



SIRIUS SAFETY RELAY STANDARD SERIES DEVICE
RELAY ENABLING CIRCUITS 3 NO CONTACTS + RELAY
SIGNALING CIRCUIT 1 NC CONTACT US = 24 V AC/DC
SPRING-LOADED 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		e
Category / according to ISO 13849-1		4
Probability of dangerous failure per hour (PFHD) / with high demand rate / according to EN 62061	1/h	0.17000000000000004E-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	a	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 • as NO contact / for reporting function / instantaneous switching • as NC contact / for reporting function / delayed switching • as NO contact / for reporting function / delayed switching • as NC contact / safety-related / instantaneous switching • as NO contact / safety-related / instantaneous switching • as NC contact / safety-related / delayed switching		1 0 0 0 0 3 0
Number of outputs / as contact-less semiconductor switching element • safety-related • delayed switching • non-delayed • for reporting function • non-delayed		0 0 0
Stop category / according to DIN EN 60204-1		0

General technical details:

Design of the input

- cascading-input/functional switching
- feedback input

No
Yes

• start input		Yes
Design of the electrical connection / jumper socket		No
Operating cycles / maximum	1/h	360
Switching capacity current		
• of the NO contacts of the relay outputs		
• at DC-13		
• at 24 V	A	5
• at 115 V	A	0.2
• at 230 V	A	0.1
• at AC-15		
• at 115 V	A	4
• at 230 V	A	4
• of the NC contacts of the relay outputs		
• at DC-13		
• at 24 V	A	1
• at 115 V	A	0.2
• at 230 V	A	0.1
• at AC-15		
• at 115 V	A	1.5
• at 230 V	A	1.5
Thermal current / of the contact-affected switching element / maximum	A	5
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	ms	200
• for DC / maximum	ms	320
• for AC / maximum	ms	320
Make time / with automatic start / after mains power cut		
• typical	ms	200
• maximum	ms	320
Make time / with monitored start		
• maximum	ms	20
• typical	ms	15
Backslide delay time / after opening of the safety circuits / typical	ms	10
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		0.85 ... 1.1
• for AC		
• at 60 Hz		0.85 ... 1.1
• for AC		
• 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 / sideways	mm	5
Distance, to be maintained, to the racks assembly / sideways	mm	0
Type of mounting		screw and snap-on mounting
Width	mm	22.5
Height	mm	100
Depth	mm	121.6

Connections:

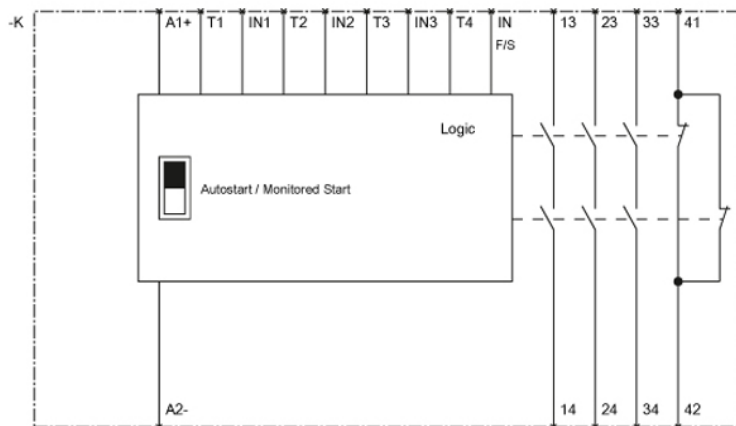
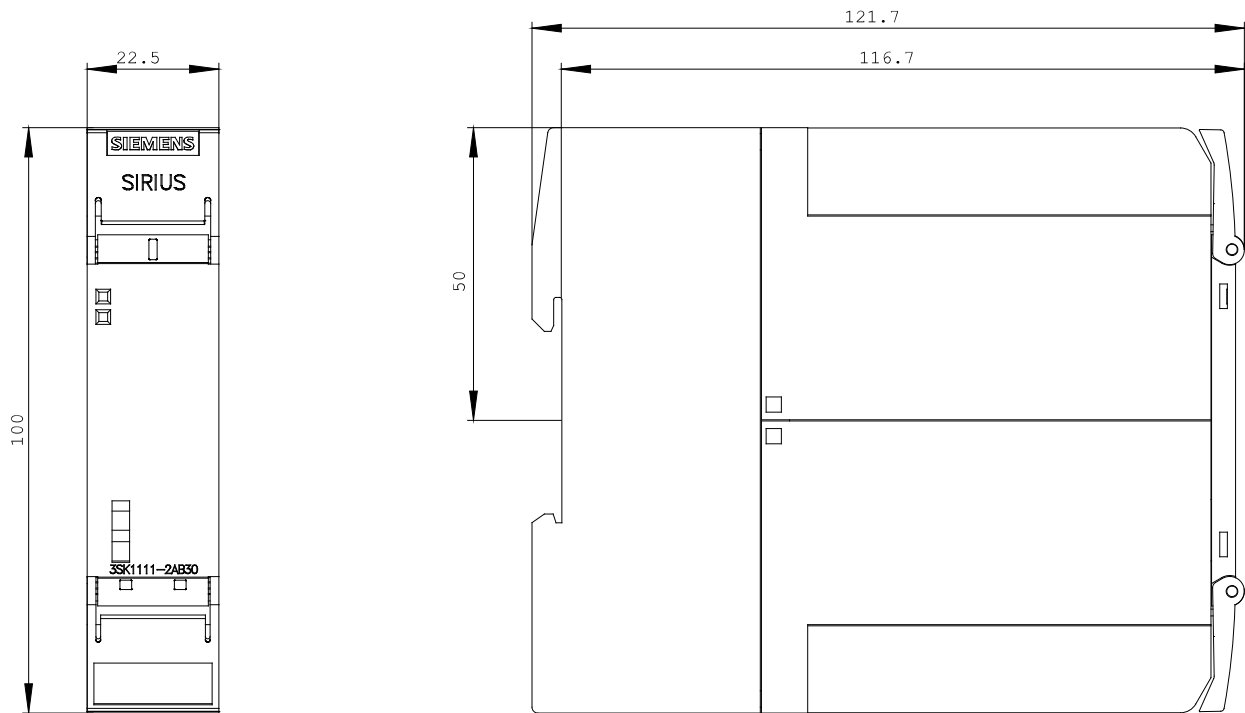
Design of the electrical connection		spring-loaded terminals
Type of the connectable conductor cross-section		
• solid		1x (0.5 ... 1.5 mm ²), 2x (0.5 ... 1.5 mm ²)
• finely stranded		
• with wire end processing		1x (0.5 ... 1.0 mm ²), 2x (0.5 ... 1.0 mm ²)
• without wire end processing		1x (0.5 ... 1.5 mm ²), 2x (0.5 ... 1.5 mm ²)

Type of the connectable conductor cross-section / for AWG conductors <ul style="list-style-type: none"> • solid • stranded 		1x (20 ... 16), 2x (20 ... 16)
		1x (20 ... 16), 2x (20 ... 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 <ul style="list-style-type: none"> • safety cut-out switch • monitoring of floating sensors • monitoring of non-floating sensors • magnetically operated switches monitoring • safety-related circuits 		Yes Yes Yes Yes Yes

Certificates/approvals:				
Verification of suitability <ul style="list-style-type: none"> • 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/3SK1111-2AB30/all
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, ...) http://www.automation.siemens.com/bilddb/cax_en.aspx?mlfb=3SK1111-2AB30



last change:

Mar 11, 2013