SIEMENS

Data sheet 3TK2845-2HB40

	!!! Phased-out product !!! The successor product series is 3SK2 (see FAQ 109747906) SIRIUS safety relay with relay and electronic 24 V DC, 45 mm Spring-loaded terminal EC instantaneous: 4 NO EC delayed: 0 SC: 1 Auto-start and monitored start Basic device Maximum achievable PL according to EN 13849-1: e Maximum achievable SIL according to IEC 61508: 3
product brand name	SIRIUS
product designation	safety relays
design of the product	monitored start and autostart
product type designation	3TK28
Product Function	
product function	
● automatic start	Yes
● light barrier monitoring	Yes
● standstill monitoring	No
● protective door monitoring	Yes
● magnetically operated switch monitoring NC-NO	No
● magnetically operated switch monitoring NC-NC	Yes
● rotation speed monitoring	No
● laser scanner monitoring	Yes
● light array monitoring	Yes
● EMERGENCY OFF function	Yes
● monitored start-up	Yes
● pressure-sensitive mat monitoring	Yes
product feature cross-circuit-proof	Yes
suitability for interaction press control	No
suitability for use	
● monitoring of floating sensors	Yes
● monitoring of non-floating sensors	Yes
● position switch monitoring	Yes
● EMERGENCY-OFF circuit monitoring	Yes
● valve monitoring	No
● opto-electronic protection device monitoring	Yes
● tactile sensor monitoring	Yes
● magnetically operated switch monitoring	Yes
● proximity switch monitoring	No
● safety-related circuits	Yes
General technical data	
certificate of suitability UL approval	Yes
insulation voltage rated value	300 V
surge voltage resistance rated value	4 000 V
protection class IP	
● of the enclosure	IP20
● of the terminal	IP20
shock resistance	8 g / 10 ms, 15 g / 5 ms
vibration resistance according to IEC 60068-2-6	5 ... 500 Hz: 0,075 mm
operating frequency maximum	2 000 1/h
Substance Prohibitance (day/month/year)	05/01/2012
SVHC substance name	Lead monoxide (lead oxide) CAS-No. 1317-36-8 6,6'-di-tert-butyl-2,2'-methylenedi-p-cresol CAS-No. 119-47-1
Net Weight	0.359 kg
Ambient conditions	
installation altitude at height above sea level maximum	2 000 m

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ambient temperature	
● during operation	-25 ... +60 °C
● during storage	-40 ... +80 °C
relative humidity during operation	10 ... 95 %
air pressure according to SN 31205	90 ... 106 kPa
Electromagnetic compatibility	
installation environment regarding EMC	This product is suitable for Class A environments only. In household environments, this device can cause unwanted radio interference. The user is required to implement appropriate measures in this case.
EMC emitted interference	IEC 60947-5-1, IEC 60000-4-3, IEC 60000-4-5, IEC 60000-4-6
Safety related data	
product function suitable for safety function	Yes
stop category according to IEC 60204-1	0
IEC 62061	
SIL Claim Limit (subsystem) according to EN 62061	3
PFHD with high demand rate according to IEC 62061	6.9E-9 1/h
ISO 13849	
category according to EN ISO 13849-1	4
IEC 61508	
Safety Integrity Level (SIL)	
● according to IEC 61508	3
safety device type according to IEC 61508-2	Type B
Safe failure fraction (SFF)	99 %
hardware fault tolerance according to IEC 61508	1
T1 value for proof test interval or service life according to IEC 61508	20 a
Electrical Safety	
touch protection against electrical shock	finger-safe
Short-circuit protection	
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
Inputs	
design of input	
● cascading input/functional switching	Yes
● feedback input	Yes
● start input	Yes
number of sensor inputs	
● 1-channel or 2-channel	2
Outputs	
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
mechanical service life (operating cycles) typical	100 000
number of outputs as contact-less semiconductor switching element	
● for signaling function	
— delayed switching	0
— instantaneous contact	1
● safety-related	
— delayed switching	0
— instantaneous contact	2
switching capacity current of semiconductor outputs	
● for signaling function at DC-13 at 24 V	0.5 A
● for enabling circuit at DC-13 at 24 V	1 A
switching capacity current of the NO contacts of the relay outputs at DC-13	
● at 24 V	1 A

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● at 115 V	0.1 A
● at 230 V	0.1 A
switching capacity current of the NO contacts of the relay outputs at AC-15	
● at 115 V	3 A
● at 230 V	3 A
wire length between sensor and electronics evaluation device with Cu 1.5 mm² and 150 nF/km maximum	1 000 m
Times	
make time with automatic start	
● typical	60 ms
● at DC maximum	100 ms
make time with monitored start	
● typical	60 ms
● maximum	100 ms
backslide delay time after opening of the safety circuits typical	45 ms
backslide delay time in the event of power failure	
● typical	25 ms
● maximum	30 ms
recovery time after opening of the safety circuits typical	400 ms
recovery time after power failure typical	8 s
pulse duration	
● of the sensor input minimum	45 ms
● of the ON pushbutton input minimum	0.2 s
● of the cascading input minimum	0.045 s
Control circuit/ Control	
type of voltage of the control supply voltage	DC
control supply voltage 1 at DC rated value	24 V
operating range factor control supply voltage rated value of magnet coil at DC	
● initial value	0.85
● full-scale value	1.15
Installation/ mounting/ dimensions	
mounting position	any
fastening method	screw and snap-on mounting
height	138.5 mm
width	45 mm
depth	88 mm
Connections/ Terminals	
type of electrical connection	spring-loaded terminals
type of connectable conductor cross-sections	
● solid	2x (0.25 ... 1.5 mm²)
● finely stranded with core end processing	2 x (0.25 ... 1.5 mm²)
● finely stranded without core end processing	2x (0.25 ... 1.5 mm²)
● for AWG cables solid	2x (24 ... 16)
● for AWG cables stranded	2x (24 ... 16)
connectable conductor cross-section	
● solid	0.25 ... 1.5 mm²
● finely stranded with core end processing	0.25 ... 1.5 mm²
● finely stranded without core end processing	0.25 ... 1.5 mm²
AWG number as coded connectable conductor cross section	
● solid	24 ... 16
● stranded	24 ... 16
DC resistance of the cable maximum	1 000 Ω
type of electrical connection plug-in socket	Yes
Approvals Certificates	

Environment	General Product Approval	EMV	Functional Saftey

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Environmental Confirmations

Type Examination Certificate

Test Certificates	other

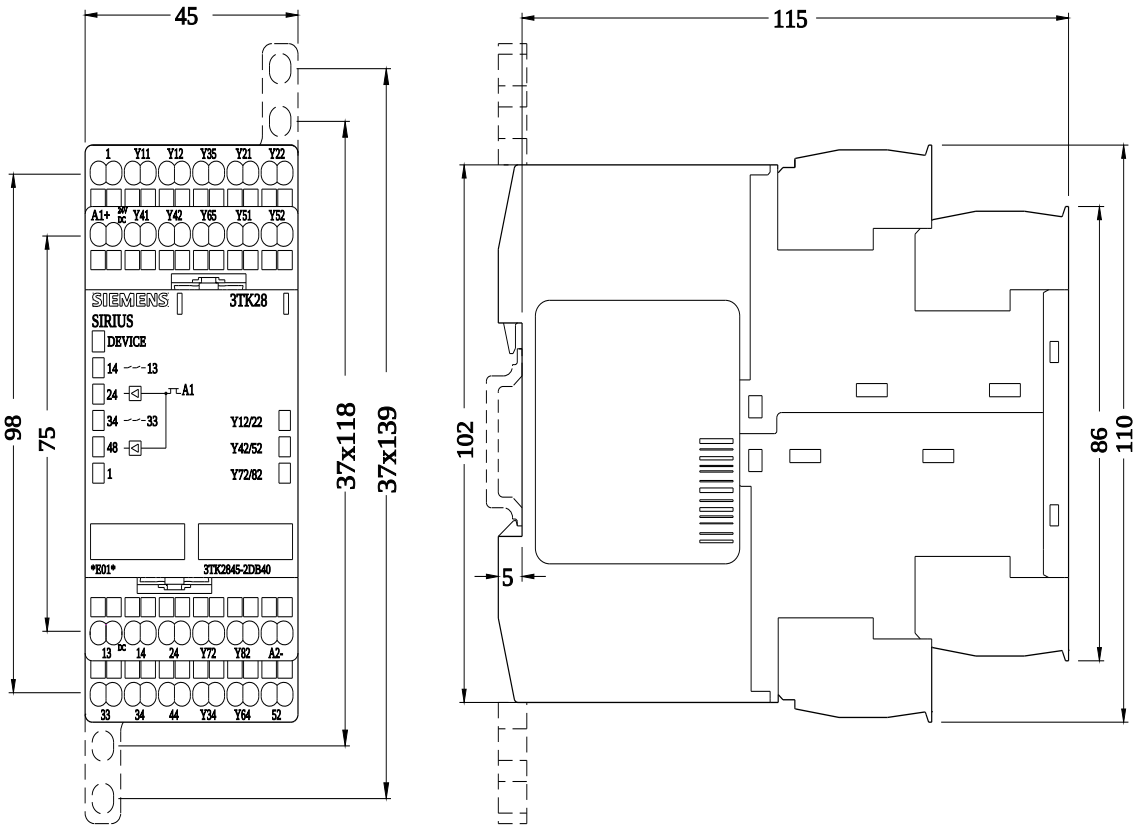
Special Test Certificate

Confirmation

产品合格
QC PASS

Further information

Information on the packaging
https://support.industry.siemens.com/cs/ww/en/view/109813875
Information for data generation and storage
https://support.industry.siemens.com/cs/ww/en/view/109995012
Information- and Downloadcenter (Catalogs, Brochures,…)
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Service&Support (Manuals, Certificates, Characteristics, FAQs,...)
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Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)
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