



Coupling contactor relay, 4 NO 24 V DC, 0.85-1.85\*US with integrated suppressor 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                                              |
| power loss [W] for rated value of the current without load current share typical | 1.6 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 DC                                                                          | 10g / 5 ms, 5g / 10 ms                          |
| shock resistance with sine pulse                                                 |                                                 |
| • at DC                                                                          | 15g / 5 ms, 8g / 10 ms                          |
| mechanical service life (operating cycles)                                       |                                                 |
| • of contactor typical                                                           | 30 000 000                                      |
| reference code according to IEC 81346-2                                          | K                                               |
| Substance Prohibitance (Date)                                                    | 10/01/2009                                      |
| SVHC substance name                                                              | Lead - 7439-92-1                                |
| Weight                                                                           | 0.298 kg                                        |
| <b>Ambient conditions</b>                                                        |                                                 |
| installation altitude at height above sea level maximum                          | 2 000 m                                         |
| ambient temperature                                                              |                                                 |
| • during operation                                                               | -25 ... +50 °C                                  |
| • during storage                                                                 | -55 ... +80 °C                                  |
| relative humidity minimum                                                        | 10 %                                            |
| relative humidity at 55 °C according to IEC 60068-2-30 maximum                   | 95 %                                            |
| <b>Environmental footprint</b>                                                   |                                                 |
| Environmental Product Declaration (EPD)                                          | Yes                                             |
| Global Warming Potential [CO2 eq] total                                          | 133 kg                                          |
| Global Warming Potential [CO2 eq] during manufacturing                           | 1.3 kg                                          |
| Global Warming Potential [CO2 eq] during operation                               | 132 kg                                          |
| Global Warming Potential [CO2 eq] after end of life                              | -0.227 kg                                       |
| <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                                              |

|                                                                                       |                  |
|---------------------------------------------------------------------------------------|------------------|
| <b>control supply voltage at DC rated value</b>                                       | 24 V             |
| <b>operating range factor control supply voltage rated value of magnet coil at DC</b> |                  |
| • initial value                                                                       | 0.85             |
| • full-scale value                                                                    | 1.85             |
| <b>design of the surge suppressor</b>                                                 | suppressor diode |
| <b>closing power of magnet coil at DC</b>                                             | 1.6 W            |
| <b>holding power of magnet coil at DC</b>                                             | 1.6 W            |
| <b>closing delay</b>                                                                  |                  |
| • at DC                                                                               | 25 ... 120 ms    |
| <b>opening delay</b>                                                                  |                  |
| • at DC                                                                               | 5 ... 20 ms      |
| <b>arcing time</b>                                                                    | 10 ... 15 ms     |
| <b>Auxiliary circuit</b>                                                              |                  |
| <b>number of NO contacts for auxiliary contacts</b>                                   | 4                |
| • instantaneous contact                                                               | 4                |
| <b>identification number and letter for switching elements</b>                        | 40 E             |
| <b>operational current at AC-12 maximum</b>                                           | 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                                                                                                                                     |
| <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 miniature circuit breaker for short-circuit protection of the auxiliary circuit up to 230 V                                                                                                                                                                                                                                                                                                                                                                                                                     | C characteristic: 6 A; 0.4 kA                                                                                                                 |
| 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 DIN 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>• for 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>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                               |
| <b>product function</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                               |
| <ul style="list-style-type: none"> <li>• positively driven operation according to IEC 60947-5-1</li> <li>• suitable for safety function</li> </ul>                                                                                                                                                                                                                                                                                                                                                                            | Yes<br>Yes                                                                                                                                    |
| suitability for use safety-related switching OFF                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Yes                                                                                                                                           |
| <b>service life maximum</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 20 a                                                                                                                                          |
| <b>proportion of dangerous failures</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                               |
| <ul style="list-style-type: none"> <li>• with low demand rate according to SN 31920</li> <li>• with high demand rate according to SN 31920</li> </ul>                                                                                                                                                                                                                                                                                                                                                                         | 40 %<br>73 %                                                                                                                                  |
| <b>B10 value with high demand rate according to SN 31920</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 1 000 000; With 0.3 x I <sub>e</sub>                                                                                                          |
| <b>failure rate [FIT] with low demand rate according to SN 31920</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 100 FIT                                                                                                                                       |
| <b>ISO 13849</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                               |
| <b>device type according to ISO 13849-1</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 3                                                                                                                                             |
| <b>overdimensioning according to ISO 13849-2 necessary</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Yes                                                                                                                                           |
| <b>IEC 61508</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                               |
| <b>safety device type according to IEC 61508-2</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Type A                                                                                                                                        |
| <b>Electrical Safety</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                               |
| <b>protection class IP on the front according to IEC 60529</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                | IP20                                                                                                                                          |
| <b>touch protection on the front according to IEC 60529</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | finger-safe, for vertical contact from the front                                                                                              |

## Approvals Certificates

### General Product Approval



[Confirmation](#)



[KC](#)

### General Product Approval

#### EMV

#### Functional Safety

#### Test Certificates

#### Marine / Shipping



[Type Examination Certificate](#)

[Type Test Certificates/Test Report](#)

[Special Test Certificate](#)



### Marine / Shipping



### other

#### Railway

#### Dangerous goods

#### Environment

[Miscellaneous](#)

[Confirmation](#)

[Special Test Certificate](#)

[Transport Information](#)



[Environmental Confirmations](#)

### Further information

#### Information on the packaging

<https://support.industry.siemens.com/cs/ww/en/view/109813875>

#### Information- and Downloadcenter (Catalogs, Brochures,...)

<https://www.siemens.com/ic10>

#### Industry Mall (Online ordering system)

<https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RH2140-1SB40>

#### Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RH2140-1SB40>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RH2140-1SB40>

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

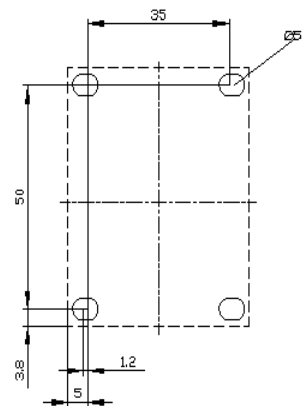
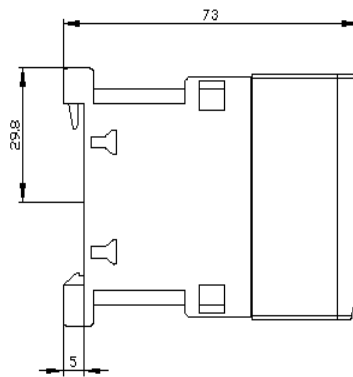
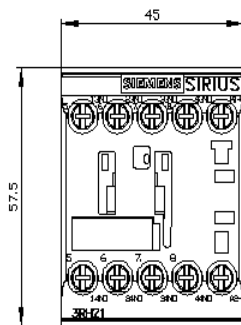
[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RH2140-1SB40&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RH2140-1SB40&lang=en)

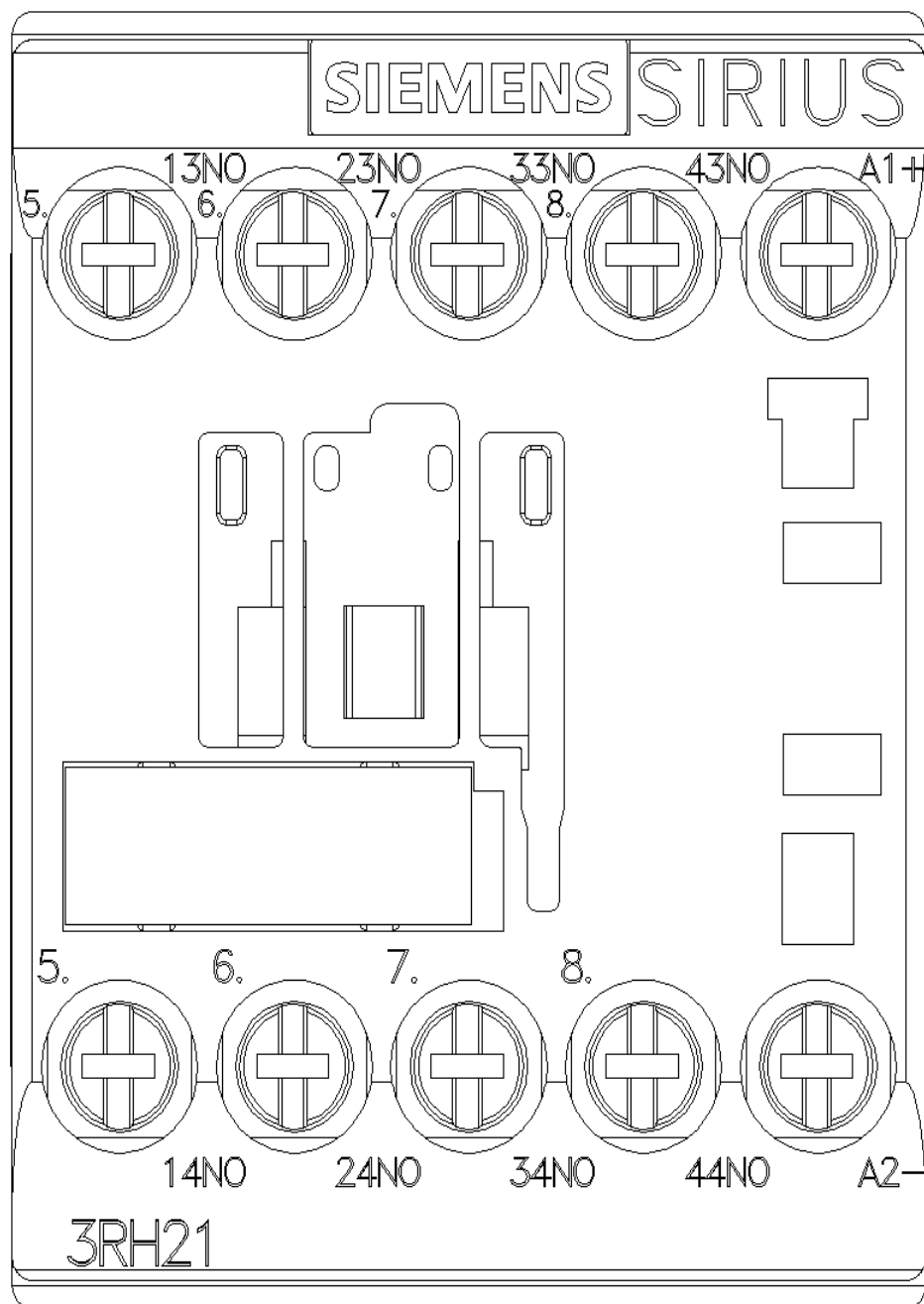
#### Characteristic: Tripping characteristics, I<sup>2</sup>t, Let-through current

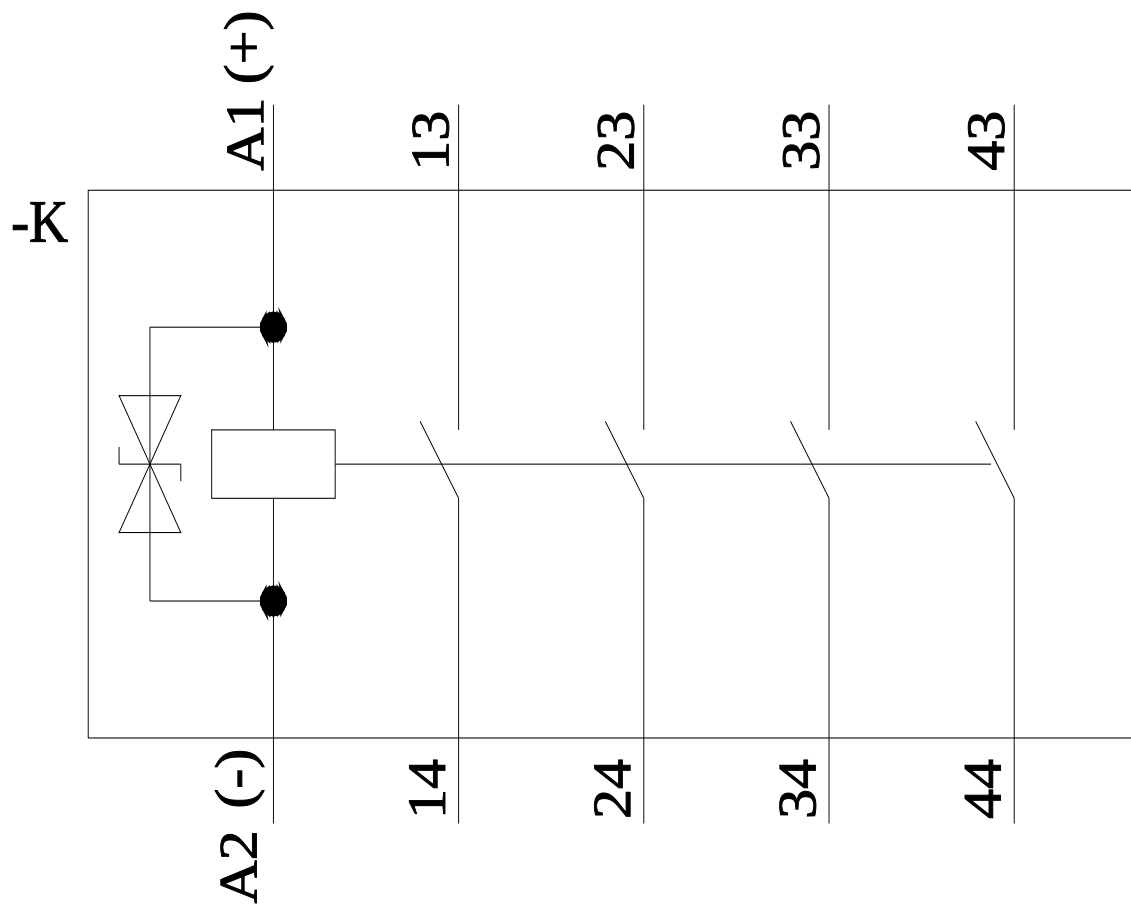
<https://support.industry.siemens.com/cs/ww/en/ps/3RH2140-1SB40/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RH2140-1SB40&objecttype=14&gridview=view1>







last modified:

5/28/2024