SIEMENS

Data sheet

3TK2845-1HB40



SIRIUS SAFETY RELAY WITH REL.- U. EL. RELEASE CIRCUIT (RC), DC 24V, 45.0MM, SCREW TERMINAL, RC INSTANT.: 4S, RC DELAYED: 0, MK: 1, AUTO- U. MONITORED START, BASIC DEVICE, MAX. ACHIEVABLE PL TO EN13849-1: E, MAX. ACHIEVABLE SIL TO IEC61508:3,

General technical data:		
product brand name		SIRIUS
Product designation	_	safety relays
Design of the product	_	monitored start and autostart
Protection class IP of the enclosure	_	IP20
Protection class IP of the terminal	_	IP20
Protection against electrical shock	_	finger-safe
Insulation voltage Rated value	V	300
Ambient temperature	_	
 during storage 	°C	-40 +80
 during operation 	°C	-25 +60
Air pressure acc. to SN 31205	kPa	90 106
Relative humidity during operation	%	10 95
Installation altitude at height above sea level	m	2 000
maximum		
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	V	4 000
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		КТ

Equipment marking acc. to DIN EN 61346-2 F Number of sensor inputs 2 1-channel or 2-channel 2 Design of the cascading single-channel and two-channel Product property cross-circul-proof Yes Safety Integrity Level (SL)				
• 1-channel or 2-channel 2 Design of the cascading cascading or in-service switching Type of the safety-related wiring of the inputs single-channel and two-channel Product property cross-circuit-proof Yes Safety Integrity Level (SL) acc. to IEC 61508 SIL Claim Limit (subsystem) acc. to EN 62061 3 Performance level (PL) acc. to EN 1850 13849-1 - acc. to EN ISO 13849-1 4 Category acc. to EN 954-1 4 Category acc. to EN 6508 1 Safety Integrity Level (SL) a - acc. to EN 180 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 1/h 0000000069 T1 value for proof test interval or service life acc. to y 20 elsment - asfety-related instantaneous contact 2 - - asfety-related delayed switching 0 - - eastedy-related delayed switching 0 - - - asfety-related - delayed switching 0 - - delayed switch				
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Stop category acc. to DIN EN 60204-1 0 General technical data:				
General technical data: Design of input • cascading input/functional switching Yes				
Design of input Yes				
cascading input/functional switching Yes				
• feedback input Yes				
Start input Yes				
Type of electrical connection Plug-in socket Yes				
Operating frequency maximum 1/h 2 000				
Switching capacity current				

 of semiconductor outputs 				
— for signaling function at DC-13 at 24 V	А	0.5		
— for enabling circuit at DC-13 at 24 V	А	1		
 of the NO contacts of the relay outputs 				
— at DC-13				
— at 24 V	А	1		
— at 115 V	А	0.1		
— at 230 V	А	0.1		
— at AC-15				
— at 115 V	А	3		
— at 230 V	А	3		
Mechanical service life (switching cycles) typical	_	100 000		
Design of the fuse link for short-circuit protection of	-	gL/gG: 4 A or fast-acting: 4A		
the NO contacts of the relay outputs required				
DC resistance of the cable maximum	Ω	1 000		
Cable length between sensor and electronic	m	1 000		
evaluation device with Cu 1.5 mm ² and 150 nF/km maximum				
Make time with automatic start				
• typical	ms	60		
• for DC maximum	ms	100		
Make time with monitored start	-			
• maximum	ms	100		
• typical	ms	60		
Backslide delay time after opening of the safety	ms	45		
circuits typical				
Backslide delay time in the event of power failure				
• typical	ms	25		
• maximum	ms	30		
Recovery time after opening of the safety circuits	ms	400		
Recovery time after power failure typical	ms	8 000		
Pulse duration	ma	45		
of the sensor input minimum	ms	45		
• of the ON pushbutton input minimum	S	0.2		
 of the cascading input minimum 	S	0.045		
Control circuit/ Control:				
Type of voltage of the control 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		0.85 1.15		

mounting position any Mounting type screw and snap-on mounting Width mm 45 Height mm 38.5 Depth mm 88 Connections/Terminals: screw-type terminals Type of connectable conductor cross-section screw-type terminals • solid 1x (0.5 4.0 mm²), 2x (0.5 2.5 mm²) • finely stranded - with core end processing - with core end processing 1x (0.5 4.0 mm²), 2x (0.5 1.5 mm²) Type of connectable conductor cross-section for ANG conductors scild • solid 2x (20 14) • stranded 2x (20 14) Product Function: Yes Product Function: Yes Product Junktion Yes • standstil monitoring Yes • automatic start Yes • notation speed monitoring Yes • cotation speed monitoring Yes • light array monitoring Yes • light array monitoring Yes • Light array monitoring Yes	Installation/ mounting/ dimensions:					
With mm 45 Height mm 138.5 Depth mm 88 Connections/ Terminals: screw-type terminals Type of electrical connectable conductor cross-section screw-type terminals • solid 1x (0.5 4.0 mm ²), 2x (0.5 2.5 mm ²) • inely stranded - with core end processing 1x (0.5 4.0 mm ²), 2x (0.5 1.5 mm ²) Type of connectable conductor cross-section for AWG conductors 2x (20 14) 2x (20 14) • stranded 2x (20 14) 2x (20 14) • stranded Yes No • Light barrier monitoring Yes No • Light barrier monitoring Yes No • protective door monitoring Yes No • Contation speed monitoring Yes No • rotation speed monitoring Yes No • Light array monitoring Yes Yes • Light array monitoring Yes Yes • EMERGENCY OFF function Yes Yes • Prosure-sensitive mat monintoring NC- NC No Ye			any			
Heightmm138.5Depthmm88Connections/ Terminals:screw-type terminalsType of electrical connectionscrew-type terminalsType of connectable conductor cross-sectionscrew-type terminals• solid1x (0.5 4.0 mm?), 2x (0.5 2.5 mm?)• finely stranded1x (0.5 2.5 mm?), 2x (0.5 1.5 mm?)Type of connectable conductor cross-section for AWG conductorsYes• solid2x (20 14)• solid2x (20 14)• strandedYesProduct Function:YesProduct functionYes• Light barrier monitoringYes• Light barrier monitoringYes• Light barrier monitoringYes• Light arrier monitoringYes• Light arrier monitoringYes• Light arrier monitoringYes• Light arrier monitoringYes• Crotation speed monitoringYes• magnetically operated switch monitoring NC- NONo• Crotation speed monitoringYes• Light array monitoringYes• EMERGENCY OFF functionYes• Subability for inferaction press controlYesSubability for useYes• Monitoring of floating sensorsYes• Safety switchYes• position switch monitoringYes• Automatic generationYes• Subability for inferaction press controlYesSubability for inferaction press controlYes• Monitoring of floating sensors	Mounting type					
Depth mm 88 Connections/ Terminals: screw-type terminals Type of electrical connection screw-type terminals Type of onnectable conductor cross-section screw-type terminals • solid 1x (0.5 4.0 mm²), 2x (0.5 2.5 mm²) • finely stranded - with core end processing 1x (0.5 4.0 mm²), 2x (0.5 2.5 mm²) • finely stranded - with core end processing 1x (0.5 4.0 mm²), 2x (0.5 1.5 mm²) • solid 2x (20 14) 2x (20 14) • stranded 2x (20 14) 2x (20 14) • stranded 2x (20 14) 2x (20 14) • stranded 2x (20 14) 2x (20 14) • strandstifumonitoring Yes No • Light barrier monitoring Yes No • contation speed monitoring Yes No • rotation speed monitoring Yes No • light array monitoring Yes Yes • utight array monitoring Yes Yes • utight array monitoring Yes No • EMERGENCY OFF function	Width	mm				
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Type of electrical connection screw-type terminals Type of connectable conductor cross-section screw-type terminals • solid 1x (0.5 4.0 mm²), 2x (0.5 2.5 mm²) • mith core end processing 1x (0.5 2.5 mm²), 2x (0.5 1.5 mm²) Type of connectable conductor cross-section for AVG conductors 2x (20 14) • solid 2x (20 14) • stranded 2x (20 14) Product Function: Product Function: Product Function Yes • Light barrier monitoring Yes • Automatic start Yes • namperically operated switch monitoring NC-NO No No ves • contation speed monitoring Yes • Light array monitoring Yes • light array monitoring Yes • contation speed monitoring Yes • contation speed monitoring Yes • contation speed monitoring Yes • Light array monitoring Yes • Light array monitoring Yes • magnetically operated switch monitoring NC-NC Yes NC Yes • EMERGENCY OFF function	Depth	mm	88			
Type of electrical connection screw-type terminals Type of connectable conductor cross-section screw-type terminals • solid 1x (0.5 4.0 mm²), 2x (0.5 2.5 mm²) • mith core end processing 1x (0.5 2.5 mm²), 2x (0.5 1.5 mm²) Type of connectable conductor cross-section for AVG conductors 2x (20 14) • solid 2x (20 14) • stranded 2x (20 14) Product Function: Product Function: Product Function Yes • Light barrier monitoring Yes • Automatic start Yes • namperically operated switch monitoring NC-NO No No ves • contation speed monitoring Yes • Light array monitoring Yes • light array monitoring Yes • contation speed monitoring Yes • contation speed monitoring Yes • contation speed monitoring Yes • Light array monitoring Yes • Light array monitoring Yes • magnetically operated switch monitoring NC-NC Yes NC Yes • EMERGENCY OFF function	Connections/ Terminals:					
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AWG conductors 2x (20 14) • solid 2x (20 14) • stranded 2x (20 14) Product function 2x (20 14) Product function 2x (20 14) Product function Ves • Light barrier monitoring Yes • Standstill monitoring Yes • protective door monitoring Yes • Automatic start Yes • nagnetically operated switch monitoring NC- No NO Yes • rotation speed monitoring Yes • laser scanner monitoring Yes • monitored start-up Yes • Light array monitoring Yes • RedREGENCY OFF function Yes • Pressure-sensitive mat monitoring NC- Yes • Pressure-sensitive mat monitoring NC- Yes • Pressure-sensitive mat monitoring Yes • Suitability for use Yes • Monitoring of floating sensors Yes • Monitoring of non-floating sensors Yes • Monitoring of non-floating sensors Yes • safety switch Yes • position switc	— with core end processing		1x (0.5 2.5 mm²), 2x (0.5 1.5 mm²)			
• solid2x (20 14)• stranded2x (20 14)Product Function:Product function• Light barrier monitoringYes• Standstill monitoringNo• protective door monitoringYes• protective door monitoringYes• Automatic startYes• magnetically operated switch monitoring NC- NONo• rotation speed monitoringYes• nonitored start-upYes• laser scanner monitoringYes• magnetically operated switch monitoring NC- NCYes• EMERGENCY OFF functionYes• EMERGENCY OFF functionYes• Suitability for useYes• Monitoring of non-floating sensorsYes• Monitoring of non-floating sensorsYes• Monitoring of non-floating sensorsYes• Suitability for useYes• Monitoring of non-floating sensorsYes• position switch monitoringYes• position switch monitoring						
• stranded2x (20 14)Product Function:Product function• Light barrier monitoringYes• Standstill monitoringNo• protective door monitoringYes• Automatic startYes• Magnetically operated switch monitoring NC- NONo• rotation speed monitoringYes• inspirate start -upYes• magnetically operated switch monitoring NC- NONo• rotation speed monitoringYes• magnetically operated switch monitoring NC- NCYes• Elight array monitoringYes• EMERGENCY OFF functionYes• Pressure-sensitive mat monitoringYes• Suitability for interaction press controlNoSuitability for useYes• Monitoring of floating sensorsYes• Safety switchYes• position switch monitoringYes• position switch monitoringYes• position switch monitoringYes• use monitoringYes• use monitoring of non-floating sensorsYes• safety switchYes• position switch monitoringYes• position switch monitoringYes• use mon	AWG conductors					
Product Function: Product function • Light barrier monitoring • Standstill monitoring • protective door monitoring • protective door monitoring • protective door monitoring • Automatic start • magnetically operated switch monitoring NC- NO • rotation speed monitoring • laser scanner monitoring • magnetically operated switch monitoring NC- NC • magnetically operated switch monitoring NC- NC • EMERGENCY OFF function • Pressure-sensitive mat monitoring • Pressure-sensitive mat monitoring • Pressure-sensitive mat monitoring • Monitoring of floating sensors • Monitoring of floating sensors • safety switch • position switch monitoring • position switch monitoring • EMERGENCY-OFF circuit monitoring • Laser scanner • Monitoring of non-floating sensors • safety switch • position switch monitoring • take monitoring •	• solid		2x (20 14)			
Product function Light barrier monitoring Standstill monitoring protective door monitoring Product function Protective door monitoring Present to an an	• stranded		2x (20 14)			
Light barrier monitoringYesStandstill monitoringNo• protective door monitoringYes• Automatic startYes• magnetically operated switch monitoring NC- NONo• rotation speed monitoringNo• rotation speed monitoringYes• nonitored start-upYes• magnetically operated switch monitoring NC- NOYes• magnetically operated switch monitoring NC- NCYes• magnetically operated switch monitoring NC- NCYes• EMERGENCY OFF functionYes• Pressure-sensitive mat monitoringYes• Monitoring of floating sensorsYes• Monitoring of non-floating sensorsYes• Safety switchYes• position switch monitoringYes• pup there is a feat y switchYes• position switch monitoringYes• position switch monitoringYes• pup there is whitch monitoringYes• pup there is whitchYes• pup there is whitchYes• position switch monitoringYes• pup there is whitch monitoringYes• pup there is whitch monitoringYes• pup there is whitch monitoringYes• pup there is the pup the pu	Product Function:					
 Standstill monitoring Standstill monitoring Protective door monitoring Automatic start Automatic start Mo Mo No Suitability for interaction press control No Suitability for use Monitoring of floating sensors No Safety switch Safety switch Suitability of non-floating sensors Yes Safety switch Suitability on witch monitoring Yes Suitability or interaction press control No 	Product function					
EventuationYes• protective door monitoringYes• Automatic startYes• magnetically operated switch monitoring NC- NONo• rotation speed monitoringNo• rotation speed monitoringYes• laser scanner monitoringYes• monitored start-upYes• Light array monitoringYes• magnetically operated switch monitoring NC- NCYes• Magnetically operated switch monitoring NC- NCYes• EMERGENCY OFF functionYes• Pressure-sensitive mat monitoringYes• Monitoring of floating sensorsYes• Monitoring of no-floating sensorsYes• Safety switchYes• position switch monitoringYes• position switch monitoringYes• eMERGENCY-OFF circuit monitoringYes• use of the monitoringYes <t< td=""><td> Light barrier monitoring </td><td></td><td colspan="3">Yes</td></t<>	 Light barrier monitoring 		Yes			
 Automatic start Automatic start Yes magnetically operated switch monitoring NC-NO rotation speed monitoring laser scanner monitoring Yes monitored start-up Yes Light array monitoring Yes magnetically operated switch monitoring NC-NC EMERGENCY OFF function Suitability for interaction press control Monitoring of floating sensors Monitoring of non-floating sensors safety switch monitoring Yes Suitability switch monitoring Yes Monitoring of non-floating sensors Safety switch monitoring Yes Suitability monitoring Yes Monitoring of non-floating sensors Safety switch monitoring Yes Suitability monitoring Yes Suitability monitoring Yes No 	Standstill monitoring		No			
Indextent of allNo• magnetically operated switch monitoring NC- NONo• rotation speed monitoringNo• laser scanner monitoringYes• laser scanner monitoringYes• monitored start-upYes• Light array monitoringYes• magnetically operated switch monitoring NC- NCYes• EMERGENCY OFF functionYes• Pressure-sensitive mat monitoringYesSuitability for interaction press controlNoSuitability for useYes• Monitoring of floating sensorsYes• Monitoring of non-floating sensorsYes• safety switchYes• position switch monitoringYes• suitability for useYes• Monitoring of non-floating sensorsYes• safety switchYes• position switch monitoringYes• position switch monitoringYes• public monitoringYes• safety switchYes• position switch monitoringYes• valve monitoringNo	 protective door monitoring 		Yes			
NONo• rotation speed monitoringNo• laser scanner monitoringYes• monitored start-upYes• Light array monitoringYes• Light array monitoringYes• Light array monitoringYes• magnetically operated switch monitoring NC- NCYes• EMERGENCY OFF functionYes• Pressure-sensitive mat monitoringYes• Monitoring of floating sensorsYes• Monitoring of non-floating sensorsYes• Monitoring of non-floating sensorsYes• safety switchYes• position switch monitoringYes• subtability for useYes• Monitoring of non-floating sensorsYes• safety switchYes• position switch monitoringYes• subtability in witch monitoringYes• safety switchYes• position switch monitoringYes• alve monitoringYes• valve monitoringNo	Automatic start		Yes			
 Iaser scanner monitoring Iaser scanner monitoring Iaser scanner monitoring Iaser scanner monitoring Immittee monitoring Light array monitoring Light array monitoring Yes Imagnetically operated switch monitoring NC- NC EMERGENCY OFF function Pressure-sensitive mat monitoring Yes Suitability for interaction press control No Suitability for use Monitoring of floating sensors Safety switch position switch monitoring Yes EMERGENCY-OFF circuit monitoring Yes Ves Ves Ves Ves Ves No 			No			
Index nominand monitoring trainingYes• monitoringYes• Light array monitoringYes• magnetically operated switch monitoring NC- NCYes• EMERGENCY OFF functionYes• Pressure-sensitive mat monitoringYesSuitability for interaction press controlNoSuitability for useYes• Monitoring of floating sensorsYes• Monitoring of non-floating sensorsYes• safety switchYes• position switch monitoringYes• position switch monitoringYes• ualve monitoringYes• valve monitoringYes• valve monitoringNo	 rotation speed monitoring 		No			
 Light array monitoring Light array monitoring Yes magnetically operated switch monitoring NC- NC EMERGENCY OFF function Yes Pressure-sensitive mat monitoring Yes Suitability for interaction press control No Suitability for use Monitoring of floating sensors Safety switch position switch monitoring Yes EMERGENCY-OFF circuit monitoring Yes No 	 laser scanner monitoring 		Yes			
 magnetically operated switch monitoring NC-NC EMERGENCY OFF function Pressure-sensitive mat monitoring Yes Suitability for interaction press control No Suitability for use Monitoring of floating sensors Monitoring of non-floating sensors safety switch position switch monitoring Yes EMERGENCY-OFF circuit monitoring Yes No 	 monitored start-up 		Yes			
NCYes• EMERGENCY OFF functionYes• Pressure-sensitive mat monitoringYesSuitability for interaction press controlNoSuitability for useYes• Monitoring of floating sensorsYes• Monitoring of non-floating sensorsYes• safety switchYes• position switch monitoringYes• EMERGENCY-OFF circuit monitoringYes• valve monitoringNo	 Light array monitoring 		Yes			
• Pressure-sensitive mat monitoringYesSuitability for interaction press controlNoSuitability for useYes• Monitoring of floating sensorsYes• Monitoring of non-floating sensorsYes• safety switchYes• position switch monitoringYes• EMERGENCY-OFF circuit monitoringYes• valve monitoringNo			Yes			
Suitability for interaction press controlNoSuitability for useYes• Monitoring of floating sensorsYes• Monitoring of non-floating sensorsYes• safety switchYes• position switch monitoringYes• EMERGENCY-OFF circuit monitoringYes• valve monitoringNo	EMERGENCY OFF function		Yes			
Suitability for useYes• Monitoring of floating sensorsYes• Monitoring of non-floating sensorsYes• safety switchYes• position switch monitoringYes• EMERGENCY-OFF circuit monitoringYes• valve monitoringNo	 Pressure-sensitive mat monitoring 		Yes			
• Monitoring of floating sensorsYes• Monitoring of non-floating sensorsYes• safety switchYes• position switch monitoringYes• EMERGENCY-OFF circuit monitoringYes• valve monitoringNo	-		No			
 Monitoring of non-floating sensors Safety switch position switch monitoring EMERGENCY-OFF circuit monitoring valve monitoring No 	Suitability for use					
• safety switch Yes • position switch monitoring Yes • EMERGENCY-OFF circuit monitoring Yes • valve monitoring No	 Monitoring of floating sensors 		Yes			
• position switch monitoring Yes • EMERGENCY-OFF circuit monitoring Yes • valve monitoring No	 Monitoring of non-floating sensors 		Yes			
EMERGENCY-OFF circuit monitoring valve monitoring No	 safety switch 		Yes			
• valve monitoring No	 position switch monitoring 		Yes			
	 EMERGENCY-OFF circuit monitoring 		Yes			
tactile sensor monitoring Yes	 valve monitoring 		No			
	 tactile sensor monitoring 		Yes			

 magnetically operated switch monitorin 	g		Yes		
 safety-related circuits 			Yes		
Certificates/ approvals:					
Certificate of suitability			UL, CSA, EN IEC 61508	N 60204-1, EN IS	O 12100, EN 954-1,
 TÜV (German technical inspectorate) c 	ertificate		Yes		
• UL approval			Yes		
BG BIA certificate			Yes		
General Product Approval				EMC	Functional
					Safety/Safety
					of Machinery
					Type Examination
	·HI	Ø	L)		Certificate
CCC CSA		U	L	C-TICK	
Declaration of Test c	other				
Conformity Certificates					

Environmental

Confirmations

EG-Konf.

Further information

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

Special Test

Certificate

Industry Mall (Online ordering system) http://www.siemens.com/industrymall

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3TK28451HB40

Confirmation

Service&Support (Manuals, Certificates, Characteristics, FAQs,...) https://support.industry.siemens.com/cs/ww/en/ps/3TK28451HB40

Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...) http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3TK28451HB40&lang=en

