SIEMENS

Data sheet

product brand name

3RH2422-1XF40-0LA2

Contactor relay latched railway, 2 NO + 2 NC, 72..125 V DC, 0.7 ... 1.25^* Us, with integr. varistor, Size S00, screw terminal Suitable for PLC outputs



product brand name	SIRIUS
product designation	Contactor relay for railway applications
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
surge voltage resistance rated value	6 kV
shock resistance at rectangular impulse	
• at DC	10g / 5 ms, 5g / 10 ms
shock resistance with sine pulse	
• at DC	15g / 5 ms, 8g / 10 ms
mechanical service life (switching cycles)	
 of contactor typical 	30 000 000
 of the contactor with added electronically optimized auxiliary switch block typical 	5 000 000
of the contactor with added auxiliary switch block typical	10 000 000
reference code according to IEC 81346-2	K
Substance Prohibitance (Date)	10/01/2009
Ambient conditions	
installation altitude at height above sea level maximum	2 000 m
ambient temperature	
 during operation 	-40 +70 °C
during storage	-55 +80 °C
relative humidity minimum	10 %
relative humidity at 55 °C according to IEC 60068-2-30 maximum	95 %
Main circuit	
no-load switching frequency	
• at DC	1 500 1/h
Control circuit/ Control	
type of voltage of the control supply voltage	DC
control supply voltage at DC	
rated value	72 125 V
operating range factor control supply voltage rated value of magnet coil at DC	
• initial value	0.7
• full-scale value	1.25

SIRIUS

closing power of magnet coil at DC holding power of magnet coil at DC closing delay ● at DC at DC at DC 25 45 ms arcing time residual current of the electronics for control with signal <0> at DC at 24 V maximum permissible 4.5 W 0.75 W 30 70 ms 25 45 ms 10 15 ms	design of the surge suppressor	Varistor
Auto Color Colo		
Cosing delay at DC		
e at DC pening idealy • at DC arcing time for catical current of the electronics for control with signal dy- at DC at 24 V maximum permissable working regions to 10 m. 15 ms to 10 m 3 ms because of NC contacts for auxillary contacts • instantaneous contact • inst	<u> </u>	
opening delay		30 70 ms
a st DC		
10 mA 10 m		25 45 ms
ADED C at 24 V maximum permissible unimber of NC contacts for auxiliary contacts 2 instantaneous contact 2 unimber of NC contacts for auxiliary contacts 2 instantaneous contact 2 instantaneous contact 2 deficient fication number and letter for switching elements 31 E operational current at AC-12 maximum 10 A operational current at AC-18 10 A at 320 V rated value 3 A at 500 V rated value 1 A operational current at 1 current path at DC-12 1 A at 24 V rated value 10 A at 110 V rated value 1 A at 22 V rated value 1 A at 460 V rated value 0.3 A at 24 V rated value 10 A at 360 V rated value 10 A at 360 V rated value 10 A at 360 V rated value 10 A at 440 V rated value 10 A at 440 V rated value 10 A at 24 V rated value 10 A at 20 V rated value 10 A at 20 V rated va	arcing time	10 15 ms
Number of NC contacts for auxillary contacts 2 1 1 1 1 1 1 1 1 1	residual current of the electronics for control with signal	10 mA
number of NC contacts for auxiliary contacts 2 w instantaneous contact 2 u instantaneous contact 2 w instantaneous contact 2 denomatic contact for auxiliary contacts 2 elements 31 E celements 0 operational current at AC-12 maximum 10 A operational current at AC-18 3A at 400 V rated value 1 A at 500 V rated value 1 A at 22 V rated value 1 A at 22 V rated value 1 A at 440 V rated value 1 A at 42 V rated value 10 A at 110 V rated value 10 A at 120 V rated value 4 A at 24 V rated value 10 A at 250 V rated value 10 A at 260 V rated value 10 A at 27 V rated value 10 A at 28 V rated value 10 A at 28 V rated value	<0> at DC at 24 V maximum permissible	
mumber of NO contacts for auxiliary contacts 2	Auxiliary circuit	
mumber of NO contacts for auxillary contacts 2		
• instantaneous contact 2 identification number and letter for switching elements 31 E		
Identification number and letter for switching elements 10 A		
Departional current at AC-12 maximum 0 A		
operational current at AC-12 maximum 10 A operational current at AC-15 Company of Table Value a at 230 V rated value 10 A a at 550 V rated value 1A a at 550 V rated value 1A operational current at 1 current path at DC-12 Image: I		31 E
Poperational current at AC-15 * al 230 V rated value 3 A 3		10 A
• at 400 V rated value	•	10 A
• at 690 V rated value		
Operational current at 1 current path at DC-12	at 500 V rated value	2 A
No 24 V rated value 10 A A A A A A A A A		1 A
at 220 V rated value at 440 V rated value at 600 V rated value operational current with 2 current paths in series at DC-12 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 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 60 V rated value at 220 V rated value at 440 V rated value at 440 V rated value at 60 V rated value		10 A
	at 110 V rated value	3 A
• at 600 V rated value 0.15 A operational current with 2 current paths in series at DC-12 - at 24 V rated value • at 24 V rated value 10 A • at 60 V rated value 4 A • at 110 V rated value 2 A • at 440 V rated value 1.3 A • at 600 V rated value 0.65 A • perational current with 3 current paths in series at DC-12 10 A • at 24 V rated value 10 A • at 60 V rated value 10 A • at 22 V rated value 10 A • at 110 V rated value 10 A • at 220 V rated value 3.6 A • at 440 V rated value 1.8 A • at 600 V rated value 1.8 A • operating frequency at DC-12 maximum 1 000 I/h operational current at 1 current path at DC-13 1 A • at 220 V rated value 1.A • at 220 V rated value 0.3 A • at 400 V rated value 0.14 A • at 60 V rated value 0.1 A • at 60 V rated value 0.1 A • at 60 V rated value 0.1 A • at 220 V rated valu	at 220 V rated value	1 A
Operational current with 2 current paths in series at DC-12 • at 24 V rated value	 at 440 V rated value 	0.3 A
DC-12	at 600 V rated value	0.15 A
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 240 V rated value at 600 V rated value at 20 V rated value at 600 V rated value at 600 V rated value at 110 V rated value at 24 V rated value at 110 V rated value at 110 V rated value at 440 V rated value at 440 V rated value at 140 V rated value at 220 V rated value at 220 V rated value at 30 O V rated value at 440 V rated value at 600 V rated value at 200 V rated value at 440 V rated value at 440 V rated value at 440 V rated value at 240 V rated value at 440 V rated value at 600 V rated value		
at 10 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 60 V rated value at 220 V rated value at 600 V rated value at 220 V rated value at 24 V rated value at 220 V rated value at 220 V rated value at 24 V rated value at 200 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 29 V rated value at 20 V rated value		40.4
 at 110 V rated value at 220 V rated value at 440 V rated value at 600 V rated value o.65 A Operational current with 3 current paths in series at DC-12 at 24 V rated value at 60 V rated value at 220 V rated value at 220 V rated value at 60 V rated value at 20 V rated value at 60 V rated value at 20 V rated value at 20 V rated value at 24 V rated value at 24 V rated value at 110 V rated value at 110 V rated value at 110 V rated value at 140 V rated value at 140 V rated value at 220 V rated value at 24 V rated value at 600 V rated value at 20 V rated value at 40 V rated value at 20 V rated value at 20 V rated value at 40 V rated value at 60 V rated		
at 220 V rated value at 440 V rated value at 600 V rated value operational current with 3 current paths in series at DC-12 at 24 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 220 V rated value at 440 V rated value at 600 V rated value at 100 V rated value at 110 V rated value at 110 V rated value at 110 V rated value at 120 V rated value at 1440 V rated value at 220 V rated value at 24 V rated value at 25 V rated value at 140 V rated value at 25 V rated value at 26 V rated value at 27 V rated value at 28 V rated value at 29 V rated value at 20 V		
● at 600 V rated value 0.65 A Operational current with 3 current paths in series at DC-12 10 A ● at 24 V rated value 10 A ● at 60 V rated value 10 A ● at 110 V rated value 3.6 A ● at 440 V rated value 2.5 A ● at 600 V rated value 1.8 A Operating frequency at DC-12 maximum 1 000 1/h Operating frequency at DC-12 maximum 1 0 A ● at 24 V rated value 1 A ● at 21 V rated value 1 A ● at 220 V rated value 0.3 A ● at 440 V rated value 0.1 A ● at 600 V rated value 0.1 A ● at 600 V rated value 10 A ● at 22 V rated value 3.5 A ● at 110 V rated value 1.3 A ● at 220 V rated value 0.9 A ● at 440 V rated value 0.2 A ● at 440 V rated value 0.2 A ● at 600 V rated value 0.2 A ● at 600 V rated value 0.1 A		
Operational current with 3 current paths in series at DC-12 10 A • at 24 V rated value 10 A • at 110 V rated value 10 A • at 220 V rated value 3.6 A • at 440 V rated value 2.5 A • at 600 V rated value 1.8 A Operating frequency at DC-12 maximum 1 000 1/h Operational current at 1 current path at DC-13 1 0 A • at 24 V rated value 1 A • at 220 V rated value 0.3 A • at 440 V rated value 0.14 A • at 600 V rated value 0.1 A • at 600 V rated value 0.1 A • at 24 V rated value 0.1 A • at 24 V rated value 0.1 A • at 20 V rated value 1.3 A • at 20 V rated value 1.3 A • at 20 V rated value 0.9 A • at 440 V rated value 0.2 A • at 440 V rated value 0.2 A		
DC-12 • at 24 V rated value 10 A • at 60 V rated value 10 A • at 110 V rated value 10 A • at 220 V rated value 3.6 A • at 440 V rated value 2.5 A • at 600 V rated value 1.8 A operating frequency at DC-12 maximum 1 000 1/h operational current at 1 current path at DC-13 • at 24 V rated value • at 110 V rated value • at 220 V rated value • at 600 V rated value • at 600 V rated value • at 600 V rated value 0.14 A • at 24 V rated value 0.1 A • at 24 V rated value 10 A • at 60 V rated value 3.5 A • at 110 V rated value 1.3 A • at 220 V rated value 0.9 A • at 440 V rated value 0.2 A • at 600 V rated value 0.2 A		0.0071
• 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 600 V rated value • at 24 V rated value • at 110 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 440 V rated value • at 600 V rated value • at 600 V rated value • at 600 V rated value • at 20 V rated value • at 20 V rated value • at 600 V rated value • at 600 V rated value • at 440 V rated value • at 440 V rated value • at 440 V rated value • at 600 V rated value • at 600 V rated value • at 600 V rated value • at 440 V rated value		
 at 110 V rated value at 220 V rated value at 440 V rated value at 600 V rated value 1.8 A Operating frequency at DC-12 maximum 1 000 1/h Operational current at 1 current path at DC-13 at 24 V rated value at 10 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 at 600 V rated value at 24 V rated value at 20 V rated value at 24 V rated value at 250 V rated value at 20 V rated value at 20 V rated value at 440 V rated value 	• at 24 V rated value	10 A
 at 220 V rated value at 440 V rated value at 600 V rated value 1.8 A Operating frequency at DC-12 maximum 1 000 1/h Operational current at 1 current path at DC-13 at 24 V rated value at 110 V rated value at 220 V rated value at 440 V rated value at 600 V rated value 0.14 A oat 600 V rated value 0.1 A Operational current with 2 current paths in series at DC-13 at 24 V rated value at 60 V rated value at 10 V rated value at 110 V rated value at 220 V rated value at 220 V rated value at 240 V rated value at 240 V rated value 1.3 A at 440 V rated value 0.9 A at 440 V rated value 0.2 A at 600 V rated value 0.1 A	• at 60 V rated value	10 A
 at 440 V rated value at 600 V rated value 1.8 A Operating frequency at DC-12 maximum 1 000 1/h operational current at 1 current path at DC-13 at 24 V rated value at 110 V rated value at 220 V rated value at 440 V rated value at 600 V rated value 0.14 A o at 600 V rated value 0.1 A operational current with 2 current paths in series at DC-13 at 24 V rated value at 60 V rated value at 10 V rated value at 110 V rated value at 220 V rated value at 220 V rated value at 240 V rated value 0.9 A at 440 V rated value 0.1 A	• at 110 V rated value	10 A
■ at 600 V rated value ■ 1.8 A operating frequency at DC-12 maximum 1 000 1/h operational current at 1 current path at DC-13 ■ at 24 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 24 V rated value ■ at 20 V rated value ■ at 24 V rated value ■ at 40 V rated value ■ at 40 V rated value ■ at 440 V rated value ■ at 600 V rated value	• at 220 V rated value	3.6 A
operating frequency at DC-12 maximum operational current at 1 current path at DC-13 • at 24 V rated value • at 110 V rated value • at 220 V rated value • at 440 V rated value • at 600 V rated value operational current 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 220 V rated value • at 24 V rated value • at 24 V rated value • at 25 V rated value • at 26 V rated value • at 10 V rated value • at 110 V rated value • at 220 V rated value • at 440 V rated value • at 440 V rated value • at 440 V rated value • at 460 V rated value • at 600 V rated value	• at 440 V rated value	2.5 A
operational current at 1 current path at DC-13	at 600 V rated value	
 at 24 V rated value at 110 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 60 V rated value at 60 V rated value at 110 V rated value at 220 V rated value at 240 V rated value at 240 V rated value at 240 V rated value at 250 V rated value at 260 V rated value at 260 V rated value at 270 V rated value <l< th=""><th></th><th>1 000 1/h</th></l<>		1 000 1/h
 at 110 V rated value at 220 V rated value at 440 V rated value at 600 V rated value operational current 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 110 V rated value at 220 V rated value at 440 V rated value at 600 V rated value 	· ·	
 at 220 V rated value at 440 V rated value at 600 V rated value operational current 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 600 V rated value 		
 at 440 V rated value at 600 V rated value operational current 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 220 V rated value at 440 V rated value at 600 V rated value 		
 at 600 V rated value operational current 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 220 V rated value at 220 V rated value at 440 V rated value at 600 V rated value 		
operational current 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 220 V rated value • at 220 V rated value • at 440 V rated value • at 600 V rated value		
DC-13 • at 24 V rated value 10 A • at 60 V rated value 3.5 A • at 110 V rated value 1.3 A • at 220 V rated value 0.9 A • at 440 V rated value 0.2 A • at 600 V rated value 0.1 A		U.1 A
 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 440 V rated value at 600 V rated value at 600 V rated value 		
 at 110 V rated value at 220 V rated value at 440 V rated value at 600 V rated value 0.1 A 		10 A
 at 220 V rated value at 440 V rated value at 600 V rated value 0.2 A 0.1 A 	at 60 V rated value	3.5 A
 at 440 V rated value at 600 V rated value 0.2 A 0.1 A 	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	
at 24 V rated value	10 A
at 60 V rated value	4.7 A
 at 110 V rated value 	3 A
at 220 V rated value	1.2 A
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	C characteristic: 6 A; 0.4 kA
protection of the auxiliary circuit up to 230 V	
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, standing, on horizontal mounting surface
fastening method	screw and snap-on mounting onto 35 mm standard mounting rail
side-by-side mounting	Yes
height	58 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
 for grounded parts 	
— forwards	10 mm
— upwards	10 mm
— at the side	6 mm
— downwards	10 mm
for live parts	
— 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
connectable conductor cross-section for auxiliary	
contacts	
solid or stranded	0.5 4 mm²
finely stranded with core end processing	0.5 2.5 mm²
type of connectable conductor cross-sections	
for auxiliary contacts	
— solid or stranded	2x (0.5 1.5 mm²), 2x (0.75 2.5 mm²), 2x 4 mm²
— finely stranded with core end processing	2x (0.5 1.5 mm²), 2x (0.75 2.5 mm²)
at AWG cables for auxiliary contacts	2x (20 16), 2x (18 14), 2x 12
AWG number as coded connectable conductor cross section for auxiliary contacts	20 12
Safety related data	
B10 value with high demand rate according to SN 31920	1 000 000
proportion of dangerous failures	
 with low demand rate according to SN 31920 	40 %
with high demand rate according to SN 31920	73 %
T1 value for proof test interval or service life according to IEC 61508	20 y

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

EMC



Confirmation



<u>KC</u>





Functional
Safety/Safety of
Machinery

Declaration of Conformity

Test Certificates

Marine / Shipping

Type Examination
Certificate





Special Test Certificate

Type Test Certificates/Test Report



Marine / Shipping













other

Railway

Dangerous Good

Confirmation



Special Test Certificate <u>Transport Information</u>

Further information

 $Information-\ and\ Download center\ (Catalogs,\ Brochures,...)$

https://www.siemens.com/ic10

Industry Mall (Online ordering system)

https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RH2422-1XF40-0LA2

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RH2422-1XF40-0LA2

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

https://support.industry.siemens.com/cs/ww/en/ps/3RH2422-1XF40-0LA2

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

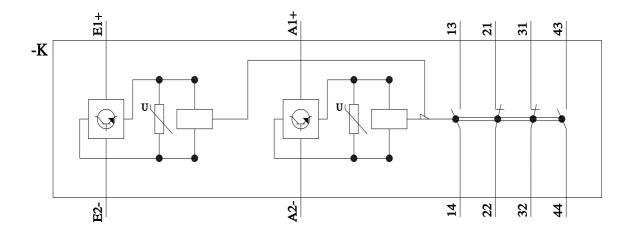
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RH2422-1XF40-0LA2&lang=en

Characteristic: Tripping characteristics, I2t, Let-through current

https://support.industry.siemens.com/cs/ww/en/ps/3RH2422-1XF40-0LA2/char

Further characteristics (e.g. electrical endurance, switching frequency)

http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RH2422-1XF40-0LA2&objecttype=14&gridview=view1



last modified: 12/1/2021 🖸