km / maximum Make time / with automatic start • typical • for DC / maximum • for AC / maximum Make time / with automatic start / after mains power cut • typical • maximum • maximum Make time / with monitored start • maximum • ms 200 Make time / with monitored start • maximum • ms 200 Make time / with monitored start • maximum • ms 200 Make time / with monitored start • maximum • ms 200 Make time / with monitored start • maximum • ms 200 Make time / with monitored start • maximum • ms 200 Make time / with automatic start / after opening of the safety circuits / typical Backslide delay time / after opening of the safety circuits / typical Backslide delay time / at mains power cut	• at 115 V	Α	4
• at DC-13 • at 24 V • at 115 V • at 230 V • at AC-15 • at 115 V • at 230 V A A D.1 • at AC-15 • at 115 V • at 230 V A A 1.5 Thermal current / of the contact-affected switching element / maximum Mechanical operating cycles as operating time / typical Design of the fuse link / for short-circuit protection of the NO contacts of the relay outputs / required Cable length / between sensor and electronic evaluation device / with Cu 1.5 mm² and 150 nF/km / maximum Make time / with automatic start • typical • for DC / maximum Aske time / with automatic start / after mains power cut • typical • maximum Make time / with monitored start • maximum ms 200 Make time / with monitored start • maximum ms 200 Make time / with monitored start • maximum ms 200 Subject ms 200 Make time / with monitored start • maximum ms 200 Subject ms 320 Make time / with monitored start • maximum ms 320 Make time / with monitored start • maximum ms 320 Make time / with monitored start • maximum ms 320 Make time / with monitored start • maximum ms 320 Make time / with monitored start • maximum ms 320 Make time / with monitored start • maximum ms 320 Make time / with monitored start • maximum ms 320 Make time / with monitored start • maximum ns 320 Make time / with monitored start • maximum ns 320 Make time / after opening of the safety circuits / typical	• at 230 V	Α	4
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*at AC-15 *at 115 V *at 230 V A 1.5 Thermal current / of the contact-affected switching element / maximum Mechanical operating cycles as operating time / typical Design of the fuse link / for short-circuit protection of the NO contacts of the relay outputs / required Cable length / between sensor and electronic evaluation device / with Cu 1.5 mm² and 150 nF/km / maximum Make time / with automatic start *typical *for DC / maximum *ms 320 Make time / with automatic start / after mains power cut *typical *maximum *ms 200 Make time / with automatic start / after mains power cut *typical *maximum *ms 320 Make time / with monitored start *maximum *ms 320 Make time / with monitored start *maximum *ms 320 Make time / with monitored start *maximum *ms 15 Backslide delay time / at mains power cut *typical Backslide delay time / at mains power cut *typical *ms 10 *ms 15	• at 115 V	Α	0.2
*at 115 V *at 230 V A 1.5 Thermal current / of the contact-affected switching element / maximum Mechanical operating cycles as operating time / typical Design of the fuse link / for short-circuit protection of the NO contacts of the relay outputs / required Cable length / between sensor and electronic evaluation device / with Cu 1.5 mm² and 150 nF/km / maximum Make time / with automatic start • typical • for DC / maximum **ms 200 Make time / with automatic start / after mains power cut • typical • maximum **ms 200 Make time / with automatic start / after mains power cut • typical • maximum **ms 320 Make time / with monitored start • maximum **ms 200 **ms 320 **Make time / with monitored start • maximum **ms 320 **ms 320 **Make time / with monitored start • maximum **ms 320 **ms 320 **Make time / with monitored start • maximum **ms 32	• at 230 V	Α	0.1
* at 230 V Thermal current / of the contact-affected switching element / maximum Mechanical operating cycles as operating time / typical Design of the fuse link / for short-circuit protection of the NO contacts of the relay outputs / required Cable length / between sensor and electronic evaluation device / with Cu 1.5 mm² and 150 nF/km / maximum Make time / with automatic start • typical • for DC / maximum for AC / maximum Make time / with automatic start / after mains power cut • typical • maximum Make time / with monitored start • typical • maximum ms 320 Make time / with monitored start • maximum ms 200 Make time / with monitored start • maximum ms 200 Make time / with monitored start • maximum ms 20 Make time / with monitored start • maximum ms 20 Make time / with monitored start • maximum ms 15 Backslide delay time / at mains power cut	• at AC-15		
Thermal current / of the contact-affected switching element / maximum Mechanical operating cycles as operating time / typical Design of the fuse link / for short-circuit protection of the NO contacts of the relay outputs / required Cable length / between sensor and electronic evaluation device / with Cu 1.5 mm² and 150 nF/km / maximum Make time / with automatic start • typical • for DC / maximum • for AC / maximum Make time / with automatic start / after mains power cut • typical • maximum Make time / with monitored start • typical • maximum ms	• at 115 V	Α	1.5
maximum 10,000,000 Mechanical operating cycles as operating time / typical 10,000,000 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 Cable length / between sensor and electronic evaluation device / with Cu 1.5 mm² and 150 nF/km / maximum m 2,000 Make time / with automatic start typical for DC / maximum ms 320 Make time / with automatic start / after mains power cut ms 320 • typical ms 200 • maximum ms 320 Make time / with automatic start / after mains power cut ms 200 • maximum ms 320 Make time / with monitored start ms 320 • maximum ms 20 • typical ms 15 • typical ms 15 • typical ms 15 • typical ms 15 <td>• at 230 V</td> <td>Α</td> <td>1.5</td>	• at 230 V	Α	1.5
Design of the fuse link / for short-circuit protection of the NO contacts of the relay outputs / required Cable length / between sensor and electronic evaluation device / with Cu 1.5 mm² and 150 nF/km / maximum Make time / with automatic start • typical • for AC / maximum Make time / with automatic start / after mains power cut • typical • ms 200 Make time / with automatic start / after mains power cut • typical • ms 200 Make time / with monitored start • maximum ms 320 Make time / with monitored start • maximum ms 20 Make time / with monitored start • maximum ms 20 Sackslide delay time / after opening of the safety circuits / typical Backslide delay time / at mains power cut		А	5
contacts of the relay outputs / required breaker type B: 2A or circuit breaker type C: 1A Cable length / between sensor and electronic evaluation device / with Cu 1.5 mm² and 150 nF/km / maximum Make time / with automatic start • typical • for DC / maximum • for AC / maximum Make time / with automatic start / after mains power cut • typical • maximum ms 200 Make time / with automatic start / after mains power cut • typical • maximum ms 200 Make time / with monitored start • maximum ms 20 • typical • maximum • typical Backslide delay time / after opening of the safety circuits / typical Backslide delay time / at mains power cut	Mechanical operating cycles as operating time / typical		10,000,000
/ with Cu 1.5 mm² and 150 nF/km / maximum Make time / with automatic start • typical • for DC / maximum • for AC / maximum Make time / with automatic start / after mains power cut • typical • maximum Make time / with monitored start • maximum • typical • maximum ms 320 Make time / with monitored start • maximum typical ms 20 • typical ms 15 Backslide delay time / after opening of the safety circuits / typical Backslide delay time / at mains power cut	•		
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• for DC / maximum • for AC / maximum ms 320 Make time / with automatic start / after mains power cut • typical • maximum ms 320 Make time / with monitored start • maximum ms 20 • typical ms 20 • typical ms 15 Backslide delay time / after opening of the safety circuits / typical Backslide delay time / at mains power cut	Make time / with automatic start		
• for AC / maximum Make time / with automatic start / after mains power cut • typical • maximum ms	• typical	ms	200
Make time / with automatic start / after mains power cut • typical • maximum Make time / with monitored start • maximum • maximum • typical Backslide delay time / after opening of the safety circuits / typical Backslide delay time / at mains power cut	• for DC / maximum	ms	320
 typical maximum ms 320 Make time / with monitored start maximum typical ms 20 typical ms 15 Backslide delay time / after opening of the safety circuits / typical ms 10 Backslide delay time / at mains power cut 	• for AC / maximum	ms	320
maximum ms 320 Make time / with monitored start maximum ms 20 typical ms 15 Backslide delay time / after opening of the safety circuits / typical Backslide delay time / at mains power cut ms 10 ms ms ms ms ms ms ms m	Make time / with automatic start / after mains power cut		
Make time / with monitored start • maximum • typical Backslide delay time / after opening of the safety circuits / typical Backslide delay time / at mains power cut	• typical	ms	200
maximum typical ms 15 Backslide delay time / after opening of the safety circuits / typical Backslide delay time / at mains power cut ms 10 The safety circuits / typical	• maximum	ms	320
• typical ms 15 Backslide delay time / after opening of the safety circuits / typical ms 10 Backslide delay time / at mains power cut	Make time / with monitored start		
Backslide delay time / after opening of the safety circuits / ms 10 typical Backslide delay time / at mains power cut	• maximum	ms	20
Backslide delay time / at mains power cut	• typical	ms	15
		ms	10
• typical ms 65	Backslide delay time / at mains power cut		
	• typical	ms	65

• maximum	ms	75
Recovery time / after opening of the safety circuits / typical	ms	10
Recovery time / after mains power cut / typical	S	0.09
Pulse duration		
• of the sensor input / minimum	ms	150
of the ON pushbutton input / minimum	s	0.015

Control circuit:		
Type of voltage / of the controlled supply voltage		AC/DC
Control supply voltage frequency		
• 1 / rated value	Hz	50
• 2 / rated value	Hz	60
Control supply voltage		
• for DC / rated value	V	24
• at 50 Hz / at AC / rated value	V	24
• at 60 Hz / at AC / rated value	V	24
Operating range factor control supply voltage rated value / of the magnet coil		
• at 50 Hz		
• for AC		0.85 1.1
• at 60 Hz		
• for AC		0.85 1.1
• for DC		0.85 1.2
Active power loss / typical	W	2

Installation/mounting/dimensions:		
mounting position		any
Distance, to be maintained, to earthed part / sidewards	mm	5
Distance, to be maintained, to the ranks assembly / sidewards	mm	0
Type of mounting		corous and anon an mounting
		screw and snap-on mounting
Width	mm	22.5
	mm mm	, ,

Connections:	
Design of the electrical connection	screw-type terminals
Type of the connectable conductor cross-section	
• solid	1x (0.5 2.5 mm²), 2x (1.0 1.5 mm²)
finely stranded	
with wire end processing	1x (0.5 2.5 mm²), 2x (0.5 1.0 mm²)

Type of the connectable conductor cross-section / for AWG conductors

solid

1x (20 ... 14), 2x (18 ... 16)

Product Function:		
Product function / parameterizable	Sensor floating / sensor non-floating, monitored start / autostart	
Suitability for use / device connector 3ZY12	No	
Suitability for interaction / pressing control	No	
Suitability for use		
safety cut-out switch	Yes	
monitoring of floating sensors	Yes	
 monitoring of non-floating sensors 	Yes	
 magnetically operated switches monitoring 	Yes	
safety-related circuits	Yes	

Certificates/approvals:

Verification of suitability

• TÜV (German technical inspectorate) certificate

• UL-registration

Yes

Yes

General Product Approval

EMC

Declaration of Conformity

Test Certificates









Type Test
Certificates/Test
Report

Further information:

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

http://www.siemens.com/industrial-controls/catalogs

Industry Mall (Online ordering system)

http://www.siemens.com/industrial-controls/mall

Cax online generator:

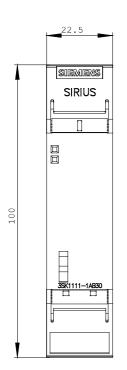
http://www.siemens.com/cax

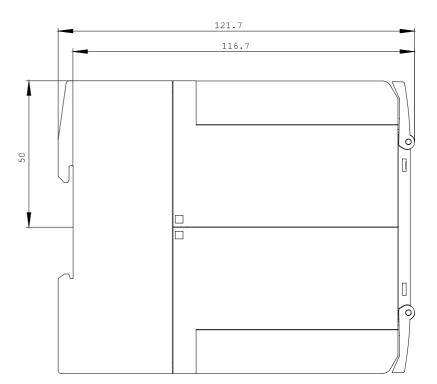
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

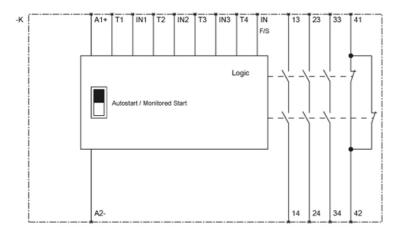
http://support.automation.siemens.com/WW/view/en/3SK1111-1AB30/all

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

http://www.automation.siemens.com/bilddb/cax_en.aspx?mlfb=3SK1111-1AB30







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