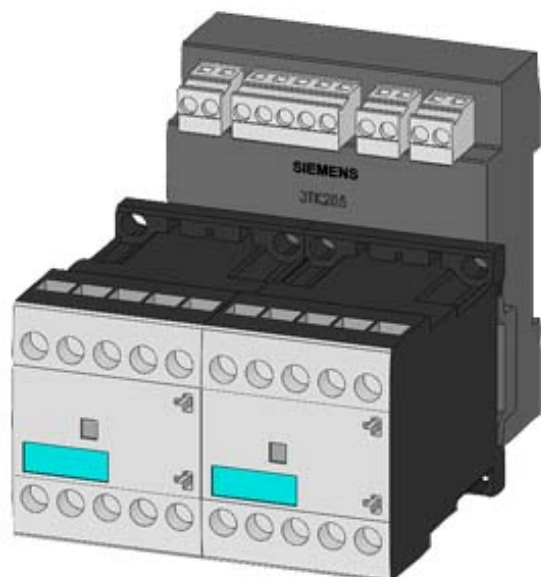




SIRIUS SAFETY RELAY WITH AUXILIARY CONTACTOR
RELEASE CIRCUIT (RC), DC 24V, 90.0MM, SCREW TERMINAL,
RC INSTANT.: 2S, RC DELAYED: 0, MC: 1NC, AUTOSTART /
MONITORED START, BASIC DEVICE, MAX. ACHIEVABLE SIL: 2,
PL: D

General technical data:

product brand name	SIRIUS
Product designation	safety relays
Design of the product	for EMERGENCY-STOP units
Protection class IP of the enclosure	IP20
Protection class IP of the terminal	IP20
Protection against electrical shock	finger-safe
Insulation voltage rated value	690 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	5g / 11 ms
Surge voltage resistance rated value	6 000 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.
Equipment marking acc. to DIN 40719 extended according to IEC 204-2 acc. to IEC 750	KT
Equipment marking acc. to DIN EN 61346-2	F
Contact reliability	one incorrect switching operation of 100 million switching operations (17 V, 5 mA)
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	SIL2
SIL Claim Limit (subsystem) acc. to EN 62061	2
Performance level (PL) • acc. to EN ISO 13849-1	d
Category acc. to EN 954-1	3
Category acc. to EN ISO 13849-1	3
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	0.000000011 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 • as NO contact — safety-related instantaneous contact — safety-related delayed switching	1 2 0
Number of outputs as contact-less semiconductor switching element • safety-related — delayed switching — instantaneous contact • for signaling function — delayed switching — instantaneous contact	 0 0 0 0
Stop category acc. to DIN EN 60204-1	0

General technical data:

Design of input	
• cascading input/functional switching	No
• feedback input	Yes
• Start input	Yes
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	
— at DC-13	
— at 24 V	10 A
— at 115 V	1 A
— at 230 V	0.3 A
— at AC-15	
— at 115 V	6 A
— at 230 V	6 A
• of the NC contacts of the relay outputs	
— at DC-13	
— at 24 V	10 A
— at 115 V	1 A
— at 230 V	0.3 A
— at AC-15	
— at 115 V	6 A
— at 230 V	6 A
Mechanical service life (switching cycles) typical	30 000 000
maximum permissible voltage for safe isolation between electronic evaluation device and enabling circuit acc. to EN 60947-1	400 V
Design of the fuse link for short-circuit protection of the NO contacts of the relay outputs required	gL/gG: 10 A
DC resistance of the cable maximum	250 Ω
Wire length between sensor and electronic evaluation device with Cu 1.5 mm² and 150 nF/km maximum	2 000 m
Make time with automatic start	
• typical	100 ms
• at DC maximum	200 ms
Make time with automatic start after power failure	
• typical	350 ms
• maximum	500 ms
Make time with monitored start	
• maximum	100 ms
• typical	60 ms

Backslide delay time after opening of the safety circuits typical	30 ms
Backslide delay time in the event of power failure	
• typical	100 ms
• maximum	120 ms
Recovery time after opening of the safety circuits typical	20 ms
Recovery time after power failure typical	20 ms
Pulse duration	
• of the sensor input minimum	20 ms
• of the ON pushbutton input minimum	0.02 s
• of the cascading input minimum	0.02 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	0.85 ... 1.1

Auxiliary circuit:

Contact reliability of auxiliary contacts	< 1 error per 100 million operating cycles
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Installation/ mounting/ dimensions:

Mounting position	any
Mounting type	screw and snap-on mounting
Width	90 mm
Height	132 mm
Depth	108 mm

Connections/ Terminals:

Type of electrical connection	screw-type terminals
Type of connectable conductor cross-sections	
• solid	1x (0.2 ... 2.5 mm²), 2x (0.2 ... 1.0 mm²)
• finely stranded	
— with core end processing	1x (0.25 ... 2.5 mm²), 2x (0.25 ... 1.0 mm²)
Type of connectable conductor cross-sections at AWG conductors	
• solid	2x (24 ... 18)
• stranded	2x (24 ... 18)

Product Function:

Product function	
• Light barrier monitoring	No
• Standstill monitoring	No

• protective door monitoring	Yes
• Automatic start	Yes
• magnetically operated switch monitoring NC-NO	No
• rotation speed monitoring	No
• laser scanner monitoring	No
• monitored start-up	Yes
• Light array monitoring	No
• magnetically operated switch monitoring NC-NC	Yes
• EMERGENCY OFF function	Yes
• Pressure-sensitive mat monitoring	No
Suitability for interaction press control	No
Suitability for use	
• Monitoring of floating sensors	Yes
• Monitoring of non-floating sensors	No
• safety switch	Yes
• position switch monitoring	Yes
• EMERGENCY-OFF circuit monitoring	Yes
• valve monitoring	No
• tactile sensor monitoring	No
• magnetically operated switch monitoring	No
• safety-related circuits	Yes
Certificates/ approvals:	
Certificate of suitability	UL, CSA, EN 60204-1, EN ISO 12100, EN 954-1, IEC 61508
• TÜV (German technical inspectorate) certificate	Yes
• UL approval	Yes
• BG BIA certificate	Yes

General Product Approval	EMC	Functional Safety/Safety of Machinery
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[Baumusterprüfbescheinigung](#)

Declaration of Conformity	Test Certificates	other
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[spezielle Prüfbescheinigung](#)

[Bestätigungen](#)

[Umweltbestätigung](#)

Further information

Information- and Downloadcenter (Catalogs, Brochures,...)

<http://www.siemens.com/industrial-controls/catalogs>

Industry Mall (Online ordering system)

<http://www.siemens.com/industrymall>

Cax online generator

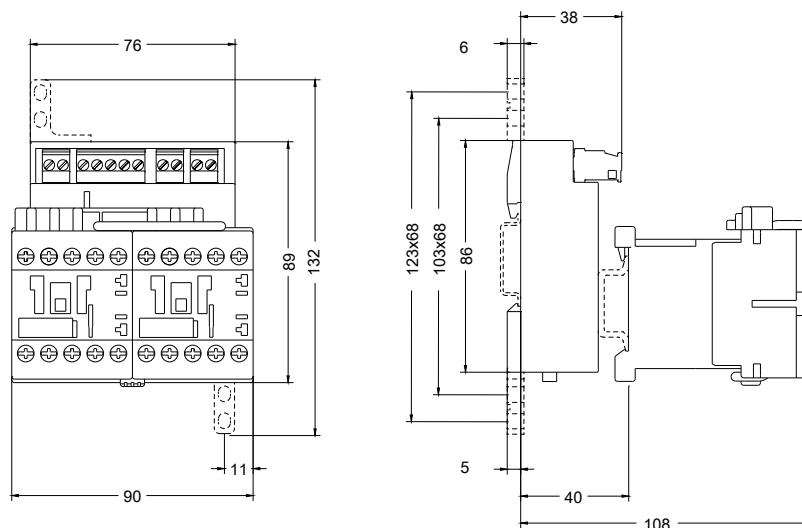
<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3TK2851-1BB40>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3TK2851-1BB40>

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

http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3TK2851-1BB40&lang=en



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