

Contactor, AC-1, 140 A/690 V/40 °C, S3, 3-pole, 480 V AC/60 Hz, 2NO+2NC, ring cable lug connection/ screw terminal



Figure similar

|                                                               |           |
|---------------------------------------------------------------|-----------|
| product brand name                                            | SIRIUS    |
| product designation                                           | Contactor |
| product type designation                                      | 3RT24     |
| General technical data                                        |           |
| size of contactor                                             | S3        |
| product extension                                             |           |
| • function module for communication                           | No        |
| • auxiliary switch                                            | Yes       |
| insulation voltage                                            |           |
| • of main circuit with degree of pollution 3 rated value      | 1 000 V   |
| • of auxiliary 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      |
| protection class IP                                           |           |

|                                                                                       |                                                                          |
|---------------------------------------------------------------------------------------|--------------------------------------------------------------------------|
| • on the front                                                                        | IP20; Finger-safe, for vertical contact from the front acc. to IEC 60529 |
| • of the terminal                                                                     | IP00                                                                     |
| <b>shock resistance at rectangular impulse</b>                                        |                                                                          |
| • at AC                                                                               | 6.7 g / 5 ms, 4.0 g / 10 ms                                              |
| <b>shock resistance with sine pulse</b>                                               |                                                                          |
| • at AC                                                                               | 10.6 g / 5 ms, 6.3 g / 10 ms                                             |
| <b>mechanical service life (switching cycles)</b>                                     |                                                                          |
| • of contactor typical                                                                | 10 000 000                                                               |
| • of the contactor with added electronically optimized auxiliary switch block typical | 5 000 000                                                                |
| • of the contactor with added auxiliary switch block typical                          | 10 000 000                                                               |
| <b>reference code acc. to IEC 81346-2</b>                                             | Q                                                                        |

|                                                           |                |
|-----------------------------------------------------------|----------------|
| <b>Ambient conditions</b>                                 |                |
| • installation altitude at height above sea level maximum | 2 000 m        |
| <b>ambient temperature</b>                                |                |
| • during operation                                        | -25 ... +60 °C |
| • during storage                                          | -55 ... +80 °C |
| relative humidity during operation                        | 0 ... 95 %     |

|                                                        |           |
|--------------------------------------------------------|-----------|
| <b>Main circuit</b>                                    |           |
| <b>number of poles for main current circuit</b>        | 3         |
| <b>number of NO contacts for main contacts</b>         | 3         |
| <b>type of voltage for main current circuit</b>        | AC        |
| <b>operational current</b>                             |           |
| • at AC-1                                              |           |
| — up to 690 V at ambient temperature 40 °C rated value | 140 A     |
| — up to 690 V at ambient temperature 55 °C rated value | 130 A     |
| — up to 690 V at ambient temperature 60 °C rated value | 130 A     |
| • at AC-3 at 400 V rated value                         | 44 A      |
| <b>minimum cross-section in main circuit</b>           |           |
| • at maximum AC-1 rated value                          | 50 mm²    |
| <b>no-load switching frequency</b>                     |           |
| • at AC                                                | 5 000 1/h |
| <b>operating frequency</b>                             |           |
| • at AC-1 maximum                                      | 650 1/h   |

|                                 |    |
|---------------------------------|----|
| <b>Control circuit/ Control</b> |    |
| <b>type of voltage</b>          | AC |

|                                                                                                     |                  |
|-----------------------------------------------------------------------------------------------------|------------------|
| <b>type of voltage of the control supply voltage</b>                                                | AC               |
| <b>control supply voltage at AC</b><br>• at 60 Hz rated value                                       | 480 V            |
| <b>operating range factor control supply voltage rated value of magnet coil at AC</b><br>• at 60 Hz | 0.85 ... 1.1     |
| <b>apparent pick-up power of magnet coil at AC</b><br>• at 60 Hz                                    | 322 V·A          |
| <b>inductive power factor with closing power of the coil</b><br>• at 60 Hz                          | 0.55             |
| <b>apparent holding power of magnet coil at AC</b><br>• at 60 Hz                                    | 21 V·A           |
| <b>inductive power factor with the holding power of the coil</b><br>• at 60 Hz                      | 0.4              |
| <b>closing delay</b><br>• at AC                                                                     | 13 ... 50 ms     |
| <b>opening delay</b><br>• at AC                                                                     | 10 ... 21 ms     |
| <b>arcing time</b>                                                                                  | 10 ... 20 ms     |
| <b>control version of the switch operating mechanism</b>                                            | Standard A1 - A2 |

#### Auxiliary circuit

|                                                                                                                                                                                                                        |                                                     |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|
| <b>number of NC contacts for auxiliary contacts</b><br>• instantaneous contact                                                                                                                                         | 2<br>2                                              |
| <b>number of NO contacts for auxiliary contacts</b><br>• instantaneous contact                                                                                                                                         | 2<br>2                                              |
| <b>operational current at AC-12 maximum</b>                                                                                                                                                                            | 10 A                                                |
| <b>operational current at AC-15</b><br>• at 230 V rated value<br>• at 400 V rated value<br>• at 500 V rated value<br>• at 690 V rated value                                                                            | 6 A<br>3 A<br>2 A<br>1 A                            |
| <b>operational current at DC-13</b><br>• at 24 V rated value<br>• at 48 V rated value<br>• at 60 V rated value<br>• at 110 V rated value<br>• at 125 V rated value<br>• at 220 V rated value<br>• at 600 V rated value | 6 A<br>2 A<br>2 A<br>1 A<br>0.9 A<br>0.3 A<br>0.1 A |
| <b>design of the miniature circuit breaker</b>                                                                                                                                                                         |                                                     |

|                                                                 |                                                 |
|-----------------------------------------------------------------|-------------------------------------------------|
| • for short-circuit protection of the auxiliary switch required | gG: 10 A (230 V, 400 A)                         |
| <b>contact reliability of auxiliary contacts</b>                | 1 faulty switching per 100 million (17 V, 1 mA) |

### Short-circuit protection

|                                                                                                                                                                                                                                                                                                                       |                                                                                  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|
| <b>product function short circuit protection</b>                                                                                                                                                                                                                                                                      | No                                                                               |
| <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)<br>gR: 250 A (690 V, 100 kA)<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>fastening method</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | screw and snap-on mounting onto 35 mm standard mounting rail according to DIN EN 60715                                               |
| • side-by-side mounting                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Yes                                                                                                                                  |
| <b>height</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 140 mm                                                                                                                               |
| <b>width</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 70 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                      |

### Connections/ Terminals

|                                    |        |
|------------------------------------|--------|
| <b>width of connection bar</b>     | 11 mm  |
| <b>thickness of connection bar</b> | 2.5 mm |
| <b>diameter of holes</b>           | 6.6 mm |
| <b>number of holes</b>             | 1      |

|                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                              |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| <b>type of electrical connection</b> <ul style="list-style-type: none"> <li>• for main current circuit</li> <li>• at contactor for auxiliary contacts</li> <li>• of magnet coil</li> </ul>                                                                                                                                                      | Ring cable lug connection<br>Screw-type terminals<br>Screw-type terminals                                                                    |
| <b>connectable conductor cross-section for auxiliary contacts</b> <ul style="list-style-type: none"> <li>• solid or stranded</li> <li>• finely stranded with core end processing</li> </ul>                                                                                                                                                     | 0.5 ... 2.5 mm <sup>2</sup><br>0.5 ... 2.5 mm <sup>2</sup>                                                                                   |
| <ul style="list-style-type: none"> <li>• type of connectable conductor cross-sections for auxiliary contacts <ul style="list-style-type: none"> <li>— solid or stranded</li> <li>— finely stranded with core end processing</li> </ul> </li> <li>• type of connectable conductor cross-sections at AWG cables for auxiliary contacts</li> </ul> | 2x (0,5 ... 1,5 mm <sup>2</sup> ), 2x (0,75 ... 2,5 mm <sup>2</sup> )<br>2x (0.5 ... 1.5 mm <sup>2</sup> )<br>2x (20 ... 16), 2x (18 ... 14) |
| <b>Safety related data</b>                                                                                                                                                                                                                                                                                                                      |                                                                                                                                              |
| <b>proportion of dangerous failures</b> <ul style="list-style-type: none"> <li>• with low demand rate acc. to SN 31920</li> <li>• with high demand rate acc. to SN 31920</li> </ul>                                                                                                                                                             | 40 %<br>73 %                                                                                                                                 |
| <b>product function</b> <ul style="list-style-type: none"> <li>• mirror contact acc. to IEC 60947-4-1</li> <li>• positively driven operation acc. to IEC 60947-5-1</li> </ul>                                                                                                                                                                   | Yes<br>No                                                                                                                                    |
| <b>T1 value for proof test interval or service life acc. to IEC 61508</b>                                                                                                                                                                                                                                                                       | 20 y                                                                                                                                         |
| <b>touch protection against electrical shock</b>                                                                                                                                                                                                                                                                                                | finger-safe when touched vertically from front acc. to IEC 60529                                                                             |
| <b>Certificates/ approvals</b>                                                                                                                                                                                                                                                                                                                  |                                                                                                                                              |

| General Product Approval | EMC |
|--------------------------|-----|
|--------------------------|-----|



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

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ABS



LRS

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



PRS



RINA



RMRS



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## Further information

**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=3RT2446-6AV66>

**Cax online generator**

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2446-6AV66>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RT2446-6AV66>

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

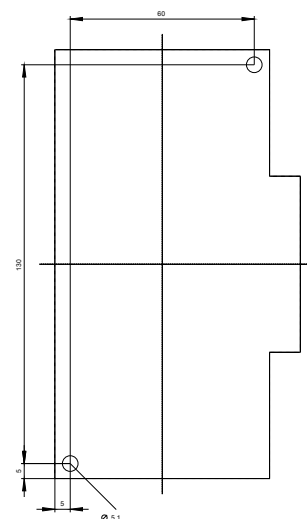
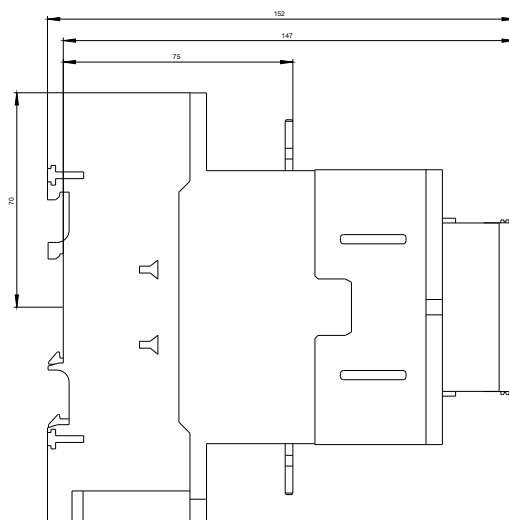
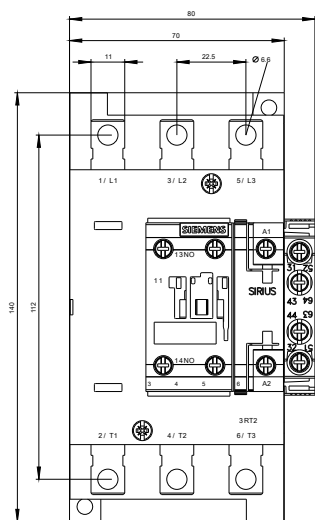
[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RT2446-6AV66&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2446-6AV66&lang=en)

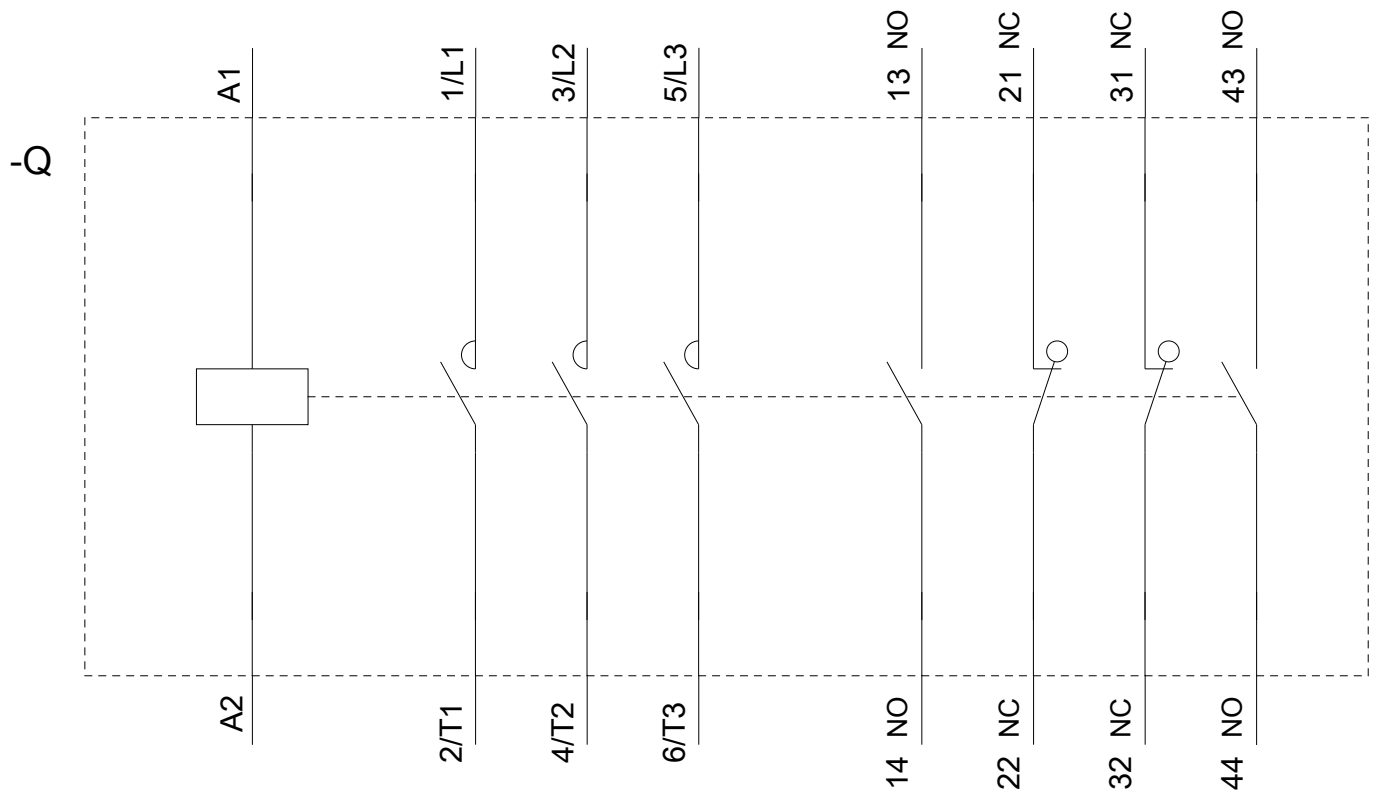
**Characteristic: Tripping characteristics, I<sup>2</sup>t, Let-through current**

<https://support.industry.siemens.com/cs/ww/en/ps/3RT2446-6AV66/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2446-6AV66&objecttype=14&gridview=view1>





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