

SIRIUS SAFETY RELAY WITH AUXILIARY CONTACTOR
 RELEASE CIRCUIT (RC),
 AC 230V, 90.0MM, SCREW TERMINAL,
 RC INSTANT.: 6S, RC DELAYED: 0,
 MC: 1NC, AUTOSTART / MONITORED START,
 BASIC DEVICE, MAX. ACHIEVABLE SIL: 2,
 PL: D

General technical details:		
product brand name		SIRIUS
product designation		safety relays
Design of the product		for EMERGENCY-STOP units
protection class IP / of the housing		IP20
Protection class IP / of the terminal		IP20
Protection against electrical shock		finger-safe
Insulation voltage / rated value	V	690
Ambient temperature		
• during storage	°C	-40 ... +80
• during operating	°C	-25 ... +60
Air pressure		
• according to SN 31205	kPa	90 ... 106
Relative humidity		
• during operating phase	%	10 ... 95
Installation altitude / at a height over sea level / maximum	m	2,000
Resistance against vibration / according to IEC 60068-2-6		5 ... 500 Hz: 0,075 mm
Resistance against shock		5g / 11 ms
Impulse voltage resistance / rated value	V	6,000
EMC emitted interference		IEC 60947-5-1, IEC 60000-4-3, IEC 60000-4-5, IEC 60000-4-6
Installation environment relating to 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.
Item designation		
• according to DIN 40719 extendable after IEC 204-2 / according to IEC 750		KT
• according 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 / transverse contact-secure		Yes
safety Integrated Level • according to IEC 61508		SIL2
SIL claim limit (for a subsystem) / according to EN 62061		2
Performance Level (PL) • according to ISO 13849-1		d
Category / according to EN 954-1		3
Category / according to ISO 13849-1		3
Hardware fault tolerance / according to IEC 61508		1
Safety device type / according to IEC 61508-2		Type B
Probability of dangerous failure per hour (PFHD) / with high demand rate / according to EN 62061	1/h	0.11E-7
T1 value / for proof test interval or service life / according to IEC 61508	a	20
Number of outputs / as contact-affected switching element • as NC contact / for reporting function / instantaneous switching • as NO contact / safety-related / instantaneous switching • as NO contact / safety-related/ delayed switching		1 6 0
Number of outputs / as contact-less semiconductor switching element • safety-related • delayed switching • non-delayed • for reporting function • delayed switching • non-delayed		0 0 0 0
Stop category / according to DIN EN 60204-1		0

General technical details:

Design of the input • cascading-entrance/operation-even switching • reducing-entrance • start-up entrance		No Yes Yes
Design of the electrical connection / jumper socket		Yes
Operating cycles / maximum	1/h	1,000
Switching capacity current • of NO contacts of relay outputs		

• at DC-13	A	10
• at 24 V	A	1
• at 115 V	A	0.3
• at 230 V		
• at AC-15		
• at 115 V	A	6
• at 230 V	A	6
• of NC contacts of relay outputs		
• at DC-13		
• at 24 V	A	10
• at 115 V	A	1
• at 230 V	A	0.3
• at AC-15		
• at 115 V	A	6
• at 230 V	A	6
Mechanical operating cycles as operating time / typical		30,000,000
Max. permissible voltage for safe isolation / between electronic evaluation device and enabling circuit / according to EN 60947-1	V	400
Design of the fuse link / for short-circuit protection of the NO contacts of the relay outputs / required		gL/gG: 10 A
Resistance to direct current / of the cable / maximum	Ω	250
Cable length / between sensor and electronic evaluation device / with Cu 1.5 mm² and 150 nF/km / maximum	m	2,000
Make time / with automatic start		
• typical	ms	100
• for AC / maximum	ms	200
Make time / with automatic start / after mains power cut		
• typical	ms	350
• maximum	ms	500
Make time / with monitored start		
• maximum	ms	100
• typical	ms	60
Backslide delay time / after opening of the safety circuits / typical	ms	30
Backslide delay time / at mains power cut		
• typical	ms	100
• maximum	ms	120
Recovery time / after opening of the safety circuits / typical	ms	20
Recovery time / after mains power cut / typical	s	0.02
Pulse duration		
• of the sensor input / minimum	ms	20
• of the ON pushbutton input / minimum	s	0.02

- of the cascading-entrance / minimum

s	0.02
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Control circuit:

Type of voltage / of the controlled supply voltage		AC
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Control supply voltage frequency		
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- 1 / rated value

Hz	50
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- 2 / rated value

Hz	60
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Control supply voltage / 1 / at 50 Hz / for AC / rated value	V	230
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Control supply voltage / 1 / at 60 Hz / for AC / rated value	V	230
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operating range factor control supply voltage rated value / of the magnet coil		
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- at 50 Hz

- for AC

0.9 ... 1.15

- at 60 Hz

- for AC

0.9 ... 1.15

Auxiliary circuit:

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

mounting position		any
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Type of mounting		screw and snap-on mounting
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Width	mm	90
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Height	mm	132
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Depth	mm	146
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Connections:

Design of the electrical connection		screw-type terminals
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Type of the connectable conductor cross-section		
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- solid

1x (0.2 ... 2.5 mm ²), 2x (0.2 ... 1 mm ²)

- finely stranded

- with wire end processing

1x (0.25 ... 2.5 mm ²), 2x (0.25 ... 1 mm ²)
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Type of the connectable conductor cross-section / for AWG conductors		
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- solid

2x (24 ... 12)

- stranded

2x (24 ... 12)

Product Function:

Product function		
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- light barrier monitoring

No

- standstill monitoring

No

- protective door monitoring

Yes

• automatic start	Yes
• magnetic switch monitoring Normally closed contact-Normally open contact	No
• rotation speed monitoring	No
• laser scanner monitoring	No
• monitored start-up	Yes
• light grid monitoring	No
• magnetic switch monitoring Normally closed contact-Normally closed contact	Yes
• emergency stop function	Yes
• step mat monitoring	No
Suitability for interaction / pressing control	No
Acceptability for application	
• monitoring of floating sensors	Yes
• monitoring of non-floating sensors	No
• safety cut-out switch	Yes
• position switch monitoring	Yes
• EMERGENCY-OFF circuit monitoring	Yes
• valve monitoring	No
• tactile sensor monitoring	No
• magnetically operated switches monitoring	No
• safety-related circuits	Yes

Certificates/approvals:

Verification of suitability	UL, CSA, EN 60204-1, EN ISO 12100, EN 954-1, IEC 61508
• TÜV (German technical inspectorate) certificate	Yes
• UL-registration	Yes
• BG BIA certificate	Yes

General Product Approval	EMC	Functional Safety / Safety of Machinery
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Declaration of Conformity	Test Certificates	other
 EG-Konf.	Special Test Certificate	Confirmation

Further information:

Information- and Downloadcenter (Catalogs, Brochures,...)
<http://www.siemens.com/industrial-controls/catalogs>

Industry Mall (Online ordering system)

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

Cax online generator:

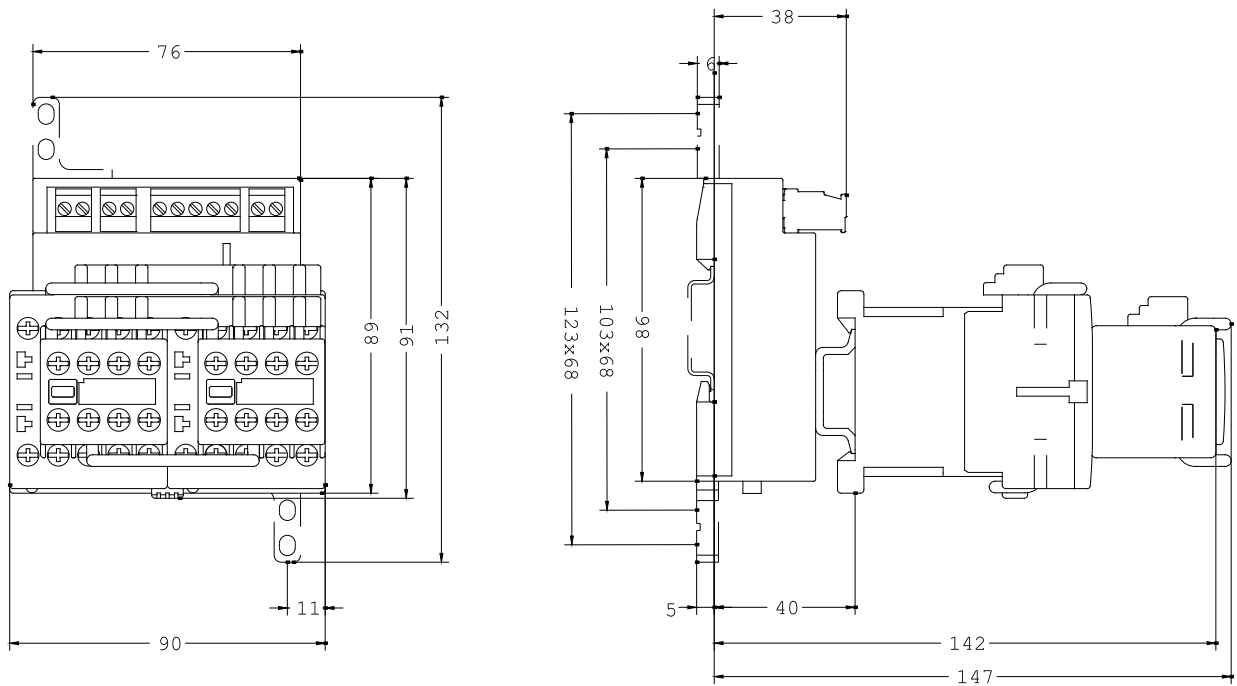
<http://www.siemens.com/cax>

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

<http://support.automation.siemens.com/WW/view/en/3TK2852-1AL20/all>

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

http://www.automation.siemens.com/bilddb/cax_en.aspx?mlfb=3TK2852-1AL20



last change:

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