



Contactor relay, 4 NO, 24 V DC, with integrated diode, Size S00, Spring-type terminal

|                                                                                       |                        |
|---------------------------------------------------------------------------------------|------------------------|
| <b>product brand name</b>                                                             | SIRIUS                 |
| <b>product designation</b>                                                            | Auxiliary contactor    |
| <b>product type designation</b>                                                       | 3RH2                   |
| <b>General technical data</b>                                                         |                        |
| <b>size of contactor</b>                                                              | S00                    |
| product extension auxiliary switch                                                    | Yes                    |
| insulation voltage with degree of pollution 3 at AC rated value                       | 690 V                  |
| <b>degree of pollution</b>                                                            | 3                      |
| <b>surge voltage resistance rated value</b>                                           | 6 kV                   |
| <b>shock resistance at rectangular impulse</b>                                        |                        |
| • at DC                                                                               | 10g / 5 ms, 5g / 10 ms |
| <b>shock resistance with sine pulse</b>                                               |                        |
| • at DC                                                                               | 15g / 5 ms, 8g / 10 ms |
| <b>mechanical service life (switching cycles)</b>                                     |                        |
| • of contactor typical                                                                | 30 000 000             |
| • of the contactor with added electronically optimized auxiliary switch block typical | 5 000 000              |
| • of the contactor with added auxiliary switch block typical                          | 10 000 000             |
| <b>reference code acc. to IEC 81346-2</b>                                             | K                      |
| <b>Substance Prohibitance (Date)</b>                                                  | 01.10.2009             |
| <b>Ambient conditions</b>                                                             |                        |
| installation altitude at height above sea level maximum                               | 2 000 m                |
| <b>ambient temperature</b>                                                            |                        |
| • during operation                                                                    | -25 ... +60 °C         |
| • during storage                                                                      | -55 ... +80 °C         |
| <b>relative humidity minimum</b>                                                      | 10 %                   |
| <b>relative humidity at 55 °C acc. to IEC 60068-2-30 maximum</b>                      | 95 %                   |
| <b>Main circuit</b>                                                                   |                        |
| <b>no-load switching frequency</b>                                                    |                        |
| • at AC                                                                               | 10 000 1/h             |
| • at DC                                                                               | 10 000 1/h             |
| <b>Control circuit/ Control</b>                                                       |                        |
| <b>type of voltage of the control supply voltage</b>                                  | DC                     |
| <b>control supply voltage at DC</b>                                                   |                        |
| • rated value                                                                         | 24 V                   |
| <b>operating range factor control supply voltage rated value of magnet coil at DC</b> |                        |

|                                                                    |               |
|--------------------------------------------------------------------|---------------|
| • initial value                                                    | 0.8           |
| • full-scale value                                                 | 1.1           |
| <b>design of the surge suppressor</b>                              | diode         |
| <b>closing power of magnet coil at DC</b>                          | 4 W           |
| <b>holding power of magnet coil at DC</b>                          | 4 W           |
| <b>closing delay</b>                                               |               |
| • at DC                                                            | 30 ... 100 ms |
| <b>opening delay</b>                                               |               |
| • at DC                                                            | 38 ... 65 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          |
| 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          |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                      |
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| <ul style="list-style-type: none"> <li>• at 60 V rated value</li> <li>• at 110 V rated value</li> <li>• at 220 V rated value</li> <li>• at 440 V rated value</li> <li>• at 600 V rated value</li> </ul>                                                                                                                                                                                                                                                                                                                       | 4.7 A<br>3 A<br>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>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 70 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                                                                                                                                                                                                                                                                                                                                                                                                                                                               | spring-loaded 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> <li>— finely stranded without core end processing</li> </ul> </li> <li>• at AWG cables for auxiliary contacts</li> </ul>                                                                                                                                                                                                                  | 2x (0,5 ... 4 mm²)<br>2x (0.5 ... 2.5 mm²)<br>2x (0.5 ... 2.5 mm²)<br>2x (20 ... 12)                                                 |
| <b>Safety related data</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                      |
| B10 value with high demand rate acc. to SN 31920                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 1 000 000; With 0.3 x I <sub>e</sub>                                                                                                 |
| <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                                                                                                                              |
| <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=3RH2140-2FB40>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RH2140-2FB40>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RH2140-2FB40>

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

[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RH2140-2FB40&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RH2140-2FB40&lang=en)

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RH2140-2FB40/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RH2140-2FB40&objecttype=14&gridview=view1>



