## **SIEMENS**

Product data sheet 3RH2131-2BG40



CONTACTOR RELAY, 3NO+1NC, DC 125V, SZ S00, SPRING-LOADED 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	125
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	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 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 120 V • with 2 current paths in series / at DC-13 • at 24 V / rated value • at 60 V / rated value • at 600 V / rated value • at 6	• 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 • 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 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 100 V / rated value • at 3.5 • at 110 V / rated value • at 3.5 • at 110 V / rated value • at 600 V / rated value • at 24 V / rated value • at 25 V / rated value • at 26 V / rated value • at 26 V / rated value • at 26 V / rated value • at 27 V / rate	• 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  Operating current • of the auxiliary contacts / with 1 current path / at DC-13 • at 24 V • at 110 V • at 120 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 60 V / rated value • at 600 V / rated value • at 6	• 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  • at 24 V / rated value  • at 60 V / rated value  • at 60 V / rated value  • at 10 V / rated value  • at 40 V / rated value  • at 600 V / rated value  • at 600 V / rated value  • at 600 V / rated value  • at 60 V / rated value  • at 110 V / rated value  • at 60 V / rated value  • at 440 V / rated value  • at 440 V / rated value  • at 440 V / rated value  • at 600 V / rated value  The 10,000  • at DC  Frequency of operation  • at AC-12 / maximum  • at AC-14 / maximum  • at AC-15 / maximum  • at AC-15 / maximum  • at DC  • at DC	• 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 60 V / rated value         A         0.1           • with 3 current paths in series / at DC-13         A         10           • at 60 V / rated value         A         0.1           • at 24 V / rated value         A         3           • at 220 V / rated value         A         3           • 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           Off-load operating frequency         A         1/h	• 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 120 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 440 V / rated value  • at 600 V / rated value  • with 3 current paths in series / at DC-13  • at 22 V / rated value  • at 60 V / rated value  • at 60 V / rated value  • at 60 V / rated value  • at 110 V / rated value  • at 110 V / rated value  • at 60 V / rated value  • at 60 V / rated value  • at 440 V / rated value  • at AC - 1/h 10,000  • at AC  • at DC   Frequency of operation  • at AC-12 / maximum  • th C-15 / maximum  • th D, 1,000  • at DC-12 / maximum  • th D, 1,000  • at DC-12 / maximum  • th D, 1,000	• at 600 V / rated value	Α	1.8
* at 24 V	Operating current		
*at 110 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 *with 2 current paths in series / at DC-13  *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 440 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  *at 220 V / rated value A 3  *at 24 V / rated value A 5  *at 110 V / rated value A 5  *at 110 V / rated value A 5  *at 20 V / rated value A 6  *at 20 V / rated value A 7  *at 20 V / rated value A 7  *at 20 V / rated value A 7  *at 20 V / rated value A 8  *at 20 V / rated	• 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 440 V / rated value  * at 600 V / rated value  * at 110 V / rated value  * at 220 V / rated value  * at 440 V / rated value  * at 440 V / rated value  * at 600 V / ra	• 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 440 V / rated value     * at 600 V / rated value     * at 24 V / rated value     * 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 220 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       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 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       0.26         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 DC-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 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 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>	• 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 600 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 220 V / rated value</li> <li>at 200 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</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 AC</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></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 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 AC - 1/h 10,000</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 AC-12 / maximum</li> <li>at AC-12 / maximum</li> <li>at AC-14 / maximum</li> <li>at AC-15 / maximum</li> <li>at DC-12 / maximum</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 10 V / rated value</li> <li>at 110 V / rated value</li> <li>at 120 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 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 AC-12 / maximum</li> <li>at AC-12 / maximum</li> <li>at AC-12 / maximum</li> <li>at AC-14 / maximum</li> <li>at AC-15 / 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 1220 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 AC</li> <li>at DC</li> <li>1/h 10,000</li> <li>Frequency 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>at DC-12 /</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
<ul> <li>at 60 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>A 0.5</li> <li>at 600 V / rated value</li> <li>A 0.26</li> <li>Off-load operating frequency</li> <li>at AC</li> <li>1/h 10,000</li> <li>at DC</li> <li>Frequency of operation</li> <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 AC-15 / maximum</li> <li>at DC-12 / maximum</li> <li>at DC-12 / maximum</li> <li>1/h 1,000</li> </ul>	• 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	Α	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-15 / maximum</li> <li>at DC-12 / maximum</li> <li>1/h 1,000</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       I/h       10,000         • at AC       1/h       10,000         Frequency of operation       I/h       1,000         • at AC-12 / maximum       1/h       1,000         • at AC-14 / maximum       1/h       1,000         • at DC-12 / 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	70
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	spring-loaded terminals
Type of the connectable conductor cross-section	
for auxiliary contacts	
• solid	2x (0.5 4 mm²)
• finely stranded	
<ul> <li>with conductor end processing</li> </ul>	2x (0.5 2.5 mm²)
<ul> <li>without conductor final cutting</li> </ul>	2x (0.5 2.5 mm²)
• for AWG conductors / for auxiliary contacts	2x (20 12)

### Certificates/approvals:

#### **General Product Approval**

3

ROSTEST



**Test Certificates** 

Manufacturer















Shipping Approval

**Shipping Approval** 







### **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:

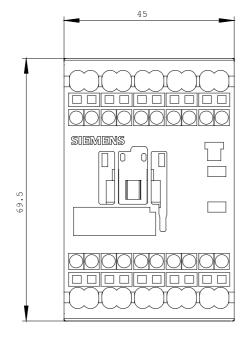
http://www.siemens.com/cax

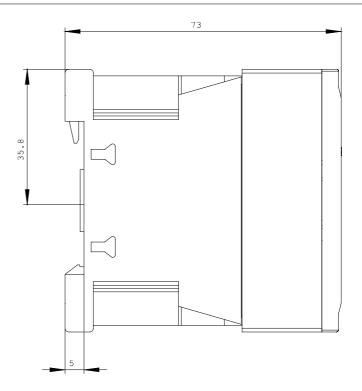
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

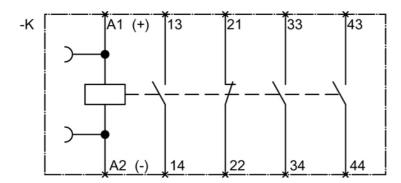
 $\underline{\text{http://support.automation.siemens.com/WW/view/en/3RH2131-2BG40/all}}$ 

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

 $\underline{\text{http://www.automation.siemens.com/bilddb/cax\_en.aspx?mlfb=3RH2131-2BG40}$ 







last change: Oct 24, 2011