

SIRIUS SAFETY RELAY BASIC UNIT ADVANCED SERIES WITH
TIME DELAY 0.5-30S RELAY ENABLING CIRCUITS 2
INSTANTANEOUS NO CONTACTS 2 DELAYED NO CONTACTS
US = 24 V DC SPRING-LOADED TERMINAL



Figure similar

General technical data:	
product brand name	SIRIUS
Product designation	Advanced basic units
Design of the product	For autonomous safety applications
Protection class IP of the enclosure	IP20
Protection against electrical shock	finger-safe
Insulation voltage rated value	300 V
Ambient temperature	
• during storage	-40 ... +80 °C
• during operation	-25 ... +60 °C
Air pressure acc. to SN 31205	90 kPa ... 106 kPa
Relative humidity during operation	10 ... 95 %
Installation altitude at height above sea level maximum	2 000 m
Vibration resistance acc. to IEC 60068-2-6	5 ... 500 Hz: 0,75 mm
Shock resistance	10g / 11 ms
Surge voltage resistance rated value	4 000 V
EMC emitted interference	IEC 60947-5-1, Class A

Installation environment regarding EMC	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.
Overvoltage category	3
Degree of pollution	3
Number of sensor inputs 1-channel or 2-channel	1
Design of the cascading	yes
Type of the safety-related wiring of the inputs	single-channel and two-channel
Product feature cross-circuit-proof	Yes
Safety Integrity Level (SIL)	
• acc. to IEC 61508	SIL3
• for delayed release circuit acc. to IEC 61508	SIL3
Performance level (PL)	
• acc. to EN ISO 13849-1	e
• for delayed release circuit acc. to EN ISO 13849-1	e
Category acc. to EN ISO 13849-1	4
Safe failure fraction (SFF)	99 %
PFHD with high demand rate acc. to EN 62061	0.0000000037 1/h
PFDavg with low demand rate acc. to IEC 61508	0.000007
T1 value for proof test interval or service life acc. to IEC 61508	20 y
Hardware fault tolerance acc. to IEC 61508	1
Safety device type acc. to IEC 61508-2	Type B
Number of outputs as contact-affected switching element	
• as NC contact	
— for signaling function instantaneous contact	0
— for signaling function delayed switching	0
— safety-related instantaneous contact	0
— safety-related delayed switching	0
• as NO contact	
— for signaling function instantaneous contact	0
— for signaling function delayed switching	0
— safety-related instantaneous contact	2
— safety-related delayed switching	2
Number of outputs as contact-less semiconductor switching element	
• safety-related	
— delayed switching	0
— instantaneous contact	0

• for signaling function instantaneous contact	0
Stop category acc. to DIN EN 60204-1	0 / 1
General technical data:	
Design of input	
• cascading input/functional switching	Yes
• feedback input	Yes
• Start input	Yes
Type of electrical connection Plug-in socket	No
Operating frequency maximum	360 1/h
Switching capacity current	
• of the NO contacts of the relay outputs	
— at DC-13	
— at 24 V	3 A
— at 115 V	0.2 A
— at 230 V	0.1 A
— at AC-15	
— at 115 V	3 A
— at 230 V	3 A
Thermal current of the switching element with contacts maximum	5 A
Operating current at 17 V minimum	5 mA
Mechanical service life (switching cycles) 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
Wire length	
• with Cu 1.5 mm ² and 150 nF/km per sensor circuit maximum	4 000 m
Make time with automatic start	
• at DC maximum	110 ms
Make time with automatic start after power failure	
• typical	6 500 ms
• maximum	6 500 ms
Make time with monitored start	
• maximum	110 ms
Backslide delay time after opening of the safety circuits typical	40 ms
Backslide delay time in the event of power failure	
• typical	30 ms
• maximum	40 ms
Adjustable OFF-delay time after opening of the safety circuits	0.5 ... 30
Recovery time after opening of the safety circuits typical	30 ms

Recovery time after power failure typical	6.5 s
Pulse duration	
• of the sensor input minimum	75 ms
• of the ON pushbutton input minimum	0.15 s

Control circuit/ Control:

Type of voltage of the control supply voltage	DC
Control supply voltage	
• at DC	
— rated value	24 V
Operating range factor control supply voltage rated value of magnet coil	
• at DC	0.8 ... 1.2
Power loss [W] typical	2.5 W

Installation/ mounting/ dimensions:

Mounting position	any
Required spacing for grounded parts at the side	5 mm
Required spacing with side-by-side mounting at the side	0 mm
Mounting type	screw and snap-on mounting
Width	22.5 mm
Height	100 mm
Depth	121.6 mm

Connections/ Terminals:

Type of electrical connection	Push-in terminal
Type of connectable conductor cross-sections	
• solid	1x (0.5 ... 1.5 mm ²), 2x (0.5 ... 1.5 mm ²)
• finely stranded	
— with core end processing	1x (0.5 ... 1.0 mm ²), 2x (0.5 ... 1.0 mm ²)
— without core end processing	1x (0.5 ... 1.5 mm ²), 2x (0.5 ... 1.5 mm ²)
Type of connectable conductor cross-sections at AWG conductors	
• solid	1x (20 ... 16), 2x (20 ... 16)
• stranded	1x (20 ... 16), 2x (20 ... 16)

Product Function:

Product function parameterizable	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
Suitability for operation Device connector 3ZY12	Yes
Suitability for interaction press control	Yes
Suitability for use	
• safety switch	Yes
• Monitoring of floating sensors	Yes

- Monitoring of non-floating sensors
- magnetically operated switch monitoring
- safety-related circuits

Yes
Yes
Yes

Certificates/approvals

General Product Approval				EMC	Functional Safety/Safety of Machinery
					Baumusterbescheinigung
CCC	CSA	UL		C-Tick	

Declaration of Conformity	Test Certificates	Shipping Approval		other	Railway
	Typprüfbescheinigung/Werkszeugnis			Bestätigungen	Bestätigungen
EG-Konf.		LRS	RMRS		

Further information

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

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

Industry Mall (Online ordering system)

<https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3SK1121-2CB42>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3SK1121-2CB42>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3SK1121-2CB42>

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

http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3SK1121-2CB42&lang=en



