



contactor relay, 4 NO, 110 V AC, 50/60 Hz, screw terminal, frame size S00

|   |                            |
|---|----------------------------|
| <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                        |
| power loss [W] for rated value of the current without load current share typical      | 1.43 W                     |
| insulation voltage with degree of pollution 3 at AC rated value                       | 690 V                      |
| <b>degree of pollution</b>  | 3                          |
| <b>surge voltage resistance rated value</b>   | 6 kV                       |
| <b>shock resistance at rectangular impulse</b>  |                            |
| • at AC   | 7,3g / 5 ms, 4,7g / 10 ms  |
| <b>shock resistance with sine pulse</b>   |                            |
| • at AC   | 11,4g / 5 ms, 7,3g / 10 ms |
| <b>mechanical service life (operating 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 according to IEC 81346-2</b>  | K                          |
| <b>Substance Prohibittance (Date)</b>   | 10/01/2009                 |
| <b>Weight</b>   | 0.234 kg                   |
| <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 according to IEC 60068-2-30 maximum</b>                 | 95 %                       |
| <b>Environmental footprint</b>  |                            |
| Environmental Product Declaration (EPD)   | Yes                        |
| global warming potential [CO <sub>2</sub> eq] total                                   | 49.2 kg                    |
| global warming potential [CO <sub>2</sub> eq] during manufacturing                    | 1.15 kg                    |
| global warming potential [CO <sub>2</sub> eq] during operation                        | 48.2 kg                    |
| global warming potential [CO <sub>2</sub> eq] after end of life                       | -0.139 kg                  |
| <b>Main circuit</b>   |                            |
| <b>no-load switching frequency</b>  |                            |
| • at AC   | 10 000 1/h                 |
| • at DC   | 10 000 1/h                 |

**Control circuit/ Control**

|   |              |
|---|--------------|
| <b>type of voltage of the control supply voltage</b>                                  | AC           |
| <b>control supply voltage at AC</b>   |              |
| • at 50 Hz rated value  | 110 V        |
| • at 60 Hz rated value  | 110 V        |
| <b>control supply voltage frequency</b>   |              |
| • 1 rated value   | 50 Hz        |
| • 2 rated value   | 60 Hz        |
| <b>operating range factor control supply voltage rated value of magnet coil at AC</b> |              |
| • at 50 Hz  | 0.8 ... 1.1  |
| • at 60 Hz  | 0.85 ... 1.1 |
| <b>apparent pick-up power of magnet coil at AC</b>                                    | 37 VA        |
| <b>inductive power factor with closing power of the coil</b>                          | 0.8          |
| <b>apparent holding power of magnet coil at AC</b>                                    | 5.7 VA       |
| <b>inductive power factor with the holding power of the coil</b>                      | 0.25         |
| <b>closing delay</b>  |              |
| • at AC   | 8 ... 33 ms  |
| <b>opening delay</b>  |              |
| • at AC   | 4 ... 15 ms  |
| <b>arcing time</b>  | 10 ... 15 ms |

**Auxiliary circuit**

|  |           |
|--|-----------|
| <b>number of NC contacts for auxiliary contacts</b>                | 0         |
| • instantaneous contact  | 0         |
| <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> |           |

|   |   |
|---|---|
| <ul style="list-style-type: none"> <li>• at 24 V rated value</li> <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>  | 10 A<br>3.5 A<br>1.3 A<br>0.9 A<br>0.2 A<br>0.1 A   |
| <b>operational current with 3 current paths in series at DC-13</b>  |   |
| <ul style="list-style-type: none"> <li>• at 24 V rated value</li> <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>  | 10 A<br>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   |
| <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: 10 A; 0.4 kA  |
| design of the fuse link for short-circuit protection of the auxiliary switch required   | gG: 10 A (690 V, 1 kA)  |
| <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 mm <sup>2</sup> ), 2x (0.75 ... 2.5 mm <sup>2</sup> ), 2x 4 mm <sup>2</sup><br>2x (0.5 ... 1.5 mm <sup>2</sup> ), 2x (0.75 ... 2.5 mm <sup>2</sup> )<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 %  |

|   |  |
|---|--|
| B10 value with high demand rate according to SN 31920         | 1 000 000; With 0.3 x I <sub>e</sub>             |
| failure rate [FIT] with low demand rate according to SN 31920 | 100 FIT  |
| ISO 13849   |  |
| device type according to ISO 13849-1                          | 3  |
| overdimensioning according to ISO 13849-2 necessary           | Yes  |
| IEC 61508   |  |
| safety device type according to IEC 61508-2                   | Type A   |
| Electrical Safety   |  |
| protection class IP on the front according to IEC 60529       | IP20   |
| touch protection on the front according to IEC 60529          | finger-safe, for vertical contact from the front |

#### Approvals Certificates

##### General Product Approval



KC



|                          |     |                   |                   |                      |
|--------------------------|-----|-------------------|-------------------|----------------------|
| General Product Approval | EMV | Functional Safety | Test Certificates | Maritime application |
|--------------------------|-----|-------------------|-------------------|----------------------|



[Type Examination Certificate](#)

[Special Test Certificate](#)

[Type Test Certificates/Test Report](#)



##### Maritime application



|       |         |             |
|-------|---------|-------------|
| other | Railway | Environment |
|-------|---------|-------------|

[Miscellaneous](#)



[Confirmation](#)

[Special Test Certificate](#)



[Environmental Confirmations](#)

#### Further information

##### Information on the packaging

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

##### Information for data generation and storage

<https://support.industry.siemens.com/cs/ww/en/view/109995012>

##### 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=3RH2140-1AF00>

##### Cax online generator

<https://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RH2140-1AF00>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RH2140-1AF00>

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

[https://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RH2140-1AF00&lang=en](https://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RH2140-1AF00&lang=en)

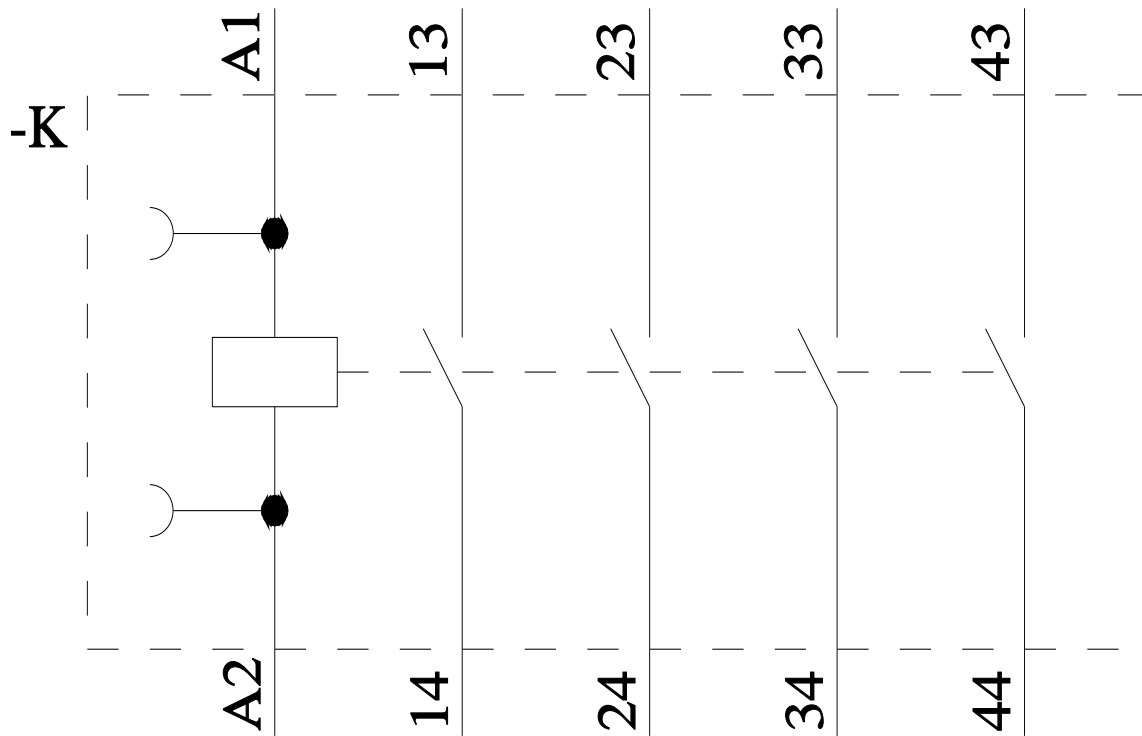
##### Characteristic: Tripping characteristics, I<sub>t</sub>, Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3RH2140-1AF00/char>

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

<https://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RH2140-1AF00&objecttype=14&gridview=view1>





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