

contactor relay, latched, railway, 2 NO + 2 NC, 72-125 V DC, 0.7-1.25*Us, with integrated varistor, screw terminal, frame size S00



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| product brand name | SIRIUS |
| product designation | Contacteur relay for railway applications |
| 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 | 0.75 W |
| insulation voltage with degree of pollution 3 at AC rated value | 690 V |
| surge voltage resistance rated value | 6 kV |
| shock resistance at rectangular impulse | |
| • at DC | 10 g / 5 ms, 5 g / 10 ms |
| shock resistance with sine pulse | |
| • at DC | 15 g / 5 ms, 8 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 Prohibitance (day/month/year) | 10/01/2009 |
| SVHC substance name | Lead CAS-No. 7439-92-1 Lead monoxide (lead oxide) CAS-No. 1317-36-8 2-methyl-1-(4-methylthiophenyl)-2-morpholinopropan-1-one CAS-No. 71868-10-5 Melamine CAS-No. 108-78-1 |
| Net Weight | 0.56 kg |
| Ambient conditions | |
| installation altitude at height above sea level maximum | 2 000 m |
| ambient temperature | |
| • during operation | -40 ... +70 °C |
| • during storage | -55 ... +80 °C |
| relative humidity minimum | 10 % |
| relative humidity at 55 °C according to IEC 60068-2-30 maximum | 95 % |
| Main circuit | |
| no-load switching frequency | |
| • at DC | 1 500 1/h |
| Control circuit/ Control | |
| type of voltage of the control supply voltage | DC |
| control supply voltage at DC rated value | 72 ... 125 V |


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| operating range factor control supply voltage rated value of magnet coil at DC | |
| • initial value | 0.7 |
| • full-scale value | 1.25 |
| design of the surge suppressor | Varistor |
| inrush current peak | 1.1 A |
| duration of inrush current peak | 50 µs |
| pickup current mean value | 0.04 A |
| pickup current peak | 0.04 A |
| duration of pickup current | 250 ms |
| holding current mean value | 7 mA |
| closing power of magnet coil at DC | 4.5 W |
| holding power of magnet coil at DC | 0.75 W |
| closing delay | |
| • at DC | 30 ... 70 ms |
| opening delay | |
| • at DC | 25 ... 45 ms |
| arcing time | 10 ... 15 ms |
| residual current of the electronics for control with signal <0> at DC at 24 V maximum permissible | 10 mA |
| Auxiliary circuit | |
| number of NC contacts for auxiliary contacts | 2 |
| • instantaneous contact | 2 |
| number of NO contacts for auxiliary contacts | 2 |
| • instantaneous contact | 2 |
| 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 |

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| operational current with 2 current paths in series at DC-13 | |
| <ul style="list-style-type: none"> ● at 24 V rated value ● at 60 V rated value ● at 110 V rated value ● at 220 V rated value ● at 440 V rated value ● at 600 V rated value | <ul style="list-style-type: none"> 10 A 3.5 A 1.3 A 0.9 A 0.2 A 0.1 A |
| operational current with 3 current paths in series at DC-13 | |
| <ul style="list-style-type: none"> ● at 24 V rated value ● at 60 V rated value ● at 110 V rated value ● at 220 V rated value ● at 440 V rated value ● at 600 V rated value | <ul style="list-style-type: none"> 10 A 4.7 A 3 A 1.2 A 0.5 A 0.26 A |
| operating frequency at DC-13 maximum | 1 000 1/h |
| 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 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) |
| 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, standing, on horizontal mounting surface |
| fastening method side-by-side mounting | Yes |
| fastening method | screw and snap-on mounting onto 35 mm DIN rail |
| height | 58 mm |
| width | 90 mm |
| depth | 73 mm |
| required spacing | |
| <ul style="list-style-type: none"> ● with side-by-side mounting <ul style="list-style-type: none"> — forwards — upwards — downwards — at the side ● for grounded parts <ul style="list-style-type: none"> — forwards — upwards — at the side — downwards ● for live parts <ul style="list-style-type: none"> — forwards — upwards — downwards — at the side | <ul style="list-style-type: none"> 10 mm 10 mm 10 mm 0 mm 10 mm 10 mm 6 mm 10 mm 10 mm 10 mm 10 mm 6 mm |
| Connections/ Terminals | |
| type of electrical connection for auxiliary and control circuit | screw-type terminals |
| connectable conductor cross-section for auxiliary contacts | |
| <ul style="list-style-type: none"> ● solid or stranded ● finely stranded with core end processing | <ul style="list-style-type: none"> 0.5 ... 4 mm² 0.5 ... 2.5 mm² |
| type of connectable conductor cross-sections | |
| <ul style="list-style-type: none"> ● for auxiliary contacts <ul style="list-style-type: none"> — solid or stranded — finely stranded with core end processing ● for AWG cables for auxiliary contacts | <ul style="list-style-type: none"> 2x (0.5 ... 1.5 mm²), 2x (0.75 ... 2.5 mm²), 2x 4 mm² 2x (0.5 ... 1.5 mm²), 2x (0.75 ... 2.5 mm²) 2x (20 ... 16), 2x (18 ... 14), 2x 12 |
| AWG number as coded connectable conductor cross section for auxiliary contacts | 20 ... 12 |




| Safety related data | |
|---|--|
| product function positively driven operation according to IEC 60947-5-1 | Yes |
| 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 |
| IEC 61508 | |
| T1 value | |
| • for proof test interval or service life according to IEC 61508 | 20 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 | |
|--|----------|
| Environmental Product Declaration | |
| • global warming potential [CO2 eq] / during manufacturing | 2.44 kg |
| • global warming potential [CO2 eq] / during operation | 135 kg |
| • global warming potential [CO2 eq] / after end of life | -0.49 kg |
| • global warming potential [CO2 eq] / total | 137 kg |

| Environment | General Product Approval | | | | |
|---|---|---|---|---|---|
| Environmental Confirmations |  |  |  |  |  |

| General Product Approval | EMV | Functional Safety | Test Certificates |
|---|---|---|---|
|  |  |  |  |
| | | Type Examination Certificate | Type Test Certificates/Test Report |

| Test Certificates | Maritime application | | | | |
|--|---|---|---|---|---|
| Special Test Certificate |  |  |  |  |  |

| Maritime application | other | Railway |
|---|---|---|
|  |  |  |
| | Confirmation | Miscellaneous |
| | | Special Test Certificate |

Dangerous goods

[Transport Information](#)

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=3RH2422-1XF40-0LA2>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RH2422-1XF40-0LA2>

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

https://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RH2422-1XF40-0LA2&lang=en

Cax online generator

<https://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RH2422-1XF40-0LA2>

Characteristic curves

[https://curves.simaris.siemens.com/curves/<mmp_prod_noCOMP="HAUPT"></mmp_prod_no>](https://curves.simaris.siemens.com/curves/<mmp_prod_noCOMP=)

