SIEMENS

## Data sheet 3RH2131-1BB40




Contactor relay, 3 NO + 1 NC, 24 V DC, Size S00, screw terminal

| | |
|---|---|
| **product brand name** | SIRIUS |
| **product designation** | Auxiliary contactor |
| **product type designation** | 3RH2 |
| **General technical data** | |
| **size of contactor** | S00 |
| product extension auxiliary switch | Yes |
| power loss [W] for rated value of the current without load current share typical | 4 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 |
| ● 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 Prohibitance (Date)** | 10/01/2009 |
| **Weight** | 0.27 kg |
| **Ambient conditions** | |
| 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 % |
| **Environmental footprint** | |
| 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 |
| **Main circuit** | |
| **no-load switching frequency** | |
| ● at AC | 10 000 1/h |
| ● at DC | 10 000 1/h |


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|---|---|
| **Control circuit/ Control** | |
| **type of voltage of the control supply voltage** | DC |
| **control supply voltage at DC rated value** | 24 V |
| **operating range factor control supply voltage rated value of magnet coil at DC** | |
| ● initial value | 0.8 |
| ● full-scale value | 1.1 |
| **closing power of magnet coil at DC** | 4 W |
| **holding power of magnet coil at DC** | 4 W |
| **closing delay** | |
| ● at DC | 30 ... 100 ms |
| **opening delay** | |
| ● at DC | 7 ... 13 ms |
| **arcing time** | 10 ... 15 ms |
| **Auxiliary circuit** | |
| **number of NC contacts for auxiliary contacts** | 1 |
| ● instantaneous contact | 1 |
| **number of NO contacts for auxiliary contacts** | 3 |
| ● instantaneous contact | 3 |
| **identification number and letter for switching elements** | 31 E |
| operational current at AC-12 maximum | 10 A |
| **operational current at AC-15** | |
| ● 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 |
| **operational current at 1 current path at DC-12** | |
| ● 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 |
| **operational current with 2 current paths in series at DC-12** | |
| ● 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 |
| **operational current with 3 current paths in series at DC-12** | |
| ● 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 |
| **operating frequency at DC-12 maximum** | 1 000 1/h |
| **operational current at 1 current path at DC-13** | |
| ● 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 |
| **operational current with 2 current paths in series at DC-13** | |
| ● 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 |
| **operational current with 3 current paths in series at DC-13** | |


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|---|---|
| ● at 24 V rated value | 10 A |
| ● at 60 V rated value | 4.7 A |
| ● at 110 V rated value | 3 A |
| ● at 220 V rated value | 1.2 A |
| ● at 440 V rated value | 0.5 A |
| ● at 600 V rated value | 0.26 A |
| **operating frequency at DC-13 maximum** | 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 |
| **contact reliability of auxiliary contacts** | 1 faulty switching per 100 million (17 V, 1 mA) |
| **UL/CSA ratings** | |
| **contact rating of auxiliary contacts according to UL** | A600 / Q600 |
| **Short-circuit protection** | |
| design of the fuse link for short-circuit protection of the auxiliary switch required | fuse gL/gG: 10 A |
| **Installation/ mounting/ dimensions** | |
| **mounting position** | +/-180° rotation possible on vertical mounting surface; can be tilted forward and backward by +/- 22.5° on vertical mounting surface |
| **fastening method** | screw and snap-on mounting onto 35 mm DIN rail |
| **height** | 57.5 mm |
| **width** | 45 mm |
| **depth** | 73 mm |
| **required spacing** | |
| ● with side-by-side mounting | |
| — forwards | 10 mm |
| — upwards | 10 mm |
| — downwards | 10 mm |
| — at the side | 0 mm |
| ● for grounded parts | |
| — forwards | 10 mm |
| — upwards | 10 mm |
| — at the side | 6 mm |
| — downwards | 10 mm |
| ● for live parts | |
| — forwards | 10 mm |
| — upwards | 10 mm |
| — downwards | 10 mm |
| — at the side | 6 mm |
| **Connections/ Terminals** | |
| type of electrical connection for auxiliary and control circuit | screw-type terminals |
| **type of connectable conductor cross-sections** | |
| ● for auxiliary contacts | |
| — solid or stranded | 2x (0.5 ... 1.5 mm²), 2x (0.75 ... 2.5 mm²), 2x 4 mm² |
| — finely stranded with core end processing | 2x (0.5 ... 1.5 mm²), 2x (0.75 ... 2.5 mm²) |
| ● for AWG cables for auxiliary contacts | 2x (20 ... 16), 2x (18 ... 14), 2x 12 |
| **Safety related data** | |
| **product function** | |
| ● positively driven operation according to IEC 60947-5-1 | Yes |
| ● suitable for safety function | Yes |
| suitability for use safety-related switching OFF | Yes |
| **service life maximum** | 20 a |
| **proportion of dangerous failures** | |
| ● with low demand rate according to SN 31920 | 40 % |
| ● with high demand rate according to SN 31920 | 73 % |
| **B10 value with high demand rate according to SN 31920** | 1 000 000; With 0.3 x Ie |
| **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 |


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| 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

Confirmation

KC

| General Product Approval | EMV | Functional Saftey | Test Certificates | | |
|---|---|---|---|---|---|
| | | Type Examination Certificate | Type Test Certificates/Test Report | Special Test Certificate | Miscellaneous |

### 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=3RH2131-1BB40
**Cax online generator**
http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RH2131-1BB40
**Service&Support (Manuals, Certificates, Characteristics, FAQs,...)**
https://support.industry.siemens.com/cs/ww/en/ps/3RH2131-1BB40
**Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)**
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RH2131-1BB40&lang=en
**Characteristic: Tripping characteristics, I²t, Let-through current**
https://support.industry.siemens.com/cs/ww/en/ps/3RH2131-1BB40/char
**Further characteristics (e.g. electrical endurance, switching frequency)**
http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RH2131-1BB40&objecttype=14&gridview=view1


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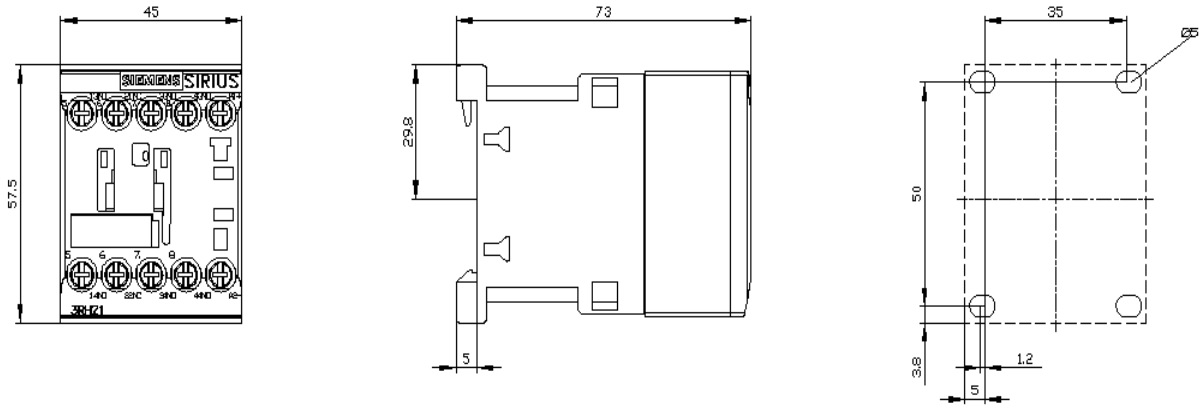



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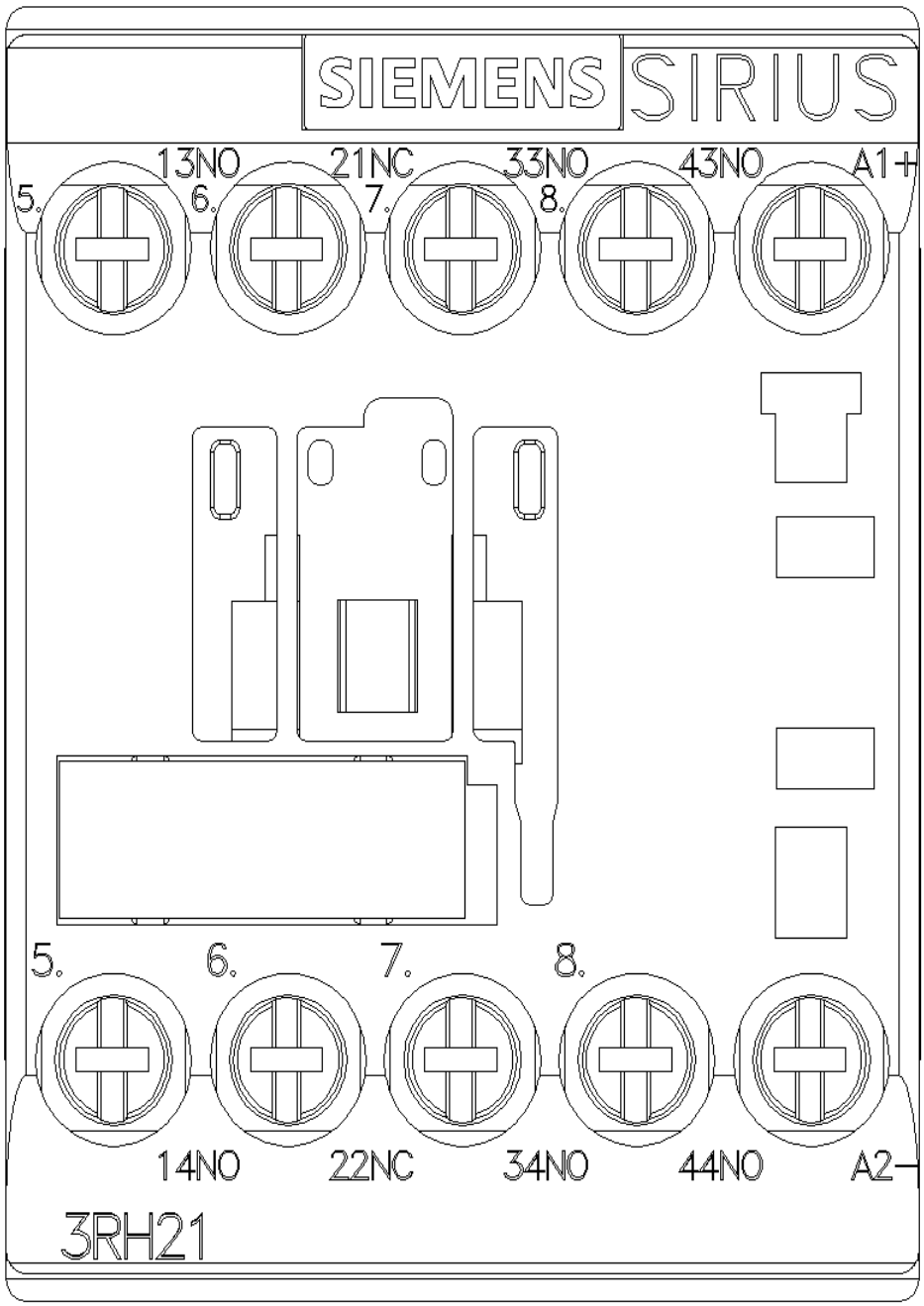



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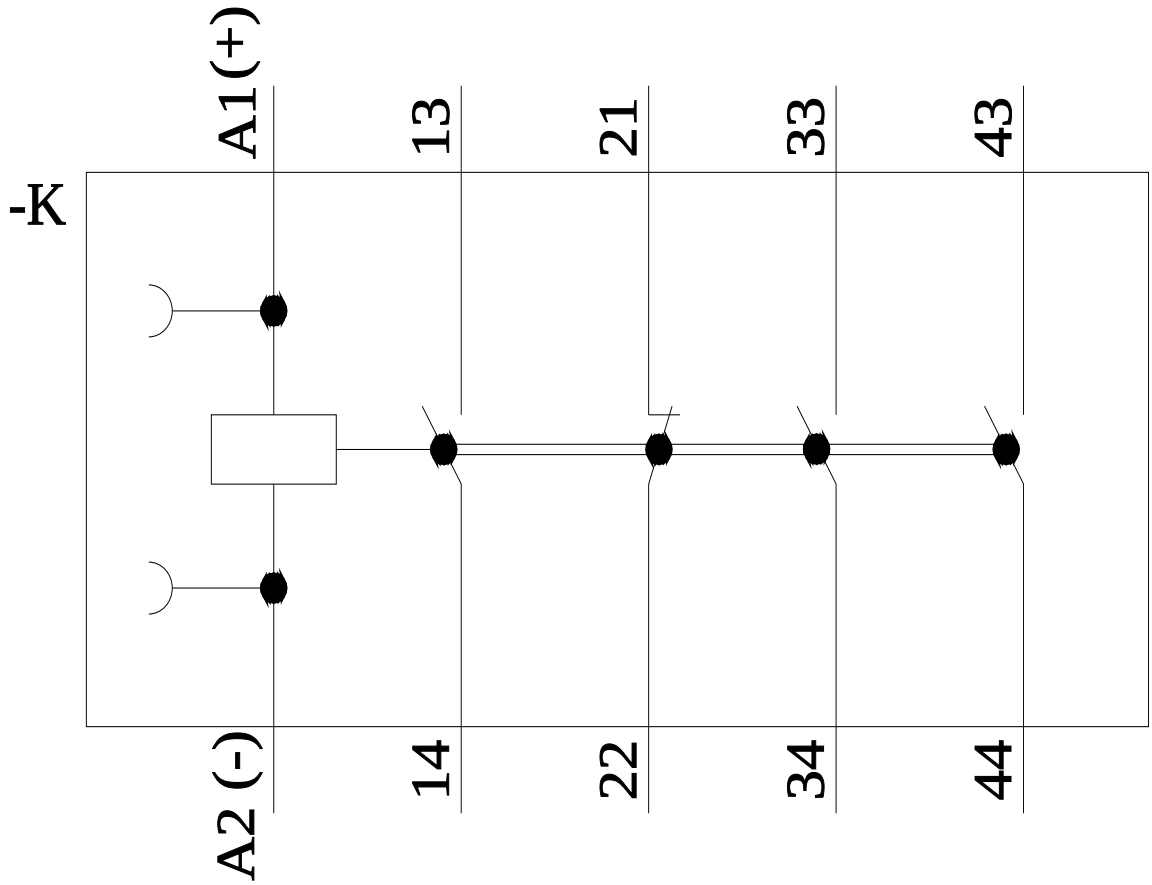


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