



Coupling contactor relay, 2 NO + 2 NC, 24 V DC, 0.85 ... 1.85\* US, with integrated diode, Size S00, screw terminal

|                                                                                |                                                 |
|--------------------------------------------------------------------------------|-------------------------------------------------|
| product brand name                                                             | SIRIUS                                          |
| product designation                                                            | Coupling relay for switching auxiliary circuits |
| product type designation                                                       | 3RH2                                            |
| <b>General technical data</b>                                                  |                                                 |
| size of contactor                                                              | S00                                             |
| product extension auxiliary switch                                             | No                                              |
| 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 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                                      |
| reference code acc. to IEC 81346-2                                             | K                                               |
| Substance Prohibition (Date)                                                   | 01.10.2009 00:00:00                             |
| <b>Ambient conditions</b>                                                      |                                                 |
| installation altitude at height above sea level maximum                        | 2 000 m                                         |
| • ambient temperature during operation                                         | -25 ... +50 °C                                  |
| • ambient temperature during storage                                           | -55 ... +80 °C                                  |
| <b>Main circuit</b>                                                            |                                                 |
| no-load switching frequency                                                    |                                                 |
| • at AC                                                                        | 10 000 1/h                                      |
| • at DC                                                                        | 10 000 1/h                                      |
| <b>Control circuit/ Control</b>                                                |                                                 |
| type of voltage of the control supply voltage                                  | DC                                              |
| control supply voltage at DC                                                   |                                                 |
| • rated value                                                                  | 24 V                                            |
| operating range factor control supply voltage rated value of magnet coil at DC |                                                 |
| • initial value                                                                | 0.85                                            |
| • full-scale value                                                             | 1.85                                            |
| design of the surge suppressor                                                 | with diode                                      |
| closing power of magnet coil at DC                                             | 1.6 W                                           |
| holding power of magnet coil at DC                                             | 1.6 W                                           |
| closing delay                                                                  |                                                 |

|                                                                    |               |
|--------------------------------------------------------------------|---------------|
| • at DC                                                            | 30 ... 100 ms |
| <b>opening delay</b>                                               |               |
| • at DC                                                            | 7 ... 13 ms   |
| <b>arcing time</b>                                                 | 10 ... 15 ms  |
| <b>Auxiliary circuit</b>                                           |               |
| <b>number of NC contacts for auxiliary contacts</b>                | 2             |
| • instantaneous contact                                            | 2             |
| <b>number of NO contacts for auxiliary contacts</b>                | 2             |
| • instantaneous contact                                            | 2             |
| <b>identification number and letter for switching elements</b>     | 22 E          |
| operational current at AC-12 maximum                               | 10 A          |
| <b>operational current at AC-15</b>                                |               |
| • 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           |
| <b>operational current at 1 current path at DC-12</b>              |               |
| • 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        |
| <b>operational current with 2 current paths in series at DC-12</b> |               |
| • 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        |
| <b>operational current with 3 current paths in series at DC-12</b> |               |
| • 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         |
| <b>operating frequency at DC-12 maximum</b>                        | 1 000 1/h     |
| <b>operational current at 1 current path at DC-13</b>              |               |
| • 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         |
| <b>operational current with 2 current paths in series at DC-13</b> |               |
| • 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         |
| <b>operational current with 3 current paths in series at DC-13</b> |               |
| • at 24 V rated value                                              | 10 A          |
| • at 60 V rated value                                              | 4.7 A         |
| • at 110 V rated value                                             | 3 A           |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                               |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• at 220 V rated value</li> <li>• at 440 V rated value</li> <li>• at 600 V rated value</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                      | 1.2 A<br>0.5 A<br>0.26 A                                                                                                                      |
| <b>operating frequency at DC-13 maximum</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 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                                                                                                                 |
| <b>contact reliability of auxiliary contacts</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 1 faulty switching per 100 million (17 V, 1 mA)                                                                                               |
| <b>UL/CSA ratings</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                               |
| <b>contact rating of auxiliary contacts according to UL</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | A600 / Q600                                                                                                                                   |
| <b>Short-circuit protection</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                               |
| design of the fuse link for short-circuit protection of the auxiliary switch required                                                                                                                                                                                                                                                                                                                                                                                                                                         | fuse gL/gG: 10 A                                                                                                                              |
| <b>Installation/ mounting/ dimensions</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                               |
| <b>mounting position</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | +/-180° rotation possible on vertical mounting surface; can be tilted forward and backward by +/- 22.5° on vertical mounting surface          |
| <b>fastening method</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | screw and snap-on mounting onto 35 mm standard mounting rail                                                                                  |
| <b>height</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 57.5 mm                                                                                                                                       |
| <b>width</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 45 mm                                                                                                                                         |
| <b>depth</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 73 mm                                                                                                                                         |
| <b>required spacing</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                               |
| <ul style="list-style-type: none"> <li>• with side-by-side mounting <ul style="list-style-type: none"> <li>— forwards</li> <li>— upwards</li> <li>— downwards</li> <li>— at the side</li> </ul> </li> <li>• for grounded parts <ul style="list-style-type: none"> <li>— forwards</li> <li>— upwards</li> <li>— at the side</li> <li>— downwards</li> </ul> </li> <li>• for live parts <ul style="list-style-type: none"> <li>— forwards</li> <li>— upwards</li> <li>— downwards</li> <li>— at the side</li> </ul> </li> </ul> | 10 mm<br>10 mm<br>10 mm<br>0 mm<br><br>10 mm<br>10 mm<br>6 mm<br>10 mm<br><br>10 mm<br>10 mm<br>10 mm<br>6 mm                                 |
| <b>Connections/ Terminals</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                               |
| type of electrical connection for auxiliary and control circuit                                                                                                                                                                                                                                                                                                                                                                                                                                                               | screw-type terminals                                                                                                                          |
| <b>type of connectable conductor cross-sections</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                               |
| <ul style="list-style-type: none"> <li>• for auxiliary contacts <ul style="list-style-type: none"> <li>— solid or stranded</li> <li>— finely stranded with core end processing</li> </ul> </li> <li>• at AWG cables for auxiliary contacts</li> </ul>                                                                                                                                                                                                                                                                         | 2x (0,5 ... 1,5 mm²), 2x (0,75 ... 2,5 mm²), 2x 4 mm²<br>2x (0.5 ... 1.5 mm²), 2x (0.75 ... 2.5 mm²)<br>2x (20 ... 16), 2x (18 ... 14), 2x 12 |
| <b>Safety related data</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                               |
| B10 value with high demand rate acc. to SN 31920                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 1 000 000; With 0.3 x Ie                                                                                                                      |
| <b>proportion of dangerous failures</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                               |
| <ul style="list-style-type: none"> <li>• with low demand rate acc. to SN 31920</li> <li>• with high demand rate acc. to SN 31920</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                   | 40 %<br>73 %                                                                                                                                  |
| failure rate [FIT] with low demand rate acc. to SN 31920                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 100 FIT                                                                                                                                       |
| product function positively driven operation acc. to IEC 60947-5-1                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Yes                                                                                                                                           |
| <b>T1 value for proof test interval or service life acc. to IEC 61508</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 20 y                                                                                                                                          |
| <b>protection class IP on the front acc. to IEC 60529</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | IP20                                                                                                                                          |
| <b>touch protection on the front acc. to IEC 60529</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | finger-safe, for vertical contact from the front                                                                                              |
| <b>Certificates/ approvals</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                               |
| <b>General Product Approval</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | <b>EMC</b>                                                                                                                                    |



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#### 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=3RH2122-1VB40>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RH2122-1VB40>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RH2122-1VB40>

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

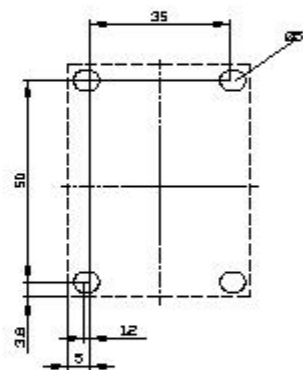
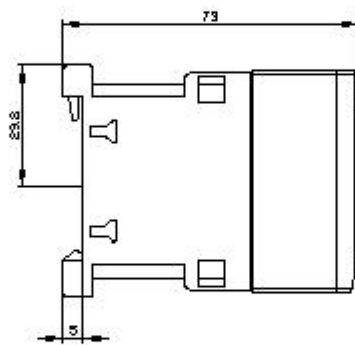
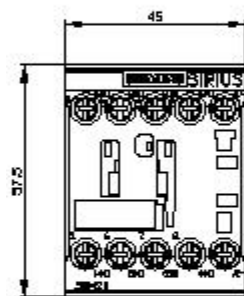
[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RH2122-1VB40&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RH2122-1VB40&lang=en)

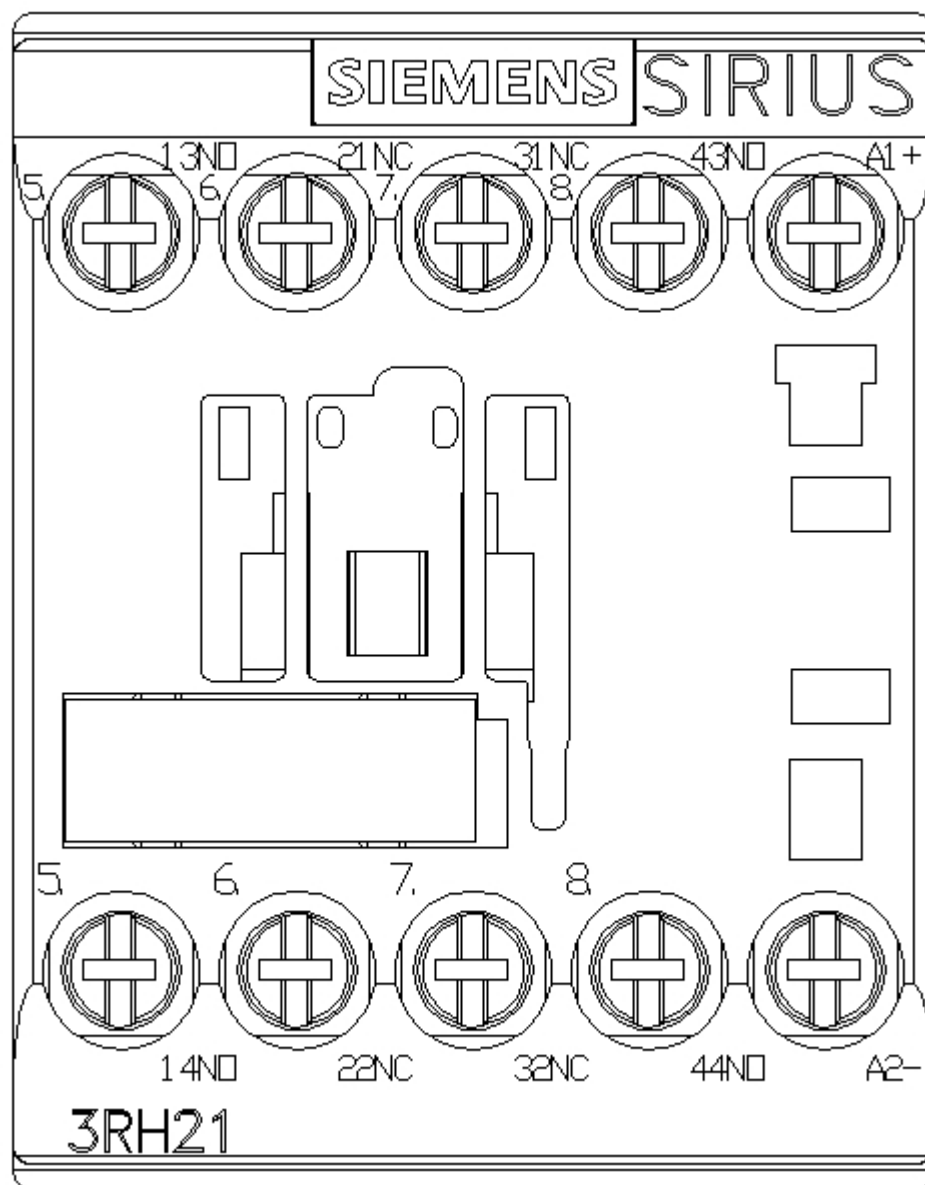
Characteristic: Tripping characteristics, I<sup>2</sup>t, Let-through current

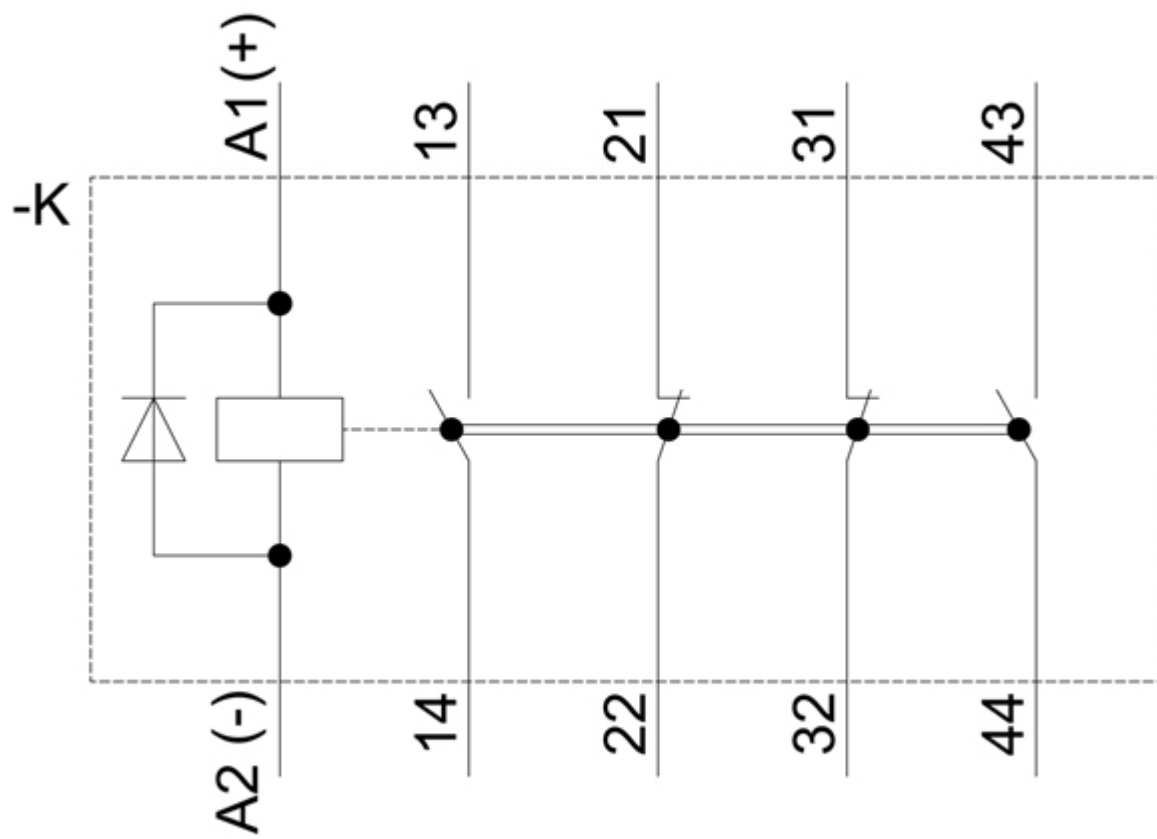
<https://support.industry.siemens.com/cs/ww/en/ps/3RH2122-1VB40/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RH2122-1VB40&objecttype=14&gridview=view1>







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