## SIEMENS

## Data sheet

## 3TK2853-1BB40



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		
General technical data			
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)			
<ul> <li>according to IEC 61508</li> </ul>	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	Туре В		
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			

<ul> <li>for signaling function instantaneous contact</li> </ul>	0
<ul> <li>as NO contact</li> </ul>	
<ul> <li>— safety-related instantaneous contact</li> </ul>	3
<ul> <li>— safety-related delayed switching</li> </ul>	0
number of outputs as contact-less semiconductor switching element	
<ul> <li>safety-related</li> </ul>	
— delayed switching	0
<ul> <li>— instantaneous contact</li> </ul>	1
<ul> <li>for signaling function</li> </ul>	
— delayed switching	0
— instantaneous contact	0
stop category according to EN 60204-1	0
Inputs	
design of input	
<ul> <li>cascading input/functional switching</li> </ul>	Yes
<ul> <li>feedback input</li> </ul>	Yes
start input	Yes
Outputs	
type of electrical connection plug-in socket	Yes
operating frequency maximum	1 000 1/h
switching capacity current	
<ul> <li>of the NO contacts of the relay outputs at DC-13</li> </ul>	
— at 24 V	10 A
— at 115 V	1 A
— at 230 V	0.3 A
<ul> <li>of the NO contacts of the relay outputs at AC-15</li> </ul>	
— at 115 V	6 A
— at 230 V	6 A
<ul> <li>of the NC contacts of the relay outputs at DC-13</li> </ul>	
— at 24 V	10 A
— at 115 V	1 A
— at 230 V	0.3 A
<ul> <li>of the NC contacts of the relay outputs at AC-15</li> </ul>	
— at 115 V	6 A
— at 230 V	6 A
mechanical service life (operating cycles) typical	30 000 000
maximum permissible voltage for protective separation between electronics evaluation device and enabling circuit according 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	500 Ω
wire length between sensor and electronics evaluation device with Cu 1.5 mm <sup>2</sup> and 150 nF/km maximum	2 000 m
Times	
make time with automatic start	
• typical	60 ms
at DC maximum	100 ms
make time with automatic start after power failure	6.000 mm
• typical	6 000 ms
maximum	7 000 ms
make time with monitored start	100 mg
• maximum	100 ms 60 ms
typical     backslide delay time after opening of the safety circuits	50 ms
typical	
backslide delay time in the event of power failure	120 ms
● typical ● maximum	120 ms
recovery time after opening of the safety circuits typical	500 ms
recovery time after power failure typical	7 s

pulse duration				
<ul> <li>of the sensor input minimum</li> </ul>	45 ms			
<ul> <li>of the ON pushbutton input minimum</li> </ul>	0.2 s			
<ul> <li>of the cascading input minimum</li> </ul>	0.045 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 operat	ting cycles		
Installation/ mounting/ dimensions				
mounting position	any			
fastening method	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	corow type terminals			
solid	$1 \times (0.2 - 2.5 \text{ mm}^2) 2 \times (0.2 - 1)$	$1.0 \text{ mm}^2$		
<ul> <li>finely stranded</li> </ul>	1x (0.2 2.5 mm²), 2x (0.2 1			
-	$1 \times (0.25 - 2.5 \text{ mm}^2) 2 \times (0.25 \text{ mm}^2)$	$1.0 \text{ mm}^{2}$		
- with core end processing	1x (0.25 2.5 mm²), 2x (0.25	1.0 mm <sup>-</sup> )		
type of connectable conductor cross-sections for AWG cables				
• solid	2x (24 18)			
stranded	2x (24 18)			
Product Function				
product function				
light barrier monitoring	Yes			
standstill monitoring	No			
protective door monitoring	Yes			
automatic start	Yes			
magnetically operated switch monitoring NC-NO	No			
rotation speed monitoring	No			
laser scanner monitoring	Yes			
monitored start-up	Yes			
light array monitoring	Yes			
magnetically operated switch monitoring NC-NC	Yes			
EMERGENCY OFF function	Yes			
pressure-sensitive mat monitoring	Yes			
suitability for interaction press control	Yes			
suitability for use				
monitoring of floating sensors	Yes			
monitoring of non-floating sensors	Yes			
safety switch	Yes			
position switch monitoring	Yes			
EMERGENCY-OFF circuit monitoring	Yes			
valve monitoring	No			
tactile sensor monitoring	Yes			
<ul> <li>magnetically operated switch monitoring</li> </ul>	No			
safety-related circuits	Yes			
Certificates/ approvals				
certificate of suitability	UL, CSA, EN 60204-1, EN ISC	12100, EN 954-1, IEC 6	1508	
<ul> <li>TÜV (German technical inspectorate) certificate</li> </ul>	Yes			
• UL approval	Yes			
BG BIA approval	Yes			
General Product Approval		EMC	Functional	
			Safety/Safety of Ma-	



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

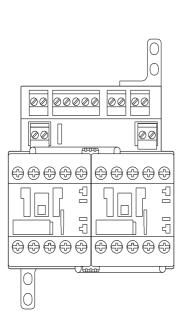
http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3TK2853-1BB40

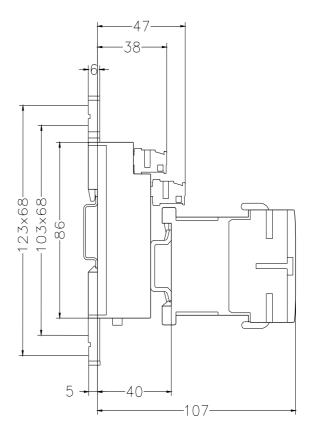
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

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





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