# **SIEMENS**

Product data sheet 3RH2131-1BW40



CONTACTOR RELAY, 3NO+1NC, DC 48V, 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:		
Type of voltage / of the controlled supply voltage		DC
Control supply voltage / 1		
• for DC / rated value	V	48
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	А	10
• at 110 V / rated value	А	4
• at 220 V / rated value	Α	2

• at 440 V / rated value			
• 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 220 V / rated value • 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 40 V / rated value • at 400 V / rated value • at 600 V / rated value • at 110 V / rated value • at 600 V / rated value • a	• at 440 V / rated value	Α	1.3
- at 24 V / rated value	• at 600 V / rated value	Α	0.65
• at 80 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 • of the auxiliary contacts / with 1 current path / at DC-13 • at 24 V • 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 60 V / rated value • at 60 V / rated value • at 60 V / rated value • at 100 V / rated value • at 400 V / rated value • at 400 V / rated value • at 400 V / rated value • at 600 V / rated value • at 24 V / rated value • at 25 V / rated value • at 26 V / rated value • at 27 V / rated value • at 28 V / rated value • at 28 V / rated value • at 29 V / rated value • at 20 V / ra	• 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	• at 60 V / rated value	Α	10
• at 440 V / rated value  • at 600 V / rated value  • 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 40 V / rated value • at 40 V / rated value • at 60	• 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 40 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 440 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         3.5           • at 110 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 600 V / rated value         A         4         4.7           • at 110 V / rated value         A         3         4.7         4.1           • at 220 V / rated value         A         1.2         4.1         4.2         4.1         4.2         4.1         4.2         4.1         4.2         4.1         4.2         4.1         4.2         4.1         4.2         4.1         4.2         4.1         4.2         4.1         4.2         4.1	• at 440 V / rated value	Α	2.5
• of the auxiliary contacts / with 1 current path / at DC-13  • at 24 V	• at 600 V / rated value	Α	1.8
*at 24 V	Operating current		
* at 110 V	• of the auxiliary contacts / with 1 current path / at DC-13		
• at 220 V       A       0.3         • with 2 current paths in series / at DC-13       -         • at 24 V / rated value       A       10         • at 60 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       4.7         • at 110 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       0.26         Off-load operating frequency       A       0.26         off-load operating frequency       -       -         • at DC       1/h       10,000         Frequency of operation         • 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 24 V	Α	6
* with 2 current paths in series / at DC-13     * at 24 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       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       Image: series / at DC-13         • at 24 V / rated value       A       4.7         • at 110 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       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         • at DC       1/h       10,000         Frequency of operation         • at AC-12 / maximum       1/h       1,000         • at AC-15 / maximum       1/h       1,000         • at AC-12 / maximum       1/h       1,000	• at 220 V	Α	0.3
<ul> <li>at 60 V / rated value</li> <li>at 110 V / rated value</li> <li>at 220 V / rated value</li> <li>at 220 V / rated value</li> <li>at 440 V / rated value</li> <li>at 600 V / rated value</li> <li>at 24 V / rated value</li> <li>at 24 V / rated value</li> <li>at 3</li> <li>at 24 V / rated value</li> <li>at 110 V / rated value</li> <li>at 110 V / rated value</li> <li>at 220 V / rated value</li> <li>at 220 V / rated value</li> <li>at 440 V / rated value</li> <li>at 600 V / rated value</li> <li>at 600 V / rated value</li> <li>at 600 V / rated value</li> <li>at 440 V / rated value</li> <li>at 600 V / rated value</li> <li>at 70</li> &lt;</ul>	• with 2 current paths in series / at DC-13		
<ul> <li>at 110 V / rated value</li> <li>at 220 V / rated value</li> <li>at 440 V / rated value</li> <li>at 600 V / rated value</li> <li>with 3 current paths in series / at DC-13</li> <li>at 24 V / rated value</li> <li>at 60 V / rated value</li> <li>at 110 V / rated value</li> <li>at 110 V / rated value</li> <li>at 220 V / rated value</li> <li>at 220 V / rated value</li> <li>at 440 V / rated value</li> <li>at 600 V / rated value</li> <li>at 700 V / rated value</li> <li>at 7</li></ul>	• at 24 V / rated value	Α	10
<ul> <li>at 220 V / rated value</li> <li>at 440 V / rated value</li> <li>at 600 V / rated value</li> <li>with 3 current paths in series / at DC-13</li> <li>at 24 V / rated value</li> <li>at 60 V / rated value</li> <li>at 60 V / rated value</li> <li>at 110 V / rated value</li> <li>at 220 V / rated value</li> <li>at 220 V / rated value</li> <li>at 440 V / rated value</li> <li>at 600 V / rated value</li> <li>at 700 V / rated value</li> <li>at 70</li></ul>	• at 60 V / rated value	Α	3.5
<ul> <li>at 440 V / rated value</li> <li>at 600 V / rated value</li> <li>with 3 current paths in series / at DC-13</li> <li>at 24 V / rated value</li> <li>at 60 V / rated value</li> <li>at 110 V / rated value</li> <li>at 110 V / rated value</li> <li>at 220 V / rated value</li> <li>at 440 V / rated value</li> <li>at 440 V / rated value</li> <li>at 600 V / rated value</li> <li>at 7000</li> <li>at AC</li> <li>at AC</li> <li>at AC</li> <li>at AC</li> <li>at AC-12 / maximum</li> <li>at AC-14 / maximum</li> <li>at AC-15 / maximum</li> <li>at AC-12 / maximum</li> <li>at DC-12 / maximum</li> <li>at DC</li> <li>at DC</li></ul>	• at 110 V / rated value	Α	1.3
<ul> <li>at 600 V / rated value</li> <li>with 3 current paths in series / at DC-13</li> <li>at 24 V / rated value</li> <li>at 60 V / rated value</li> <li>at 110 V / rated value</li> <li>at 110 V / rated value</li> <li>at 220 V / rated value</li> <li>at 440 V / rated value</li> <li>at 600 V / rated value</li> <li>at 600 V / rated value</li> <li>at 600 V / rated value</li> <li>at AC</li> <li>at AC</li> <li>at AC</li> <li>at AC</li> <li>at AC-12 / maximum</li> <li>at AC-14 / maximum</li> <li>at AC-15 / maximum</li> <li>at AC-12 / maximum</li> <li>at DC-12 / maximum</li> </ul>	• at 220 V / rated value	Α	0.9
<ul> <li>with 3 current paths in series / at DC-13</li> <li>at 24 V / rated value</li> <li>at 60 V / rated value</li> <li>at 110 V / rated value</li> <li>at 220 V / rated value</li> <li>at 220 V / rated value</li> <li>at 440 V / rated value</li> <li>at 600 V / rated value</li> <li>at 600 V / rated value</li> <li>at AC</li> <li>at DC</li> <li>1/h 10,000</li> <li>at AC-12 / maximum</li> <li>at AC-14 / maximum</li> <li>at AC-15 / maximum</li> <li>at AC-12 / maximum</li> <li>at AC-15 / maximum</li> <li>at AC-15 / maximum</li> <li>at DC-12 / maximum</li> </ul>	• at 440 V / rated value	Α	0.2
<ul> <li>at 24 V / rated value</li> <li>at 60 V / rated value</li> <li>at 110 V / rated value</li> <li>at 110 V / rated value</li> <li>at 220 V / rated value</li> <li>at 440 V / rated value</li> <li>at 600 V / rated value</li> <li>A 0.5</li> <li>at 600 V / rated value</li> <li>A 0.26</li> </ul> Off-load operating frequency <ul> <li>at AC</li> <li>at DC</li> <li>1/h 10,000</li> </ul> Frequency of operation <ul> <li>at AC-12 / maximum</li> <li>at AC-14 / maximum</li> <li>at AC-15 / maximum</li> <li>at AC-15 / maximum</li> <li>at DC-12 / maximum</li> </ul>	• 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 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	• 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 AC • at DC  Frequency of operation • at AC-12 / maximum • at AC-15 / maximum • at DC-12 / maximum	• at 24 V / rated value	А	10
• at 220 V / rated value • at 440 V / rated value • at 600 V / rated value  • at AC • at AC • at DC  Frequency of operation • at AC-12 / maximum • at AC-15 / maximum • at DC-12 / maximum	• at 60 V / rated value	Α	4.7
<ul> <li>at 440 V / rated value</li> <li>at 600 V / rated value</li> <li>Off-load operating frequency</li> <li>at AC</li> <li>1/h 10,000</li> <li>at DC</li> <li>I/h 10,000</li> <li>Trequency of operation</li> <li>at AC-12 / maximum</li> <li>at AC-14 / maximum</li> <li>at AC-15 / maximum</li> <li>at AC-12 / maximum</li> <li>1/h 1,000</li> <li>at DC-12 / maximum</li> <li>1/h 1,000</li> <li>1/h 1,000</li> </ul>	• at 110 V / rated value	Α	3
◆ at 600 V / rated value       A       0.26         Off-load operating frequency       0.26         ◆ 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	
<ul> <li>with conductor end processing</li> </ul>	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







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		
<ul> <li>with low demand rate / according to SN 31920</li> </ul>	%	40
<ul> <li>with high demand rate / according to SN 31920</li> </ul>	%	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:

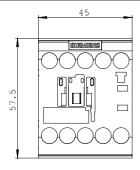
http://www.siemens.com/cax

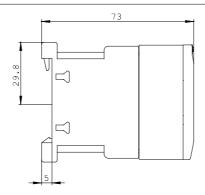
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

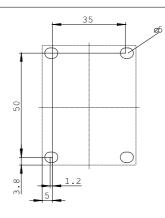
http://support.automation.siemens.com/WW/view/en/3RH2131-1BW40/all

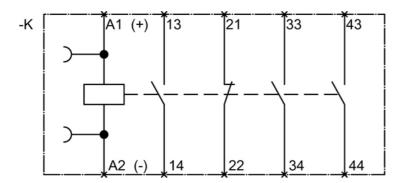
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, ...)

http://www.automation.siemens.com/bilddb/cax\_en.aspx?mlfb=3RH2131-1BW40









last change: Oct 24, 2011