



SIRIUS SAFETY RELAY WITH ELECTRONIC RELEASE
CIRCUIT (RC) DC 24V,
22.5MM, SCREW TERMINAL,
RC INSTANT.: 2 HL, RC DELAYED: 0,
MK: 0, AUTOSTART / MONITORED START,
STANDARD DEVICE,
MAX. ACHIEVABLE SIL: 3, PL: E

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		IP40
Protection class IP / of the terminal		IP20
Protection against electrical shock		finger-safe
Insulation voltage / rated value	V	50
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		8g / 10 ms and 15g / 5 ms
Impulse voltage resistance / rated value	V	500

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 <ul style="list-style-type: none"> • according to DIN 40719 extendable after IEC 204-2 / according to IEC 750 • according to DIN EN 61346-2 		KT F
Number of sensor inputs <ul style="list-style-type: none"> • 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 / transverse contact-secure		Yes
Safety Integrity Level (SIL) <ul style="list-style-type: none"> • according to IEC 61508 		SIL3
SIL claim limit (for a subsystem) / according to EN 62061		3
Performance Level (PL) <ul style="list-style-type: none"> • according to ISO 13849-1 		e
Category / according to EN 954-1		4
Category / according to ISO 13849-1		4
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	0.50E-10
T1 value / for proof test interval or service life / according to IEC 61508	a	20
Number of outputs / as contact-affected switching element <ul style="list-style-type: none"> • as NC contact / for reporting function / instantaneous switching • as NO contact / safety-related / instantaneous switching • as NO contact / safety-related / delayed switching 		0 0 0
Number of outputs / as contact-less semiconductor switching element <ul style="list-style-type: none"> • safety-related <ul style="list-style-type: none"> • delayed switching • non-delayed • for reporting function <ul style="list-style-type: none"> • delayed switching • non-delayed 		0 2 0 0
Stop category / according to DIN EN 60204-1		0

General technical details:

Design of the input		
• cascading-input/functional switching		Yes
• feedback input		Yes
• start input		Yes
Design of the electrical connection / jumper socket		Yes
Operating cycles / maximum	1/h	2,000
Switching capacity current		
• of semiconductor outputs		
• for enabling circuit / for DC-13 / at 24 V	A	1.5
Design of the fuse link / for short-circuit protection of the NO contacts of the relay outputs / required		not required
Resistance to direct current / of the cable / maximum	Ω	1,000
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	60
• for DC / maximum	ms	100
Make time / with automatic start / after mains power cut		
• typical	ms	6,000
• maximum	ms	7,000
Make time / with monitored start		
• maximum	ms	100
• typical	ms	60
Backslide delay time / after opening of the safety circuits / typical	ms	45
Backslide delay time / at mains power cut		
• typical	ms	0
• maximum	ms	0
Recovery time / after opening of the safety circuits / typical	ms	400
Recovery time / after mains power cut / typical	s	7
Pulse duration		
• of the sensor input / minimum	ms	45
• of the ON pushbutton input / minimum	s	0.2
• of the cascading-entrance / minimum	s	0.045
Control circuit:		
Type of voltage / of the controlled supply voltage		DC
Control supply voltage / 1 / for DC / rated value	V	24
operating range factor control supply voltage rated value / of the magnet coil		
• for DC		0.9 ... 1.15

Installation/mounting/dimensions:		
mounting position		any
Type of mounting		screw and snap-on mounting
Width	mm	22.5
Height	mm	100
Depth	mm	88

Connections:		
Design of the electrical connection		screw-type terminals
Type of the connectable conductor cross-section		
<ul style="list-style-type: none"> • solid 		1x (0.5 ... 4 mm ²), 2x (0.5 ... 2.5 mm ²)
<ul style="list-style-type: none"> • finely stranded • with wire end processing 		1x (0.5 ... 2.5 mm ²), 2x (0.5 ... 1.5 mm ²)
Type of the connectable conductor cross-section / for AWG conductors		
<ul style="list-style-type: none"> • solid 		2x (20 ... 14)
<ul style="list-style-type: none"> • stranded 		2x (20 ... 14)

Product Function:		
Product function		
<ul style="list-style-type: none"> • light barrier monitoring 		Yes
<ul style="list-style-type: none"> • standstill monitoring 		No
<ul style="list-style-type: none"> • protective door monitoring 		Yes
<ul style="list-style-type: none"> • automatic start 		Yes
<ul style="list-style-type: none"> • magnetic switch monitoring Normally closed contact-Normally open contact 		No
<ul style="list-style-type: none"> • rotation speed monitoring 		No
<ul style="list-style-type: none"> • laser scanner monitoring 		Yes
<ul style="list-style-type: none"> • monitored start-up 		Yes
<ul style="list-style-type: none"> • light grid monitoring 		Yes
<ul style="list-style-type: none"> • magnetic switch monitoring Normally closed contact-Normally closed contact 		Yes
<ul style="list-style-type: none"> • emergency stop function 		Yes
<ul style="list-style-type: none"> • step mat monitoring 		Yes
Suitability for interaction / pressing control		No
Acceptability for application		
<ul style="list-style-type: none"> • monitoring of floating sensors 		Yes
<ul style="list-style-type: none"> • monitoring of non-floating sensors 		Yes
<ul style="list-style-type: none"> • safety cut-out switch 		Yes
<ul style="list-style-type: none"> • position switch monitoring 		Yes
<ul style="list-style-type: none"> • EMERGENCY-OFF circuit monitoring 		Yes

- valve monitoring
- tactile sensor monitoring
- magnetically operated switches monitoring
- safety-related circuits

No
Yes
Yes
Yes

Certificates/approvals:

Verification of suitability

- TÜV (German technical inspectorate) certificate
- UL-registration
- BG BIA certificate

UL, CSA, EN 60204-1, EN ISO 12100, EN 954-1, IEC 61508, DIN EN 50156-1
Yes
Yes
Yes

General Product Approval

EMC

Functional Safety / Safety of Machinery



Declaration of Conformity

Test Certificates

other



[Special Test Certificate](#)

[Confirmation](#)

[Environmental Confirmations](#)

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:

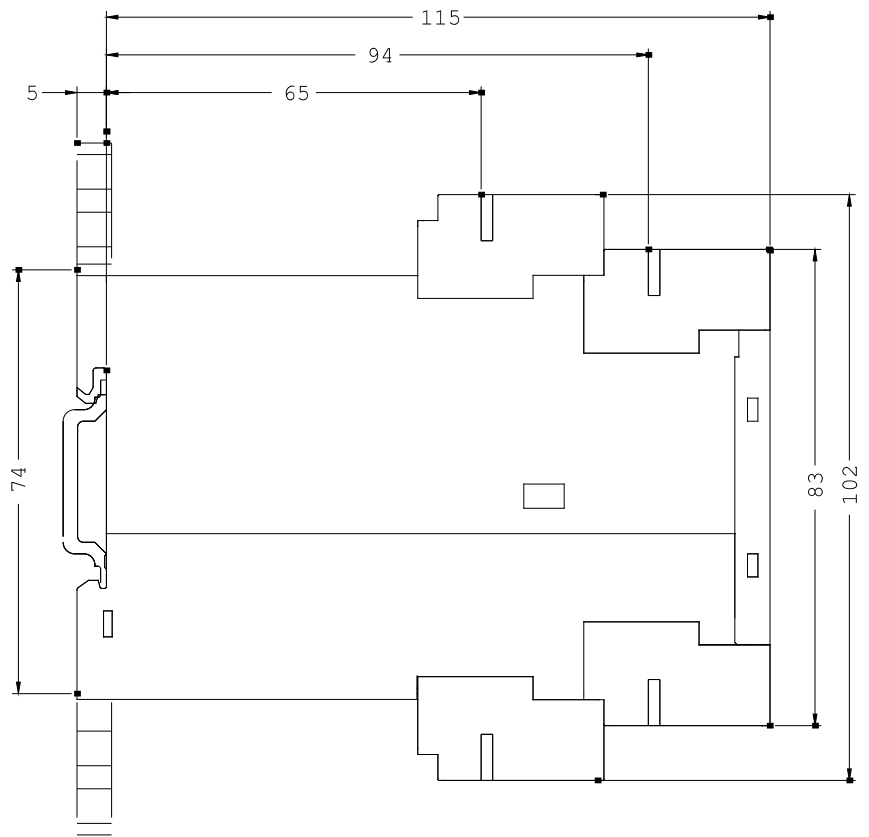
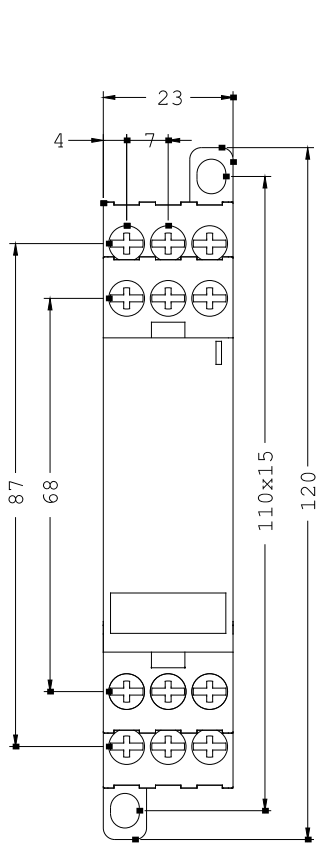
<http://www.siemens.com/cax>

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

<http://support.automation.siemens.com/WW/view/en/3TK2841-1BB40/all>

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

http://www.automation.siemens.com/bilddb/cax_en.aspx?mlfb=3TK2841-1BB40



last change:

Mar 4, 2013