



SIRIUS safety relay with relay enabling circuits (EC) 24 V DC, 45 mm overall width Screw terminal EC instantaneous: 2 NO EC delayed: 2NO, 0.5...30 s SC: 1NC monitored start Basic device Maximum achieved SIL: 3/2, PL: e/d

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	IP20
protection class IP of the terminal	IP20
touch protection against electrical shock	finger-safe
insulation voltage rated value	300 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
surge voltage resistance rated value	4 000 V
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.
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	none
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	SIL2
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	d
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 A
PFHD with high demand rate acc. to EN 62061	0.0000000027 1/h
Average probability of failure on demand (PFDavg) with low demand rate acc. to IEC 61508	0.0000024 1/y
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	1
• as NO contact — safety-related instantaneous contact	2
— safety-related delayed switching	2
number of outputs as contact-less semiconductor switching element	
• safety-related — delayed switching	0
— instantaneous contact	0
• 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	No
• feedback input	Yes
• start input	Yes
Outputs	
type of electrical connection plug-in socket	Yes
operating frequency maximum	1 000 1/h
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
• 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
thermal current of the switching element with contacts maximum	5 A
electrical endurance (switching cycles) typical	100 000
mechanical service life (switching cycles) typical	10 000 000
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
DC resistance of the cable maximum	30 Ω
wire length between sensor and electronics evaluation device with Cu 1.5 mm² and 150 nF/km maximum	1 000 m
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	0.5 ... 30 s
recovery time after power failure typical	200 ms
pulse duration	
• of the sensor input minimum	25 ms

<ul style="list-style-type: none"> 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	24 V
<ul style="list-style-type: none"> at DC rated value 	
operating range factor control supply voltage rated value of magnet coil	
<ul style="list-style-type: none"> at AC <ul style="list-style-type: none"> at 50 Hz at 60 Hz at DC 	0.85 ... 1.1 0.85 ... 1.1 0.85 ... 1.1
Installation/ mounting/ dimensions	
mounting position	any
fastening method	screw and snap-on mounting
width	44.8 mm
height	138.5 mm
depth	120 mm
Connections/ Terminals	
type of electrical connection	screw-type terminals
type of connectable conductor cross-sections	
<ul style="list-style-type: none"> solid finely stranded with core end processing 	1x (0.5 ... 4.0 mm ²), 2x (0.5 ... 2.5 mm ²) 1x (0.5 ... 2.5 mm ²), 2x (0.5 ... 1.5 mm ²)
type of connectable conductor cross-sections at AWG cables	
<ul style="list-style-type: none"> solid stranded 	2x (20 ... 14) 2x (20 ... 14)
Product Function	
product function	
<ul style="list-style-type: none"> light barrier monitoring standstill monitoring protective door monitoring automatic start magnetically operated switch monitoring NC-NO rotation speed monitoring laser scanner monitoring monitored start-up light array monitoring magnetically operated switch monitoring NC-NC EMERGENCY OFF function pressure-sensitive mat monitoring 	No No No No No No No Yes No No Yes Yes
suitability for interaction press control	No
suitability for use	
<ul style="list-style-type: none"> monitoring of floating sensors monitoring of non-floating sensors safety switch position switch monitoring EMERGENCY-OFF circuit monitoring valve monitoring tactile sensor monitoring magnetically operated switch monitoring safety-related circuits 	Yes No Yes Yes Yes No No No No Yes
Certificates/ approvals	
certificate of suitability	UL, CSA, EN 60204-1, EN ISO 12100, EN 954-1, IEC 61508
<ul style="list-style-type: none"> TÜV (German technical inspectorate) certificate UL approval BG BIA approval 	Yes Yes 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=3TK2827-1BB40>

Cax online generator

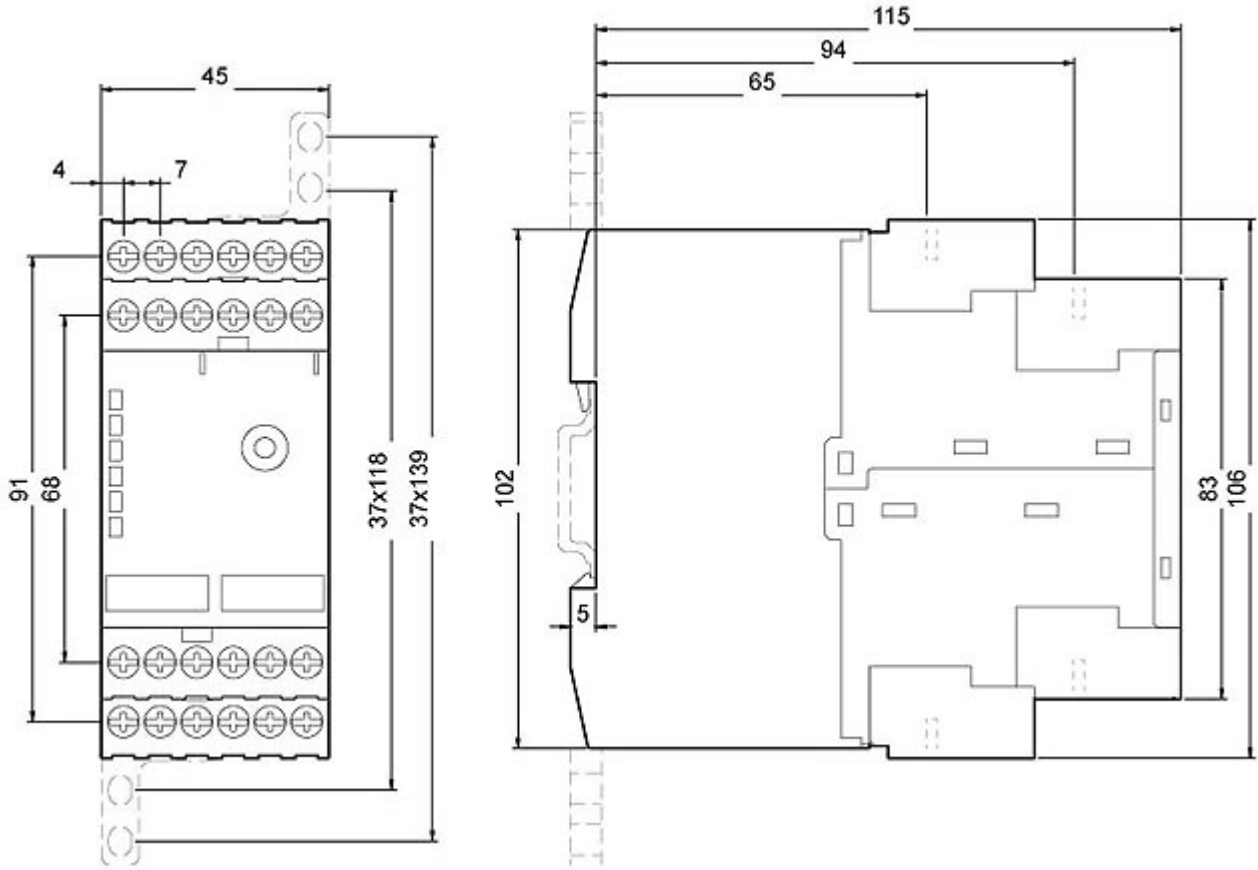
<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3TK2827-1BB40>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3TK2827-1BB40>

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

http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3TK2827-1BB40&lang=en



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