



SIRIUS safety relay with contactor relay enabling circuits (EC) 24 V DC, 90 mm  
Screw terminal EC instantaneous: 3 NO + 1 HL EC delayed: 0 SC: 0  
Autostart/monitored start Basic device Maximum achieved SIL: 3, PL: e

product brand name	SIRIUS
product designation	safety relays
design of the product	for EMERGENCY-STOP and safety doors
<b>General technical data</b>	
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	690 V
ambient temperature	
• during storage	-40 ... +80 °C
• during operation	-25 ... +60 °C
air pressure according 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 according 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. In household environments, this device can cause unwanted radio interference. The user is required to implement appropriate measures in this case.
reference code according to DIN 40719 extended according to IEC 204-2 according to IEC 750	KT
reference code according to 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	cascading and 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)	
• according to IEC 61508	3
SIL Claim Limit (subsystem) according to EN 62061	3
category according to EN ISO 13849-1	4
hardware fault tolerance according to IEC 61508	1
safety device type according to IEC 61508-2	Type B
PFHD with high demand rate according to EN 62061	1.1E-8 1/h
T1 value for proof test interval or service life according to IEC 61508	20 a
number of outputs as contact-affected switching element	
• as NC contact	

— for signaling function instantaneous contact	0
• as NO contact	
— safety-related instantaneous contact	3
— safety-related delayed switching	0
<b>number of outputs as contact-less semiconductor switching element</b>	
• safety-related	
— delayed switching	0
— instantaneous contact	1
• for signaling function	
— delayed switching	0
— instantaneous contact	0
<b>stop category according to EN 60204-1</b>	0
<b>Inputs</b>	
<b>design of input</b>	
• cascading input/functional switching	Yes
• feedback input	Yes
• start input	Yes
<b>Outputs</b>	
<b>type of electrical connection plug-in socket</b>	Yes
<b>operating frequency maximum</b>	1 000 1/h
<b>switching capacity current</b>	
• 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
• of the NO contacts of the relay outputs 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
• of the NC contacts of the relay outputs at AC-15	
— at 115 V	6 A
— at 230 V	6 A
<b>mechanical service life (operating cycles) typical</b>	30 000 000
<b>maximum permissible voltage for protective separation between electronics evaluation device and enabling circuit according to EN 60947-1</b>	400 V
<b>design of the fuse link for short-circuit protection of the NO contacts of the relay outputs required</b>	gL/gG: 10 A
<b>DC resistance of the cable maximum</b>	500 Ω
<b>wire length between sensor and electronics evaluation device with Cu 1.5 mm² and 150 nF/km maximum</b>	2 000 m
<b>Times</b>	
<b>make time with automatic start</b>	
• typical	60 ms
• at DC maximum	100 ms
<b>make time with automatic start after power failure</b>	
• typical	6 000 ms
• maximum	7 000 ms
<b>make time with monitored start</b>	
• maximum	100 ms
• typical	60 ms
<b>backslide delay time after opening of the safety circuits typical</b>	50 ms
<b>backslide delay time in the event of power failure</b>	
• typical	120 ms
• maximum	120 ms
<b>recovery time after opening of the safety circuits typical</b>	500 ms
<b>recovery time after power failure typical</b>	7 s

<b>pulse duration</b>		
<ul style="list-style-type: none"><li>• of the sensor input minimum</li></ul>	45 ms	
<ul style="list-style-type: none"><li>• of the ON pushbutton input minimum</li></ul>	0.2 s	
<ul style="list-style-type: none"><li>• of the cascading input minimum</li></ul>	0.045 s	
<b>Control circuit/ Control</b>		
<b>type of voltage of the control supply voltage</b>	DC	
<b>control supply voltage 1</b>		
<ul style="list-style-type: none"><li>• at DC rated value</li></ul>	24 V	
<b>operating range factor control supply voltage rated value of magnet coil</b>		
<ul style="list-style-type: none"><li>• at DC</li></ul>	0.85 ... 1.1	
<b>Auxiliary circuit</b>		
<b>contact reliability of auxiliary contacts</b>	< 1 error per 100 million operating cycles	
<b>Installation/ mounting/ dimensions</b>		
<b>mounting position</b>	any	
<b>fastening method</b>	screw and snap-on mounting	
<b>width</b>	90 mm	
<b>height</b>	132 mm	
<b>depth</b>	108 mm	
<b>Connections/ Terminals</b>		
<b>type of electrical connection</b>	screw-type terminals	
<b>type of connectable conductor cross-sections</b>		
<ul style="list-style-type: none"><li>• solid</li></ul>	1x (0.2 ... 2.5 mm²), 2x (0.2 ... 1.0 mm²)	
<ul style="list-style-type: none"><li>• finely stranded</li></ul>		
<ul style="list-style-type: none"><li>— with core end processing</li></ul>	1x (0.25 ... 2.5 mm²), 2x (0.25 ... 1.0 mm²)	
<b>type of connectable conductor cross-sections for AWG cables</b>		
<ul style="list-style-type: none"><li>• solid</li></ul>	2x (24 ... 18)	
<ul style="list-style-type: none"><li>• stranded</li></ul>	2x (24 ... 18)	
<b>Product Function</b>		
<b>product function</b>		
<ul style="list-style-type: none"><li>• light barrier monitoring</li></ul>	Yes	
<ul style="list-style-type: none"><li>• standstill monitoring</li></ul>	No	
<ul style="list-style-type: none"><li>• protective door monitoring</li></ul>	Yes	
<ul style="list-style-type: none"><li>• automatic start</li></ul>	Yes	
<ul style="list-style-type: none"><li>• magnetically operated switch monitoring NC-NO</li></ul>	No	
<ul style="list-style-type: none"><li>• rotation speed monitoring</li></ul>	No	
<ul style="list-style-type: none"><li>• laser scanner monitoring</li></ul>	Yes	
<ul style="list-style-type: none"><li>• monitored start-up</li></ul>	Yes	
<ul style="list-style-type: none"><li>• light array monitoring</li></ul>	Yes	
<ul style="list-style-type: none"><li>• magnetically operated switch monitoring NC-NC</li></ul>	Yes	
<ul style="list-style-type: none"><li>• EMERGENCY OFF function</li></ul>	Yes	
<ul style="list-style-type: none"><li>• pressure-sensitive mat monitoring</li></ul>	Yes	
<b>suitability for interaction press control</b>	Yes	
<b>suitability for use</b>		
<ul style="list-style-type: none"><li>• monitoring of floating sensors</li></ul>	Yes	
<ul style="list-style-type: none"><li>• monitoring of non-floating sensors</li></ul>	Yes	
<ul style="list-style-type: none"><li>• safety switch</li></ul>	Yes	
<ul style="list-style-type: none"><li>• position switch monitoring</li></ul>	Yes	
<ul style="list-style-type: none"><li>• EMERGENCY-OFF circuit monitoring</li></ul>	Yes	
<ul style="list-style-type: none"><li>• valve monitoring</li></ul>	No	
<ul style="list-style-type: none"><li>• tactile sensor monitoring</li></ul>	Yes	
<ul style="list-style-type: none"><li>• magnetically operated switch monitoring</li></ul>	No	
<ul style="list-style-type: none"><li>• safety-related circuits</li></ul>	Yes	
<b>Certificates/ approvals</b>		
<b>certificate of suitability</b>	UL, CSA, EN 60204-1, EN ISO 12100, EN 954-1, IEC 61508	
<ul style="list-style-type: none"><li>• TÜV (German technical inspectorate) certificate</li></ul>	Yes	
<ul style="list-style-type: none"><li>• UL approval</li></ul>	Yes	
<ul style="list-style-type: none"><li>• BG BIA approval</li></ul>	Yes	
<b>General Product Approval</b>	<b>EMC</b>	<b>Functional Safety/Safety of Ma</b>



[Type Examination Certificate](#)

Test Certificates

other

[Special Test Certificate](#)

[Confirmation](#)

#### Further information

**Siemens has decided to exit the Russian market (see here).**

<https://press.siemens.com/global/en/pressrelease/siemens-wind-down-russian-business>

**Siemens is working on the renewal of the current EAC certificates.**

Please contact your local Siemens office on the status of validity of the EAC certification if you intend to import or offer to supply these products to an EAC relevant market (other than the sanctioned EAEU member states Russia or Belarus).

**Information on the packaging**

<https://support.industry.siemens.com/cs/ww/en/view/109813875>

**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=3TK2853-1BB40>

**Cax online generator**

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3TK2853-1BB40>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3TK2853-1BB40>

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

[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3TK2853-1BB40&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3TK2853-1BB40&lang=en)

