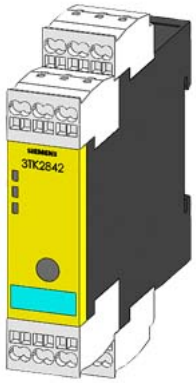
SIEMENS

Data sheet 3TK2842-2BB41



SIRIUS safety relay with electronic enabling circuits (EC) 24 V DC, 22.5 mm Spring-type terminal EC instantaneous: 1 HL EC delayed: 1 HL, 0.05...3 s MK: 0 Autostart/monitored start Standard device Maximum achieved SIL: 3, PL: e

General technical data	
product brand name	SIRIUS
product designation	safety relays
design of the product	for EMERGENCY-STOP and safety doors
protection class IP of the enclosure	IP40
protection class IP of the terminal	IP20
touch protection against electrical shock	finger-safe
insulation voltage rated value	50 V
ambient temperature	
● during storage	-40 ... +80 °C
● during operation	-25 ... +60 °C
air pressure acc. to SN 31205	90 ... 106 kPa
relative humidity during operation	10 ... 95 %
installation altitude at height above sea level maximum	2 000 m
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	500 V
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.
reference code acc. to DIN 40719 extended according to IEC 204-2 acc. to IEC 750	KT
reference code acc. 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 cross-circuit-proof	Yes
Safety Integrity Level (SIL)	
● acc. to IEC 61508	3
● 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 ISO 13849-1	4
hardware fault tolerance acc. to IEC 61508	1

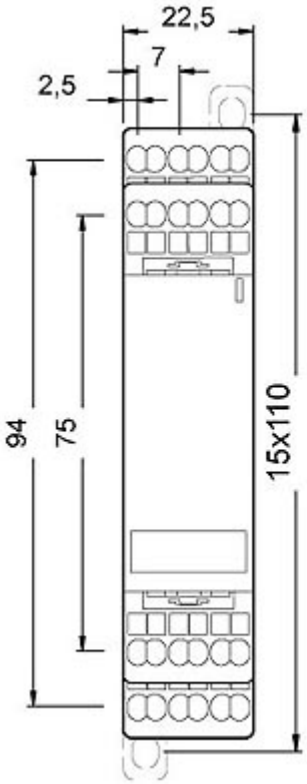
safety device type acc. to IEC 61508-2	Type B
PFHD with high demand rate acc. to EN 62061	0.00000000005 1/h
T1 value for proof test interval or service life acc. to IEC 61508	20 y
number of outputs as contact-affected switching element	
● as NC contact	
— for signaling function instantaneous contact	0
● as NO contact	
— safety-related instantaneous contact	0
— safety-related delayed switching	0
number of outputs as contact-less semiconductor switching element	
● safety-related	
— delayed switching	1
— instantaneous contact	1
● for signaling function	
— delayed switching	0
— instantaneous contact	0
stop category acc. to DIN EN 60204-1	0 + 1
Inputs	
design of input	
● cascading input/functional switching	Yes
● feedback input	Yes
● start input	Yes
Outputs	
type of electrical connection plug-in socket	Yes
operating frequency maximum	2 000 1/h
switching capacity current	
● of semiconductor outputs	
— for enabling circuit at DC-13 at 24 V	1.5 A
design of the fuse link for short-circuit protection of the NO contacts of the relay outputs required	not required
DC resistance of the cable maximum	1 000 Ω
wire length between sensor and electronics evaluation device with Cu 1.5 mm² and 150 nF/km maximum	2 000 m
make time with automatic start	
● typical	60 ms
● at DC maximum	100 ms
make time with automatic start after power failure	
● typical	6 000 ms
● maximum	7 000 ms
make time with monitored start	
● maximum	100 ms
● typical	60 ms
backslide delay time in the event of power failure	
● typical	0 ms
● maximum	0 ms
adjustable OFF-delay time after opening of the safety circuits	0.05 ... 3 s
recovery time after opening of the safety circuits typical	400 ms
recovery time after power failure typical	7 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

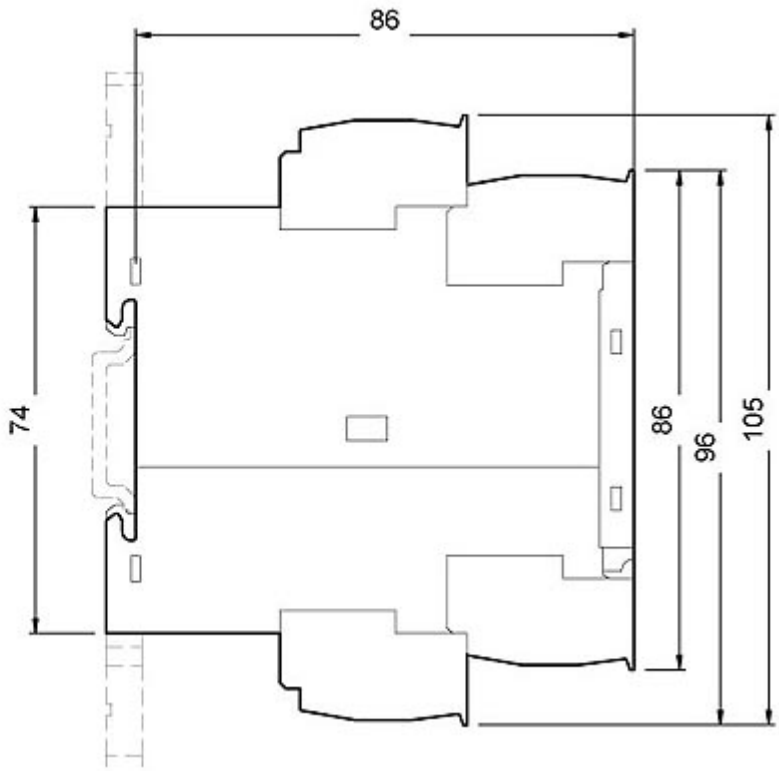
control supply voltage 1	
● at DC rated value	24 V
operating range factor control supply voltage rated value of magnet coil	
● at DC	0.9 ... 1.15
Installation/ mounting/ dimensions	
mounting position	any
fastening method	screw and snap-on mounting
width	22.5 mm
height	120 mm
depth	88 mm
Connections/ 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)
— without core end processing	2x (0.25 ... 1.5 mm²)
type of connectable conductor cross-sections at AWG cables	
● 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
● 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, DIN EN 50156-1
● TÜV (German technical inspectorate) certificate	Yes
● UL approval	Yes
● BG BIA approval	Yes
Approvals Certificates	

Further information

Information- and Downloadcenter (Catalogs, Brochures,…)
https://www.siemens.com/ic10
Industry Mall (Online ordering system)
https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3TK2842-2BB41

Cax online generator
http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3TK2842-2BB41
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)
https://support.industry.siemens.com/cs/ww/en/ps/3TK2842-2BB41
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3TK2842-2BB41&lang=en





last modified: 10/14/2020