## **SIEMENS**

Data sheet 3RH2122-2KF40



Coupling contactor relay, 2 NO + 2 NC, 110 V DC, 0.7  $\dots$  1.25\* US, with integrated suppressor diode, Size S00, Spring-type terminal suitable for PLC outputs

product designation  product type designation  General technical data  size of contactor  product extension auxiliary switch insulation voltage with degree of pollution 3 at AC rated value  degree of pollution  surge voltage resistance rated value el CC  shock resistance at rectangular impulse el at DC  at DC  shock resistance with sine pulse el at DC  shock resistance with sine pulse el at DC  shock resistance with sine pulse el CC  mechanical service life (switching cycles) el of contactor typical reference code according to IEC 81346-2  Substance Prohibitance (Date)  Ambient conditions  installation altitude at height above sea level maximum ambient temperature el during operation el during storage relative humidity minimum relative humidity at 55 °C according to IEC 60068-2-30 maximum  Main circuit no-load switching frequency el at AC el the Control circuit' Control type of voltage at DC el talk-scale value el eliuli-scale value el surge suppressor closing power of magnet coil at DC el sill-scale value el surge suppressor closing power of magnet coil at DC elosing power of magnet	product brand name	SIRIUS
size of contactor S00 product extension auxiliary switch insulation voltage with degree of pollution 3 at AC rated value  degree of pollution surge voltage resistance rated value • at DC • at DC  shock resistance at rectangular impulse • at DC • at DC  shock resistance with sine pulse • at DC  mechanical service life (switching cycles) • of contactor typical reference code according to IEC 81346-2  Substance Prohibitance (Date)  Installation altitude at height above sea level maximum ambient temperature • during operation • during storage relative humidity minimum relative humidity minimum relative humidity at 55 °C according to IEC 60068-2-30 maximum  Main circuit  no-load switching frequency • at AC • at DC  orated value  operating range factor control supply voltage rated value of magnet coil at DC • initial value • full-scale value •	product designation	Coupling relay for switching auxiliary circuits
size of contactor product extension auxiliary switch insulation voltage with degree of pollution 3 at AC rated value  degree of pollution 3 surge voltage resistance rated value • at DC  shock resistance at rectangular impulse • at DC  shock resistance with sine pulse • at DC  mechanical service life (switching cycles) • of contactor typical of contactor typical reference code according to IEC 81346-2  K Substance Prohibitance (Date)  Amblent conditions installation altitude at height above sea level maximum ablent temperature • during operation • during storage -55 +80 °C relative humidity at 55 °C according to IEC 60068-2-30 maximum  Main circuit no-load switching frequency • at AC • at DC  or at AC  or at CC  or at CC  or rated value  DC  control suppily voltage at DC • rated value  operating range factor control supply voltage rated value of magnet coll at DC • unitial value  of unitial value  of the surge suppressor  suppressor diode	product type designation	3RH2
product extension auxiliary switch insulation voltage with degree of pollution 3 at AC rated value  degree of pollution  surge voltage resistance rated value	General technical data	
Insulation voltage with degree of pollution 3 at AC rated value degree of pollution 3 surge voltage resistance rated value 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 reference code according to IEC 81346-2 K Substance Prohibitance (Date)  Ambient conditions installation altitude at height above sea level maximum ambient temperature • during operation • during storage relative humidity minimum relative humidity at 55 °C according to IEC 60068-2-30 maximum  Main circuit  no-load switching frequency • at AC • at DC 10 000 1/h • at DC  control circuit/ Control type of voltage of the control supply voltage control supply voltage at DC • rated value  operating range factor control supply voltage rated value of magnet coil at DC • initial value • full-scale value  1.25  design of the surge suppressor  sympressor diode	size of contactor	S00
value       degree of pollution     3       surge voltage resistance rated value     6 kV       shock resistance at rectangular impulse     10g / 5 ms, 5g / 10 ms       e at DC     15g / 5 ms, 8g / 10 ms       mechanical service life (switching cycles)     30 000 000       e of contactor typical     30 000 000       reference code according to IEC 81346-2     K       Substance Prohibitance (Date)     10/01/2009       Ambient conditions     10/01/2009       installation altitude at height above sea level maximum     2 000 m       ambient temperature     -6 uring operation       e during operation     -25 +60 °C       e during storage     -55 +80 °C       relative humidity minimum     10 %       relative humidity at 55 °C according to IEC 60068-2-30     95 %       maximum     95 %       Main circuit     no-load switching frequency       e at DC     10 000 1/h       control circuit/ Control     10 000 1/h       type of voltage of the control supply voltage     DC       control supply voltage at DC     110 V       e rated value     0 rated value       operating range factor control supply voltage rated value of magnet coil at DC     10 00 1/h       initial value     0 7       initial value     0 7       initi	product extension auxiliary switch	No
surge voltage resistance rated value shock resistance at rectangular impulse at DC shock resistance with sine pulse at DC stock resistance with sine pulse stock resistance with sine pulse at DC stock resistance with sine pulse stock resistance resistance with sine pulse resistance with		690 V
shock resistance at rectangular impulse	degree of pollution	3
shock resistance with sine pulse  • at DC  • at DC  mechanical service life (switching cycles)  • of contactor typical  reference code according to IEC 81346-2  K Substance Prohibitance (Date)  Ambient conditions  installation altitude at height above sea level maximum  ambient temperature  • during operation  • during storage  relative humidity minimum  relative humidity minimum  relative humidity at 55 °C according to IEC 60068-2-30  maximum  Main circuit  no-load switching frequency  • at AC  • at DC  10 000 1/h  • at DC  Control circuit/ Control  type of voltage of the control supply voltage  control supply voltage at DC  • rated value  operating range factor control supply voltage rated value of magnet coil at DC  • initial value  • full-scale value  1.25  design of the surge suppressor	surge voltage resistance rated value	6 kV
shock resistance with sine pulse  • at DC  mechanical service life (switching cycles)  • of contactor typical  reference code according to IEC 81346-2  K Substance Prohibitance (Date)  Ambient conditions  installation altitude at height above sea level maximum  ambient temperature  • during operation  • during storage  relative humidity minimum  relative humidity at 55 °C according to IEC 60068-2-30 maximum  Main circuit  no-load switching frequency  • at AC  • at DC  control circuit/ Control  type of voltage of the control supply voltage  control supply voltage at DC  • rated value  operating range factor control supply voltage rated value of magnet coil at DC  • initial value  • full-scale value  design of the surge suppressor  suppressor diode	shock resistance at rectangular impulse	
e at DC mechanical service life (switching cycles) e of contactor typical reference code according to IEC 81346-2 K Substance Prohibitance (Date)  Ambient conditions installation altitude at height above sea level maximum ablent temperature e during operation e during storage relative humidity minimum relative humidity at 55 °C according to IEC 60068-2-30 maximum  Main circuit no-load switching frequency e at AC e at DC  Control circuit/ Control  type of voltage of the control supply voltage control supply voltage at DC e rated value operating range factor control supply voltage rated value of magnet coil at DC e initial value  0.7 e full-scale value 1.25 design of the surge suppressor suppressor diode	• at DC	10g / 5 ms, 5g / 10 ms
mechanical service life (switching cycles)  • of contactor typical  reference code according to IEC 81346-2  K Substance Prohibitance (Date)  Ambient conditions  installation altitude at height above sea level maximum  ambient temperature  • during operation  • during storage  relative humidity minimum  relative humidity at 55 °C according to IEC 60068-2-30  maximum  Main circuit  no-load switching frequency  • at AC  • at DC  Control circuit/ Control  type of voltage of the control supply voltage  control supply voltage at DC  • rated value  operating range factor control supply voltage rated value of magnet coil at DC  • initial value  of full-scale value  full-scale value  of the surge suppressor  suppressor diode	shock resistance with sine pulse	
e of contactor typical  reference code according to IEC 81346-2  Substance Prohibitance (Date)  Ambient conditions  installation altitude at height above sea level maximum  ambient temperature  • during operation • during storage  relative humidity minimum  relative humidity at 55 °C according to IEC 60068-2-30 maximum  Main circuit  no-load switching frequency • at AC • at DC  Control circuit/ Control  type of voltage of the control supply voltage  control supply voltage at DC • rated value  operating range factor control supply voltage rated value of magnet coil at DC  • initial value • full-scale value  design of the surge suppressor  suppressor diode	• at DC	15g / 5 ms, 8g / 10 ms
reference code according to IEC 81346-2  Substance Prohibitance (Date)  Ambient conditions  installation altitude at height above sea level maximum  ambient temperature  • during operation • during storage  relative humidity minimum  relative humidity at 55 °C according to IEC 60068-2-30 maximum  Main circuit  no-load switching frequency • at AC • at DC  Control circuit/ Control  type of voltage of the control supply voltage  control supply voltage at DC • rated value  operating range factor control supply voltage rated value of magnet coil at DC • initial value  • full-scale value  design of the surge suppressor  suppressor diode	mechanical service life (switching cycles)	
Substance Prohibitance (Date)  Ambient conditions  installation altitude at height above sea level maximum  ambient temperature  • during operation • during storage  relative humidity minimum  relative humidity at 55 °C according to IEC 60068-2-30 maximum  Main circuit  no-load switching frequency • at AC • at DC  Control circuit/ Control  type of voltage of the control supply voltage control supply voltage at DC • rated value  operating range factor control supply voltage rated value of magnet coil at DC  • initial value • full-scale value  design of the surge suppressor  suppressor diode	of contactor typical	30 000 000
installation altitude at height above sea level maximum ambient temperature  • during operation • during storage relative humidity minimum relative humidity at 55 °C according to IEC 60068-2-30 maximum  Main circuit  no-load switching frequency • at AC • at DC  Control circuit/ Control  type of voltage of the control supply voltage control supply voltage at DC • rated value  operating range factor control supply voltage rated value of magnet coil at DC • initial value • full-scale value  full-scale value  of the surge suppressor  suppressor diode	reference code according to IEC 81346-2	K
installation altitude at height above sea level maximum  ambient temperature  • during operation • during storage  relative humidity minimum  relative humidity at 55 °C according to IEC 60068-2-30 maximum  Main circuit  no-load switching frequency • at AC • at DC  Control circuit/ Control  type of voltage of the control supply voltage  control supply voltage at DC • rated value  operating range factor control supply voltage rated value of magnet coil at DC • initial value • full-scale value  design of the surge suppressor  suppressor diode	Substance Prohibitance (Date)	10/01/2009
ambient temperature  • during operation • during storage  -55 +60 °C  relative humidity minimum  10 %  relative humidity at 55 °C according to IEC 60068-2-30 maximum  Main circuit  no-load switching frequency • at AC • at DC  Control circuit/ Control  type of voltage of the control supply voltage  control supply voltage at DC • rated value  operating range factor control supply voltage rated value of magnet coil at DC  • initial value • full-scale value  design of the surge suppressor  suppressor diode	Ambient conditions	
<ul> <li>during operation</li> <li>during storage</li> <li>-55 +80 °C</li> <li>relative humidity minimum</li> <li>10 %</li> <li>relative humidity at 55 °C according to IEC 60068-2-30 maximum</li> <li>Main circuit</li> <li>no-load switching frequency</li> <li>at AC</li> <li>10 000 1/h</li> <li>at DC</li> <li>10 000 1/h</li> <li>Control circuit/ Control</li> <li>type of voltage of the control supply voltage</li> <li>control supply voltage at DC</li> <li>rated value</li> <li>operating range factor control supply voltage rated value of magnet coil at DC</li> <li>initial value</li> <li>full-scale value</li> <li>suppressor diode</li> </ul>	installation altitude at height above sea level maximum	2 000 m
<ul> <li>during storage</li> <li>relative humidity minimum</li> <li>10 %</li> <li>relative humidity at 55 °C according to IEC 60068-2-30 maximum</li> <li>Main circuit</li> <li>no-load switching frequency <ul> <li>at AC</li> <li>10 000 1/h</li> <li>at DC</li> <li>10 000 1/h</li> </ul> </li> <li>Control circuit/ Control</li> <li>type of voltage of the control supply voltage</li> <li>control supply voltage at DC</li> <li>rated value</li> <li>operating range factor control supply voltage rated value of magnet coil at DC</li> <li>initial value</li> <li>full-scale value</li> <li>suppressor diode</li> </ul> <li>oppressor diode</li>	ambient temperature	
relative humidity minimum  relative humidity at 55 °C according to IEC 60068-2-30 maximum  Main circuit  no-load switching frequency  • at AC  • at DC  Control circuit/ Control  type of voltage of the control supply voltage  control supply voltage at DC  • rated value  • rated value  operating range factor control supply voltage rated value of magnet coil at DC  • initial value  • full-scale value  1.25  design of the surge suppressor  suppressor diode	<ul> <li>during operation</li> </ul>	-25 +60 °C
relative humidity at 55 °C according to IEC 60068-2-30 maximum  Main circuit  no-load switching frequency  • at AC  • at DC  Control circuit/ Control  type of voltage of the control supply voltage  control supply voltage at DC  • rated value  operating range factor control supply voltage rated value of magnet coil at DC  • initial value  • full-scale value  full-scale value  1.25  design of the surge suppressor	during storage	-55 +80 °C
maximum  Main circuit  no-load switching frequency  • at AC  • at DC  10 000 1/h  Control circuit/ Control  type of voltage of the control supply voltage  control supply voltage at DC  • rated value  110 V  operating range factor control supply voltage rated value of magnet coil at DC  • initial value  • full-scale value  1.25  design of the surge suppressor  suppressor diode	relative humidity minimum	10 %
no-load switching frequency  • at AC  • at DC  10 000 1/h  Control circuit/ Control  type of voltage of the control supply voltage  control supply voltage at DC  • rated value  110 V  operating range factor control supply voltage rated value of magnet coil at DC  • initial value  • full-scale value  design of the surge suppressor  10 000 1/h  DC  110 V  00  00  110 V		95 %
<ul> <li>at AC</li> <li>at DC</li> <li>10 000 1/h</li> <li>Control circuit/ Control</li> <li>type of voltage of the control supply voltage</li> <li>control supply voltage at DC</li> <li>rated value</li> <li>operating range factor control supply voltage rated value of magnet coil at DC</li> <li>initial value</li> <li>full-scale value</li> <li>design of the surge suppressor</li> <li>10 000 1/h</li> <li>10</li></ul>	Main circuit	
at DC  Control circuit/ Control  type of voltage of the control supply voltage  control supply voltage at DC      • rated value  operating range factor control supply voltage rated value of magnet coil at DC      • initial value      • full-scale value  design of the surge suppressor  10 000 1/h  DC  0.0  0.7  110 V  0.7  1.25  suppressor diode	no-load switching frequency	
type of voltage of the control supply voltage  control supply voltage at DC  • rated value  operating range factor control supply voltage rated value of magnet coil at DC  • initial value  of tull-scale value  design of the surge suppressor  DC  110 V  0.7  1.25  suppressor diode	• at AC	10 000 1/h
type of voltage of the control supply voltage  control supply voltage at DC  • rated value  110 V  operating range factor control supply voltage rated value of magnet coil at DC  • initial value  • full-scale value  design of the surge suppressor  DC  0.7  1.25  suppressor diode	• at DC	10 000 1/h
control supply voltage at DC  • rated value  110 V  operating range factor control supply voltage rated value of magnet coil at DC  • initial value  • full-scale value  design of the surge suppressor  125	Control circuit/ Control	
<ul> <li>rated value</li> <li>operating range factor control supply voltage rated value of magnet coil at DC</li> <li>initial value</li> <li>full-scale value</li> <li>design of the surge suppressor</li> <li>110 ∨</li> <li>0.7</li> <li>suppressor diode</li> </ul>	type of voltage of the control supply voltage	DC
operating range factor control supply voltage rated value of magnet coil at DC  • initial value  • full-scale value  design of the surge suppressor  operating range factor control supply voltage rated  0.7  suppressor diode	control supply voltage at DC	
value of magnet coil at DC	rated value	110 V
● full-scale value 1.25  design of the surge suppressor suppressor diode		
design of the surge suppressor suppressor diode	• initial value	0.7
	• full-scale value	1.25
closing power of magnet coil at DC 2.8 W	design of the surge suppressor	suppressor diode
	closing power of magnet coil at DC	2.8 W

holding power of magnet coil at DC	2.8 W
closing delay	
• at DC	25 130 ms
opening delay	
• at DC	7 20 ms
arcing time	10 15 ms
Auxiliary circuit	
number of NC contacts for auxiliary contacts	2
instantaneous contact	2
number of NO contacts for auxiliary contacts	2
instantaneous contact	2
identification number and letter for switching	22 E
elements	
operational current at AC-12 maximum	10 A
operational current at AC-15	
at 230 V rated value	10 A
• at 400 V rated value	3 A
at 500 V rated value	2 A
at 690 V rated value	1 A
operational current at 1 current path at DC-12	40.4
• at 24 V rated value	10 A
• at 110 V rated value	3 A
• at 220 V rated value	1 A
• at 440 V rated value	0.3 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	10 A
• at 60 V rated value	10 A
• at 110 V rated value	4 A
at 220 V rated value	2 A
• at 440 V rated value	1.3 A
• at 600 V rated value	0.65 A
operational current with 3 current paths in series at DC-12	
at 24 V rated value	10 A
at 60 V rated value	10 A
at 110 V rated value     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	10 A
at 110 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
operational current with 2 current paths in series at 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
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
<ul> <li>at 440 V rated value</li> </ul>	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 standard mounting rail
height	70 mm
width	45 mm
depth	73 mm
required spacing	
<ul><li>with side-by-side mounting</li></ul>	
— 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
• for live parts	40
— 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	spring-loaded terminals
type of connectable conductor cross-sections	
for auxiliary contacts	Ov. (0.5
solid or stranded     finely stranded with core and processing	$2x (0.5 4 mm^2)$
<ul> <li>finely stranded with core end processing</li> <li>finely stranded without core end processing</li> </ul>	2x (0.5 2.5 mm²) 2x (0.5 2.5 mm²)
at AWG cables for auxiliary contacts	2x (0.5 2.5 mm <sup>-</sup> ) 2x (20 12)
Safety related data	ZA (20 12)
B10 value with high demand rate according to SN 31920	1 000 000; With 0.3 x le
proportion of dangerous failures	1 000 000, WHILL U.S X IC
with low demand rate according to SN 31920	40 %
with high demand rate according to SN 31920     with high demand rate according to SN 31920	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 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	





Confirmation



<u>KC</u>



EMC

Functional Safety/Safety of Machinery

**Declaration of Conformity** 

**Test Certificates** 



Type Examination
Certificate





Special Test Certificate

Type Test Certificates/Test Report

## Marine / Shipping













Marine / Shipping

other

**Dangerous Good** 



Confirmation



<u>Transport Information</u>

## Further information

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=3RH2122-2KF40

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RH2122-2KF40

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

 $\underline{\text{https://support.industry.siemens.com/cs/ww/en/ps/3RH2122-2KF40}}$ 

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

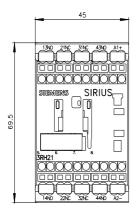
http://www.automation.siemens.com/bilddb/cax\_de.aspx?mlfb=3RH2122-2KF40&lang=en

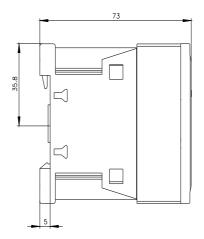
Characteristic: Tripping characteristics, I2t, Let-through current

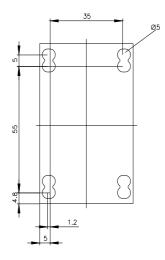
https://support.industry.siemens.com/cs/ww/en/ps/3RH2122-2KF40/char

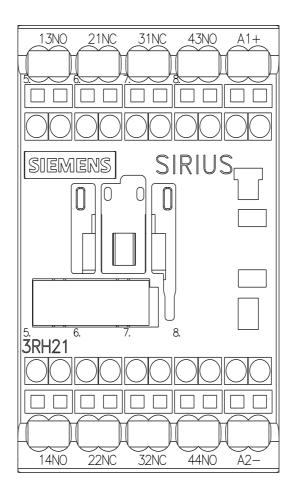
Further characteristics (e.g. electrical endurance, switching frequency)

http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RH2122-2KF40&objecttype=14&gridview=view1









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