SIEMENS

Product data sheet 3RH2131-1BB40



CONTACTOR RELAY, 3NO+1NC, DC 24V, 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
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	10,000,000
 of the contactor with added electronics-compatible auxiliary switch block / typical 	10,000,000

Control circuit:		
Type of voltage / of the controlled supply voltage		DC
Control supply voltage		
• for DC / rated value	V	24
operating range factor control supply voltage rated value / of the magnet coil		
• 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		
• at AC-12 / maximum	Α	10
• at AC-15		
• at 230 V / rated value	Α	10
• at 400 V / rated value	Α	3
• at 500 V / rated value	Α	2
• at 690 V / rated value	Α	1
Operating current		
• with 1 current path / at DC-12		
• at 24 V / rated value	Α	10
• at 110 V / rated value	Α	3
• at 220 V / rated value	Α	1
• at 440 V / rated value	Α	0.3
• at 600 V / rated value	Α	0.15
• with 2 current paths in series / at DC-12		
• at 24 V / rated value	Α	10

- 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 / rated value - at 110 V / rated value - at 110 V / rated value - at 440 V / rated value - at 110 V / rated val			
- 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 60 V / rated value - at 60 V / rated value - at 110 V / rated value - at 60 V / rated value - at 600 V / rated value - at 700 V / rated value - at 600 V / rated value - at 700 V / rated value - at 700 V / rated value - at 200 V / rated value	• at 60 V / rated value	Α	10
* at 440 V / rated value	• at 110 V / rated value	Α	4
• at 600 V / rated value • with 3 current paths in series / at DC-12 • 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 600 V / rated value • at 110 V / rated value • at 600 V / rated value • at	• 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 110 V / rated value • at 220 V / rated value • at 220 V / rated value • at 600 V / rated value • at 110 V / rated value • at 600 V / rated value • at 220 V / rated value • at 600 V / rated value • at 220 V / rated value • at 600 V / rated value • a	• at 440 V / rated value	Α	1.3
• at 24 V / rated value • at 60 V / rated value • at 110 V / rated value • at 110 V / rated value • at 1220 V / rated value • at 220 V / rated value • at 220 V / rated value • at 800 V / rated value • with 1 current path / at DC-13 • at 24 V / rated value • at 110 V / rated value • at 120 V / rated value • at 600 V / rated value • at 220 V / rated value • at 440 V / rated value • at 220 V / rated value • at 440 V / rated value • at 220 V / rated value • at 440 V / rated value • at 440 V / rated value • at 600 V / rated value • at 220 V / rated value • at 220 V / rated value • at 600 V / rated value • at 220 V / ra	• 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	Α	10
* at 220 V / rated value A 2.5 * at 600 V / rated value A 1.8 Operating current * with 1 current path / at DC-13 * at 24 V / rated value A 10 * at 110 V / rated value A 10 * at 600 V / rated value A 10 * at 600 V / rated value A 10 * at 600 V / rated value A 10 * at 600 V / rated value A 10 * at 600 V / rated value A 10 * at 600 V / rated value A 10 * at 600 V / rated value A 10 * at 600 V / rated value A 13 * at 24 V / rated value A 13 * at 24 V / rated value A 13 * at 24 V / rated value A 13 * at 220 V / rated value A 13 * at 220 V / rated value A 13 * at 220 V / rated value A 13 * at 220 V / rated value A 13 * at 220 V / rated value A 13 * at 220 V / rated value A 140 * at 600 V / rated value A 15 * at 24 V / rated value A 16 * at 60 V / rated value A 17 * at 24 V / rated value A 17 * at 24 V / rated value A 17 * at 24 V / rated value A 17 * at 24 V / rated value A 17 * at 24 V / rated value A 17 * at 24 V / rated value A 17 * at 24 V / rated value A 17 * at 24 V / rated value A 17 * at 24 V / rated value A 17 * at 24 V / rated value A 17 * at 24 V / rated value A 17 * at 24 V / rated value A 17 * at 250 V / rated value A 17 * at 26 V / rated value A 17 * at 27 V / rated value A 18 * at 28 V / rated value A 19 * at 400 V / rated value A 19 *	• at 60 V / rated value	Α	10
* at 440 V / rated value A 1.8 Operating current * with 1 current path / at DC-13 * at 24 V / rated value A 10 * at 110 V / rated value A 10 * at 110 V / rated value A 10 * at 220 V / rated value A 0.14 * at 200 V / rated value A 0.14 * with 2 current paths in series / at DC-13 * at 24 V / rated value A 0.1 * at 60 V / rated value A 10 * at 60 V / rated value A 10 * at 60 V / rated value A 1.3 * at 220 V / rated value A 1.3 * at 220 V / rated value A 0.9 * at 410 V / rated value A 0.9 * at 440 V / rated value A 0.2 * at 600 V / rated value A 0.2 * at 600 V / rated value A 0.2 * at 60 V / rated value A 0.2 * at 60 V / rated value A 0.2 * at 24 V / rated value A 0.5 * at 24 V / rated value A 0.5 * at 24 V / rated value A 0.5 * at 24 V / rated value A 0.5 * at 60 V / rated value A 0.5 * at 440 V / rated value A 0.5 * at 60 V / rated	• at 110 V / rated value	Α	10
* at 600 V / rated value A 1.8 Operating current * with 1 current path / at DC-13 * at 24 V / rated value A 10 * at 110 V / rated value A 1 * at 220 V / rated value A 0.3 * at 440 V / rated value A 0.14 * at 600 V / rated value A 0.1 * with 2 current paths in series / at DC-13 * at 24 V / rated value A 1.3 * at 24 V / rated value A 1.3 * at 24 V / rated value A 1.3 * at 220 V / rated value A 0.9 * at 110 V / rated value A 0.9 * at 440 V / rated value A 0.9 * at 440 V / rated value A 0.1 * with 3 current paths in series / at DC-13 * at 24 V / rated value A 0.1 * at 600 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 0.1 * at 60 V / rated value A 0.5 * at 110 V / rated value A 1.0 * at 100 V / rated value A 1.0 * at 100 V / rated value A 1.0 * at 100 V / rated value A 1.0 * at 100 V / rated value A 1.0 * at 100 V / rated value A 1.0 * at 100 V / rated value A 1.0 * at 100 V / rated value A 1.0 * at 100 V / rated value A 1.0 * at AC 10 V / rated value A 1.0 * at AC 10 V / rated value A 1.0 * at AC 11 V In 10,000 * at AC 12 V / maximum 11 V 1.000 * at AC-12 / maximum 11 V 1.000	• at 220 V / rated value	Α	3.6
Operating current • with 1 current path / at DC-13 • at 24 V / rated value A 10 • at 110 V / rated value A 1 • at 220 V / rated value A 0.3 • at 440 V / rated value A 0.14 • with 2 current paths in series / at DC-13 A 0.1 • 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 0.9 • at 110 V / rated value A 0.2 • at 600 V / rated value A 0.1 • with 3 current paths in series / at DC-13 A 0.1 • with 3 current paths in series / at DC-13 A 0.1 • with 3 current paths in series / at DC-13 A 0.1 • at 60 V / rated value A 0.1 • at 24 V / rated value A 1.0 • at 60 V / rated value A 4.7 • at 110 V / rated value A 3 • at 440 V / rated value A 0.5 <	• at 440 V / rated value	Α	2.5
• with 1 current path / at DC-13 • at 24 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 • with 2 current paths in series / at DC-13 • at 24 V / rated value • 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 440 V / rated value • at 600 V / rated value • at 600 V / rated value • at 600 V / rated value • at 100 V / rated value • at 110 V / rated value • at 220 V / rated value • at 120 V / rated value • at 130 V / rated value • at 100 V / rated value • a	• at 600 V / rated value	Α	1.8
* at 24 V / rated value	Operating current		
*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 110 V / rated value *at 220 V / rated value *at 440 V / rated value *at 600 V / rated val	• with 1 current path / at DC-13		
• at 220 V / rated value A 0.3 • at 440 V / rated value A 0.14 • at 600 V / rated value A 0.1 • with 2 current paths in series / at DC-13 Image: context of the context of t	• at 24 V / rated value	Α	10
* at 440 V / rated value A 0.14 * at 600 V / rated value A 0.1 * with 2 current paths in series / at DC-13 * at 24 V / rated value A 3.5 * at 110 V / rated value A 3.5 * at 110 V / rated value A 0.9 * at 440 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 0.1 * with 3 current paths in series / at DC-13 * at 24 V / rated value A 4.7 * at 110 V / rated value A 3.6 * at 220 V / rated value A 3.7 * at 220 V / rated value A 3.7 * at 220 V / rated value A 3.7 * at 220 V / rated value A 3.7 * at 220 V / rated value A 0.5 * at 440 V / rated value A 0.5 * at 440 V / rated value A 0.5 * at 600 V / rated value A 0.26 Off-load operating frequency * at AC * at CC * at DC * at DC * at DC * at DC * at CC-12 / maximum * at AC-14 / maximum	• at 110 V / rated value	Α	1
 * at 600 V / rated value * 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 440 V / rated value * at 600 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 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 220 V / rated value	Α	0.3
* 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 440 V / rated value * at 600 V / rated value * at 600 V / rated value * at 600 V / rated value * at 24 V / rated value * at 24 V / rated value * at 10 * at 110 V / rated value * at 110 V / rated value * at 220 V / rated value * at 220 V / rated value * at 200 V / rated value * at 3 * at 200 V / rated value * at 400 V / rated value * at 600 V / rated value * at 600 V / rated value * at 600 V / rated value * at AC-12 / maximum * at AC-12 / maximum * at AC-14 / maximum	• at 440 V / rated value	Α	0.14
 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 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 60 V / rated value at 110 V / rated value at 110 V / rated value at 110 V / rated value at 220 V / rated value at 20 V / rated value at 600 V / rated value at 600 V / rated value at 200 V / rated value at 200 V / rated value at 3 0.5 at 600 V / rated value at 600 V / rated value at 700 V / rated value at AC 11/h 10,000 at AC 12 / maximum 1/h 1,000 at AC 14 / maximum 1/h 1,000 	• 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 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 440 V / rated value at 600 V / rated value at 260 V / rated value at 100 V / rated value at 200 V / rated value at 3 V V / rated value at 100 V / rated value at 10	• 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 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-12 / maximum at AC-12 / maximum 1/h 1,000 at AC-14 / maximum 1/h 1,000 	• 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 110 V / rated value at 220 V / rated value at 220 V / rated value at 440 V / rated value at 600 V / rated value at 600 V / rated value at 70.5 at 600 V / rated value at 70.5 at 600 V / rated value at 70.5 at 70.00 at 70.00<	• 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 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 AC at AC-12 / maximum at AC-14 / maximum 1/h 1,000 1/h 1,000 	• 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 AC at AC at DC 1/h 10,000 Frequency of operation at AC-12 / maximum at AC-14 / maximum 1/h 1,000 	• 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 220 V / rated value at 440 V / rated value at 600 V / rated value at 600 V / rated value at AC at AC at DC 1/h 10,000 at AC-12 / maximum at AC-14 / maximum 1/h 1,000 	• 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 • at 600 V / rated value Off-load operating frequency • at AC • at DC Frequency of operation • at AC-12 / maximum • at AC-14 / maximum 1/h 1,000	• 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 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 1/h 1,000	• 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 1/h 10,000 at AC-12 / maximum at AC-14 / maximum A 3 A 1.2 A 0.5 A 0.26 A 1,000 A 10,000 A 1,000 A 1,000 A 1,000 	• at 24 V / rated value	Α	10
• at 220 V / rated value • 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-14 / maximum 1/h 1,000 A 0.5 A 0.26 I/h 10,000 1/h 10,000 1/h 1,000	• at 60 V / rated value	Α	4.7
 at 440 V / rated value at 600 V / rated value A 0.26 Off-load operating frequency at AC 1/h 10,000 at DC I/h 10,000 Trequency of operation at AC-12 / maximum at AC-14 / maximum 1/h 1,000 	• at 110 V / rated value	Α	3
• at 600 V / rated value Off-load operating frequency • at AC • at DC Frequency of operation • at AC-12 / maximum • at AC-14 / maximum 1/h 1,000 A 0.26 1/h 10,000 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 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 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	Off-load operating frequency		
Frequency of operation 1/h 1,000 • at AC-14 / 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 DC	1/h	10,000
• at AC-14 / maximum 1/h 1,000	Frequency of operation		
	• at AC-12 / maximum	1/h	1,000
• at AC-15 / maximum 1/h 1,000	• at AC-14 / maximum	1/h	1,000
	• at AC-15 / maximum	1/h	1,000

+ P.C. 40 /	4 /1-	4.000
• 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
Design of the miniature circuit breaker / for short-circuit protection of the auxiliary circuit / up to 230 V		C characteristic: 6 A; 0.4 kA
Installation/mounting/dimensions:		
mounting position		+/-180° rotation possible on vertical mounting surface; can be tilted forward and backward by +/- 22.5° on vertical mounting surface
Type of mounting		screw and snap-on mounting onto 35 mm standard mounting rail
Width	mm	45
Height	mm	57.5
Depth	mm	73
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		

Certificates/approvals:

• finely stranded

• with conductor end processing

• for AWG conductors / for auxiliary contacts

2x (0.5 ... 1.5 mm²), 2x (0.75 ... 2.5 mm²)

2x (20 ... 16), 2x (18 ... 14), 2x 12

General Product Approval

Functional Safety / Safety of Machinery

Declaration of Conformity









Type Examination



Test Certificates

other

Special Test Certificate

Type Test Certificates/Test Report

Shipping Approval















Shipping Approval

other







Environmental Confirmations

UL/CSA ratings:

Contact rating designation / for auxiliary contacts / according to

A600 / Q600

Sicherheitsrelevante Kenngrößen:		
B10 value / with high demand rate		
according to SN 31920		1,000,000
• note		With 0.3 x le
T1 value / for proof test interval or service life		
according to IEC 61508	а	20
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

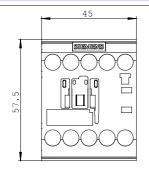
Cax online generator

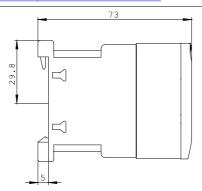
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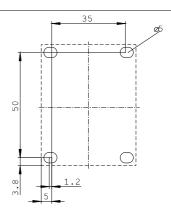
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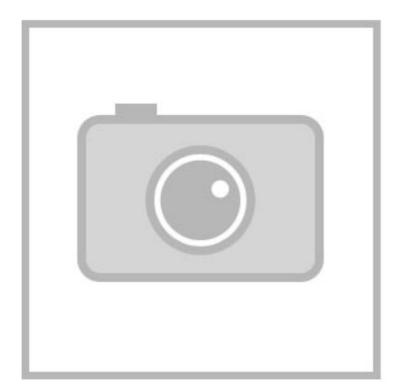
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, ...)

http://www.automation.siemens.com/bilddb/cax_en.aspx?mlfb=3RH2131-1BB40









last change: Nov 14, 2013