



Figure similar




SIRIUS safety relay with relay enabling circuits (EC) 24 V DC, 45 mm overall width
Screw terminal EC instantaneous: 2 NO EC delayed: 2NO, 0.05...3 s SC: 1NC
monitored start Basic device Maximum achieved SIL: 3/2, PL: e/d

product brand name	SIRIUS
product designation	safety relays
design of the product	for EMERGENCY-STOP and safety doors
product type designation	3TK28
Product Function	
product function	
• automatic start	No
• light barrier monitoring	No
• standstill monitoring	No
• protective door monitoring	No
• magnetically operated switch monitoring NC-NO	No
• magnetically operated switch monitoring NC-NC	No
• rotation speed monitoring	No
• laser scanner monitoring	No
• light array monitoring	No
• EMERGENCY OFF function	Yes
• monitored start-up	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	No
• position switch monitoring	Yes
• EMERGENCY-OFF circuit monitoring	Yes
• valve monitoring	No
• opto-electronic protection device monitoring	No
• tactile sensor monitoring	No
• magnetically operated switch monitoring	No
• proximity switch monitoring	No
• safety switch	Yes
• safety-related circuits	Yes
General technical data	
certificate of suitability UL approval	Yes
product feature cross-circuit-proof	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	8g / 10 ms
vibration resistance according to IEC 60068-2-6	5 ... 500 Hz: 0,075 mm
operating frequency maximum	1 000 1/h
mechanical service life (operating cycles) typical	10 000 000
electrical endurance (operating cycles) typical	100 000
thermal current of the switching element with contacts maximum	5 A
Substance Prohibitance (Date)	05/01/2012
Weight	0.457 kg
Ambient conditions	
installation altitude at height above sea level maximum	2 000 m
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	EN 60947-5-1
Safety related data	
stop category according to IEC 60204-1	0 + 1
IEC 62061	
SIL Claim Limit (subsystem) according to EN 62061	3
PFHD with high demand rate according to IEC 62061	2.7E-9 1/h
ISO 13849	
category according to EN ISO 13849-1	4
performance level (PL)	
• for delayed release circuit according to ISO 13849-1	d
IEC 61508	
Safety Integrity Level (SIL)	
• according to IEC 61508	3
• for delayed release circuit according to IEC 61508	SIL2
safety device type according to IEC 61508-2	Type A
Average probability of failure on demand (PFDavg) with low demand rate acc. to IEC 61508	2.4E-6 1/y
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: 6 A, or quick: 10 A
Inputs	
design of input	
• cascading input/functional switching	No
• feedback input	Yes
• start input	Yes
number of sensor inputs	
• 1-channel or 2-channel	1
Outputs	
number of outputs as contact-affected switching element	
• as NC contact	
— for signaling function instantaneous contact	1
• as NO contact	
— safety-related instantaneous contact	2
— safety-related delayed switching	2
number of outputs as contact-less semiconductor switching element	
• for signaling function	

— delayed switching	0
— instantaneous contact	0
• safety-related	
— delayed switching	0
— instantaneous contact	0
switching capacity current of the NO contacts of the relay outputs for delayed release circuit	
• at AC-15 at 230 V	3 A
• at DC-13 at 24 V	2 A
switching capacity current of the NO contacts of the relay outputs for instantaneous enabling circuit	
• at AC-15 at 230 V	5 A
• at DC-13 at 24 V	5 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 after power failure	
• typical	8 000 ms
• maximum	8 000 ms
make time with monitored start	
• maximum	80 ms
backslide delay time in the event of power failure	
• maximum	100 ms
adjustable OFF-delay time after opening of the safety circuits	0.05 ... 3 s
recovery time after power failure typical	200 ms
pulse duration	
• of the sensor input minimum	25 ms
• of the ON pushbutton input minimum	0.025 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	1.1
operating range factor control supply voltage rated value of magnet coil at AC	
• at 50 Hz	0.85 ... 1.1
• at 60 Hz	0.85 ... 1.1
Installation/ mounting/ dimensions	
mounting position	any
fastening method	screw and snap-on mounting
height	138.5 mm
width	44.8 mm
depth	120 mm
Connections/ Terminals	
type of electrical connection	screw terminal
type of connectable conductor cross-sections	
• solid	1x (0.5 ... 4.0 mm ²), 2x (0.5 ... 2.5 mm ²)
• finely stranded with core end processing	1x (0.5 ... 2.5 mm ²), 2x (0.5 ... 1.5 mm ²)
• for AWG cables solid	2x (20 ... 14)
• for AWG cables stranded	2x (20 ... 14)
connectable conductor cross-section	
• solid	0.5 ... 4 mm ²
• finely stranded with core end processing	0.5 ... 2.5 mm ²
AWG number as coded connectable conductor cross section	
• solid	20 ... 14
• stranded	20 ... 14
DC resistance of the cable maximum	30 Ω
type of electrical connection plug-in socket	Yes

Approvals Certificates

General Product Approval	EMV	Functional Safety	Test Certificates
 CCC	 UL	 EAC	 RCM

[Type Examination Certificate](#)

[Special Test Certificate](#)

other	Environment
Confirmation	Environmental Confirmations

Further information

Information on the packaging

<https://support.industry.siemens.com/cs/ww/en/view/109813875>

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=3TK2827-1BB41>

Cax online generator

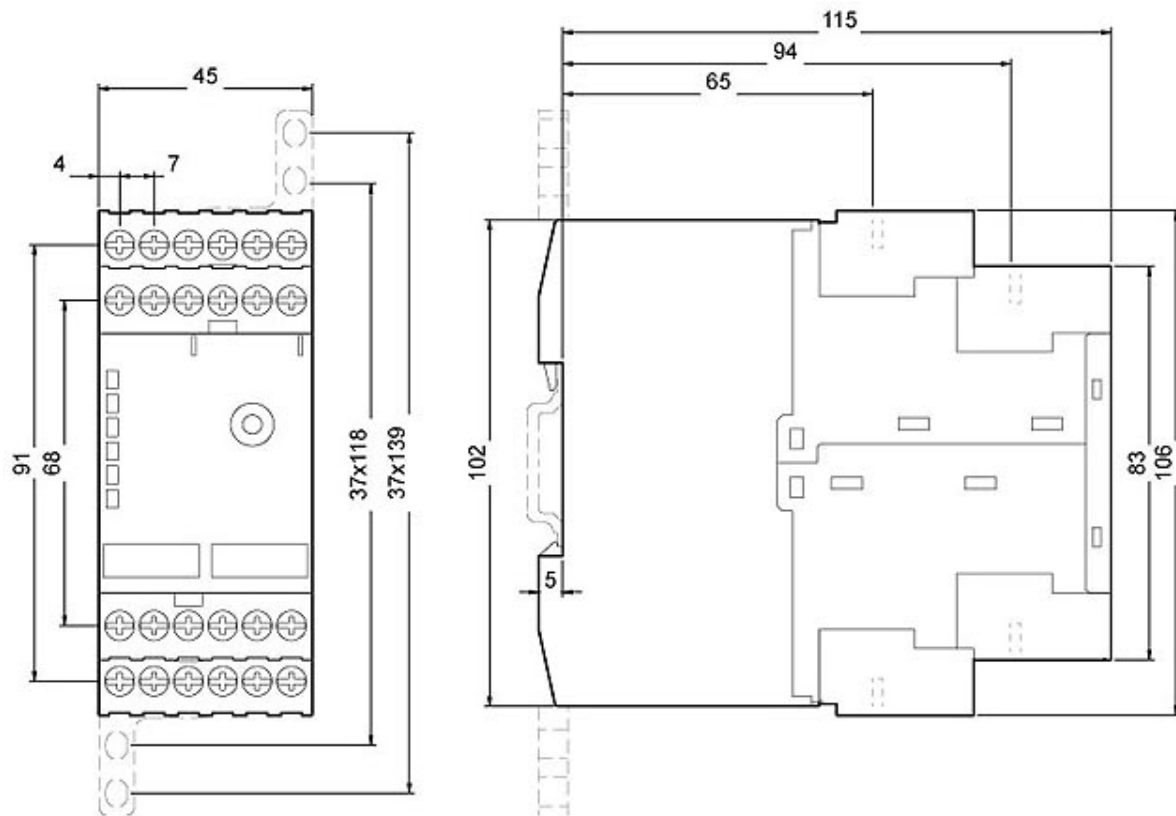
<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3TK2827-1BB41>

Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

<https://support.industry.siemens.com/cs/ww/en/ps/3TK2827-1BB41>

Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)

http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3TK2827-1BB41&lang=en



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