SIEMENS

Product data sheet 3RH2131-1FB40



CONTACTOR RELAY, 3NO+1NC, DC 24V, W/ INTEGRATED DIODE, SIZE S00, SCREW TERMINAL

General technical data:		
Product brand name		SIRIUS
Size of the contactor		S00
Identification number and letter for switching elements		31 E
Product extension / auxiliary switch		Yes
Protection class IP / on the front		IP20
Protection against electrical shock		finger-safe
Degree of pollution		3
Insulation voltage / with degree of pollution 3 / rated value	V	690
Installation altitude / at a height over sea level / maximum	m	2,000
Ambient temperature / during storage	°C	-55 80
Ambient temperature / during operating	°C	-25 60
Shock resistance		
at rectangular impulse		
• at DC		10g / 5 ms, 5g / 10 ms
• at sine pulse		
• at DC		15g / 5 ms, 8g / 10 ms
Impulse voltage resistance / rated value	kV	6
Mechanical operating cycles as operating time		
of the contactor / typical		30,000,000

of the contactor with added auxiliary switch block / typical
 of the contactor with added electronics-compatible auxiliary switch block / typical
 10,000,000
 10,000,000

Control circuit:		
Design of the surge suppressor		with diode
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 solenoid		
• for DC		0.8 1.1
Holding power / of the solenoid / for DC	W	4
Pull-in power / of the solenoid / for DC	W	4
Closing delay		
• at DC	ms	30 100
Opening delay		
• at DC	ms	25 90
Arcing time	S	10 15

Auxiliary circuit:		
Contact reliability / of the auxiliary contacts		1 faulty switching per 100 million (17 V, 1 mA)
Number of NC contacts / for auxiliary contacts / instantaneous switching		1
Number of NO contacts / for auxiliary contacts / instantaneous switching		3
Operating current / of the auxiliary contacts / at AC-12 / maximum	А	10
Operating current / of the auxiliary contacts / at AC-15		
• at 230 V	Α	6
• at 400 V	Α	3
• at 500 V	Α	2
• at 690 V	Α	1
Operating current		
• of the auxiliary contacts / with 1 current path / at DC-12		
• at 24 V	Α	6
• at 110 V	Α	3
• at 220 V	Α	1
• with 2 current paths in series / at DC-12		
• at 24 V / rated value	Α	10
• at 60 V / rated value	Α	10
• at 110 V / rated value	Α	4

- at 220 V / rated value			
• at 600 V / rated value • with 3 current paths in series / at DC-12 • at 24 V / rated value • at 10 V / rated value • at 110 V / rated value • at 110 V / rated value • at 3.6 • at 40 V / rated value • at 600 V / rated value • at 110 V • at 220 V • at 110 V • at 220 V • with 2 current paths in series / at DC-13 • at 24 V / rated value • at 600	• at 220 V / rated value	Α	2
• with 3 current paths in series / at DC-12 • at 24 V / rated value • at 60 V / rated value • at 110 V / rated value • at 220 V / rated value • at 220 V / rated value • at 600 V / rated value • at 110 V • at 220 V • at 110 V • at 220 V • with 2 current paths in series / at DC-13 • at 24 V	• at 440 V / rated value	Α	1.3
- at 24 V / rated value	• at 600 V / rated value	Α	0.65
* at 60 V / rated value	• with 3 current paths in series / at DC-12		
- at 110 V / rated value	• at 24 V / rated value	А	10
* at 220 V / rated value	• at 60 V / rated value	Α	10
* at 440 V / rated value A 1.8 Operating current • of the auxiliary contacts / with 1 current path / at DC-13 • at 24 V A 110 V A 1 • at 110 V A 1 • at 220 V A 0.3 • with 2 current paths in series / at DC-13 • at 60 V / rated value A 1.3 • at 24 V / rated value A 1.3 • at 24 V / rated value A 0.9 • at 10 V / rated value A 0.9 • at 440 V / rated value A 0.2 • at 600 V / rated value A 0.1 • with 3 current paths in series / at DC-13 • at 24 V / rated value A 0.5 • at 600 V / rated value A 0.5 • at 600 V / rated value A 0.1 • with 3 current paths in series / at DC-13 • at 24 V / rated value A 0.1 • with 3 current paths in series / at DC-13 • at 24 V / rated value A 0.5 • at 600 V / rated value A 0.5 • at 110 V / rated value A 0.5 • at 110 V / rated value A 0.5 • at 110 V / rated value A 0.5 • at 110 V / rated value A 0.5 • at 220 V / rated value A 0.5 • at AC 1/ rated va	• at 110 V / rated value	Α	10
• at 600 V / rated value Operating current • of the auxiliary contacts / with 1 current path / at DC-13 • at 24 V • at 110 V • at 220 V • with 2 current paths in series / at DC-13 • at 24 V / rated value • at 60 V / rated value • at 60 V / rated value • at 40 V / rated value • at 440 V / rated value • at 440 V / rated value • at 600 V / rated value • at 60 V / rated value • at 60 V / rated value • at 60 V / rated value • at 110 V / rated value • at 60 V / rated value • at 60 V / rated value • at 60 V / rated value • at 110 V / rated value • at 60 V / rated value	• at 220 V / rated value	Α	3.6
Operating current • of the auxiliary contacts / with 1 current path / at DC-13 • at 24 V A 6 • at 110 V A 1 • at 220 V A 0.3 • with 2 current paths in series / at DC-13 A 10 • at 24 V / rated value A 3.5 • at 110 V / rated value A 1.3 • at 220 V / rated value A 0.9 • at 440 V / rated value A 0.1 • with 3 current paths in series / at DC-13 A 10 • at 24 V / rated value A 0.1 • with 3 current paths in series / at DC-13 A 10 • at 24 V / rated value A 0.1 • at 24 V / rated value A 4.7 • at 110 V / rated value A 3 • at 220 V / rated value A 1.2 • at 440 V / rated value A 1.2 • at 440 V / rated value A 0.5 • at 600 V / rated value A 0.5 • at 600 V / rated value A 0.26	• at 440 V / rated value	Α	2.5
• of the auxiliary contacts / with 1 current path / at DC-13 • at 24 V • at 110 V • at 220 V • with 2 current paths in series / at DC-13 • at 24 V / rated value • at 60 V / rated value • at 60 V / rated value • at 110 V / rated value • at 220 V rated value • at 220 V rated value • at 3.5 • at 1110 V / rated value • at 220 V rated value • at 440 V / rated value • at 600 V / rated value • at 600 V / rated value • with 3 current paths in series / at DC-13 • at 24 V / rated value • at 600 V / rated value • at 60 V / rated value • at 60 V / rated value • at 60 V / rated value • at 220 V / rated value • at 60 V / rated value • at 220 V / rated value • at 20 V / rated	• at 600 V / rated value	Α	1.8
* at 24 V	Operating current		
*at 110 V *at 220 V *at 220 V *with 2 current paths in series / at DC-13 *at 24 V / rated value A 10 *at 60 V / rated value A 1.3 *at 220 V / rated value A 3.5 *at 110 V / rated value A 0.9 *at 440 V / rated value A 0.2 *at 600 V / rated value A 0.1 *with 3 current paths in series / at DC-13 *at 24 V / rated value A 10 *at 60 V / rated value A 4.7 *at 110 V / rated value A 3.3 *at 24 V / rated value A 4.7 *at 110 V / rated value A 3.3 *at 220 V / rated value A 1.2 *at 440 V / rated value A 1.2 *at 440 V / rated value A 0.5 *at 600 V / rated value A 0.5 *at AC-12 / maximum A 1/h 1,000 *at AC-12 / maximum A 1/h 1,000 *at AC-15 / maximum A 1/h 1,000 *at AC-15 / maximum A 1/h 1,000 *at DC-12 / maximum A 1/h 1,000	• of the auxiliary contacts / with 1 current path / at DC-13		
* at 220 V * with 2 current paths in series / at DC-13 * at 24 V / rated value * at 60 V / rated value * at 110 V / rated value * at 220 V / rated value * at 440 V / rated value * at 600 V / rated value * at 110 V / rated value * at 60 V / rated value * at 60 V / rated value * at 22 V / rated value * at 110 V / rated value * at 110 V / rated value * at 110 V / rated value * at 220 V / rated value * at 440 V / rated value * at 600 V / rated	• at 24 V	Α	6
* with 2 current paths in series / at DC-13 * at 24 V / rated value * at 60 V / rated value * at 110 V / rated value * at 110 V / rated value * at 220 V / rated value * at 220 V / rated value * at 600 V / rated value * at 60 V / rated value * at 24 V / rated value * at 60 V / rated value * at 110 V / rated value * at 110 V / rated value * at 220 V / rated value * at 220 V / rated value * at 440 V / rated value * at 440 V / rated value * at 600 V / rated value	• at 110 V	Α	1
• at 24 V / rated value A 10 • at 60 V / rated value A 3.5 • at 110 V / rated value A 1.3 • at 220 V / rated value A 0.9 • at 440 V / rated value A 0.1 • with 3 current paths in series / at DC-13 Image: series / at DC-13 • at 24 V / rated value A 4.7 • at 60 V / rated value A 4.7 • at 110 V / rated value A 3 • at 220 V / rated value A 1.2 • at 440 V / rated value A 0.5 • at 600 V / rated value A 0.5 • at 600 V / rated value A 0.26 Off-load operating frequency • at AC 1/h 10,000 Frequency of operation I/h 1,000 • at AC-12 / maximum 1/h 1,000 • at AC-15 / maximum 1/h 1,000 • at DC-12 / maximum 1/h 1,000	• at 220 V	Α	0.3
 at 60 V / rated value at 110 V / rated value at 220 V / rated value at 440 V / rated value at 600 V / rated value with 3 current paths in series / at DC-13 at 24 V / rated value at 60 V / rated value at 10 V / rated value at 110 V / rated value at 110 V / rated value at 220 V / rated value at 220 V / rated value at 440 V / rated value at 220 V / rated value at 440 V / rated value at 600 V / rated value at 600	• with 2 current paths in series / at DC-13		
 at 110 V / rated value at 220 V / rated value at 440 V / rated value at 600 V / rated value with 3 current paths in series / at DC-13 at 24 V / rated value at 60 V / rated value at 110 V / rated value at 110 V / rated value at 220 V / rated value at 220 V / rated value at 220 V / rated value at 200 V / rated value at 440 V / rated value at 600 V / rated value at 600 V / rated value at 600 V / rated value at AC at AC at AC at AC at AC at AC-12 / maximum at AC-14 / maximum at AC-15 / maximum at AC-12 / maximum at AC-14 / maximum at AC-15 / maximum at AC-12 / maximum at AC-12 / maximum at AC-12 / maximum at AC-12 / maximum at AC-13 / maximum at AC-14 / maximum at AC-15 / maximum at AC-15 / maximum at AC-12 / maximum at AC-12 / maximum at AC-13 / maximum at AC-14 / maximum at AC-15 / maximum a	• at 24 V / rated value	Α	10
 at 220 V / rated value at 440 V / rated value at 600 V / rated value with 3 current paths in series / at DC-13 at 24 V / rated value at 60 V / rated value at 60 V / rated value at 110 V / rated value at 110 V / rated value at 220 V / rated value at 440 V / rated value at 600 V / rated value at 700 V / rated value at 70	• at 60 V / rated value	Α	3.5
 at 440 V / rated value at 600 V / rated value with 3 current paths in series / at DC-13 at 24 V / rated value at 60 V / rated value at 60 V / rated value at 110 V / rated value at 110 V / rated value at 220 V / rated value at 440 V / rated value at 600 V / rated value at AC 1/h 10,000 at AC at AC at AC at AC at AC-12 / maximum at AC-14 / maximum at AC-15 / maximum at AC-12 / maximum at AC-12 / maximum at AC-12 / maximum at AC-12 / maximum at AC-14 / maximum at DC at	• at 110 V / rated value	Α	1.3
 at 600 V / rated value with 3 current paths in series / at DC-13 at 24 V / rated value at 60 V / rated value at 110 V / rated value at 110 V / rated value at 220 V / rated value at 440 V / rated value at 600 V / rated value at 600 V / rated value at 600 V / rated value at AC at AC at DC 1/h 10,000 Frequency of operation at AC-12 / maximum at AC-14 / maximum at AC-15 / maximum at AC-12 / maximum at DC-12 / maximum 	• at 220 V / rated value	Α	0.9
 with 3 current paths in series / at DC-13 at 24 V / rated value at 60 V / rated value at 110 V / rated value at 1220 V / rated value at 220 V / rated value at 440 V / rated value at 600 V / rated value at 600 V / rated value at AC at DC 1/h 10,000 at DC Frequency of operation at AC-12 / maximum at AC-14 / maximum at AC-15 / maximum at AC-12 / maximum at DC-12 / maximum 	• at 440 V / rated value	Α	0.2
 at 24 V / rated value at 60 V / rated value at 110 V / rated value at 110 V / rated value at 220 V / rated value at 440 V / rated value at 600 V / rated value A 0.5 at 600 V / rated value A 0.26 Off-load operating frequency at AC at DC 1/h 10,000 Frequency of operation at AC-12 / maximum at AC-14 / maximum at AC-15 / maximum at AC-15 / maximum at DC-12 / maximum 	• at 600 V / rated value	Α	0.1
• at 60 V / rated value • at 110 V / rated value • at 220 V / rated value • at 440 V / rated value • at 600 V / rated value • at 600 V / rated value • at AC • at DC Frequency of operation • at AC-12 / maximum • at AC-15 / maximum • at AC-15 / maximum • at DC-12 / maximum	• with 3 current paths in series / at DC-13		
 at 110 V / rated value at 220 V / rated value at 440 V / rated value at 600 V / rated value at AC at DC at AC-12 / maximum at AC-14 / maximum at AC-15 / maximum at AC-15 / maximum at DC-12 / maximum 	• at 24 V / rated value	Α	10
 at 220 V / rated value at 440 V / rated value at 600 V / rated value A 0.5 A 0.26 Off-load operating frequency at AC at DC 1/h 10,000 Frequency of operation at AC-12 / maximum at AC-14 / maximum at AC-15 / maximum at AC-15 / maximum at DC-12 / maximum at DC-12 / maximum at DC-12 / maximum at DC-12 / maximum 	• at 60 V / rated value	Α	4.7
• at 440 V / rated value • at 600 V / rated value Off-load operating frequency • at AC • at DC Frequency of operation • at AC-12 / maximum • at AC-15 / maximum • at DC-12 / maximum	• at 110 V / rated value	Α	3
◆ at 600 V / rated value A 0.26 Off-load operating frequency • at AC 1/h 10,000 • at DC 1/h 10,000 Frequency of operation • at AC-12 / maximum 1/h 1,000 • at AC-14 / maximum 1/h 1,000 • at AC-15 / maximum 1/h 1,000 • at DC-12 / maximum 1/h 1,000	• at 220 V / rated value	Α	1.2
Off-load operating frequency 1/h 10,000 • at DC 1/h 10,000 Frequency of operation • at AC-12 / maximum 1/h 1,000 • at AC-14 / maximum 1/h 1,000 • at AC-15 / maximum 1/h 1,000 • at DC-12 / maximum 1/h 1,000	• at 440 V / rated value	Α	0.5
• at AC 1/h 10,000 • at DC 1/h 10,000 Frequency of operation • at AC-12 / maximum 1/h 1,000 • at AC-14 / maximum 1/h 1,000 • at AC-15 / maximum 1/h 1,000 • at DC-12 / maximum 1/h 1,000	• at 600 V / rated value	Α	0.26
• at DC 1/h 10,000 Frequency of operation • at AC-12 / maximum 1/h 1,000 • at AC-14 / maximum 1/h 1,000 • at AC-15 / maximum 1/h 1,000 • at DC-12 / maximum 1/h 1,000	Off-load operating frequency		
Frequency of operation • at AC-12 / maximum 1/h 1,000 • at AC-14 / maximum 1/h 1,000 • at AC-15 / maximum 1/h 1,000 • at DC-12 / maximum 1/h 1,000	• at AC	1/h	10,000
• at AC-12 / maximum 1/h 1,000 • at AC-14 / maximum 1/h 1,000 • at AC-15 / maximum 1/h 1,000 • at DC-12 / maximum 1/h 1,000	• at DC	1/h	10,000
• at AC-14 / maximum 1/h 1,000 • at AC-15 / maximum 1/h 1,000 • at DC-12 / maximum 1/h 1,000	Frequency of operation		
• at AC-15 / maximum 1/h 1,000 • at DC-12 / maximum 1/h 1,000	• at AC-12 / maximum	1/h	1,000
• at DC-12 / maximum 1/h 1,000	• at AC-14 / maximum	1/h	1,000
	• at AC-15 / maximum	1/h	1,000
• at DC-13 / maximum 1/h 1,000	• at DC-12 / maximum	1/h	1,000
	• at DC-13 / maximum	1/h	1,000

Short-circuit:

Design of the fuse link / for short-circuit protection of the auxiliary switch

• required

Fuse gL/gG: 10 A, miniature circuit breaker C 6 A (short-circuit current lk < 400 A)

Installation/mounting/dimensions:		
Built in orientation		vertical
Type of mounting		screw and snap-on mounting onto 35 mm standard mounting rail
Width	mm	45
Height	mm	57.5
Depth	mm	73
Distance, to be maintained, to the ranks assembly / sidewards	mm	0

Connections:	
Design of the electrical connection	
 for auxiliary and control current circuit 	screw-type terminals
Type of the connectable conductor cross-section	
for auxiliary contacts	
• solid	2x (0.5 1.5 mm²), 2x (0.75 2.5 mm²), 2x 4 mm²
finely stranded	
 with conductor end processing 	2x (0.5 1.5 mm²), 2x (0.75 2.5 mm²)
• for AWG conductors / for auxiliary contacts	2x (20 16), 2x (18 14), 2x 12

Certificates/approvals:

General Product Approval





ROSTEST



Test Certificates

Manufacturer

Shipping Approval







GL

kegist LRS





Shipping Approval other





UL/CSA ratings:

Contact rating designation / for auxiliary contacts / according to UL

A600 / Q600

Safety:related Parameter:

B10 value / with high demand rate		
according to SN 31920		1,000,000
T1 value / for proof test interval or service life		
according to IEC 61508	а	10
Proportion of dangerous failures		
 with low demand rate / according to SN 31920 	%	40
 with high demand rate / according to SN 31920 	%	73
Failure rate (FIT value) / with low demand rate		
according to SN 31920	FIT	100
Product function / positively driven operation to IEC 60947-5-1		Yes

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:

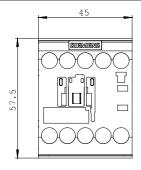
http://www.siemens.com/cax

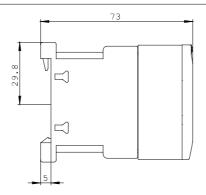
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

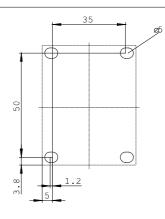
http://support.automation.siemens.com/WW/view/en/3RH2131-1FB40/all

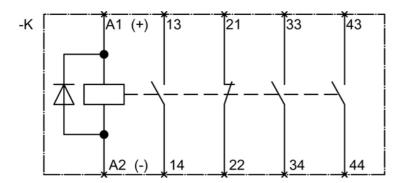
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, ...)

 $\underline{\text{http://www.automation.siemens.com/bilddb/cax_en.aspx?mlfb=3RH2131-1FB40}$









last change: Oct 24, 2011