SIEMENS

Data sheet 3TK2810-1BA41

SIRIUS SAFETY RELAY SAFETY-RELATED SPEED MONITORING, 24 V DC, 45.0 MM, SCREW TERMINAL, FK INSTANTANEOUS.: 2NO, FK DELAYED: 0, MK: 2 ELECTRICAL, AUTO START / MANUAL START, BASIC UNIT, MAX. ERR. CAT. EN13849-1: E, MAX. ERR. SIL TO IEC61508:3,

General technical data:		
product brand name		SIRIUS
Product designation		safety relays
Design of the product		standstill and speed monitoring
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	-20 ... +70
• during operation	°C	0 ... 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		10 ... 55 Hz: 0.35 mm
Shock resistance		8g / 10 ms
Surge voltage resistance Rated value	V	4 000
EMC emitted interference		EN 60947-5-1
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		
• 2-channel		3
• 1-channel or 2-channel		0
Design of the cascading		none
Type of the safety-related wiring of the inputs		single-channel or two-channel
Product property cross-circuit-proof		Yes
Safety Integrity Level (SIL)		
• acc. to IEC 61508		SIL3
• for delayed release circuit acc. to IEC 61508		SIL3
SIL Claim Limit (subsystem) acc. to EN 62061		3
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 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	0.0000000034
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
— 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		1
— safety-related delayed switching		1
Number of outputs as contact-less semiconductor switching element		
• safety-related		
— delayed switching		0
— instantaneous contact		0
• for signaling function		
— delayed switching		1
— instantaneous contact		1

Stop category acc. to DIN EN 60204-1		0
General technical data:		
Design of input		
• cascading input/functional switching		No
• feedback input		Yes
• Start input		Yes
Type of electrical connection Plug-in socket		Yes
Switching capacity current		
• of semiconductor outputs		
— for signaling function at DC-13 at 24 V	A	0.02
• of the NO contacts of the relay outputs		
— at DC-13		
— at 24 V	A	2
— at 115 V	A	2
— at AC-15		
— at 24 V	A	3
— at 230 V	A	3
• of the NC contacts of the relay outputs		
— at AC-15		
— at 24 V	A	3
— at 115 V	A	3
— at 230 V	A	2
Thermal current of the switching element with contacts maximum	A	5
Electrical endurance (switching cycles) typical		100 000
Mechanical service life (switching cycles) typical		50 000 000
Design of the fuse link for short-circuit protection of the NO contacts of the relay outputs required		gL/gG: 4 A
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		0.9 ... 1.1
Installation/ mounting/ dimensions:		
mounting position		any
Mounting type		screw and snap-on mounting
Width	mm	45
Height	mm	105.9
Depth	mm	124.3

Connections/ Terminals:	
Type of electrical connection	screw-type terminals
Type of connectable conductor cross-section	
• solid	0.5 ... 4 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	No
• Standstill monitoring	Yes
• protective door monitoring	Yes
• Automatic start	Yes
• magnetically operated switch monitoring NC-NO	No
• rotation speed monitoring	Yes
• laser scanner monitoring	No
• monitored start-up	Yes
• Light array monitoring	No
• magnetically operated switch monitoring NC-NC	No
• EMERGENCY OFF function	Yes
• Pressure-sensitive mat monitoring	No
Suitability for interaction press control	No
Suitability for use	
• Monitoring of floating sensors	Yes
• Monitoring of non-floating sensors	No
• safety switch	Yes
• position switch monitoring	Yes
• EMERGENCY-OFF circuit monitoring	No
• valve monitoring	No
• tactile sensor monitoring	No
• magnetically operated switch monitoring	No
• safety-related circuits	Yes

Certificates/ approvals:	
Certificate of suitability	TÜV / IEC 61508
• TÜV (German technical inspectorate) certificate	Yes
• UL approval	Yes

• BG BIA certificate	No

General Product Approval	Functional Safety/Safety of Machinery
CCC CSA TÜV UL EAC	Type Examination

Declaration of Conformity	other
CE EG-Konf.	Declaration of Conformity

Further information

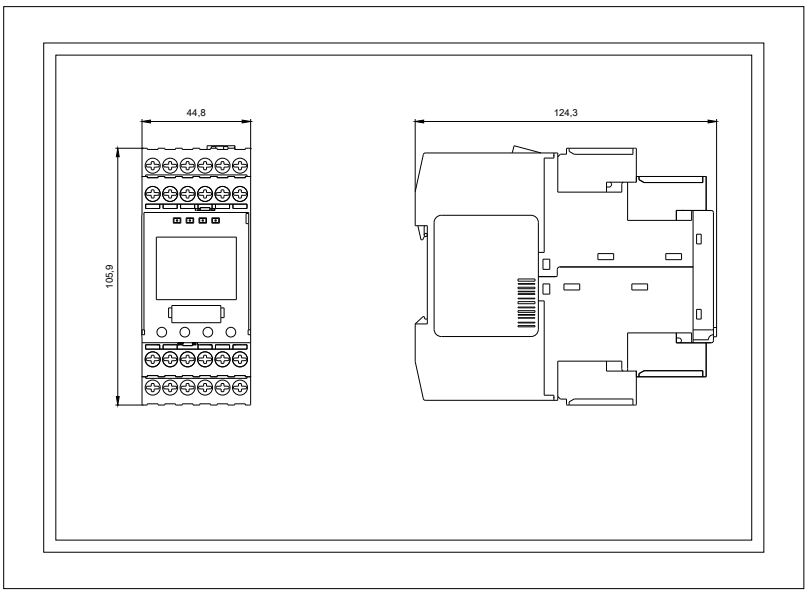
Information- and Downloadcenter (Catalogs, Brochures,…)
http://www.siemens.com/industrial-controls/catalogs

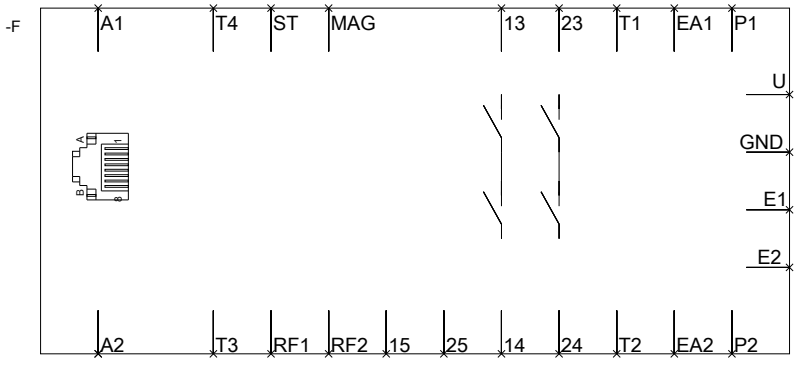
Industry Mall (Online ordering system)
http://www.siemens.com/industrymall

Cax online generator
http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3TK28101BA41

Service&Support (Manuals, Certificates, Characteristics, FAQs,...)
https://support.industry.siemens.com/cs/ww/en/ps/3TK28101BA41

Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3TK28101BA41&lang=en





last modified: 16.03.2015