# SIEMENS

## **Product data sheet**

### 3RH2140-2BB40



CONTACTOR RELAY, 4NO, DC 24V, SZ S00, SPRING-LOADED TERMINAL

General technical data:		
Product brand name		SIRIUS
Size of the contactor		S00
Identification number and letter for switching elements		40 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 electronics-compatible auxiliary       10,000,000         Control circuit:       DC         Type of voltage / of the controlled supply voltage       DC         Control supply voltage / 1       V         • for DC / rated value       V         Operating range factor control supply voltage rated value / of the solenoid / for DC       W         • for DC       0.8 1.1         Holding power / of the solenoid / for DC       W         • at DC       0.8 100         Operating delay       -         • at DC       ms         • at DC       ms         Arcing time       s         Arcing time       s         Auxiliary contacts / instantaneous switching       0         Operating current / of the auxiliary contacts / instantaneous switching       4         Operating current / of the auxiliary contacts / at AC-12 / maximum       A         • at 200 V       A       6         • at 200 V       A       6 <t< th=""><th>of the contactor with added auxiliary switch block / typical</th><th></th><th>10,000,000</th></t<>	of the contactor with added auxiliary switch block / typical		10,000,000
switch block / typical         Image: switch block / typical           Control circuit:         DC           Type of voltage / of the controlled supply voltage         DC           Control supply voltage / 1         V           • for DC / rated value         V           Operating range factor control supply voltage rated value / of the solenoid / for DC         W           Holding power / of the solenoid / for DC         W           Pull-In power / of the solenoid / for DC         W           Pull-In power / of the solenoid / for DC         W           Pull-In power / of the solenoid / for DC         W           Pull-In power / of the solenoid / for DC         W           Pull-In power / of the solenoid / for DC         W           Pull-In power / of the solenoid / for DC         W           Pull-In power / of the solenoid / for DC         W           Pull-In power / of the solenoid / for DC         W           Cosing delay			
Type of voltage / of the controlled supply voltageDCControl supply voltage / 1V• for DC / rated valueV24Operating range factor control supply voltage rated value / of the solenoid / for DC08 1.1Holding power / of the solenoid / for DCW4Pull-in power / of the solenoid / for DCW4Closing delay• at DCM30 100Opening delay• at DCms25 90Arcing times10 15Auxiliary contacts / for auxiliary contacts / instantaneous switching0Number of NC contacts / for auxiliary contacts / instantaneous switching0Operating current / of the auxiliary contacts / instantaneous switching1• at 220 VAA6• at 230 VAA1• at 230 VAA6• at 230 VAA3• at 230 VAA6• at 230 VAA1• at 230 VAA3• at 230 VAA1• at 230 VAA6• at 230 VAA1• at 230 VAA1• at 24VAA6• at 24VAA6• at 24VAA6• at 24VAA6• at 24VAA6• at 24V / tated valueAA1• at 24V / tated valueAA1• at 24V / tated valueAA1• at 24V / tated value <td></td> <td></td> <td></td>			
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• for DC / rated valueV24Operating range factor control supply voltage rated value / of the solenoidII• for DC0.8 1.1Holding power / of the solenoid / for DCW4Pult-In power / of the solenoid / for DCW4Closing delayII• at DCms30 100Opening delayII• at DCms25 90Arcing times10 15Auxiliary circuit:Ifaulty switching per 100 million (17 V, 1 mA)Number of NC contacts / for auxiliary contacts / instantaneous switching1Operating current / of the auxiliary contacts / instantaneous switchingAOperating current / of the auxiliary contacts / at AC-12 / maximumA0A3• at 200 VA6• at 300 VA1• at 400 VA3• at 400 VA1• at 400 VA3• at 400 VA1• at 400 VA3• at 400 VA6• at 400 VA3• at 400 VA6• at 400 VA6• at 400 VA3• at 400 VA6• at 200 VA6• at 210 VA<	Type of voltage / of the controlled supply voltage		DC
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the solenoid i for DC	• for DC / rated value	V	24
Holding power / of the solenoid / for DCW4Pull-In power / of the solenoid / for DCW4Pull-In power / of the solenoid / for DCW4Closing delayms30 100• at DCms30 100Opening delays10 15• at DCms10 15Arcing time11 faulty switching per 100 million (17 V, 1 mA)Number of NC contacts / for auxiliary contacts / instantaneous switching1Number of NC contacts / for auxiliary contacts / instantaneous switching1Operating current / of the auxiliary contacts / at AC-12 / maximumA0A1• at 230 VAA6• at 500 VAA3• at 690 VAA1• at 690 VAA1• at 690 VAA1• at 690 VAA3• at 690 VAA1• at 690 VAA1	Operating range factor control supply voltage rated value / of the solenoid	-	
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• at DCms30 100Opening delayrms25 90• at DCms25 90Arcing times10 15Auxiliary circuit:1 faulty switching per 100 million (17 V, 1 mA)Number of NC contacts / for auxiliary contacts / instantaneous switching0Operating current / of the auxiliary contacts / instantaneous switching4Operating current / of the auxiliary contacts / at AC-12 / maximumA010Operating current / of the auxiliary contacts / at AC-12 / switchingA0A6• at 230 VAA6• at 240 VAA3• at 690 VAA1Operating current / of the auxiliary contacts / at AC-15F• at 24VAA6• at 230 VAA1• at 230 VAA3• at 24VAA1• at 230 VAA1• at 24VAA6• at 24VAA6• at 24VAA6• at 24VAA1• at 24VAA1• at 220 VAA1• at 220 VAA10• at 220 VAA10• at 220 VAA10• at 220 VAA10• at 24V / rated valueAA10• at 24V / rated valueAA10• at 60 V / rated valueAA10• at 60 V / rated valueAA10• at 100 V / rated value <t< td=""><td>Pull-in power / of the solenoid / for DC</td><td>W</td><td>4</td></t<>	Pull-in power / of the solenoid / for DC	W	4
Opening delayImage: rest of the auxiliary contactsImage: rest of the auxiliary contactsImage: rest of the auxiliary contactsArcing times10 15Auxiliary circuit:I faulty switching per 100 million (17 V, 1 mA)Number of NC contacts / for auxiliary contacts / instantaneous switching0Number of NC contacts / for auxiliary contacts / instantaneous switching4Operating current / of the auxiliary contacts / instantaneous switching4Operating current / of the auxiliary contacts / at AC-12 / maximumA10Operating current / of the auxiliary contacts / at AC-15 • at 230 VA6• at 400 VA32• at 690 VA1Operating currentA1• of the auxiliary contacts / with 1 current path / at DC-12 • at 24 VA6• at 220 VA1• at 220 VA6• at 220 VA1• at 220 VA10• at 220 V /> at 220 V // ated value	Closing delay		
• at DCms25 90Arcing times10 15Auxiliary circuit:I faulty switching per 100 million (17 V, 1 mA)Number of NC contacts / for auxiliary contacts / instantaneous switching0Number of NC contacts / for auxiliary contacts / instantaneous switching0Operating current / of the auxiliary contacts / at AC-12 / maximumA10Operating current / of the auxiliary contacts / at AC-15 • at 230 VA6• at 90 VA63• at 90 VA6• at 90 VA6• at 90 VA6• at 110 VA6• at 24 VA6• at 24 VA6• at 220 VA1• at 110 VA1• at 220 VA1• at 24 VA6• at 24 VA6• at 220 VA1• at 24 V / rated valueA10• at 24 V / rated valueA10• at 24 V / rated valueA10• at 60 V / rated valueA10• at 10 V / rated valueA10• at 10 V / rated valueA10• at 10 V / rated valueA10	• at DC	ms	30 100
Arcing times10 15Auxiliary circuit:Contact reliability / of the auxiliary contacts1 faulty switching per 100 million (17 V, 1 mA)Number of NC contacts / for auxiliary contacts / instantaneous switching0Number of NO contacts / for auxiliary contacts / instantaneous switching0Operating current / of the auxiliary contacts / at AC-12 / maximumAOperating current / of the auxiliary contacts / at AC-15I• at 230 VA6• at 400 VA3• at 600 VA1Operating currentA1• of the auxiliary contacts / at DC-12A6• at 24 VA6• at 110 VA3• at 220 VA1• at 24 V/ rated valueA1• at 24 V/ rated valueA1• at 60 V/ rated valueA10• at 10 V/ rated valueA10• at 10 V/ rated valueA10	Opening delay	_	
Auxillary circuit:       1 faulty switching per 100 million (17 V, 1 mA)         Number of NC contacts / for auxiliary contacts / instantaneous switching       0         Number of NO contacts / for auxiliary contacts / instantaneous switching       0         Operating current / of the auxiliary contacts / at AC-12 / maximum       A         Operating current / of the auxiliary contacts / at AC-15       A         • at 230 V       A         • at 600 V       A         Operating current       A         • of the auxiliary contacts / at DC-12       A         • at 220 V       A         • at 24 V       A         • at 24 V       A         • of the auxiliary contacts / with 1 current path / at DC-12       A         • at 220 V       A         • at 24 V       A         • at 220 V       A         • at 24 V       A         • at 24 V       A         • at 220 V       A         • at 220 V       A         • at 24 V       A         • at 220 V       A         • at 24 V / rated value       A         • at 60 V / rated value	• at DC	ms	25 90
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         0           Number of NO contacts / for auxiliary contacts / instantaneous switching         4           Operating current / of the auxiliary contacts / at AC-12 / maximum         A         10           Operating current / of the auxiliary contacts / at AC-15         V         Image: Contact A AC-15         V           • at 230 V         AA         6         3         1           • at 00 V         AA         3         2         1           • at 690 V         AA         1         2         2           • at 24 V         AA         1         2         2           • at 110 V         AA         3         3         3         3           • at 220 V         AA         1         2         3	Arcing time	S	10 15
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         0           Number of NO contacts / for auxiliary contacts / instantaneous switching         4           Operating current / of the auxiliary contacts / at AC-12 / maximum         A         10           Operating current / of the auxiliary contacts / at AC-15         V         Image: Contact A AC-15         V           • at 230 V         AA         6         3         1           • at 00 V         AA         3         2         1           • at 690 V         AA         1         2         2           • at 24 V         AA         1         2         2           • at 110 V         AA         3         3         3         3           • at 220 V         AA         1         2         3	Auxiliary circuit:		
switchingImage: contracts / for auxiliary contacts / instantaneous switching4Operating current / of the auxiliary contacts / at AC-12 / maximumA10Operating current / of the auxiliary contacts / at AC-15FF• at 230 VAA6• at 230 VAA3• at 400 VAA3• at 690 VAA1Operating currentA1• at 690 VAA1Operating currentFF• of the auxiliary contacts / with 1 current path / at DC-12A6• at 220 VAA6• at 220 VAA3• at 220 VAA1• at 100 V rated valueAA1• at 60 V / rated valueAA10• at 60 V / rated valueAA10• at 110 V rated valueAA10			1 faulty switching per 100 million (17 V, 1 mA)
switchingImage: contracts / at AC-12 / A framewingImage: contracts / at AC-12 / A framewingImage: contracts / at AC-12 / A framewingImage: contracts / at AC-15 / A framewingImage: contracts / at AC-16 / A framewingImage: contr	Number of NC contacts / for auxiliary contacts / instantaneous switching	-	0
maximumImage: constant of the auxiliary contacts / at AC-15Image: constant of the auxiliary contacts / at AC-15• at 230 VA6• at 400 VA3• at 400 VA2• at 500 VA1• at 690 VA1Operating currentH1• of the auxiliary contacts / with 1 current path / at DC-12A6• at 24 VA6• at 110 VA3• at 220 VA1• with 2 current paths in series / at DC-12A10• at 60 V / rated valueA10• at 60 V / rated valueA10• at 10 V / rated valueA4	Number of NO contacts / for auxiliary contacts / instantaneous switching	-	4
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• at 400 VA3• at 500 VA2• at 600 VA1Operating currentKC• of the auxiliary contacts / with 1 current path / at DC-12A6• at 24 VAA6• at 24 VAA3• at 220 VAA1• at 220 VAA1• at 24 V/ rated valueAA10• at 24 V/ rated valueAA10• at 10 V/ rated valueAA4	Operating current / of the auxiliary contacts / at AC-15	_	
• at 500 VA2• at 690 VA1Operating currentKComposition of the auxiliary contacts / with 1 current path / at DC-12A6• at 24 VAA6• at 110 VAA3• at 220 VAA1• with 2 current paths in series / at DC-12A1• at 24 V / rated valueAA10• at 24 V / rated valueAA10• at 110 V / rated valueAA4	• at 230 V	А	6
• at 690 VA1Operating current • of the auxiliary contacts / with 1 current path / at DC-12 • at 24 VA6• at 24 VAA3• at 110 VAA3• at 220 VAA1• with 2 current paths in series / at DC-12 • with 2 current paths useries / at DC-12AA10• at 60 V / rated value • at 60 V / rated valueAA10• at 110 V / rated valueAA4	• at 400 V	А	3
Operating currentImage: style	• at 500 V	А	2
• of the auxiliary contacts / with 1 current path / at DC-12A6• at 24 VA3• at 110 VA3• at 220 VA1• with 2 current paths in series / at DC-12• at 24 V / rated valueA10• at 60 V / rated valueA10• at 110 V / rated valueA4	• at 690 V	А	1
• at 24 V       A       6         • at 110 V       A       3         • at 220 V       A       1         • at 220 V       A       1         • with 2 current paths in series / at DC-12       A       10         • at 24 V / rated value       A       10         • at 60 V / rated value       A       10         • at 110 V / rated value       A       4	Operating current		
• at 110 V       A       3         • at 220 V       A       1         • with 2 current paths in series / at DC-12       -       -         • at 24 V / rated value       A       10         • at 60 V / rated value       A       10         • at 110 V / rated value       A       4	• of the auxiliary contacts / with 1 current path / at DC-12		
• at 220 VA1• with 2 current paths in series / at DC-12A10• at 24 V / rated valueA10• at 60 V / rated valueA10• at 10 V / rated valueA4	• at 24 V	А	6
• with 2 current paths in series / at DC-12A10• at 24 V / rated valueA10• at 60 V / rated valueA10• at 110 V / rated valueA4	• at 110 V	А	3
• at 24 V / rated valueA10• at 60 V / rated valueA10• at 110 V / rated valueA4	• at 220 V	А	1
• at 60 V / rated valueA10• at 110 V / rated valueA4	• with 2 current paths in series / at DC-12		
• at 110 V / rated value A 4	• at 24 V / rated value	А	10
	• at 60 V / rated value	А	10
• at 220 V / rated value A 2			
	• at 110 V / rated value	А	4

A	1.3
А	0.65
А	10
А	10
А	10
А	3.6
А	2.5
А	1.8
-	
А	6
А	1
А	0.3
А	10
А	3.5
А	1.3
А	0.9
А	0.2
А	0.1
А	10
А	4.7
А	3
А	1.2
А	0.5
А	0.26
-	
1/h	10,000
1/h	10,000
1/h	1,000
	A A A A A A A A A A A A A A A A A A A

# 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 Ik < 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				
with conductor end processing	2x (0.5 2.5 mm²)			
without conductor final cutting	2x (0.5 2.5 mm²)			
<ul> <li>for AWG conductors / for auxiliary contacts</li> </ul>	2x (20 12)			

## Certificates/approvals:

General Product	Approval			Test Certificates	5
coc	(SA)	ROSTEST		Manufacturer	
Shipping Approva	al				
ABS		GL	Lloyd's Register	PRS	RINA
Shipping Approva	al other				
RMRS	DE VDE				

## 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	
• comment		with 3RH29	

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:

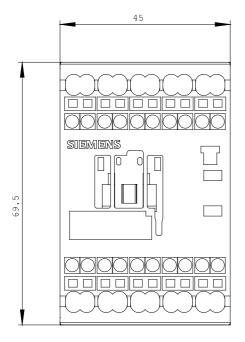
http://www.siemens.com/cax

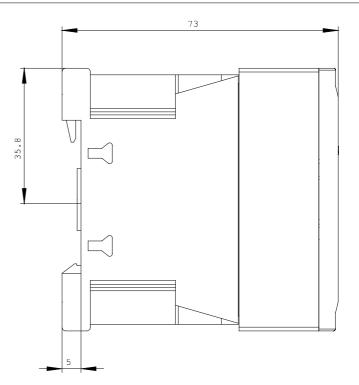
#### Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

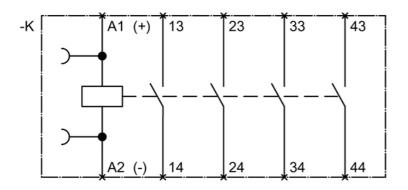
http://support.automation.siemens.com/WW/view/en/3RH2140-2BB40/all

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

http://www.automation.siemens.com/bilddb/cax\_en.aspx?mlfb=3RH2140-2BB40







last change:

Oct 24, 2011