



contactor relay, 4 NO, 110 V AC, 50 Hz / 120 V, 60 Hz, screw terminal, frame size S00

|                                                                                       |                              |
|---------------------------------------------------------------------------------------|------------------------------|
| product brand name                                                                    | SIRIUS                       |
| product designation                                                                   | Auxiliary contactor          |
| product type designation                                                              | 3RH2                         |
| <b>General technical data</b>                                                         |                              |
| size of contactor                                                                     | S00                          |
| product extension auxiliary switch                                                    | Yes                          |
| power loss [W] for rated value of the current without load current share typical      | 1.43 W                       |
| insulation voltage with degree of pollution 3 at AC rated value                       | 690 V                        |
| degree of pollution                                                                   | 3                            |
| surge voltage resistance rated value                                                  | 6 kV                         |
| shock resistance at rectangular impulse                                               |                              |
| • at AC                                                                               | 7,3 g / 5 ms, 4,7 g / 10 ms  |
| shock resistance with sine pulse                                                      |                              |
| • at AC                                                                               | 11,4 g / 5 ms, 7,3 g / 10 ms |
| mechanical service life (operating cycles)                                            |                              |
| • 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                   |
| reference code according to IEC 81346-2                                               | K                            |
| Substance Prohibition (day/month/year)                                                | 10/01/2009                   |
| Net Weight                                                                            | 0.232 g                      |
| <b>Ambient conditions</b>                                                             |                              |
| installation altitude at height above sea level maximum                               | 2 000 m                      |
| ambient temperature                                                                   |                              |
| • during operation                                                                    | -25 ... +60 °C               |
| • during storage                                                                      | -55 ... +80 °C               |
| relative humidity minimum                                                             | 10 %                         |
| relative humidity at 55 °C according to IEC 60068-2-30 maximum                        | 95 %                         |
| <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                                         | AC                           |
| control supply voltage at AC                                                          |                              |
| • at 50 Hz rated value                                                                | 110 V                        |
| • at 60 Hz rated value                                                                | 120 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 |
| <b>Auxiliary circuit</b>                                                              |              |
| <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         |
| <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 60 V rated value                                                                 | 6 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 60 V rated value                                                                 | 2 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         |

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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>                                                                                                                                                                                                                                                                                                                       | 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 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; with 3RH29<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> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                | 40 %                                                                                                                                          |

|                                                                      |                                                  |
|----------------------------------------------------------------------|--------------------------------------------------|
| • with high demand rate according to SN 31920                        | 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                                          |
| ISO 13849                                                            |                                                  |
| <b>device type according to ISO 13849-1</b>                          | 3                                                |
| <b>overdimensioning according to ISO 13849-2 necessary</b>           | Yes                                              |
| IEC 61508                                                            |                                                  |
| <b>safety device type according to IEC 61508-2</b>                   | Type A                                           |
| Electrical Safety                                                    |                                                  |
| <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

##### Environmental Product Declaration

|                                                                        |           |
|------------------------------------------------------------------------|-----------|
| • 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 |
| • global warming potential [CO <sub>2</sub> eq] / total                | 49.2 kg   |

##### Environment

##### General Product Approval

[Environmental Confirmations](#)



##### General Product Approval

##### EMV

##### Functional Safety



[Type Examination Certificate](#)

##### Test Certificates

##### Maritime application

[Type Test Certificates/Test Report](#)

[Special Test Certificate](#)



##### Maritime application

##### other



[Confirmation](#)

[Miscellaneous](#)



##### Railway

[Special Test Certificate](#)

#### 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=3RH2140-1AK60>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RH2140-1AK60>

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

[https://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RH2140-1AK60&lang=en](https://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RH2140-1AK60&lang=en)

Cax online generator

<https://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RH2140-1AK60>

Characteristic curves

[https://curves.simaris.siemens.com/curves/<mmp\\_prod\\_noCOMP='HAUPT'></mmp\\_prod\\_no>](https://curves.simaris.siemens.com/curves/<mmp_prod_noCOMP='HAUPT'></mmp_prod_no>)



