



SIRIUS SAFETY RELAY WITH ELECTRONIC RELEASE CIRCUIT (RC) DC 24V, 22.5MM, SPRING-LOADED TERMINAL, RC INSTANT.: 1 HL, RC DELAYED: 1HL 0.5...30S, MK: 0, AUTOSTART / MONITORED START, STANDARD DEVICE, MAX. ACHIEVABLE SIL: 3, PL: E

General technical data:

product brand name	SIRIUS
Product designation	safety relays
Design of the product	for EMERGENCY-STOP units
Protection class IP of the enclosure	IP40
Protection class IP of the terminal	IP20
Protection against electrical shock	finger-safe
Insulation voltage Rated value	50 V
Ambient temperature	
• during storage	-40 ... +80 °C
• during operation	-25 ... +60 °C
Air pressure acc. to SN 31205	90 ... 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: 0,075 mm
Shock resistance	8g / 10 ms and 15g / 5 ms
Surge voltage resistance Rated value	500 V
EMC emitted interference	IEC 60947-5-1, IEC 60000-4-3, IEC 60000-4-5, IEC 60000-4-6
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.
Equipment marking acc. to DIN 40719 extended according to IEC 204-2 acc. to IEC 750	KT
Equipment marking acc. to DIN EN 61346-2	F

Number of sensor inputs • 1-channel or 2-channel	1
Design of the cascading	cascading or in-service switching
Type of the safety-related wiring of the inputs	single-channel and two-channel
Product property cross-circuit-proof	Yes
Safety Integrity Level (SIL) • acc. to IEC 61508 • for delayed release circuit acc. to IEC 61508	SIL3 SIL3
SIL Claim Limit (subsystem) acc. to EN 62061	3
Performance level (PL) • acc. to EN ISO 13849-1 • for delayed release circuit acc. to EN ISO 13849-1	e e
Category acc. to EN 954-1	4
Category acc. to EN ISO 13849-1	4
Hardware fault tolerance acc. to IEC 61508	1
Safety device type acc. to IEC 61508-2	Type B
PFHD with high demand rate acc. to EN 62061	0.00000000005 1/h
T1 value for proof test interval or service life acc. to IEC 61508	20 y
Number of outputs as contact-affected switching element • as NC contact — for signaling function instantaneous contact • as NO contact — safety-related instantaneous contact — safety-related delayed switching	0 0 0
Number of outputs as contact-less semiconductor switching element • safety-related — delayed switching — instantaneous contact • for signaling function — delayed switching — instantaneous contact	1 1 0 0
Stop category acc. to DIN EN 60204-1	0 + 1

General technical data:

Design of input • cascading input/functional switching • feedback input • Start input	Yes Yes Yes
Type of electrical connection Plug-in socket	Yes

Operating frequency maximum	2 000 1/h
Switching capacity current • of semiconductor outputs — for enabling circuit at DC-13 at 24 V	1.5 A
Design of the fuse link for short-circuit protection of the NO contacts of the relay outputs required	not required
DC resistance of the cable maximum	1 000 Ω
Cable length between sensor and electronic evaluation device with Cu 1.5 mm² and 150 nF/km maximum	2 000 m
Make time with automatic start • typical • for DC maximum	60 ms 100 ms
Make time with automatic start after power failure • typical • maximum	6 000 ms 7 000 ms
Make time with monitored start • maximum • typical	100 ms 60 ms
Backslide delay time in the event of power failure • typical • maximum	0 ms 0 ms
Adjustable OFF-delay time after opening of the safety circuits	0.5 ... 30 s
Recovery time after opening of the safety circuits typical	400 ms
Recovery time after power failure typical	7 000 ms
Pulse duration • of the sensor input minimum • of the ON pushbutton input minimum • of the cascading input minimum	45 ms 0.2 s 0.045 s

Control circuit/ Control:

Type of voltage of the control supply voltage	DC
Control supply voltage 1 • for DC Rated value	24 V
Operating range factor control supply voltage rated value of the magnet coil • for DC	0.9 ... 1.15

Installation/ mounting/ dimensions:

mounting position	any
Mounting type	screw and snap-on mounting
Width	22.5 mm
Height	120 mm

Depth	88 mm
Connections/ Terminals:	
Type of electrical connection	spring-loaded terminals
Type of connectable conductor cross-section	
• solid	2x (0.25 ... 1.5 mm ²)
• finely stranded	
— with core end processing	2 x (0.25 ... 1.5 mm ²)
— without core end processing	2x (0.25 ... 1.5 mm ²)
Type of connectable conductor cross-section for AWG conductors	
• solid	2x (24 ... 16)
• stranded	2x (24 ... 16)
Product Function:	
Product function	
• Light barrier monitoring	Yes
• Standstill monitoring	No
• protective door monitoring	Yes
• Automatic start	Yes
• magnetically operated switch monitoring NC-NO	No
• rotation speed monitoring	No
• laser scanner monitoring	Yes
• monitored start-up	Yes
• Light array monitoring	Yes
• magnetically operated switch monitoring NC-NC	Yes
• EMERGENCY OFF function	Yes
• Pressure-sensitive mat monitoring	Yes
Suitability for interaction press control	No
Suitability for use	
• Monitoring of floating sensors	Yes
• Monitoring of non-floating sensors	Yes
• safety switch	Yes
• position switch monitoring	Yes
• EMERGENCY-OFF circuit monitoring	Yes
• valve monitoring	No
• tactile sensor monitoring	Yes
• magnetically operated switch monitoring	Yes
• safety-related circuits	Yes
Certificates/ approvals:	

Certificate of suitability	UL, CSA, EN 60204-1, EN ISO 12100, EN 954-1, IEC 61508, DIN EN 50156-1
• TÜV (German technical inspectorate) certificate	Yes
• UL approval	Yes
• BG BIA certificate	Yes

General Product Approval	EMC	Functional Safety/Safety of Machinery
---------------------------------	------------	--



CCC



CSA



UL



C-TICK

[Type Examination Certificate](#)

Declaration of Conformity	Test Certificates	other
----------------------------------	--------------------------	--------------



EG-Konf.

[Special Test Certificate](#)

[Confirmation](#)

[Environmental Confirmations](#)

Further information

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

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

Industry Mall (Online ordering system)

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

Cax online generator

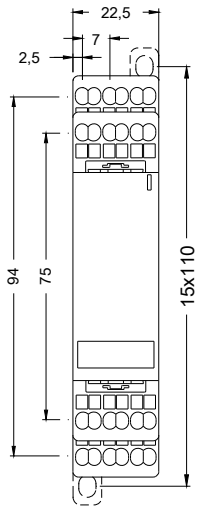
<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3TK28422BB42>

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

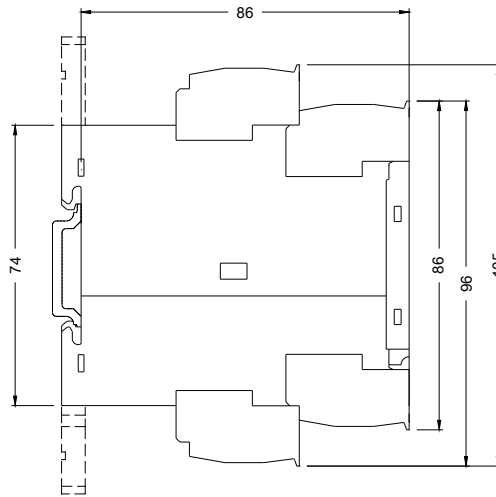
<https://support.industry.siemens.com/cs/ww/en/ps/3TK28422BB42>

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

http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3TK28422BB42&lang=en



last modified:



05.05.2015