SIEMENS

Product data sheet 3TK2842-1BB42

SIRIUS SAFETY RELAY WITH ELECTRONIC RELEASE CIRCUIT (RC) DC 24V,
22.5MM, SCREW 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 details:		
Product brand name		SIRIUS
Product designation		safety relays
Design of the product		for EMERGENCY-STOP units
Protection class IP / of the housing		IP40
Protection class IP / of the terminal		IP20
Protection against electrical shock		finger-safe
Insulation voltage / rated value	V	50
Ambient temperature		
• during storage	°C	-40 … 80
• during the operating phase	°C	-25 … 60
Air pressure		
• according to SN 31205	kPa	90 … 106
Relative humidity		
• during the 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: 0,075 mm
Resistance against shock		8g / 10 ms and 15g / 5 ms
Impulse voltage resistance / rated value	V	500

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EMC emitted interference		IEC 60947-5-1, IEC 60000-4-3, IEC 60000-4-5, IEC 60000-4-6
Item designation		
• according to DIN 40719 extendable after IEC 204-2 / according to IEC 750		KT
• according 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 feature / transverse contact-secure		Yes
Safety Integrity Level (SIL) / according to IEC 61508		SIL3
SIL claim limit (for a subsystem) / according to EN 62061		3
Performance level (PL) / according to ISO 13849-1		e
Category / according to EN 954-1		4
Category / according to ISO 13849-1		4
Probability of dangerous failure per hour (PFHD) / with high demand rate / according to EN 62061	1/h	0.5E-10
T1 value / for proof test interval or service life / according to IEC 61508	a	20
Number of outputs / as contact-affected switching element		
• as NC contact / for reporting function / instantaneous switching		0
• as NO contact / fail-safe / instantaneous switching		0
• as NO contact / fail-safe / delayed switching		0
Number of outputs / as contact-less semiconductor switching element		
• fail-safe		
• delayed switching		1
• non-delayed		1
• for reporting function		
• delayed switching		0
• non-delayed		0
Stop category / according to DIN EN 60204-1		0 + 1

General technical details:

Design of the input		
• cascading-entrance/operation-even switching		Yes
• reducing-entrance		Yes
• start-up entrance		Yes
Design of the electrical connection / jumper socket		Yes
Operating cycles / maximum	1/h	2,000

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Switching capacity current / of the semiconductor outputs / at DC-13 / at 24 V	A	1.5
Design of the fuse link / for short-circuit protection of the NO contacts of the relay outputs / necessary		not required
Resistance to direct current / of the cable / maximum	Ω	1,000
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	60
• for DC / maximum	ms	100
Make time / with automatic start / after mains power cut		
• typical	ms	6,000
• maximum	ms	7,000
Make time / with monitored start		
• maximum	ms	100
• typical	ms	60
Backslide delay time / at mains power cut		
• typical	ms	0
• maximum	ms	0
Adjustable backslide delay time		
• after opening of the safety circuits	s	0.5 … 30
Recovery time / after opening of the safety circuits / typical	ms	400
Recovery time / after mains power cut / typical	s	7
Pulse duration		
• of the sensor input / minimum	ms	45
• of the ON pushbutton input / minimum	s	0.2
• of the cascading-entrance / minimum	s	0.045

Control circuit:		
Type of voltage / of the controlled supply voltage		DC
Control supply voltage / 1 / for DC / rated value	V	24
Operating range factor control supply voltage rated value / of solenoid		
• for DC		0.9 … 1.15

Installation/mounting/dimensions:		
Built in orientation		any
Type of mounting		screw and snap-on mounting
Width	mm	22.5
Height	mm	100
Depth	mm	88

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Connections:	
Design of the electrical connection	screw-type terminals
Type of connectable conductor cross section	
• solid	0.5 ... 4 mm2, 2x (0.5 ... 2.5 mm2)
• finely stranded	
• with wire end processing	0.5 ... 2.5 mm2, 2x (0.5 ... 1.5 mm2)
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
• magnetic switch monitoring Normally closed contact-Normally open contact	No
• rotation speed monitoring	No
• laser scanner monitoring	Yes
• monitored start-up	Yes
• light grid monitoring	Yes
• magnetic switch monitoring Normally closed contact-Normally closed contact	Yes
• emergency-OFF function	Yes
• step mat monitoring	Yes
Suitability for interaction / pressing control	No
Acceptability for application	
• safety cut-out switch	Yes
• position switch monitoring	Yes
• EMERGENCY-OFF circuit monitoring	Yes
• opto-electronical protection device monitoring	Yes
• monitoring of magnetically operated switches	Yes
• monitoring of proximity switches	No
• safety-oriented circuits	Yes

Certificates/approvals:	
Verification 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-registration	Yes

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• BG BIA certificate		Yes

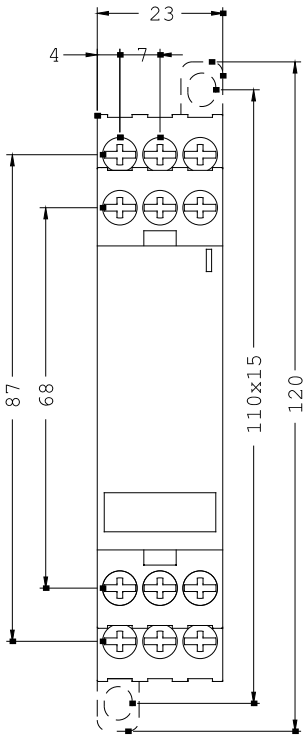
Further information:

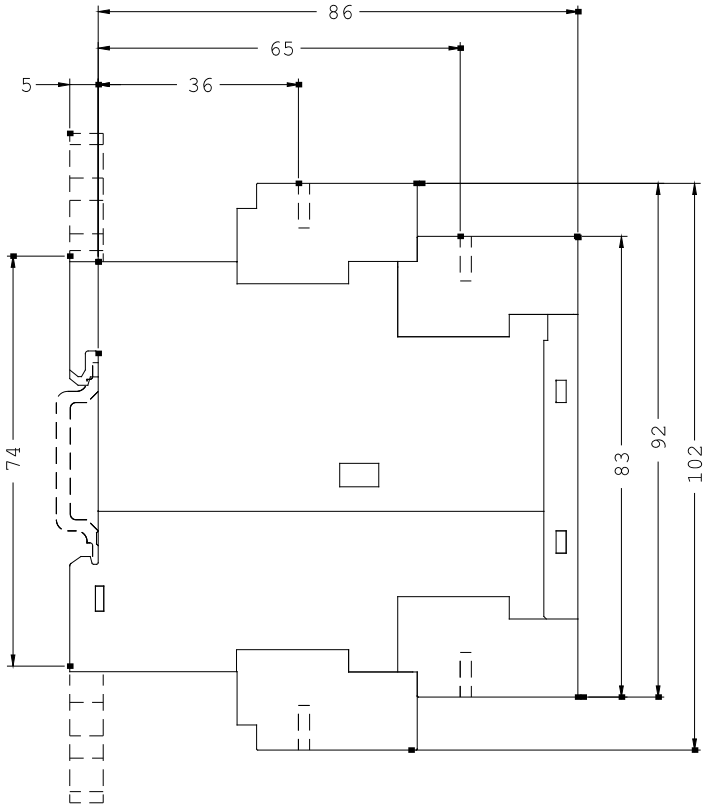
Information- and Downloadcenter (Catalogs, Brochures,…)
http://www.siemens.com/industrial-controls/catalogs

Global Industry Mall (Online ordering system)
http://www.siemens.com/industrial-controls/mall

Service&Support (Manuals, Certificates, Characteristics, FAQs,...)
http://support.automation.siemens.com/WW/view/en/3TK2842-1BB42/all

Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, ...)
http://www.automation.siemens.com/bilddb/cax_en.aspx?mlfb=3TK2842-1BB42





last change: Sep 6, 2010

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