

Contactor relay, AC-3 65 A, 30 kW / 400 V 2 NO + 2 NC, 24 V DC with varistor 3-pole, size S2 screw terminals Perm. mounted auxiliary switch suitable for 2 A PLC outputs



|                                                     |                           |
|-----------------------------------------------------|---------------------------|
| Product brand name                                  | SIRIUS                    |
| Product designation                                 | Coupling relay            |
| Product type designation                            | 3RT2                      |
| General technical data                              |                           |
| Size of contactor                                   | S2                        |
| Product extension                                   |                           |
| • function module for communication                 | No                        |
| • Auxiliary switch                                  | No                        |
| Surge voltage resistance                            |                           |
| • of main circuit rated value                       | 6 kV                      |
| • of auxiliary circuit rated value                  | 6 kV                      |
| maximum permissible voltage for safe isolation      |                           |
| • between coil and main contacts acc. to EN 60947-1 | 400 V                     |
| Protection class IP                                 |                           |
| • on the front                                      | IP20                      |
| • of the terminal                                   | IP00                      |
| Shock resistance at rectangular impulse             |                           |
| • at DC                                             | 6.1g / 5 ms, 3.7g / 10 ms |

|                                                                                         |                           |
|-----------------------------------------------------------------------------------------|---------------------------|
| <b>Shock resistance with sine pulse</b>                                                 |                           |
| • at DC                                                                                 | 9.6g / 5 ms, 5.8g / 10 ms |
| <b>Mechanical service life (switching cycles)</b>                                       |                           |
| • of contactor typical                                                                  | 10 000 000                |
| • of the contactor with added electronics-compatible auxiliary switch block typical     | 5 000 000                 |
| • of the contactor with added auxiliary switch block typical                            | 10 000 000                |
| <b>Reference code acc. to DIN 40719 extended according to IEC 204-2 acc. to IEC 750</b> | K                         |
| <b>Reference code acc. to DIN EN 81346-2</b>                                            | Q                         |

#### Ambient conditions

|                                                        |                |
|--------------------------------------------------------|----------------|
| <b>Installation altitude at height above sea level</b> |                |
| • maximum                                              | 2 000 m        |
| <b>Ambient temperature</b>                             |                |
| • during operation                                     | -25 ... +60 °C |
| • during storage                                       | -55 ... +80 °C |

#### Main circuit

|                                                                      |        |
|----------------------------------------------------------------------|--------|
| <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  |
| <b>Operating current</b>                                             |        |
| • at AC-1 at 400 V                                                   |        |
| — at ambient temperature 40 °C rated value                           | 80 A   |
| • at AC-1                                                            |        |
| — up to 690 V at ambient temperature 40 °C rated value               | 80 A   |
| — up to 690 V at ambient temperature 60 °C rated value               | 70 A   |
| • at AC-2 at 400 V rated value                                       | 65 A   |
| • at AC-3                                                            |        |
| — at 400 V rated value                                               | 65 A   |
| — at 500 V rated value                                               | 65 A   |
| — at 690 V rated value                                               | 47 A   |
| • at AC-4 at 400 V rated value                                       | 55 A   |
| <b>Connectable conductor cross-section in main circuit at AC-1</b>   |        |
| • at 60 °C minimum permissible                                       | 25 mm² |
| • at 40 °C minimum permissible                                       | 25 mm² |
| <b>Operating current for approx. 200000 operating cycles at AC-4</b> |        |

|                                                                                                                                                                                                                                                                                                             |                                         |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|
| <ul style="list-style-type: none"> <li>• at 400 V rated value</li> </ul>                                                                                                                                                                                                                                    | 28 A                                    |
| <ul style="list-style-type: none"> <li>• at 690 V rated value</li> </ul>                                                                                                                                                                                                                                    | 22 A                                    |
| <b>Operating current</b>                                                                                                                                                                                                                                                                                    |                                         |
| <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 110 V rated value</li> <li>— at 220 V rated value</li> <li>— at 440 V rated value</li> <li>— at 600 V rated value</li> </ul> </li> </ul>                      | 55 A<br>4.5 A<br>1 A<br>0.4 A<br>0.25 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 110 V rated value</li> <li>— at 220 V rated value</li> <li>— at 440 V rated value</li> <li>— at 600 V rated value</li> </ul> </li> </ul>         | 55 A<br>45 A<br>5 A<br>1 A<br>0.8 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 110 V rated value</li> <li>— at 220 V rated value</li> <li>— at 440 V rated value</li> <li>— at 600 V rated value</li> </ul> </li> </ul>         | 55 A<br>55 A<br>45 A<br>2.9 A<br>1.4 A  |
| <b>Operating current</b>                                                                                                                                                                                                                                                                                    |                                         |
| <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 110 V rated value</li> <li>— at 220 V rated value</li> <li>— at 440 V rated value</li> <li>— at 600 V rated value</li> </ul> </li> </ul>              | 35 A<br>2.5 A<br>1 A<br>0.1 A<br>0.06 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 110 V rated value</li> <li>— at 220 V rated value</li> <li>— at 440 V rated value</li> <li>— at 600 V rated value</li> </ul> </li> </ul> | 55 A<br>25 A<br>5 A<br>0.27 A<br>0.16 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 110 V rated value</li> <li>— at 220 V rated value</li> <li>— at 440 V rated value</li> <li>— at 600 V rated value</li> </ul> </li> </ul> | 55 A<br>55 A<br>25 A<br>0.6 A<br>0.35 A |
| <b>Operating power</b>                                                                                                                                                                                                                                                                                      |                                         |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                   |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• at AC-1 <ul style="list-style-type: none"> <li>— at 230 V rated value</li> <li>— at 230 V at 60 °C rated value</li> <li>— at 400 V rated value</li> <li>— at 400 V at 60 °C rated value</li> <li>— at 690 V rated value</li> <li>— at 690 V at 60 °C rated value</li> </ul> </li> <li>• at AC-2 at 400 V rated value</li> <li>• at AC-3 <ul style="list-style-type: none"> <li>— at 230 V rated value</li> <li>— at 400 V rated value</li> <li>— at 500 V rated value</li> <li>— at 690 V rated value</li> </ul> </li> </ul> | 30 kW<br>26 kW<br>53 kW<br>46 kW<br>91 kW<br>79 kW<br>30 kW<br>18.5 kW<br>30 kW<br>37 kW<br>37 kW |
| <b>Operating power for approx. 200000 operating cycles at AC-4</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                   |
| <ul style="list-style-type: none"> <li>• at 400 V rated value</li> <li>• at 690 V rated value</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 14.7 kW<br>20 kW                                                                                  |
| <b>Thermal short-time current limited to 10 s</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 520 A                                                                                             |
| <b>Power loss [W] at AC-3 at 400 V for rated value of the operating current per conductor</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 3.8 W                                                                                             |
| <b>No-load switching frequency</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                   |
| <ul style="list-style-type: none"> <li>• at DC</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 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-4 maximum</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                  | 800 1/h<br>400 1/h<br>700 1/h<br>200 1/h                                                          |
| <b>Control circuit/ Control</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                   |
| <b>Type of voltage of the control supply voltage</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | DC                                                                                                |
| <b>Control supply voltage at DC</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                   |
| <ul style="list-style-type: none"> <li>• rated value</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 24 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>1.2                                                                                        |
| <b>Design of the surge suppressor</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | with varistor                                                                                     |
| <b>Inrush current peak</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                   |
| <ul style="list-style-type: none"> <li>• at 24 V</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 2 A                                                                                               |
| <b>Duration of inrush current peak</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                   |
| <ul style="list-style-type: none"> <li>• at 24 V</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 15 µs                                                                                             |
| <b>Closing power of magnet coil at DC</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 21.5 W                                                                                            |
| <b>Holding power of magnet coil at DC</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 1 W                                                                                               |

|                      |              |
|----------------------|--------------|
| <b>Closing delay</b> |              |
| • at DC              | 45 ... 60 ms |
| <b>Opening delay</b> |              |
| • at DC              | 35 ... 55 ms |
| <b>Arcing time</b>   | 10 ... 20 ms |

#### Auxiliary circuit

|                                                     |                                                 |
|-----------------------------------------------------|-------------------------------------------------|
| <b>Number of NC contacts for auxiliary contacts</b> |                                                 |
| • instantaneous contact                             | 2                                               |
| <b>Number of NO contacts for auxiliary contacts</b> |                                                 |
| • instantaneous contact                             | 2                                               |
| Operating current at AC-12 maximum                  | 10 A                                            |
| <b>Operating 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>Operating 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>Operating current at DC-13</b>                   |                                                 |
| • at 24 V rated value                               | 6 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) |

#### UL/CSA ratings

|                                                         |       |
|---------------------------------------------------------|-------|
| <b>Full-load current (FLA) for three-phase AC motor</b> |       |
| • at 480 V rated value                                  | 65 A  |
| • at 600 V rated value                                  | 52 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                                  | 10 hp |

|                                                                                                                                                                                                                                                                        |                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|
| <ul style="list-style-type: none"> <li>• for three-phase AC motor <ul style="list-style-type: none"> <li>— at 200/208 V rated value</li> <li>— at 220/230 V rated value</li> <li>— at 460/480 V rated value</li> <li>— at 575/600 V rated value</li> </ul> </li> </ul> | 20 hp<br>20 hp<br>50 hp<br>50 hp |
| <b>Contact rating of auxiliary contacts according to UL</b>                                                                                                                                                                                                            | A600 / Q600                      |

## Short-circuit protection

|                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                   |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <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 assignment 2 required</li> </ul> </li> <li>• for short-circuit protection of the auxiliary switch required</li> </ul> | gG: 250 A (690 V, 100 kA), aM: 160 A (690 V, 100 kA), BS88: 200 A (415 V, 80 kA)<br>gG: 125A (690V,100kA), aM: 63A (690V,100kA), BS88: 100A (415V,80kA)<br>gG: 10 A (500 V, 1 kA) |

## Installation/ mounting/ dimensions

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                      |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| <b>Mounting position</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | +/-180° rotation possible on vertical mounting surface; can be tilted forward and backward by +/- 22.5° on vertical mounting surface |
| <b>Mounting type</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | screw and snap-on mounting onto 35 mm standard mounting rail according to DIN EN 60715                                               |
| <ul style="list-style-type: none"> <li>• Side-by-side mounting</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Yes                                                                                                                                  |
| <b>Height</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 114 mm                                                                                                                               |
| <b>Width</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 55 mm                                                                                                                                |
| <b>Depth</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 174 mm                                                                                                                               |
| <b>Required spacing</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                      |
| <ul style="list-style-type: none"> <li>• with side-by-side mounting <ul style="list-style-type: none"> <li>— forwards</li> <li>— upwards</li> <li>— downwards</li> <li>— at the side</li> </ul> </li> <li>• for grounded parts <ul style="list-style-type: none"> <li>— forwards</li> <li>— upwards</li> <li>— at the side</li> <li>— downwards</li> </ul> </li> <li>• for live parts <ul style="list-style-type: none"> <li>— forwards</li> <li>— upwards</li> <li>— downwards</li> <li>— at the side</li> </ul> </li> </ul> | 10 mm<br>10 mm<br>10 mm<br>0 mm<br><br>10 mm<br>10 mm<br>6 mm<br>10 mm<br><br>10 mm<br>10 mm<br>10 mm<br>6 mm                        |

## Connections/Terminals

|                                                                   |                                                                       |
|-------------------------------------------------------------------|-----------------------------------------------------------------------|
| <b>Type of electrical connection</b>                              |                                                                       |
| • for main current circuit                                        | screw-type terminals                                                  |
| • for auxiliary and control current circuit                       | screw-type terminals                                                  |
| <b>Type of connectable conductor cross-sections</b>               |                                                                       |
| • for main contacts                                               |                                                                       |
| — single or multi-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> )        |
| • at AWG conductors 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> |                                                                       |
| • single or multi-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                                          |                                                                       |
| — single or multi-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> ) |
| • at AWG conductors for auxiliary contacts                        | 2x (20 ... 16), 2x (18 ... 14)                                        |
| <b>AWG number as coded connectable conductor cross section</b>    |                                                                       |
| • for main contacts                                               | 18 ... 1                                                              |
| • for auxiliary contacts                                          | 20 ... 14                                                             |

|                                                                           |                                                                  |
|---------------------------------------------------------------------------|------------------------------------------------------------------|
| <b>Safety related data</b>                                                |                                                                  |
| <b>B10 value</b>                                                          |                                                                  |
| • with high demand rate acc. to SN 31920                                  | 1 000 000                                                        |
| <b>Proportion of dangerous failures</b>                                   |                                                                  |
| • with low demand rate acc. to SN 31920                                   | 40 %                                                             |
| • with high demand rate acc. to SN 31920                                  | 73 %                                                             |
| <b>Failure rate [FIT]</b>                                                 |                                                                  |
| • with low demand rate acc. to SN 31920                                   | 100 FIT                                                          |
| <b>Product function</b>                                                   |                                                                  |
| • Mirror contact acc. to IEC 60947-4-1                                    | Yes                                                              |
| • positively driven operation acc. to IEC 60947-5-1                       | No                                                               |
| <b>T1 value for proof test interval or service life acc. to IEC 61508</b> | 20 y                                                             |
| <b>Protection against electrical shock</b>                                | finger-safe when touched vertically from front acc. to IEC 60529 |

## Certificates/approvals

|                          |                                       |                           |
|--------------------------|---------------------------------------|---------------------------|
| General Product Approval | Functional Safety/Safety of Machinery | Declaration of Conformity |
|--------------------------|---------------------------------------|---------------------------|



CCC



CSA



UL



[Type Examination Certificate](#)



EG-Konf.

|                           |                   |                   |
|---------------------------|-------------------|-------------------|
| Declaration of Conformity | Test Certificates | Marine / Shipping |
|---------------------------|-------------------|-------------------|

[Miscellaneous](#)

[Special Test Certificate](#)

[Type Test Certificates/Test Report](#)



ABS



BUREAU VERITAS



LRS

|                   |       |
|-------------------|-------|
| Marine / Shipping | other |
|-------------------|-------|



PRS



RINA



RMRS



DNVGL.COM/AF

[Confirmation](#)

## Further information

### Information- and Downloadcenter (Catalogs, Brochures,...)

<http://www.siemens.com/industrial-controls/catalogs>

### Industry Mall (Online ordering system)

<https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RT2037-1KB44-3MA0>

### Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2037-1KB44-3MA0>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RT2037-1KB44-3MA0>

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

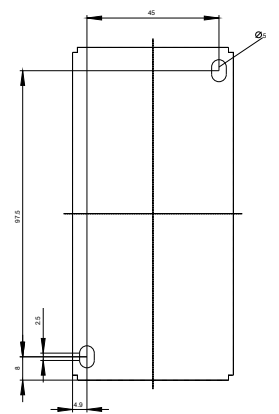
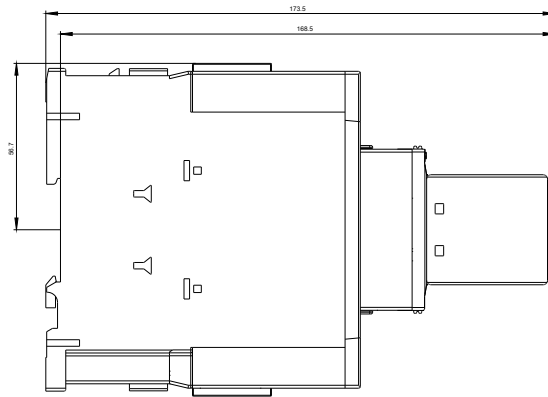
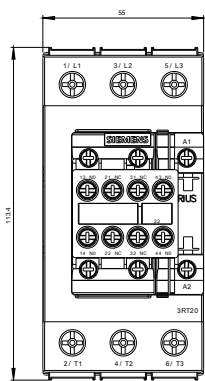
[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RT2037-1KB44-3MA0&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2037-1KB44-3MA0&lang=en)

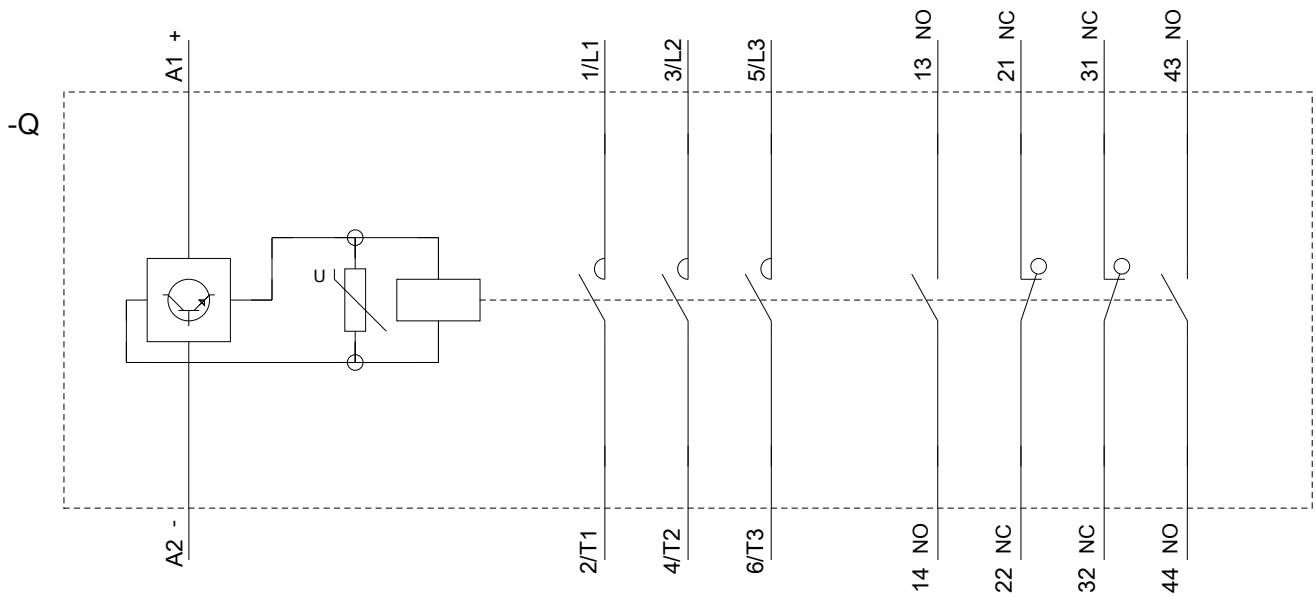
### Characteristic: Tripping characteristics, I<sub>t</sub>, Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3RT2037-1KB44-3MA0/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2037-1KB44-3MA0&objecttype=14&gridview=view1>





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