



SIRIUS SAFETY RELAY BASIC UNIT ADVANCED SERIES  
 WITH TIME DELAY 0.05-3S RELAY ENABLING CIRCUITS  
 2 INSTANTANEOUS NO CONTACTS 2 DELAYED NO  
 CONTACTS US = 24 V DC SPRING-LOADED TERMINAL

General technical data:		
product brand name		SIRIUS
Product designation		safety relays
Design of the product		For autonomous safety applications
protection type IP / of the enclosure		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, Class A

<b>Installation environment relating to EMC</b>		This product is suitable for Class A environments only. It can cause undesired radio-frequency interference in residential environments. If this is the case, the user must take appropriate measures.
<b>Overvoltage class</b>		Installation category III
<b>Degree of pollution</b>		3
<b>Number of sensor inputs / 1-channel or 2-channel</b>		1
<b>Design of the cascading</b>		yes
<b>Type of the safety-related wiring / of the inputs</b>		single-channel and two-channel
<b>Product feature / transverse contact-secure</b>		Yes
<b>Safety Integrity Level (SIL)</b>		
• according to IEC 61508		SIL3
• for delayed release circuit / according to IEC 61508		SIL3
<b>Performance Level (PL)</b>		
• according to EN ISO 13849-1		e
• for delayed release circuit / according to EN ISO 13849-1		e
<b>Category / according to EN ISO 13849-1</b>		4
<b>Safe failure fraction (SFF)</b>	%	99
<b>Probability of dangerous failure per hour (PFHD) / with high demand rate / according to EN 62061</b>	1/h	0.37E-8
<b>Average probability of failure on demand (PFDavg) / with low demand rate / according to IEC 61508</b>	1/y	0.7E-5
<b>T1 value / for proof test interval or service life / according to IEC 61508</b>	a	20
<b>Hardware fault tolerance / according to IEC 61508</b>		1
<b>Safety device type / according to IEC 61508-2</b>		Type B
<b>Number of outputs / as contact-affected switching element</b>		
• as NC contact / for reporting function / instantaneous switching		0
• 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		2
• as NC contact / safety-related / delayed switching		0
• as NO contact / safety-related / delayed switching		2
<b>Number of outputs / as contact-less semiconductor switching element</b>		
• safety-related		
• delayed switching		0
• non-delayed		0
• for reporting function / non-delayed		0
<b>Stop category / according to DIN EN 60204-1</b>		0 / 1

**General technical data:**

<b>Design of the input</b>		
• cascading-input/functional switching		Yes
• feedback input		Yes
• start input		Yes
<b>Design of the electrical connection / jumper socket</b>		No
<b>Operating cycles / maximum</b>	1/h	360
<b>Switching capacity current</b>		
• of the NO contacts of the relay outputs		
• at DC-13		
• at 24 V	A	3
• at 115 V	A	0.2
• at 230 V	A	0.1
• at AC-15		
• at 115 V	A	3
• at 230 V	A	3
<b>Thermal current / of the contact-affected switching element / maximum</b>	A	5
<b>Mechanical operating cycles as operating time / typical</b>		10,000,000
<b>Design of the fuse link / for short-circuit protection of the NO contacts of the relay outputs / required</b>		gL/gG: 6A or circuit breaker type A: 3A or circuit breaker type B: 2A or circuit breaker type C: 1A
<b>Cable length</b>		
• with Cu 1.5 mm <sup>2</sup> and 150 nF/km / per sensor circuit / maximum	m	4,000
<b>Make time / with automatic start</b>		
• for DC / maximum	ms	110
<b>Make time / with automatic start / after mains power cut</b>		
• typical	ms	6,500
• maximum	ms	6,500
<b>Make time / with monitored start</b>		
• maximum	ms	110
<b>Backslide delay time / after opening of the safety circuits / typical</b>	ms	40
<b>Backslide delay time / at mains power cut</b>		
• typical	ms	30
• maximum	ms	40
<b>Adjustable backslide delay time</b>		
• after opening of the safety circuits	s	0.05 ... 3
<b>Recovery time / after opening of the safety circuits / typical</b>	ms	30
<b>Recovery time / after mains power cut / typical</b>	s	6.5
<b>Pulse duration</b>		

- of the sensor input / minimum
- of the ON pushbutton input / minimum

ms	75
s	0.15

#### Control circuit/ Control:

<b>Voltage type / of control feed voltage</b>		DC
<b>Control supply voltage</b> • for DC / rated value	V	24
<b>Operating range factor control supply voltage rated value / of the magnet coil</b> • for DC		0.8 ... 1.2
<b>Active power loss / typical</b>	W	2.5

#### Installation/ mounting/ dimensions:

<b>mounting position</b>		any
<b>Distance, to be maintained, to earthed part / sideways</b>	mm	5
<b>Distance, to be maintained, to the ranks assembly / sideways</b>	mm	0
<b>Mounting type</b>		screw and snap-on mounting
<b>Width</b>	mm	22.5
<b>Height</b>	mm	100
<b>Depth</b>	mm	121.6

#### Connections/ terminals:

<b>Design of the electrical connection</b>		spring-loaded terminals
<b>Type of the connectable conductor cross-section</b> • solid • finely stranded • with wire end processing • without wire end processing		1x (0.5 ... 1.5 mm <sup>2</sup> ), 2x (0.5 ... 1.5 mm <sup>2</sup> ) 1x (0.5 ... 1.0 mm <sup>2</sup> ), 2x (0.5 ... 1.0 mm <sup>2</sup> ) 1x (0.5 ... 1.5 mm <sup>2</sup> ), 2x (0.5 ... 1.5 mm <sup>2</sup> )
<b>Type of the connectable conductor cross-sections / for AWG conductors</b> • solid • stranded		1x (20 ... 16), 2x (20 ... 16) 1x (20 ... 16), 2x (20 ... 16)

#### Product Function:

<b>Product function / parameterizable</b>		Sensor floating / sensor non-floating, monitored start / autostart, 1-channel / 2-channel sensor connection, cross-circuit detection, startup testing, antivalent sensors, 2-hand switches, time delay
<b>Suitability for use / device connector 3ZY12</b>		Yes
<b>Suitability for interaction / pressing control</b>		Yes
<b>Suitability for use</b> • safety cut-out switch • monitoring of floating sensors		Yes Yes

- monitoring of non-floating sensors
- magnetically operated switches monitoring
- safety-related circuits

Yes  
Yes  
Yes

#### Certificates/ approvals:

##### General Product Approval

##### EMC

##### Declaration of Conformity

##### Test Certificates



[Type Test  
Certificates/Test  
Report](#)

CCC

CSA

UL

C-TICK

EG-Konf.

#### 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

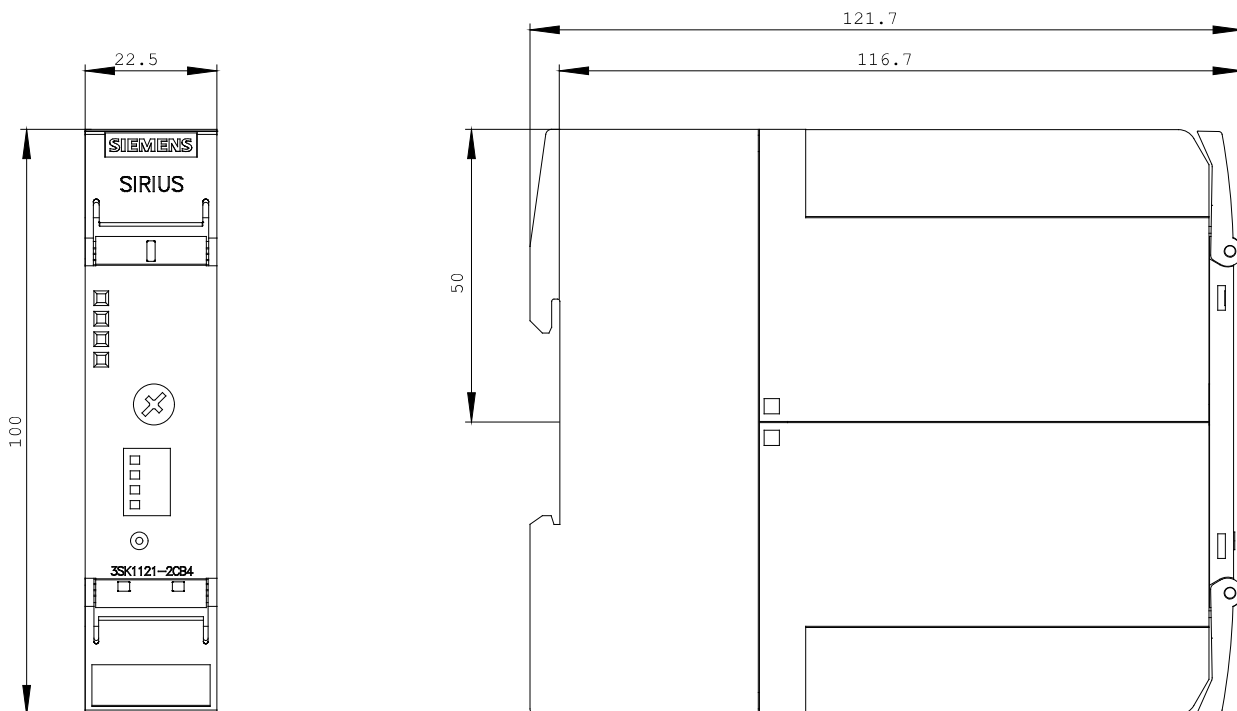
<http://www.siemens.com/cax>

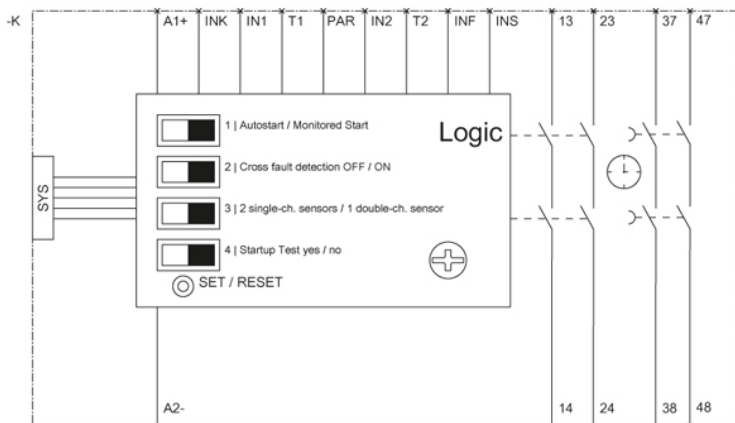
##### Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

<http://support.automation.siemens.com/WW/view/en/3SK1121-2CB41/all>

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

[http://www.automation.siemens.com/bilddb/cax\\_en.aspx?mlfb=3SK1121-2CB41](http://www.automation.siemens.com/bilddb/cax_en.aspx?mlfb=3SK1121-2CB41)





last change:

Apr 14, 2014