## SIEMENS

## Data sheet

## 3RH2431-1AF00

Contactor relay, latched, 3 NO + 1 NC, 110 V AC, 50 / 60 Hz, Size S00, screw terminal



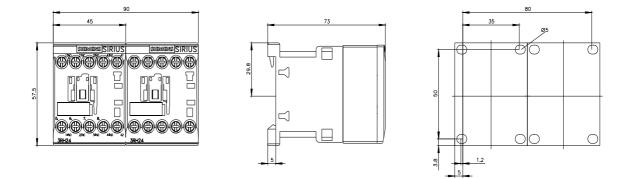
product brand name	SIRIUS
product designation	Auxiliary contactor
product type designation	3RH2
General technical data	
size of contactor	S00
product extension auxiliary switch	Yes
insulation voltage with degree of pollution 3 at AC rated value	690 V
degree of pollution	3
surge voltage resistance rated value	6 kV
shock resistance at rectangular impulse	
• at AC	7,3g / 5 ms, 4,7g / 10 ms
shock resistance with sine pulse	
• at AC	11,4g / 5 ms, 7,3g / 10 ms
mechanical service life (operating cycles)	
<ul> <li>of contactor typical</li> </ul>	5 000 000
<ul> <li>of the contactor with added electronically optimized auxiliary switch block typical</li> </ul>	5 000 000
<ul> <li>of the contactor with added auxiliary switch block typical</li> </ul>	5 000 000
reference code according to IEC 81346-2	К
Substance Prohibitance (Date)	10/01/2009
Ambient conditions	
installation altitude at height above sea level maximum	2 000 m
ambient temperature	
<ul> <li>during operation</li> </ul>	-25 +60 °C
<ul> <li>during storage</li> </ul>	-55 +80 °C
relative humidity minimum	10 %
relative humidity at 55 °C according to IEC 60068-2-30	95 %
maximum	
Main circuit	
no-load switching frequency	
• at AC	10 000 1/h
• at DC	10 000 1/h
Control circuit/ Control	
type of voltage of the control supply voltage	AC
control supply voltage at AC	
<ul> <li>at 50 Hz rated value</li> </ul>	110 V
<ul> <li>at 60 Hz rated value</li> </ul>	110 V
control supply voltage frequency	
• 1 rated value	50 Hz
• 2 rated value	60 Hz

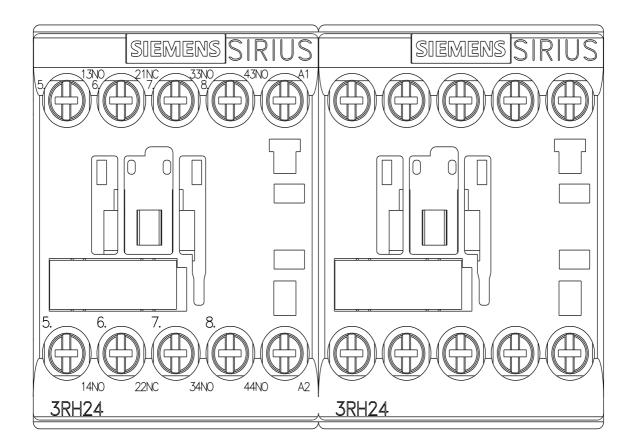
value of magnet coil at AC         0.8 11           • at 50 Hz         0.8 1.1           • at 50 Hz         0.85 1.1           • at 50 Hz         0.85 1.1           • at 60 Hz         0.74           Inductive power factor with claig power of the coil         0.8           • at AC         5	operating range factor control supply voltage rated	
• at 60 hz     0.85 1.1       apparent pick up power formagnet coil at AC     37 VA       inductive power factor with closing power of the coil     0.8       apparent holding power of apparent coil at AC     5.7 VA       inductive power factor with the holding power of the coil     0.25       closing delay		
apparent pick-up power of magnet coll at AC37 VAinductive power factor with colling power of the coll0.5coll0.25coll0.25coll0.15 mscoll0.15 msarcing time1015 msarcing time1015 msarcing time1number of NC contacts for auxiliary contacts1number of NC contacts for auxiliary contacts3instantaneous contact1number of NC contacts for auxiliary contacts3instantaneous contact1arcing time10 Aoperational current at AC-12 maximum operational current at AC-12 maximum at a 300 V rated value10 Aoperational current at AC-12 maximum at a 300 V rated value10 Aoperational current at AC-12 maximum at a 300 V rated value10 Aoperational current at AC-12 maximum at a 300 V rated value10 Aoperational current at AC-12 maximum at a 300 V rated value10 Aoperational current at AC-12 maximum at a 30 V rated value10 Aoperational current at AC-12 maximum at a 30 V rated value10 Aoperational current at at Current path at DC-12Imageneous contactat 3100 V rated value10 Aat 310 V rated value10 A	• at 50 Hz	0.8 1.1
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apparent holding power of magnet coil at AC         5.7 VA           Inductive power factor with the holding power of the coll         0.25           closing delay         833 ms           • at AC         833 ms           opening delay         •15 ms           • at AC         115 ms           Auxiliary circuit         1           number of NC contacts for auxiliary contacts         1           • instainancess contact         3           identification number and latter for switching         31 E           eitements         10 A           operational current at AC-12 maximum         10 A           operational current at AC-12 maximum         10 A           operational current at 1 current path at DC-12         •           • at 300 V rated value         2A           • at 300 V rated value         3A           • at 300 V rated value         3A           • at 400 V rated value         0A           • at 400 V rated value         0A           • at 400 V rated value         10A	apparent pick-up power of magnet coil at AC	37 VA
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<ul> <li>at 600 V rated value</li> <li>at 600 V rated value</li> <li>operating frequency at DC-12 maximum</li> <li>1 000 1/h</li> <li>operational current at 1 current path at DC-13</li> <li>at 24 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>0.14 A</li> <li>at 600 V rated value</li> <li>0.1 A</li> </ul> operational current with 2 current paths in series at DC-13 <ul> <li>at 24 V rated value</li> <li>at 24 V rated value</li> <li>0.1 A</li> </ul> operational current with 2 current paths in series at DC-13 <ul> <li>at 24 V rated value</li> <li>0.1 A</li> </ul> operational current with 2 current paths in series at DC-13 <ul> <li>at 24 V rated value</li> <li>0.4</li> <li>at 20 V rated value</li> <li>0.5 A</li> <li>at 110 V rated value</li> <li>0.9 A</li> <li>at 440 V rated value</li> <li>0.2 A</li> <li>at 600 V rated value</li> <li>0.1 A</li> </ul>	• at 220 V rated value	3.6 A
operating frequency at DC-12 maximum1 000 1/hoperational current at 1 current path at DC-1310 A• at 24 V rated value10 A• at 110 V rated value1 A• at 220 V rated value0.3 A• at 440 V rated value0.14 A• at 600 V rated value0.1 Aoperational current with 2 current paths in series at DC-1310 A• at 24 V rated value10 A• at 24 V rated value0.1 A• at 20 V rated value0.1 A• at 24 V rated value10 A• at 24 V rated value3.5 A• at 110 V rated value1.3 A• at 220 V rated value0.9 A• at 440 V rated value0.2 A• at 600 V rated value0.1 A	• at 440 V rated value	2.5 A
operational current at 1 current path at DC-1310 A• at 24 V rated value10 A• at 110 V rated value1 A• at 220 V rated value0.3 A• at 440 V rated value0.14 A• at 600 V rated value0.1 Aoperational current with 2 current paths in series at DC-1310 A• at 24 V rated value10 A• at 20 V rated value3.5 A• at 110 V rated value1.3 A• at 220 V rated value0.9 A• at 440 V rated value0.2 A• at 600 V rated value0.1 A	<ul> <li>at 600 V rated value</li> </ul>	1.8 A
• at 24 V rated value10 A• at 110 V rated value1 A• at 220 V rated value0.3 A• at 440 V rated value0.14 A• at 600 V rated value0.1 A• operational current with 2 current paths in series at DC-130• at 24 V rated value10 A• at 24 V rated value3.5 A• at 60 V rated value0.9 A• at 440 V rated value0.9 A• at 440 V rated value0.9 A• at 440 V rated value0.2 A• at 600 V rated value0.1 A	operating frequency at DC-12 maximum	1 000 1/h
<ul> <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 440 V rated value</li> <li>at 600 V rated value</li> <li>0.1 A</li> <li>operational current with 2 current paths in series at DC-13</li> <li>at 24 V rated value</li> <li>10 A</li> <li>at 60 V rated value</li> <li>3.5 A</li> <li>at 110 V rated value</li> <li>3.5 A</li> <li>at 220 V rated value</li> <li>0.9 A</li> <li>at 440 V rated value</li> <li>0.1 A</li> </ul>	operational current at 1 current path at DC-13	
<ul> <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>0.1 A</li> <li>operational current with 2 current paths in series at DC-13</li> <li>at 24 V rated value</li> <li>10 A</li> <li>at 60 V rated value</li> <li>3.5 A</li> <li>at 110 V rated value</li> <li>3.5 A</li> <li>at 220 V rated value</li> <li>0.9 A</li> <li>at 440 V rated value</li> <li>0.1 A</li> </ul>		
• at 440 V rated value0.14 A• at 600 V rated value0.1 Aoperational current with 2 current paths in series at DC-1310 A• at 24 V rated value10 A• at 60 V rated value3.5 A• at 110 V rated value1.3 A• at 220 V rated value0.9 A• at 440 V rated value0.1 A		
• at 600 V rated value0.1 Aoperational current with 2 current paths in series at DC-130.1 A• at 24 V rated value10 A• at 60 V rated value3.5 A• at 110 V rated value1.3 A• at 220 V rated value0.9 A• at 440 V rated value0.2 A• at 600 V rated value0.1 A		
operational current with 2 current paths in series at DC-13Image: DC-13• at 24 V rated value10 A• at 60 V rated value3.5 A• at 10 V rated value1.3 A• at 220 V rated value0.9 A• at 440 V rated value0.2 A• at 600 V rated value0.1 A		
DC-13• at 24 V rated value10 A• at 60 V rated value3.5 A• at 110 V rated value1.3 A• at 220 V rated value0.9 A• at 440 V rated value0.2 A• at 600 V rated value0.1 A		0.1 A
• at 60 V rated value3.5 A• at 110 V rated value1.3 A• at 220 V rated value0.9 A• at 440 V rated value0.2 A• at 600 V rated value0.1 A		
• at 110 V rated value1.3 A• at 220 V rated value0.9 A• at 440 V rated value0.2 A• at 600 V rated value0.1 A		10 A
• at 220 V rated value0.9 A• at 440 V rated value0.2 A• at 600 V rated value0.1 A	• at 60 V rated value	3.5 A
<ul> <li>at 440 V rated value</li> <li>at 600 V rated value</li> <li>0.1 A</li> </ul>	• at 110 V rated value	1.3 A
• at 600 V rated value 0.1 A	• at 220 V rated value	0.9 A
	• at 440 V rated value	0.2 A
operational current with 3 current paths in series at	• at 600 V rated value	0.1 A
	operational current with 3 current paths in series at	

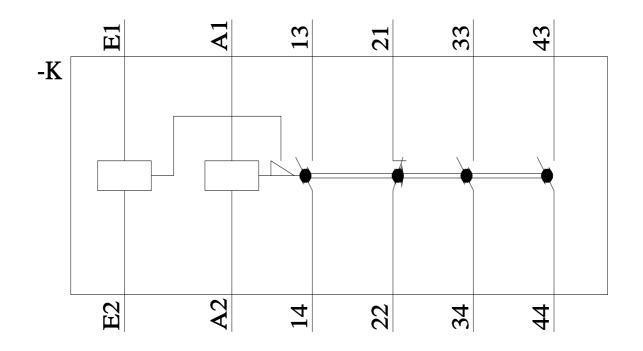
DC-13	
	10 A
<ul> <li>at 24 V rated value</li> <li>at 60 V rated value</li> </ul>	4.7 A
at 110 V rated value	4.7 A 3 A
	1.2 A
at 220 V rated value	
at 440 V rated value	0.5 A
at 600 V rated value	0.26 A
operating frequency at DC-13 maximum	1 000 1/h
design of the miniature circuit breaker for short-circuit protection of the auxiliary circuit up to 230 V	C characteristic: 6 A; 0.4 kA
contact reliability of auxiliary contacts	1 faulty switching per 100 million (17 V, 1 mA)
UL/CSA ratings	
contact rating of auxiliary contacts according to UL	A600 / Q600
Short-circuit protection	
design of the fuse link for short-circuit protection of the auxiliary switch required	fuse gL/gG: 10 A
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
fastening method	screw and snap-on mounting onto 35 mm DIN rail
height	57.5 mm
width	90 mm
depth	73 mm
required spacing	
with side-by-side mounting	
— forwards	10 mm
— upwards	10 mm
— downwards	10 mm
— at the side	0 mm
<ul> <li>for grounded parts</li> </ul>	
— forwards	10 mm
— upwards	10 mm
— at the side	6 mm
— downwards	10 mm
<ul> <li>for live parts</li> </ul>	
— forwards	10 mm
— upwards	10 mm
— downwards	10 mm
— at the side	6 mm
Connections/ Terminals	
type of electrical connection for auxiliary and control circuit	screw-type terminals
type of connectable conductor cross-sections	
<ul> <li>for auxiliary contacts</li> </ul>	
— solid or stranded	2x (0.5 1.5 mm²), 2x (0.75 2.5 mm²), 2x 4 mm²
<ul> <li>— finely stranded with core end processing</li> </ul>	2x (0.5 1.5 mm²), 2x (0.75 2.5 mm²)
<ul> <li>at AWG cables for auxiliary contacts</li> </ul>	2x (20 16), 2x (18 14), 2x 12
Safety related data	
product function positively driven operation according to IEC 60947-5-1	Yes
B10 value with high demand rate according to SN 31920	1 000 000; With 0.3 x le
proportion of dangerous failures	
with low demand rate according to SN 31920	40 %
<ul> <li>with high demand rate according to SN 31920</li> </ul>	73 %
failure rate [FIT] with low demand rate according to SN 31920	100 FIT
T1 value for proof test interval or service life according to IEC 61508	20 a
protection class IP on the front according to IEC 60529	IP20
touch protection on the front according to IEC 60529	finger-safe, for vertical contact from the front
Certificates/ approvals	
General Product Approval	
συποιαι τι τουαστ.Αρριοναι	

S.	<u>Confirmation</u>	CCC		<u>KC</u>	EAC	
EMC	Functional Safety/Safety of Machinery	Declaration of Con	formity	Test Certificates		
RCM	<u>Type Examination</u> <u>Certificate</u>	UK CA	CE EG-Konf.	Special Test Certific- ate	<u>Type Test Certific-</u> ates/Test Report	
Marine / Shipping						
ABS	B U REAU VERITAS		Lloyd's Register LRS	PRS	RINA	
Marine / Shipping	other		Railway			
RMRS	<u>Confirmation</u>	VDE	<u>Vibration and Shock</u>			
Further information         Information on the packaging         https://support.industry.siemens.com/cs/ww/en/view/109813875         Information- and Downloadcenter (Catalogs, Brochures,)         https://www.siemens.com/ic10         Industry Mall (Online ordering system)         https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RH2431-1AF00         Cax online generator         http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RH2431-1AF00         Service&Support (Manuals, Certificates, Characteristics, FAQs,)						
https://support.industry.siemens.com/cs/ww/en/ps/3RH2431-1AF00 Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros,) http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RH2431-1AF00⟨=en Characteristic: Tripping characteristics, I <sup>2</sup> t, Let-through current						

Characteristic: Tripping characteristics, I<sup>2</sup>t, Let-through current https://support.industry.siemens.com/cs/ww/en/ps/3RH2431-1AF00/char Further characteristics (e.g. electrical endurance, switching frequency) http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RH2431-1AF00&objecttype=14&gridview=view1







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