SIEMENS

Product data sheet 3TK2810-0GA01

SIRIUS SAFETY RELAY FOR SAFETY-ORIENTED STANDSTILL MONITORING,
230V AC, 45.0MM, SCREW TERMINAL,
FK INSTANT.: 3NO 1NC, FK DELAYED: 0,
MK: 3, AUTO START, BASIC UNIT,
MAX. ACHIEV. CAT. EN954-1: 4,
MAX. ACHIEV. SIL TO IEC61508:3,

General technical details:		
product brand name		SIRIUS
product designation		safety relays
Design of the product		for safe stoppage monitoring
protection class IP / of the housing		IP20
Protection class IP / of the terminal		IP20
Protection against electrical shock		finger-safe
Insulation voltage / rated value	V	690
Ambient temperature		
• during storage	°C	-40 … +75
• during operating	°C	-25 … +60
Air pressure		
• according to SN 31205	kPa	90 … 106
Relative humidity		
• during 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		10 ... 55 Hz: 0.35 mm
Resistance against shock		8g / 10 ms
Impulse voltage resistance / rated value	V	6,000
EMC emitted interference		IEC 61000-6-2, IEC 61000-6-3

Installation environment relating to 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.
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		none
Type of the safety-related wiring / of the inputs		measuring inputs
Product feature / transverse contact-secure		No
Safety Integrity Level (SIL)		
• according to IEC 61508		SIL3
• for delayed release circuit / 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
• for delayed release circuit / according to ISO 13849-1		e
Category / according to EN 954-1		4
Category / according to ISO 13849-1		4
Hardware fault tolerance / according to IEC 61508		1
Safety device type / according to IEC 61508-2		Type B
Probability of dangerous failure per hour (PFHD) / with high demand rate / according to EN 62061	1/h	0.15E-8
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		2
• as NO contact / safety-related / instantaneous switching		4
• as NO contact / safety-related / delayed switching		0
Number of outputs / as contact-less semiconductor switching element		
• safety-related		
• delayed switching		0
• non-delayed		0
• for reporting function		
• delayed switching		0
• non-delayed		2
Stop category / according to DIN EN 60204-1		0

General technical details:		
Design of the input		
• cascading-input/functional switching		No
• feedback input		Yes
• start input		No
Design of the electrical connection / jumper socket		Yes
Operating cycles / maximum	1/h	1,200
Switching capacity current		
• of semiconductor outputs		
• for signaling function / for DC-13 / at 24 V	A	0.1
• of NO contacts of relay outputs		
• at DC-13		
• at 24 V	A	2
• at AC-15		
• at 115 V	A	3
• at 230 V	A	3
• of NC contacts of relay outputs		
• at DC-13		
• at 24 V	A	2
• at AC-15		
• at 115 V	A	2
• at 230 V	A	2
Thermal current / of the contact-affected switching element / maximum	A	5
Electrical operating cycles as operating time / typical		200,000
Mechanical operating cycles as operating time / typical		50,000,000
Design of the fuse link / for short-circuit protection of the NO contacts of the relay outputs / required		quick: 5 A

Control circuit:		
Type of voltage / of the controlled supply voltage		AC
Control supply voltage frequency		
• 1 / rated value	Hz	50
• 2 / rated value	Hz	60
Control supply voltage / 1 / at 50 Hz / for AC / rated value	V	230
Control supply voltage / 1 / at 60 Hz / for AC / rated value	V	230
operating range factor control supply voltage rated value / of the magnet coil		
• at 50 Hz		
• for AC		0.8 … 1.1
• at 60 Hz		

• for AC		0.8 … 1.1

Installation/mounting/dimensions:		
mounting position		any
Type of mounting		screw and snap-on mounting
Width	mm	45
Height	mm	138.5
Depth	mm	120

Connections:		
Design of the electrical connection		screw-type terminals
Type of the connectable conductor cross-section		
• solid		1x (0.5 ... 4 mm²), 2x (0.5 ... 2.5 mm²)
• finely stranded		
• with wire end processing		1x (0.5 ... 2.5 mm²), 2x (0.5 ... 1.5 mm²)
Type of the 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		No
• automatic start		No
• magnetic switch monitoring Normally closed contact-Normally open contact		No
• rotation speed monitoring		No
• laser scanner monitoring		No
• monitored start-up		No
• light grid monitoring		No
• magnetic switch monitoring Normally closed contact-Normally closed contact		No
• emergency stop function		No
• step mat monitoring		No
Suitability for interaction / pressing control		No
Acceptability for application		
• safety cut-out switch		Yes
• position switch monitoring		No
• EMERGENCY-OFF circuit monitoring		No

• valve monitoring	No
• tactile sensor monitoring	No
• magnetically operated switches monitoring	No
• safety-related circuits	Yes

Certificates/approvals:

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

General Product Approval	Functional Safety / Safety of Machinery	Test Certificates
CSA GOST UL	VDE	Special Test Certificate

other

Declaration of Conformity

Environmental Confirmations

Further information:

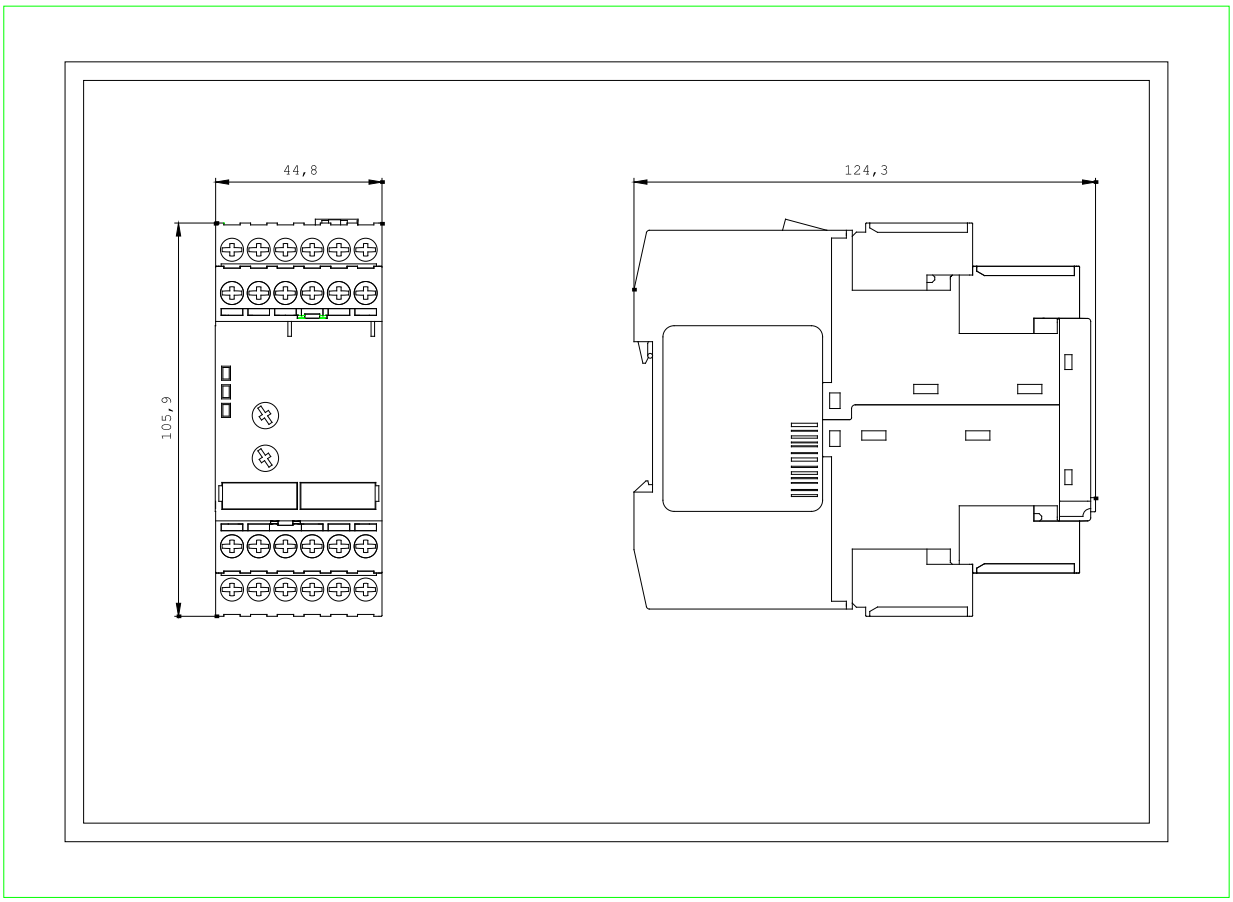
Information- and Downloadcenter (Catalogs, Brochures,…)
http://www.siemens.com/industrial-controls/catalogs

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

Cax online generator:
http://www.siemens.com/cax

Service&Support (Manuals, Certificates, Characteristics, FAQs,...)
http://support.automation.siemens.com/WW/view/en/3TK2810-0GA01/all

Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, ...)
http://www.automation.siemens.com/bilddb/cax_en.aspx?mlfb=3TK2810-0GA01



last change: Feb 18, 2013