

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 data:

product brand name	SIRIUS
Product designation	safety relays
Design of the product	for EMERGENCY-STOP units
Protection class IP of the enclosure	IP40
Protection class IP of the terminal	IP20
Protection against electrical shock	finger-safe
Insulation voltage rated value	50 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 and 15g / 5 ms
Surge voltage resistance rated value	500 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
Number of sensor inputs • 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 cross-circuit-proof	Yes
Safety Integrity Level (SIL) • acc. to IEC 61508	SIL3
SIL Claim Limit (subsystem) acc. to EN 62061	3
Performance level (PL) • acc. to EN ISO 13849-1	e
Category acc. to EN 954-1	4
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 B
PFHD with high demand rate acc. to EN 62061	0.00000000005 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	0 0 0
Number of outputs as contact-less semiconductor switching element • safety-related — delayed switching — instantaneous contact • for signaling function — delayed switching — instantaneous contact	0 2 0 0
Stop category acc. to DIN EN 60204-1	0

General technical data:

Design of input

<ul style="list-style-type: none"> • cascading input/functional switching 	Yes
<ul style="list-style-type: none"> • feedback input 	Yes
<ul style="list-style-type: none"> • Start input 	Yes
Type of electrical connection Plug-in socket	Yes
Operating frequency maximum	2 000 1/h
Switching capacity current	
<ul style="list-style-type: none"> • of semiconductor outputs <ul style="list-style-type: none"> — for enabling circuit at DC-13 at 24 V 	1.5 A
Design of the fuse link for short-circuit protection of the NO contacts of the relay outputs required	not required
DC resistance of the cable maximum	1 000 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	
<ul style="list-style-type: none"> • typical 	60 ms
<ul style="list-style-type: none"> • at DC maximum 	100 ms
Make time with automatic start after power failure	
<ul style="list-style-type: none"> • typical 	6 000 ms
<ul style="list-style-type: none"> • maximum 	7 000 ms
Make time with monitored start	
<ul style="list-style-type: none"> • maximum 	100 ms
<ul style="list-style-type: none"> • typical 	60 ms
Backslide delay time after opening of the safety circuits typical	45 ms
Backslide delay time in the event of power failure	
<ul style="list-style-type: none"> • typical 	0 ms
<ul style="list-style-type: none"> • maximum 	0 ms
Recovery time after opening of the safety circuits typical	400 ms
Recovery time after power failure typical	7 000 ms
Pulse duration	
<ul style="list-style-type: none"> • of the sensor input minimum 	45 ms
<ul style="list-style-type: none"> • of the ON pushbutton input minimum 	0.2 s
<ul style="list-style-type: none"> • of the cascading input minimum 	0.045 s
Control circuit/ Control:	
Type of voltage of the control supply voltage	DC
Control supply voltage 1	
<ul style="list-style-type: none"> • at DC rated value 	24 V
Operating range factor control supply voltage rated value of magnet coil	
<ul style="list-style-type: none"> • at DC 	0.9 ... 1.15

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

Connections/ Terminals:	
Type of electrical connection	screw-type terminals
Type of connectable conductor cross-sections	
<ul style="list-style-type: none"> • solid 	1x (0.5 ... 4.0 mm ²), 2x (0.5 ... 2.5 mm ²)
<ul style="list-style-type: none"> • finely stranded — with core end processing 	1x (0.5 ... 2.5 mm ²), 2x (0.5 ... 1.5 mm ²)
Type of connectable conductor cross-sections at 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 • 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 	<p>Yes</p> <p>No</p> <p>Yes</p> <p>Yes</p> <p>No</p> <p>No</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p>
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 	<p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>No</p> <p>Yes</p>

- magnetically operated switch monitoring Yes
- safety-related circuits Yes

Certificates/ approvals:

Certificate of suitability	UL, CSA, EN 60204-1, EN ISO 12100, EN 954-1, IEC 61508, DIN EN 50156-1
• 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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Declaration of Conformity	Test Certificates	other	
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[Bestätigungen](#)

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

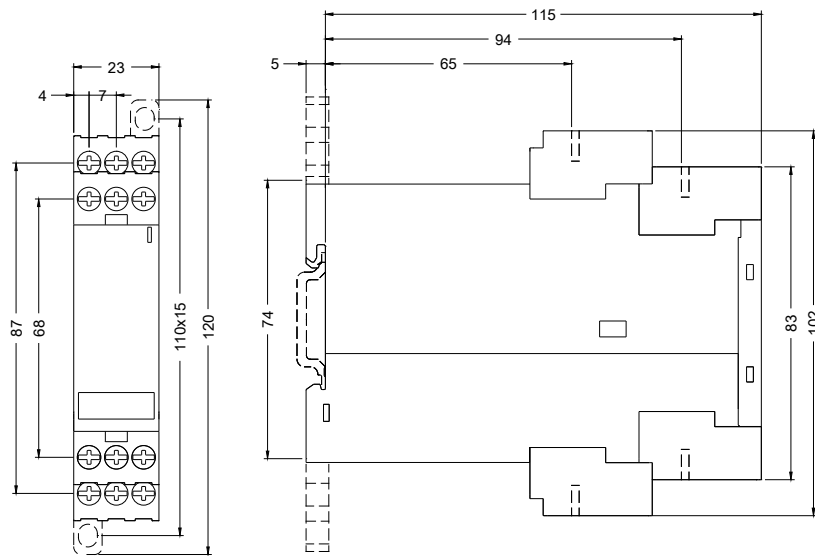
<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mfb=3TK2841-1BB40>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3TK2841-1BB40>

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

http://www.automation.siemens.com/bilddb/cax_de.aspx?mfb=3TK2841-1BB40&lang=en



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