SIEMENS

Data sheet 3TK2845-1HB40

SIRIUS SAFETY RELAY WITH REL.- U. EL. RELEASE CIRCUIT (RC), DC 24V, 45.0MM, SCREW TERMINAL, RC INSTANT.: 4S, RC DELAYED: 0, MK: 1, AUTO- U. MONITORED START, BASIC DEVICE, MAX. ACHIEVABLE PL TO EN13849-1: E, MAX. ACHIEVABLE SIL TO IEC61508:3,

General technical data:		
product brand name		SIRIUS
Product designation		safety relays
Design of the product		monitored start and autostart
Protection class IP of the enclosure		IP20
Protection class IP of the terminal		IP20
Protection against electrical shock		finger-safe
Insulation voltage Rated value	V	300
Ambient temperature		
• during storage	°C	-40 ... +80
• during operation	°C	-25 ... +60
Air pressure acc. to SN 31205	kPa	90 ... 106
Relative humidity during operation	%	10 ... 95
Installation altitude at height above sea level maximum	m	2 000
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	V	4 000
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		2
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		SIL3
SIL Claim Limit (subsystem) acc. to EN 62061		3
Performance level (PL)		
• acc. to EN ISO 13849-1		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	1/h	0.0000000069
T1 value for proof test interval or service life acc. to IEC 61508	y	20
Number of outputs as contact-affected switching element		
• as NC contact		
— for signaling function instantaneous contact		0
• as NO contact		
— safety-related instantaneous contact		2
— safety-related delayed switching		0
Number of outputs as contact-less semiconductor switching element		
• safety-related		
— delayed switching		0
— instantaneous contact		2
• for signaling function		
— delayed switching		0
— instantaneous contact		1
Stop category acc. to DIN EN 60204-1		0

General technical data:		
Design of input		
• cascading input/functional switching		Yes
• feedback input		Yes
• Start input		Yes
Type of electrical connection Plug-in socket		Yes
Operating frequency maximum	1/h	2 000
Switching capacity current		

• of semiconductor outputs		
— for signaling function at DC-13 at 24 V	A	0.5
— for enabling circuit at DC-13 at 24 V	A	1
• of the NO contacts of the relay outputs		
— at DC-13		
— at 24 V	A	1
— at 115 V	A	0.1
— at 230 V	A	0.1
— at AC-15		
— at 115 V	A	3
— at 230 V	A	3
Mechanical service life (switching cycles) typical		100 000
Design of the fuse link for short-circuit protection of the NO contacts of the relay outputs required		gL/gG: 4 A or fast-acting: 4A
DC resistance 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	1 000
Make time with automatic start		
• typical	ms	60
• for DC maximum	ms	100
Make time with monitored start		
• maximum	ms	100
• typical	ms	60
Backslide delay time after opening of the safety circuits typical	ms	45
Backslide delay time in the event of power failure		
• typical	ms	25
• maximum	ms	30
Recovery time after opening of the safety circuits typical	ms	400
Recovery time after power failure typical	ms	8 000
Pulse duration		
• of the sensor input minimum	ms	45
• of the ON pushbutton input minimum	s	0.2
• of the cascading input minimum	s	0.045
Control circuit/ Control:		
Type of voltage of the control supply voltage		DC
Control supply voltage 1		
• for DC Rated value	V	24
Operating range factor control supply voltage rated value of the magnet coil		
• for DC		0.85 ... 1.15

Installation/ mounting/ dimensions:		
mounting position		any
Mounting type		screw and snap-on mounting
Width	mm	45
Height	mm	138.5
Depth	mm	88

Connections/ Terminals:		
Type of electrical connection		screw-type terminals
Type of connectable conductor cross-section		
• solid		1x (0.5 ... 4.0 mm²), 2x (0.5 ... 2.5 mm²)
• finely stranded		
— with core end processing		1x (0.5 ... 2.5 mm²), 2x (0.5 ... 1.5 mm²)
Type of connectable conductor cross-section for AWG conductors		
• solid		2x (20 ... 14)
• stranded		2x (20 ... 14)

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
• 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

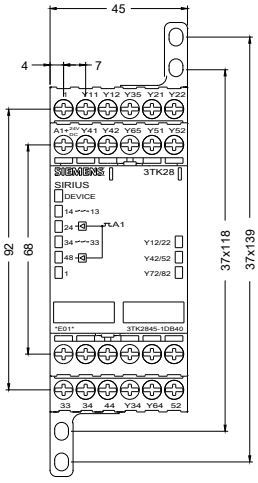
Information- and Downloadcenter (Catalogs, Brochures,…)
http://www.siemens.com/industrial-controls/catalogs

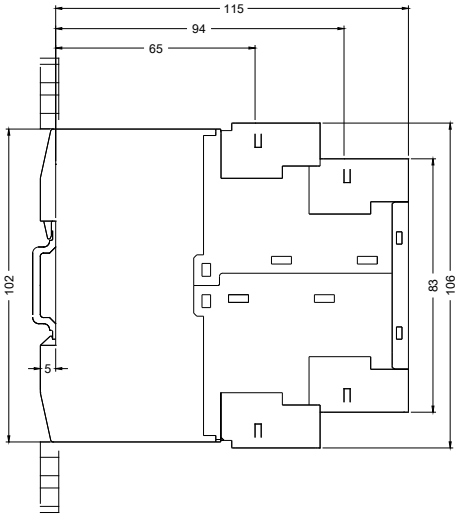
Industry Mall (Online ordering system)
http://www.siemens.com/industrymall

Cax online generator
http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3TK28451HB40

Service&Support (Manuals, Certificates, Characteristics, FAQs,...)
https://support.industry.siemens.com/cs/ww/en/ps/3TK28451HB40

Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3TK28451HB40&lang=en





last modified: 16.03.2015