SIEMENS

Product data sheet 3RH2140-1VB40



COUPLING CONTACTOR RELAY, 4NO, DC 24V, 0.85...1.85*US, 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		40 E
Product extension / auxiliary switch		No
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		

30,000,000

Control circuit/ Control:		
Design of the surge suppressor		with diode
Voltage type / of control feed 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		0.85 1.85
Holding power / of the solenoid / for DC	W	1.6
Pull-in power / of the solenoid / for DC	W	1.6
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 NO contacts / for auxiliary contacts / instantaneous switching		4
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	Α	10
• at 110 V / rated value	Α	4
• at 220 V / rated value	А	2

- at 800 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 40 V / rated value - at 800 V / rated value - at 110 V / rated value - at 800 V / rated value - at	• 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 600 V / rated value • at 110 V / rated value • at 220 V / rated value • at 600 V / rated val	• 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 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 440 V / rated value A 10 * at 440 V / rated value A 10 * with 2 current paths in series / at DC-13 * at 24 V / rated value A 10 * with 2 current paths in series / at DC-13 * at 24 V / rated value A 10 * at 60 V / rated value A 15 * at 110 V / rated value A 15 * at 110 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 20 V / rated value A 13 * at 24 V / rated value A 13 * at 24 V / rated value A 14 * at 110 V / rated value A 15 * at 24 V / rated value A 16 * at 110 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 110 V / rated value A 12 * at 440 V / rated value A 12 * at 440 V / rated value A 12 * at 440 V / rated value A 12 * at 440 V / rated value A 12 * at 440 V / rated value A 16 * at 20 V / rated value A 16 * at AC 17 / rated value A 17 * at AC 17 / rated value A 17 * at AC 17 / rated value A 17 * at AC 17 / rated value A 17 * at AC 17 / rated value A 17 * at AC 17 / raximum A 17 * at AC 17 / raximum A 17 * at AC 18 / raximum A 17 * at AC 17 / raximum A 17 * at AC 17 / raximum A 17 * at AC 17 / raximum A 17 * at AC 18 / raximum A 17 * at AC 17 / raximum A 17 * at AC 18 / raximum A 17 * at AC 17 / raximum A 17 * at AC 18 / raximum A 18 * at	• at 110 V / rated value	Α	10
at 600 V / rated value	• at 220 V / rated value	Α	3.6
Operating current • with 1 current path / at DC-13 • at 24 V / rated value • at 110 V / rated value • at 1220 V / rated value • at 220 V / rated value • at 600 V / rated value • at 60 V / rated value • at 220 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 / rated value • at 110 V / rated value • at 220 V / rated value • at 220 V / rated value • at 600 V	• 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 220 V / rated value • at 220 V / rated value • at 600 V / rated value • at 600 V / rated value • at 60 V / rated value • at 110 V / rated value • at 110 V / rated value • at 440 V / rated value • at 440 V / rated value • at 440 V / rated value • at 60 V / rated value • at 440 V / rated value • at 440 V / rated value • at 60 V / rated value	• 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 * 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 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 60 V / rated value * at 22 V / rated value * at 60 V / rated value * at 110 V / rated value * at 110 V / rated value * at 22 V / rated value * at 440 V / rated value * at 42 V / rated value * at 420 V / rated value * at 20 V / rated value * at 440 V / rated value * at 420	• with 1 current path / at DC-13		
* at 220 V / rated value	• at 24 V / rated value	Α	10
* at 440 V / rated value * 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 60 V / rated value * at 110 V / rated value * at 440 V / rated value * at 60 V / rated value * at 440 V / rated value * at 60 V / rated value * at 22 V / rated value * at 110 V / rated value * at 24 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 220 V / rated value * at 440 V / rated value * at 440 V / rated value * at 600 V / r	• 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 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 60 V / rated value * at 110 V / rated value * at 440 V / rated value * at 440 V / rated value * at 440 V / rated value * at 600 V / rated value * a	• at 220 V / rated value	Α	0.3
* with 2 current paths in series / at DC-13 * at 24 V / rated value	• at 440 V / rated value	Α	0.14
• 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 • 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 600 V / rated value	Α	0.1
 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 24 V / rated value at 24 V / rated value at 10 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 600 V / rated value at 70 D at AC at AC<	• 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 440 V / rated value at 600 V / rated value at 700 V / rated value at 7	• 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 220 V / rated value at 220 V / rated value at 440 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 DC at	• 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 10 0 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-12 / maximum at AC-14 / maximum at AC-15 / maximum at AC-12 / maximum at AC-12 / maximum at AC-12 / maximum at AC-14 / maximum at AC-15 / maximum at DC 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 600 V / rated value at AC at AC at DC 1/h 10,000 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 120 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 Trequency 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 AC-12 / maximum at DC-12 / maximum 	• at 600 V / rated value	А	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-14 / maximum • at AC-15 / maximum • at AC-12 / 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-12 / maximum • at AC-15 / maximum • at DC-12 / maximum • at DC-12 / maximum • at DC-12 / maximum • at DC-12 / maximum • at DC-12 / maximum • at DC-12 / maximum • at DC-12 / maximum • at DC-12 / maximum • at DC-12 / maximum • at DC-12 / maximum • at DC-12 / maximum • at DC-12 / maximum • at DC-12 / maximum • at DC-12 / maximum • at DC-12 / maximum • at DC-12 / maximum	• at 60 V / rated value	А	4.7
 at 440 V / rated value at 600 V / rated value 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 DC-12 / maximum 1/h 1,000 at DC-12 / maximum 1/h 1,000 1/h 1,000 	• 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
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	
Mounting type		screw and snap-on mounting onto 35 mm standard mounting rail	
Width	mm	45	
Height	mm	57.5	
Depth	mm	73	

Connections/ terminals:	
Design of the electrical connection	
• for auxiliary and control current circuit	screw-type terminals
 for auxiliary contacts / 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

Functional Safety / Safety of Machinery

Declaration of Conformity









Type Examination



Test Certificates

Special Test Certificate

Shipping Approval













Shipping Approval







other

Environmental Confirmations

UL/CSA ratings:

Contact rating designation / for auxiliary contacts / according to	
111	

A600 / Q600

Safety related data:		
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] / 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://mall.industry.siemens.com/

Cax online generator

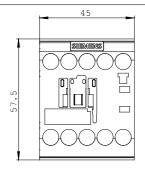
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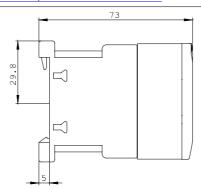
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

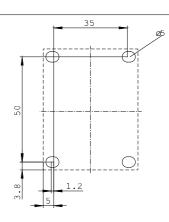
 $\underline{\text{http://support.automation.siemens.com/WW/view/en/3RH2140-1VB40/all}}$

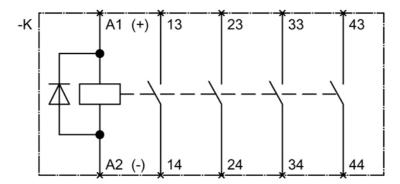
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, ...)

http://www.automation.siemens.com/bilddb/cax_en.aspx?mlfb=3RH2140-1VB40









last change: Jul 21, 2014