



contactor AC-1, 160 A, 400 V / 40 °C, 4-pole, 20-33 V AC/DC, 50/60 Hz, with integrated varistor, auxiliary contacts: 1 NO + 1 NC, screw terminal, size: S3

|                                                                               |                                                                                                                                                                                    |
|-------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| product brand name                                                            | SIRIUS                                                                                                                                                                             |
| product designation                                                           | Contactor                                                                                                                                                                          |
| product type designation                                                      | 3RT23                                                                                                                                                                              |
| <b>General technical data</b>                                                 |                                                                                                                                                                                    |
| size of contactor                                                             | S3                                                                                                                                                                                 |
| product extension                                                             |                                                                                                                                                                                    |
| • function module for communication                                           | No                                                                                                                                                                                 |
| • auxiliary switch                                                            | Yes                                                                                                                                                                                |
| power loss [W] for rated value of the current                                 |                                                                                                                                                                                    |
| • at AC in hot operating state                                                | 61.6 W                                                                                                                                                                             |
| • at AC in hot operating state per pole                                       | 15.4 W                                                                                                                                                                             |
| • without load current share typical                                          | 3.3 W                                                                                                                                                                              |
| type of calculation of power loss current-dependent                           | quadratic                                                                                                                                                                          |
| insulation voltage                                                            |                                                                                                                                                                                    |
| • of main circuit with degree of pollution 3 rated value                      | 690 V                                                                                                                                                                              |
| • of the auxiliary and control circuit with degree of pollution 3 rated value | 690 V                                                                                                                                                                              |
| surge voltage resistance                                                      |                                                                                                                                                                                    |
| • of main circuit rated value                                                 | 8 kV                                                                                                                                                                               |
| • of auxiliary circuit rated value                                            | 6 kV                                                                                                                                                                               |
| shock resistance at rectangular impulse                                       |                                                                                                                                                                                    |
| • at AC                                                                       | 6.7 g / 5 ms, 4.0 g / 10 ms                                                                                                                                                        |
| shock resistance with sine pulse                                              |                                                                                                                                                                                    |
| • at AC                                                                       | 10.6 g / 5 ms, 6.3 g / 10 ms                                                                                                                                                       |
| mechanical service life (operating cycles)                                    |                                                                                                                                                                                    |
| • of contactor typical                                                        | 10 000 000                                                                                                                                                                         |
| • of the contactor with added auxiliary switch block typical                  | 10 000 000                                                                                                                                                                         |
| reference code according to IEC 81346-2                                       | Q                                                                                                                                                                                  |
| Substance Prohibitance (day/month/year)                                       | 09/01/2017                                                                                                                                                                         |
| SVHC substance name                                                           | Lead CAS-No. 7439-92-1<br>Lead monoxide (lead oxide) CAS-No. 1317-36-8<br>2-methyl-1-(4-methylthiophenyl)-2-morpholinopropan-1-one CAS-No. 71868-10-5<br>Melamine CAS-No. 108-78-1 |
| Net Weight                                                                    | 2.033 kg                                                                                                                                                                           |
| <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>                                                                                                                                                                                                                                                                            |                                         |
| number of poles for main current circuit                                                                                                                                                                                                                                                       | 4                                       |
| number of NO contacts for main contacts                                                                                                                                                                                                                                                        | 4                                       |
| type of voltage for main current circuit                                                                                                                                                                                                                                                       | AC                                      |
| operational current                                                                                                                                                                                                                                                                            |                                         |
| <ul style="list-style-type: none"> <li>at AC-1 at 400 V at ambient temperature 40 °C rated value</li> </ul>                                                                                                                                                                                    | 160 A                                   |
| <ul style="list-style-type: none"> <li>at AC-1 <ul style="list-style-type: none"> <li>up to 690 V at ambient temperature 40 °C rated value</li> </ul> </li> </ul>                                                                                                                              | 160 A                                   |
| <ul style="list-style-type: none"> <li>up to 690 V at ambient temperature 60 °C rated value</li> </ul>                                                                                                                                                                                         | 140 A                                   |
| minimum cross-section in main circuit at maximum AC-1 rated value                                                                                                                                                                                                                              | 70 mm <sup>2</sup>                      |
| operational current                                                                                                                                                                                                                                                                            |                                         |
| <ul style="list-style-type: none"> <li>at 1 current path at DC-1 <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> </ul> </li> </ul>                      | 80 A<br>60 A<br>9 A<br>2 A<br>0.6 A     |
| <ul style="list-style-type: none"> <li>with 2 current paths in series at DC-1 <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> </ul> </li> </ul>         | 80 A<br>80 A<br>80 A<br>10 A<br>1.8 A   |
| <ul style="list-style-type: none"> <li>with 3 current paths in series at DC-1 <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> </ul> </li> </ul>         | 80 A<br>80 A<br>80 A<br>80 A<br>4.5 A   |
| <ul style="list-style-type: none"> <li>at 1 current path at DC-3 at DC-5 <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> </ul> </li> </ul>              | 20 A<br>6.5 A<br>2.5 A<br>1 A<br>0.15 A |
| <ul style="list-style-type: none"> <li>with 2 current paths in series at DC-3 at DC-5 <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> </ul> </li> </ul> | 80 A<br>80 A<br>80 A<br>7 A<br>0.42 A   |
| <ul style="list-style-type: none"> <li>with 3 current paths in series at DC-3 at DC-5 <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> </ul> </li> </ul> | 80 A<br>80 A<br>80 A<br>35 A<br>0.8 A   |
| no-load switching frequency                                                                                                                                                                                                                                                                    |                                         |
| <ul style="list-style-type: none"> <li>at AC</li> <li>at DC</li> </ul>                                                                                                                                                                                                                         | 1 000 1/h<br>1 000 1/h                  |
| operating frequency                                                                                                                                                                                                                                                                            |                                         |
| <ul style="list-style-type: none"> <li>at AC-1 maximum</li> </ul>                                                                                                                                                                                                                              | 650 1/h                                 |
| <b>Control circuit/ Control</b>                                                                                                                                                                                                                                                                |                                         |

|                                                                                       |                  |
|---------------------------------------------------------------------------------------|------------------|
| <b>type of voltage</b>                                                                | AC/DC            |
| <b>type of voltage of the control supply voltage</b>                                  | AC/DC            |
| <b>control supply voltage at AC</b>                                                   |                  |
| • at 50 Hz rated value                                                                | 20 ... 33 V      |
| • at 60 Hz rated value                                                                | 20 ... 33 V      |
| <b>control supply voltage at DC rated value</b>                                       | 20 ... 33 V      |
| <b>operating range factor control supply voltage rated value of magnet coil at DC</b> |                  |
| • initial value                                                                       | 0.8              |
| • full-scale value                                                                    | 1.1              |
| <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                                                                            | 0.8 ... 1.1      |
| <b>design of the surge suppressor</b>                                                 | with varistor    |
| <b>inrush current peak</b>                                                            | 6.5 A            |
| <b>duration of inrush current peak</b>                                                | 50 µs            |
| <b>pickup current mean value</b>                                                      | 3.2 A            |
| <b>pickup current peak</b>                                                            | 6.5 A            |
| <b>duration of pickup current</b>                                                     | 150 ms           |
| <b>holding current mean value</b>                                                     | 75 mA            |
| <b>apparent pick-up power of magnet coil at AC</b>                                    |                  |
| • at 50 Hz                                                                            | 151 V·A          |
| • at 60 Hz                                                                            | 151 V·A          |
| <b>apparent holding power of magnet coil at AC</b>                                    |                  |
| • at 50 Hz                                                                            | 3.5 V·A          |
| • at 60 Hz                                                                            | 3.5 V·A          |
| <b>inductive power factor with the holding power of the coil</b>                      |                  |
| • at 50 Hz                                                                            | 0.95             |
| • at 60 Hz                                                                            | 0.95             |
| <b>closing power of magnet coil at DC</b>                                             | 76 W             |
| <b>holding power of magnet coil at DC</b>                                             | 2.7 W            |
| <b>closing delay</b>                                                                  |                  |
| • at AC                                                                               | 50 ... 70 ms     |
| • at DC                                                                               | 50 ... 70 ms     |
| <b>opening delay</b>                                                                  |                  |
| • at AC                                                                               | 38 ... 57 ms     |
| • at DC                                                                               | 38 ... 57 ms     |
| <b>arcing time</b>                                                                    | 10 ... 20 ms     |
| <b>control version of the switch operating mechanism</b>                              | Standard A1 - A2 |
| <b>Auxiliary circuit</b>                                                              |                  |
| <b>number of NC contacts for auxiliary contacts</b>                                   | 1                |
| • attachable                                                                          | 2                |
| • instantaneous contact                                                               | 1                |
| <b>number of NO contacts for auxiliary contacts</b>                                   | 1                |
| • attachable                                                                          | 2                |
| • instantaneous contact                                                               | 1                |
| <b>operational current at AC-12 maximum</b>                                           | 10 A             |
| <b>operational current at AC-15</b>                                                   |                  |
| • at 230 V rated value                                                                | 6 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              |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                             |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• at 220 V rated value</li> <li>• at 600 V rated value</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                      | 1 A<br>0.15 A                                                                                                                                                                                                               |
| <b>operational current at DC-13</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                             |
| <ul style="list-style-type: none"> <li>• at 24 V rated value</li> <li>• at 48 V rated value</li> <li>• at 110 V rated value</li> <li>• at 125 V rated value</li> <li>• at 220 V rated value</li> <li>• at 600 V rated value</li> </ul>                                                                                                                                                                                                                                                                                        | 10 A<br>2 A<br>1 A<br>0.9 A<br>0.3 A<br>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>contact rating of auxiliary contacts according to UL</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | A600 / P600                                                                                                                                                                                                                 |
| <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                                                                                                                                                                                              |
| <b>design of the fuse link</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                             |
| <ul style="list-style-type: none"> <li>• for short-circuit protection of the main circuit <ul style="list-style-type: none"> <li>— with type of coordination 1 required</li> <li>— with type of coordination 2 required</li> </ul> </li> <li>• for short-circuit protection of the auxiliary switch required</li> </ul>                                                                                                                                                                                                       | gG: 250 A (690 V, 100 kA)<br>gR: 250 A (690 V, 100 kA)<br>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                                                                                        |
| 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>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 140 mm                                                                                                                                                                                                                      |
| <b>width</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 96 mm                                                                                                                                                                                                                       |
| <b>depth</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 152 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> | 20 mm<br>10 mm<br>10 mm<br>0 mm<br><br>20 mm<br>10 mm<br>10 mm<br>10 mm<br><br>20 mm<br>10 mm<br>10 mm<br>10 mm                                                                                                             |
| <b>Connections/ Terminals</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                             |
| <b>type of electrical connection</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                             |
| <ul style="list-style-type: none"> <li>• for main current circuit</li> <li>• for auxiliary and control circuit</li> <li>• at contactor for auxiliary contacts</li> <li>• of magnet coil</li> </ul>                                                                                                                                                                                                                                                                                                                            | screw-type terminals<br>screw-type terminals<br>Screw-type terminals<br>screw terminal                                                                                                                                      |
| <b>type of connectable conductor cross-sections</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                             |
| <ul style="list-style-type: none"> <li>• for main contacts <ul style="list-style-type: none"> <li>— stranded</li> <li>— solid or stranded</li> <li>— finely stranded with core end processing</li> </ul> </li> <li>• for AWG cables for main contacts</li> </ul>                                                                                                                                                                                                                                                              | 2x (6 ... 16 mm²), 2x (10 ... 50 mm²), 1x (10 ... 70 mm²)<br>2x (2.5 ... 16 mm²), 2x (6 ... 16 mm²), 2x (10 ... 50 mm²), 1x (10 ... 70 mm²)<br>2x (2.5 ... 35 mm²), 1x (2.5 ... 50 mm²)<br>2x (10 ... 1/0), 1x (10 ... 2/0) |
| <b>connectable conductor cross-section for main contacts</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                             |
| <ul style="list-style-type: none"> <li>• solid</li> <li>• solid or stranded</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                        | 2.5 ... 16 mm²<br>4 ... 70 mm²                                                                                                                                                                                              |

|                                                                                           |                                                                       |
|-------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|
| • stranded                                                                                | 6 ... 70 mm <sup>2</sup>                                              |
| • finely stranded with core end processing                                                | 2.5 ... 50 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 ... 2.5 mm <sup>2</sup>                                           |
| <b>type of connectable conductor cross-sections</b>                                       |                                                                       |
| • for auxiliary contacts                                                                  |                                                                       |
| — solid                                                                                   | 2x (0.5 ... 1.5 mm <sup>2</sup> ), 2x (0.75 ... 2.5 mm <sup>2</sup> ) |
| — solid or stranded                                                                       | 2x (0.5 ... 1.5 mm <sup>2</sup> ), 2x (0.75 ... 2.5 mm <sup>2</sup> ) |
| — finely stranded with core end processing                                                | 2x (0.5 ... 1.5 mm <sup>2</sup> ), 2x (0.75 ... 2.5 mm <sup>2</sup> ) |
| • for AWG cables for auxiliary contacts                                                   | 2x (20 ... 16), 2x (18 ... 14)                                        |
| <b>AWG number extended as coded connectable conductor cross section for main contacts</b> | 10 ... 2/0                                                            |
| <b>AWG number as coded connectable conductor cross section for auxiliary contacts</b>     | 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  |

#### 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 |

#### Communication/ Protocol

|                                           |    |
|-------------------------------------------|----|
| <b>product function bus communication</b> | No |
|-------------------------------------------|----|

#### Approvals Certificates

|                                                                        |         |
|------------------------------------------------------------------------|---------|
| <b>Environmental Product Declaration</b>                               |         |
| • global warming potential [CO <sub>2</sub> eq] / during manufacturing | 11.3 kg |
| • global warming potential [CO <sub>2</sub> eq] / during operation     | 329 kg  |
| • global warming potential [CO <sub>2</sub> eq] / after end of life    | -1.8 kg |
| • global warming potential [CO <sub>2</sub> eq] / total                | 339 kg  |

#### Environment General Product Approval

[Environmental Confirmations](#)



|                                 |            |                          |                             |
|---------------------------------|------------|--------------------------|-----------------------------|
| <b>General Product Approval</b> | <b>EMV</b> | <b>Test Certificates</b> | <b>Maritime application</b> |
|---------------------------------|------------|--------------------------|-----------------------------|



[Special Test Certificate](#)

[Type Test Certificates/Test Report](#)



|                             |              |                |
|-----------------------------|--------------|----------------|
| <b>Maritime application</b> | <b>other</b> | <b>Railway</b> |
|-----------------------------|--------------|----------------|



[Confirmation](#)



[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=3RT2348-1NB30>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RT2348-1NB30>

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

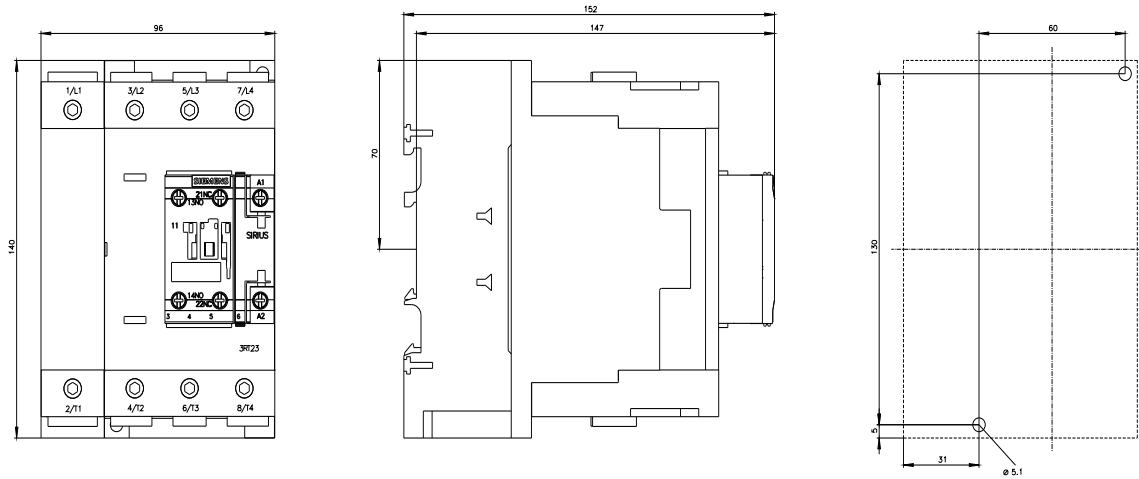
[https://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RT2348-1NB30&lang=en](https://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2348-1NB30&lang=en)

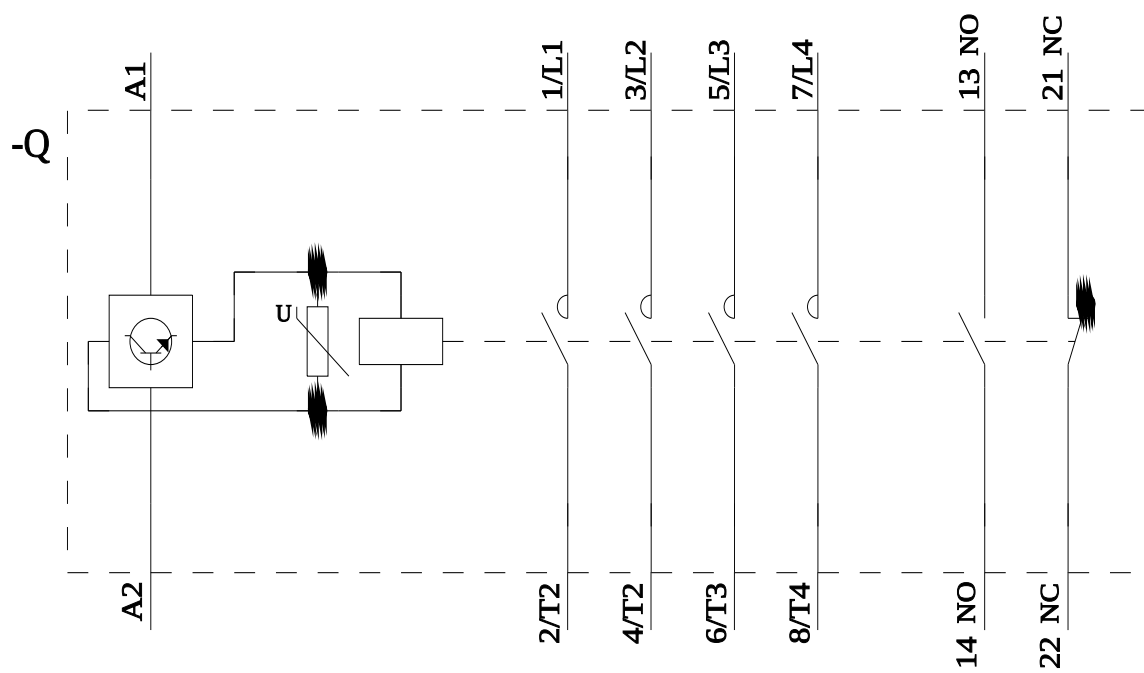
Cax online generator

<https://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2348-1NB30>

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