



power contactor, AC-3e/AC-3, 80 A, 37 kW / 400 V, 3-pole, 175-280 V AC/DC, 50/60 Hz, with integrated varistor, auxiliary contacts: 1 NO + 1 NC, main circuit: screw terminal, control and auxiliary circuit: spring-loaded terminal, size: S2,

|  |  |
|--|--|
| <b>product brand name</b>  | SIRIUS   |
| <b>product designation</b>   | Power contactor  |
| <b>product type designation</b>  | 3RT2   |
| <b>General technical data</b>  |  |
| <b>size of contactor</b>   | S2   |
| <b>product extension</b>   |  |
| • function module for communication  | No   |
| • auxiliary switch   | Yes  |
| <b>power loss [W] for rated value of the current</b>   |  |
| • at AC in hot operating state   | 17.1 W   |
| • at AC in hot operating state per pole  | 5.7 W  |
| • without load current share typical   | 1 W  |
| <b>type of calculation of power loss depending on pole</b>   | quadratic  |
| <b>insulation voltage</b>  |  |
| • of main circuit with degree of pollution 3 rated value   | 690 V  |
| • of auxiliary circuit with degree of pollution 3 rated value  | 690 V  |
| <b>surge voltage resistance</b>  |  |
| • of main circuit rated value  | 6 kV   |
| • of auxiliary circuit rated value   | 6 kV   |
| maximum permissible voltage for protective separation between coil and main contacts according to EN 60947-1 | 400 V  |
| <b>shock resistance at rectangular impulse</b>   |  |
| • at AC  | 7.7g / 5 ms, 4.5g / 10 ms                                  |
| • at DC  | 7.7g / 5 ms, 4.5g / 10 ms                                  |
| <b>shock resistance with sine pulse</b>  |  |
| • at AC  | 12g / 5 ms, 7g / 10 ms                                     |
| • at DC  | 12g / 5 ms, 7g / 10 ms                                     |
| <b>mechanical service life (operating cycles)</b>  |  |
| • of contactor typical   | 10 000 000   |
| • 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>   | Q  |
| <b>Substance Prohibition (Date)</b>  | 10/01/2014   |
| <b>SVHC substance name</b>   | Lead - 7439-92-1<br>Lead monoxide (lead oxide) - 1317-36-8 |
| <b>Weight</b>  | 1.119 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 [CO2 eq] total                                | 107 kg             |
| Global Warming Potential [CO2 eq] during manufacturing                 | 5.88 kg            |
| Global Warming Potential [CO2 eq] during operation                     | 102 kg             |
| Global Warming Potential [CO2 eq] after end of life                    | -0.988 kg          |
| <b>Main circuit</b>  |                    |
| <b>number of poles for main current circuit</b>                        | 3                  |
| <b>number of NO contacts for main contacts</b>                         | 3                  |
| <b>operating voltage</b>   |                    |
| • at AC-3 rated value maximum  | 690 V              |
| • at AC-3e rated value maximum   | 690 V              |
| <b>operational current</b>   |                    |
| • at AC-1 at 400 V at ambient temperature 40 °C rated value            | 90 A               |
| • at AC-1  |                    |
| — up to 690 V at ambient temperature 40 °C rated value                 | 90 A               |
| — up to 690 V at ambient temperature 60 °C rated value                 | 80 A               |
| • at AC-3  |                    |
| — at 400 V rated value   | 80 A               |
| — at 500 V rated value   | 80 A               |
| — at 690 V rated value   | 58 A               |
| • at AC-3e   |                    |
| — at 400 V rated value   | 80 A               |
| — at 500 V rated value   | 80 A               |
| — at 690 V rated value   | 58 A               |
| • at AC-4 at 400 V rated value   | 55 A               |
| • at AC-5a up to 690 V rated value                                     | 79.2 A             |
| • at AC-5b up to 400 V rated value                                     | 66.4 A             |
| • at AC-6a   |                    |
| — up to 230 V for current peak value n=20 rated value                  | 70 A               |
| — up to 400 V for current peak value n=20 rated value                  | 70 A               |
| — up to 500 V for current peak value n=20 rated value                  | 70 A               |
| — up to 690 V for current peak value n=20 rated value                  | 58 A               |
| • at AC-6a   |                    |
| — up to 230 V for current peak value n=30 rated value                  | 46.7 A             |
| — up to 400 V for current peak value n=30 rated value                  | 46.7 A             |
| — up to 500 V for current peak value n=30 rated value                  | 46.7 A             |
| — up to 690 V for current peak value n=30 rated value                  | 46.7 A             |
| minimum cross-section in main circuit at maximum AC-1 rated value      | 35 mm <sup>2</sup> |
| <b>operational current for approx. 200000 operating cycles at AC-4</b> |                    |
| • at 400 V rated value   | 30 A               |
| • at 690 V rated value   | 24 A               |
| <b>operational current</b>   |                    |
| • <b>at 1 current path at DC-1</b>                                     |                    |
| — at 24 V rated value  | 55 A               |
| — at 60 V rated value  | 23 A               |
| — at 110 V rated value   | 4.5 A              |
| — at 220 V rated value   | 1 A                |
| — at 440 V rated value   | 0.4 A              |
| — at 600 V rated value   | 0.25 A             |
| • <b>with 2 current paths in series at DC-1</b>                        |                    |
| — at 24 V rated value  | 55 A               |
| — at 60 V rated value  | 45 A               |

|   |   |
|---|---|
| — at 110 V rated value  | 45 A  |
| — at 220 V rated value  | 5 A   |
| — at 440 V rated value  | 1 A   |
| — at 600 V rated value  | 0.8 A   |
| <b>● with 3 current paths in series at DC-1</b>                         |   |
| — at 24 V rated value   | 55 A  |
| — at 60 V rated value   | 55 A  |
| — at 110 V rated value  | 55 A  |
| — at 220 V rated value  | 45 A  |
| — at 440 V rated value  | 2.9 A   |
| — at 600 V rated value  | 1.4 A   |
| <b>● at 1 current path at DC-3 at DC-5</b>                              |   |
| — at 24 V rated value   | 35 A  |
| — at 60 V rated value   | 6 A   |
| — at 220 V rated value  | 1 A   |
| — at 440 V rated value  | 0.1 A   |
| — at 600 V rated value  | 0.06 A  |
| <b>● with 2 current paths in series at DC-3 at DC-5</b>                 |   |
| — at 24 V rated value   | 55 A  |
| — at 60 V rated value   | 45 A  |
| — at 110 V rated value  | 25 A  |
| — at 220 V rated value  | 5 A   |
| — at 440 V rated value  | 0.27 A  |
| — at 600 V rated value  | 0.16 A  |
| <b>● with 3 current paths in series at DC-3 at DC-5</b>                 |   |
| — at 24 V rated value   | 55 A  |
| — at 60 V rated value   | 55 A  |
| — at 110 V rated value  | 55 A  |
| — at 220 V rated value  | 25 A  |
| — at 440 V rated value  | 0.6 A   |
| — at 600 V rated value  | 0.35 A  |
| <b>operating power</b>  |   |
| ● at AC-2 at 400 V rated value  | 37 kW   |
| ● at AC-3   |   |
| — at 230 V rated value  | 22 kW   |
| — at 400 V rated value  | 37 kW   |
| — at 500 V rated value  | 37 kW   |
| — at 690 V rated value  | 45 kW   |
| ● at AC-3e  |   |
| — at 230 V rated value  | 22 kW   |
| — at 400 V rated value  | 37 kW   |
| — at 500 V rated value  | 37 kW   |
| — at 690 V rated value  | 45 kW   |
| <b>operating power for approx. 200000 operating cycles at AC-4</b>      |   |
| ● at 400 V rated value  | 15.8 kW   |
| ● at 690 V rated value  | 21.8 kW   |
| <b>operating apparent power at AC-6a</b>                                |   |
| ● up to 230 V for current peak value n=20 rated value                   | 27.8 kVA  |
| ● up to 400 V for current peak value n=20 rated value                   | 48.4 kVA  |
| ● up to 500 V for current peak value n=20 rated value                   | 60.6 kVA  |
| ● up to 690 V for current peak value n=20 rated value                   | 69.3 kVA  |
| <b>operating apparent power at AC-6a</b>                                |   |
| ● up to 230 V for current peak value n=30 rated value                   | 18.6 kVA  |
| ● up to 400 V for current peak value n=30 rated value                   | 32.3 kVA  |
| ● up to 500 V for current peak value n=30 rated value                   | 40.4 kVA  |
| ● up to 690 V for current peak value n=30 rated value                   | 55.8 kVA  |
| <b>short-time withstand current in cold operating state up to 40 °C</b> |   |
| ● limited to 1 s switching at zero current maximum                      | 1 298 A; Use minimum cross-section acc. to AC-1 rated value |
| ● limited to 5 s switching at zero current maximum                      | 898 A; Use minimum cross-section acc. to AC-1 rated value   |

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| <ul style="list-style-type: none"> <li>• limited to 10 s switching at zero current maximum</li> <li>• limited to 30 s switching at zero current maximum</li> <li>• limited to 60 s switching at zero current maximum</li> </ul>  | 640 A; Use minimum cross-section acc. to AC-1 rated value<br>414 A; Use minimum cross-section acc. to AC-1 rated value<br>333 A; Use minimum cross-section acc. to AC-1 rated value |
| <b>no-load switching frequency</b>   |   |
| <ul style="list-style-type: none"> <li>• at AC</li> <li>• at DC</li> </ul>   | 1 500 1/h<br>1 500 1/h  |
| <b>operating frequency</b>   |   |
| <ul style="list-style-type: none"> <li>• at AC-1 maximum</li> <li>• at AC-2 maximum</li> <li>• at AC-3 maximum</li> <li>• at AC-3e maximum</li> <li>• at AC-4 maximum</li> </ul>   | 700 1/h<br>350 1/h<br>500 1/h<br>500 1/h<br>150 1/h   |
| <b>Control circuit/ Control</b>  |   |
| <b>type of voltage of the control supply voltage</b>   | AC/DC   |
| <b>control supply voltage at AC</b>  |   |
| <ul style="list-style-type: none"> <li>• at 50 Hz rated value</li> <li>• at 60 Hz rated value</li> </ul>   | 175 ... 280 V<br>175 ... 280 V  |
| <b>control supply voltage at DC rated value</b>  | 175 ... 280 V   |
| <b>operating range factor control supply voltage rated value of magnet coil at DC</b>  |   |
| <ul style="list-style-type: none"> <li>• initial value</li> <li>• full-scale value</li> </ul>  | 0.8<br>1.1  |
| <b>operating range factor control supply voltage rated value of magnet coil at AC</b>  |   |
| <ul style="list-style-type: none"> <li>• at 50 Hz</li> <li>• at 60 Hz</li> </ul>   | 0.8 ... 1.1<br>0.8 ... 1.1  |
| <b>design of the surge suppressor</b>  | with varistor   |
| <b>inrush current peak</b>   | 5 A   |
| <b>duration of inrush current peak</b>   | 30 µs   |
| <b>locked-rotor current mean value</b>   | 0.2 A   |
| <b>locked-rotor current peak</b>   | 0.42 A  |
| <b>duration of locked-rotor current</b>  | 230 ms  |
| <b>holding current mean value</b>  | 6 mA  |
| <b>apparent pick-up power of magnet coil at AC</b>   |   |
| <ul style="list-style-type: none"> <li>• at 50 Hz</li> <li>• at 60 Hz</li> </ul>   | 40 VA<br>40 VA  |
| <b>apparent holding power</b>  |   |
| <ul style="list-style-type: none"> <li>• at minimum rated control supply voltage at DC</li> <li>• at maximum rated control supply voltage at DC</li> </ul>   | 2 VA<br>2 VA  |
| <b>apparent holding power</b>  |   |
| <ul style="list-style-type: none"> <li>• at minimum rated control supply voltage at AC <ul style="list-style-type: none"> <li>— at 50 Hz</li> <li>— at 60 Hz</li> </ul> </li> <li>• at maximum rated control supply voltage at AC <ul style="list-style-type: none"> <li>— at 50 Hz</li> <li>— at 60 Hz</li> </ul> </li> </ul> | 2 VA<br>2 VA<br>2 VA<br>2 VA  |
| <b>apparent holding power of magnet coil at AC</b>   |   |
| <ul style="list-style-type: none"> <li>• at 50 Hz</li> <li>• at 60 Hz</li> </ul>   | 2 VA<br>2 VA  |
| <b>inductive power factor with the holding power of the coil</b>   |   |
| <ul style="list-style-type: none"> <li>• at 50 Hz</li> <li>• at 60 Hz</li> </ul>   | 0.95<br>0.95  |
| <b>closing power of magnet coil at DC</b>  | 23 W  |
| <b>holding power of magnet coil at DC</b>  | 1 W   |
| <b>closing delay</b>   |   |
| <ul style="list-style-type: none"> <li>• at AC</li> <li>• at DC</li> </ul>   | 35 ... 110 ms<br>35 ... 110 ms  |
| <b>opening delay</b>   |   |
| <ul style="list-style-type: none"> <li>• at AC</li> <li>• at DC</li> </ul>   | 30 ... 55 ms<br>30 ... 55 ms  |
| <b>arcing time</b>   | 10 ... 20 ms  |

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| <b>control version of the switch operating mechanism</b>           | Standard A1 - A2   |
| <b>Auxiliary circuit</b>   |  |
| number of NC contacts for auxiliary contacts instantaneous contact | 1  |
| number of NO contacts for auxiliary contacts instantaneous contact | 1  |
| 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 DC-12</b>                                |  |
| • at 24 V rated value  | 10 A   |
| • at 48 V rated value  | 6 A  |
| • at 60 V rated value  | 6 A  |
| • at 110 V rated value   | 3 A  |
| • at 125 V rated value   | 2 A  |
| • at 220 V rated value   | 1 A  |
| • at 600 V rated value   | 0.15 A   |
| <b>operational current at DC-13</b>                                |  |
| • at 24 V rated value  | 10 A   |
| • at 48 V rated value  | 2 A  |
| • at 60 V rated value  | 2 A  |
| • at 110 V rated value   | 1 A  |
| • at 125 V rated value   | 0.9 A  |
| • at 220 V rated value   | 0.3 A  |
| • at 600 V rated value   | 0.1 A  |
| <b>contact reliability of auxiliary contacts</b>                   | 1 faulty switching per 100 million (17 V, 1 mA)  |
| <b>UL/CSA ratings</b>  |  |
| <b>full-load current (FLA) for 3-phase AC motor</b>                |  |
| • at 480 V rated value   | 65 A   |
| • at 600 V rated value   | 62 A   |
| <b>yielded mechanical performance [hp]</b>                         |  |
| • for single-phase AC motor  |  |
| — at 110/120 V rated value   | 5 hp   |
| — at 230 V rated value   | 15 hp  |
| • for 3-phase AC motor   |  |
| — at 200/208 V rated value   | 20 hp  |
| — at 220/230 V rated value   | 25 hp  |
| — at 460/480 V rated value   | 50 hp  |
| — at 575/600 V rated value   | 60 hp  |
| <b>contact rating of auxiliary contacts according to UL</b>        | A600 / P600  |
| <b>Short-circuit protection</b>                                    |  |
| <b>design of the fuse link</b>                                     |  |
| • for short-circuit protection of the main circuit                 |  |
| — with type of coordination 1 required                             | gG: 250 A (690 V, 100 kA), aM: 160 A (690 V, 100 kA), BS88: 200 A (415 V, 80 kA)   |
| — with type of assignment 2 required                               | gG: 160A (690V,100kA), aM: 80A (690V,100kA), BS88: 125A (415V,80kA)  |
| • for short-circuit protection of the auxiliary switch required    | gG: 10 A (500 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 |
| fastening method side-by-side mounting                             | Yes  |
| <b>fastening method</b>  | screw and snap-on mounting onto 35 mm DIN rail according to DIN EN 60715   |
| <b>height</b>  | 114 mm   |
| <b>width</b>   | 55 mm  |
| <b>depth</b>   | 130 mm   |
| <b>required spacing</b>  |  |
| • 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

|   |  |
|---|--|
| <b>type of electrical connection</b>                              |  |
| • for main current circuit  | screw-type terminals   |
| • for auxiliary and control circuit                               | spring-loaded terminals  |
| • at contactor for auxiliary contacts                             | Spring-type terminals  |
| • of magnet coil  | Spring-type terminals  |
| <b>type of connectable conductor cross-sections</b>               |  |
| • for main contacts   |  |
| — solid or stranded   | 2x (1 ... 35 mm <sup>2</sup> ), 1x (1 ... 50 mm <sup>2</sup> ) |
| — finely stranded with core end processing                        | 2x (1 ... 25 mm <sup>2</sup> ), 1x (1 ... 35 mm <sup>2</sup> ) |
| • for AWG cables for main contacts                                | 2x (18 ... 2), 1x (18 ... 1)                                   |
| <b>connectable conductor cross-section for main contacts</b>      |  |
| • finely stranded with core end processing                        | 1 ... 35 mm <sup>2</sup>                                       |
| <b>connectable conductor cross-section for auxiliary contacts</b> |  |
| • solid or stranded   | 0.5 ... 2.5 mm <sup>2</sup>                                    |
| • finely stranded with core end processing                        | 0.5 ... 1.5 mm <sup>2</sup>                                    |
| • finely stranded without core end processing                     | 0.5 ... 2.5 mm <sup>2</sup>                                    |
| <b>type of connectable conductor cross-sections</b>               |  |
| • for auxiliary contacts  |  |
| — solid or stranded   | 2x (0.5 ... 2.5 mm <sup>2</sup> )                              |
| — finely stranded with core end processing                        | 2x (0.5 ... 1.5 mm <sup>2</sup> )                              |
| — finely stranded without core end processing                     | 2x (0.5 ... 2.5 mm <sup>2</sup> )                              |
| • for AWG cables for auxiliary contacts                           | 2x (20 ... 14)   |
| <b>AWG number as coded connectable conductor cross section</b>    |  |
| • for main contacts   | 18 ... 1   |
| • for auxiliary contacts  | 20 ... 14  |

### Safety related data

|  |  |
|--|--|
| <b>product function</b>  |  |
| • mirror contact according to IEC 60947-4-1                          | Yes  |
| • positively driven operation according to IEC 60947-5-1             | No   |
| • suitable for safety function                                       | Yes  |
| suitability for use safety-related switching OFF                     | Yes  |
| <b>service life maximum</b>  | 20 a   |
| <b>test wear-related service life necessary</b>                      | Yes  |
| <b>proportion of dangerous failures</b>                              |  |
| • with low demand rate according to SN 31920                         | 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  |
| <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

### General Product Approval



[Confirmation](#)



[Miscellaneous](#)

### General Product Approval

### EMV

### Test Certificates

### Marine / Shipping

[KC](#)



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### Marine / Shipping



### other

### Railway

### Dangerous goods

### Environment

[Confirmation](#)

[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=3RT2038-3NP30>

### Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2038-3NP30>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RT2038-3NP30>

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

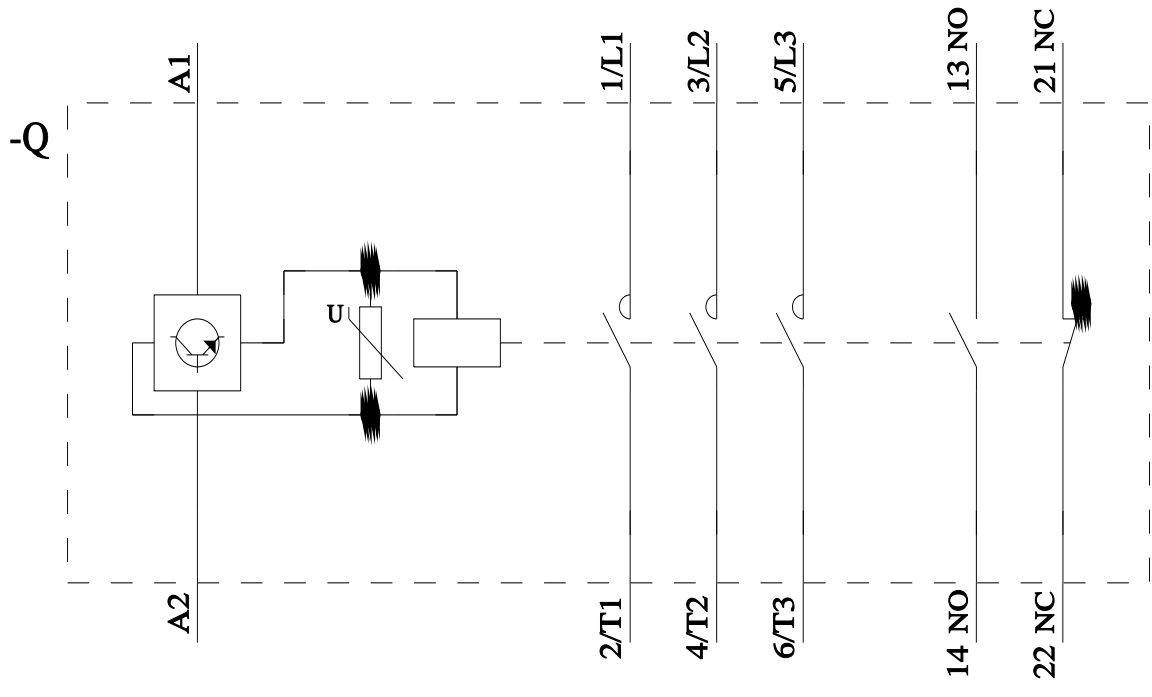
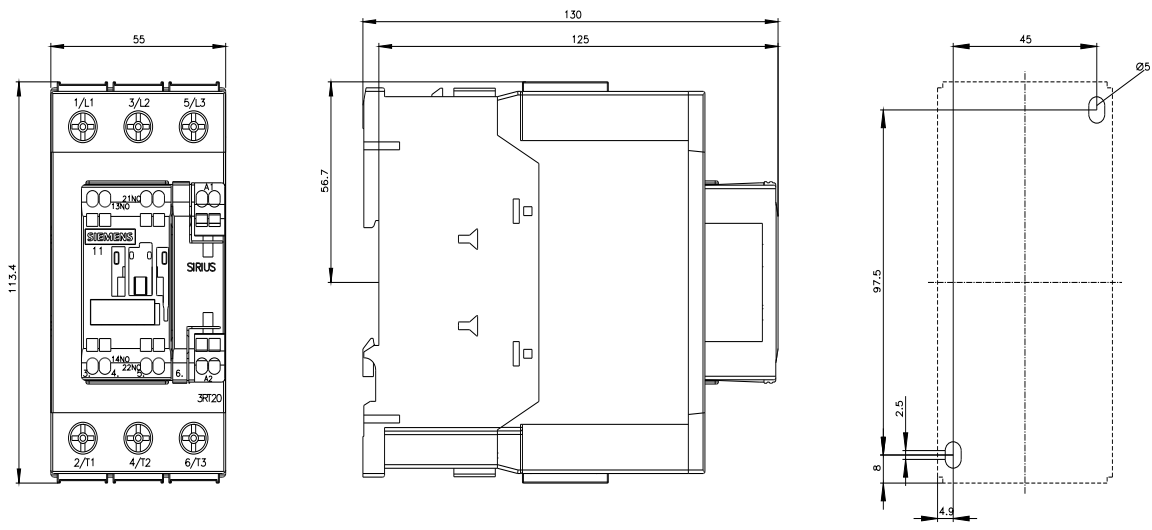
[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RT2038-3NP30&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2038-3NP30&lang=en)

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RT2038-3NP30/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2038-3NP30&objecttype=14&gridview=view1>



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