SIEMENS

Data sheet 3RH2422-1AK60

Contactor relay, latched, 2 NO + 2 NC, 110 V AC, 50 Hz, 120 V, 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
power loss [W] for rated value of the current without load current share typical	1.43 W
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)	
 of contactor typical 	5 000 000
 of the contactor with added electronically optimized auxiliary switch block typical 	5 000 000
 of the contactor with added auxiliary switch block typical 	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	
 during operation 	-25 +60 °C
during storage	-55 +80 °C
relative humidity minimum	10 %
relative humidity at 55 °C according to IEC 60068-2-30 maximum	95 %
Environmental footprint	
Environmental Product Declaration(EPD)	Yes
Global Warming Potential [CO2 eq] total	50.5 kg
Global Warming Potential [CO2 eq] during manufacturing	1.93 kg
Global Warming Potential [CO2 eq] during operation	48.8 kg
Global Warming Potential [CO2 eq] after end of life	-0.242 kg
Main circuit	
no-load switching frequency	
• at AC	10 000 1/h
• at DC	10 000 1/h
Control circuit/ Control	

Spee of voltage of the control supply voltage in AC		
### and 60 Hz rated value ### and 60 Hz rated value ### control supply voltage frequency ### crited value ### control supply voltage frequency ### crited value ### control supply voltage rated value of relating stage factor control supply voltage rated value of relating stage factor control supply voltage rated value of relating stage factor with closing power of the coil ### control supply power of magnet coil at AC ### control supply power factor with closing power of the coil ### control supply sup		AC
** at DC Hz rated value		
1 rated value	at 50 Hz rated value	110 V
	at 60 Hz rated value	120 V
### 2 Factor Value ### 2 Factor Control Supply voltage rated value of Inagents Col at AC ### 2 Fib	control supply voltage frequency	
Sperating range factor control supply voltage rated value of magnet coll at AC a at 50 Hz 0.8 1.1 0.8 1.1 0.8 1.1 0.8 1.1 0.8 1.1 0.8 1.1 0.8 1.1 0.8 1.1 0.8 1.1 0.8 1.1 0.8 1.1 0.8 0.8 1.1 0.8 0.8 1.1 0.8 0.8 1.1 0.8 0.	• 1 rated value	50 Hz
magnet coil at AC 0.81.1 * at 50 Hz 0.81.1 apparent pick-up power of magnet coil at AC 37 VA inductive power factor with closing power of the coil 0.8 apparent holding power of magnet coil at AC 5.7 VA inductive power factor with the holding power of the coil 0.25 closing delay - 833 ms at AC 833 ms opening delay - 1	• 2 rated value	60 Hz
apparent pick-up power of magnet coil at AC 0.8	• at 50 Hz	0.8 1.1
inductive power factor with closing power of the coil apparent holding power of magnet coil at AC 5.7 VA 1.7 VA 1	• at 60 Hz	0.85 1.1
Sprace Section Secti	apparent pick-up power of magnet coil at AC	37 VA
Inductive power factor with the holding power of the coil 0.25	inductive power factor with closing power of the coil	0.8
AC AC A 15 ms	apparent holding power of magnet coil at AC	5.7 VA
• et AC opening delay • et IAC 4 15 ms arcing time 10 15 ms Avxiliary circuit number of NC contacts for auxiliary contacts 2 • instantaneous contact 2 • instantaneous contact 2 • instantaneous contact 2 • instantaneous contact 3 • instantaneous contact 3 • instantaneous contact 4 • instantaneous contact 5 • instantaneous contact 4 • operational current 4 • instantaneous 6	inductive power factor with the holding power of the coil	0.25
opening delay	closing delay	
* at AC 4 15 ms	• at AC	8 33 ms
Auxiliary circuit	opening delay	
Auxiliary circuit number of NC contacts for auxiliary contacts	• at AC	4 15 ms
number of NC contacts for auxillary contacts 2 • instantaneous contact 2 number of NC contacts for auxillary contacts 2 • instantaneous contact 2 identification number and letter for switching elements 22 E operational current at AC-15 3 • at 230 V rated value 10 A • at 300 V rated value 3 A • at 500 V rated value 4 A • at 500 V rated value 1 A • at 600 V rated value 1 A • at 1500 V rated value 3 A • at 24 V rated value 0.3 A • at 800 V rated value 0.3 A • at 800 V rated value 0.15 A • at 800 V rated value 0.15 A • at 800 V rated value 0.16 A • at 110 V rated value 0.16 A • at 1220 V rated value 0.85 A • at 800 V rated value 0.86 A	arcing time	10 15 ms
Instantaneous contact 2	Auxiliary circuit	
number of NO contacts for auxiliary contacts 2	number of NC contacts for auxiliary contacts	2
Identification number and letter for switching elements 22 E	instantaneous contact	2
Identification number and letter for switching elements 10 A	number of NO contacts for auxiliary contacts	2
Operational current at AC-12 maximum 10 A	instantaneous contact	2
operational current at AC-15 10 A at 230 V rated value 3 A at 450 V rated value 2 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 21 110 V rated value 3 A at 220 V rated value 0.3 A at 800 V rated value 0.15 A operational current with 2 current paths in series at DC-12 10 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 2 A at 440 V rated value 0.85 A at 220 V rated value 0.85 A at 360 V rated value 0.85 A at 360 V rated value 0.85 A at 360 V rated value 10 A at 360 V rated value 1.8 A operating frequency at DC-12 maximum	identification number and letter for switching elements	22 E
at 230 V rated value	operational current at AC-12 maximum	10 A
	operational current at AC-15	
• 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 3 A • at 220 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 10 A • at 60 V rated value 10 A • at 60 V rated value 4 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 10 A • at 24 V rated value 1.3 A • at 600 V rated value 1.0 A • at 60 V rated value 1.0 A • at 110 V rated value 1.0 A • at 220 V rated value 2.5 A • at 440 V rated value 2.5 A • at 440 V rated value 2.5 A • at 600 V rated value 1.8 A • operational current at 1 current path at DC-13 1.8 A • at 220 V rated value	at 230 V rated value	10 A
• at 690 V rated value	• at 400 V rated value	3 A
Operational current at 1 current path at DC-12	• at 500 V rated value	2 A
at 24 V rated value at 110 V rated value at 1220 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 240 V rated value at 240 V rated value at 600 V rated value at 220 V rated value at 600 V rated value at 440 V rated value at 240 V rated value at 250 V rated value at 440 V rated value at 600 V rated value	at 690 V rated value	1 A
at 110 V rated value at 440 V rated value at 600 V rated value at 110 V rated value at 440 V rated value at 440 V rated value at 600 V rated value at 110 V rated value at 600 V rated value at 440 V rated value at 440 V rated value at 600 V rated value at 110 V rated value at 140 V rated	operational current at 1 current path at DC-12	
at 220 V rated value at 440 V rated value at 600 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 at 220 V rated value at 24 V rated value at 250 V rated value at 600 V rated value at 440 V rated value at 250 V rated value at 400 V rated value	at 24 V rated value	10 A
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 110 V rated value • at 220 V rated value • at 440 V rated value • at 220 V rated value • at 220 V rated value • at 220 V rated value • at 600 V rated value • at 220 V rated value • at 220 V rated value • at 440 V rated value • at 600 V rated value • at 440 V rated value • at 600 V rated value	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 10 A • at 60 V rated value 44 A • at 210 V rated value 45 A • at 440 V rated value 1.3 A • at 600 V rated value 10 A • at 22 V rated value 10 A • at 22 V rated value 10 A • at 22 V rated value 10 A • at 410 V rated value 10 A • at 440 V rated value 10 A • at 440 V rated value 10 A • at 440 V rated value 2.5 A • at 600 V rated value 2.5 A • at 600 V rated value 1.8 A operating frequency at DC-12 maximum 1000 1/h operational current at 1 current path at DC-13 • at 22 V rated value 1 A • at 220 V rated value 1 A • at 440 V rated value 1 A • at 600 V rated value 1 A • a	at 220 V rated value	1 A
operational current with 2 current paths in series at DC-12 • 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 440 V rated value • at 600 V rated value • at 22 V rated value • at 24 V rated value • at 60 V rated value • at 110 V rated value • at 110 V rated value • at 110 V rated value • at 120 V rated value • at 200 V rated value • at 200 V rated value • at 24 V rated value • at 25 A • at 600 V rated value • at 25 A • at 600 V rated value • at 200 V rated value	at 440 V rated value	0.3 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 440 V rated value at 600 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 24 V rated value at 60 V rated value at 110 V rated value at 20 V rated value at 20 V rated value at 20 V rated value at 40 V rated value at 600 V rated value at 24 V rated value at 22 V rated value at 40 V rated value at 40 V rated value at 40 V rated value at 600 V rated value at 60 V rated value at 70 A at 70 A	at 600 V rated value	0.15 A
 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 24 V rated value at 24 V rated value at 60 V rated value at 24 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 220 V rated value at 24 V rated value at 24 V rated value at 24 V rated value at 220 V rated value at 24 V rated value at 220 V rated value at 24 V rated value at 220 V rated value at 440 V rated value at 440 V rated value at 440 V rated value at 600 V rated value at 70 A rate of 70	operational current with 2 current paths in series at DC-12	
 at 110 V rated value at 220 V rated value at 440 V rated value at 600 V rated value o.65 A 0.65 A operational current with 3 current paths in series at DC-12 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 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 220 V rated value at 440 V rated value at 450 V rated value at 250 V rated value at 450 V rated value at 45	at 24 V rated value	10 A
 at 220 V rated value at 440 V rated value 0.65 A 1.3 A operational current with 3 current paths in series at DC-12 0.65 A 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 1 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 0.14 A at 600 V rated value 0.1 A operational current with 2 current paths in series at DC-13		
 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 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 24 V rated value at 250 V rated value at 260 V rated value at 27 V rated value at 28 V rated value at 29 V rated value at 20 V rated value at 20 V rated value at 440 V rated value at 600 V rated value at 600		
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 110 V rated value at 220 V rated value at 220 V rated value at 600 V rated value at 25 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 110 V rated value at 220 V rated value at 440 V rated value at 440 V rated value at 600 V rated value		
operational current with 3 current paths in series at DC-12 o at 24 V rated value o at 60 V rated value o at 110 V rated value o at 220 V rated value o at 440 V rated value o at 600 V rated value o at 600 V rated value operating frequency at DC-12 maximum operating frequency at DC-12 maximum operational current at 1 current path at DC-13 o at 24 V rated value o at 110 V rated value o at 220 V rated value o at 320 V rated value o at 440 V rated value o at 440 V rated value o at 440 V rated value o at 600 V rated value		
 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 600 V rated value at 24 V rated value at 24 V rated value at 24 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 at 250 V rated value at 440 V rated value at 440 V rated value at 600 V rated value 		0.65 A
 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 at 24 V rated value at 24 V rated value at 110 V rated value at 110 V rated value at 220 V rated value at 240 V rated value at 250 V rated value at 440 V rated value at 440 V rated value at 600 V rated value 		
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 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 220 V rated value at 440 V rated value at 600 V rated value 0.14 A Operational current with 2 current paths in series at DC-13		
 at 600 V rated value 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 1 A at 220 V rated value at 440 V rated value at 440 V rated value at 600 V rated value 0.1 A operational current with 2 current paths in series at DC-13		
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		
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 110 V rated value 1 A at 220 V rated value at 440 V rated value at 600 V rated value 0.1 A Operational current with 2 current paths in series at DC-13		1 000 1/h
 at 110 V rated value at 220 V rated value at 440 V rated value at 600 V rated value 0.1 A Operational current with 2 current paths in series at DC-13		
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 0.3 A 0.14 A 0.1 A		
 at 440 V rated value at 600 V rated value 0.14 A 0.1 A operational current with 2 current paths in series at DC-13 		
• at 600 V rated value operational current with 2 current paths in series at DC-13		
operational current with 2 current paths in series at DC-13		
		0.1 A
at 24 V rated value 10 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	0.1 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 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
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
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)
for AWG cables for auxiliary contacts	2x (20 16), 2x (18 14), 2x 12
Safety related data	
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	100 FIT
B10 value with high demand rate according to SN 31920	1,000,000: With 0,3 x lo
product function positively driven energian according to	1 000 000; With 0.3 x le
product function positively driven operation according to IEC 60947-5-1	Yes

IEC 61508 **Electrical Safety** 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 Approvals Certificates

General Product Approval







Confirmation





General Product Approval

EMV

Test Certificates

Marine / Shipping

<u>KC</u>





Special Test Certific-<u>ate</u>

Type Test Certificates/Test Report



Marine / Shipping













other

Miscellaneous

Confirmation

Further information

Siemens has decided to exit the Russian market (see here).

https://press.siemens.com/global/en/pressrelease/siemens-wind-down-russian-business

Siemens is working on the renewal of the current EAC certificates.

Please contact your local Siemens office on the status of validity of the EAC certification if you intend to import or offer to supply these products to an EAC relevant market (other than the sanctioned EAEU member states Russia or Belarus).

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=3RH2422-1AK60

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RH2422-1AK60

Service&Support (Manuals, Certificates, Characteristics, FAQs,...) https://support.industry.siemens.com/cs/ww/en/ps/3RH2422-1AK60

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

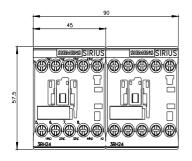
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RH2422-1AK60&lang=en

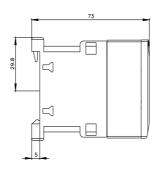
Characteristic: Tripping characteristics, I2t, Let-through current

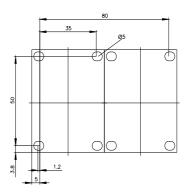
https://support.industry.siemens.com/cs/ww/en/ps/3RH2422-1AK60/char

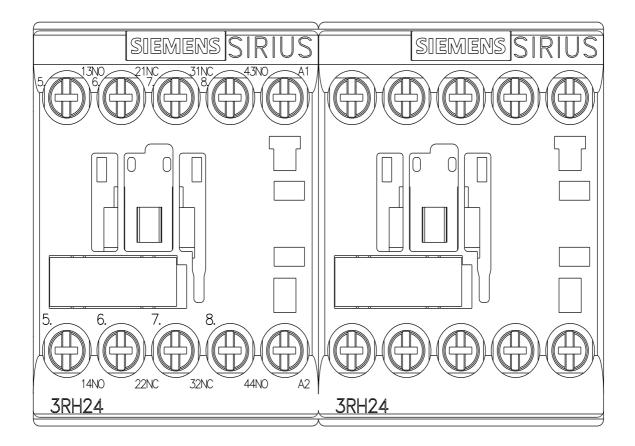
Further characteristics (e.g. electrical endurance, switching frequency)

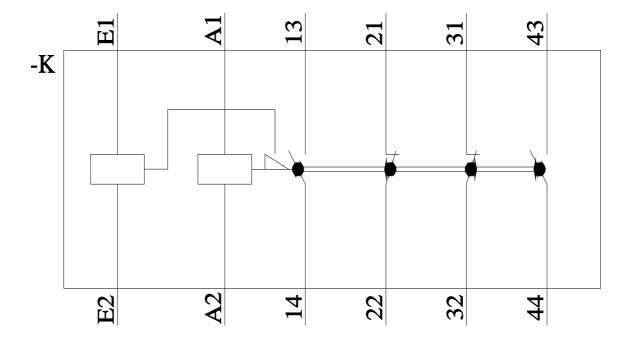
arch&mlfb=3RH2422-1AK60&objecttype=14&gridview=view1 http://www.automation.siemens.com/bilddb/index.aspx?view=Se











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