



Traction contactor, AC-3 80 A, 37 kW / 400 V 1 NO + 1 NC, 110 V DC 0.7-1.25\*US 3-pole, 3 NO, Size S3 integrated varistor Spring-type terminal

|                                                                                                       |                               |
|-------------------------------------------------------------------------------------------------------|-------------------------------|
| <b>product brand name</b>                                                                             | SIRIUS                        |
| <b>product designation</b>                                                                            | Contacteur                    |
| <b>design of the product</b>                                                                          | With extended operating range |
| <b>product type designation</b>                                                                       | 3RT2                          |
| <b>General technical data</b>                                                                         |                               |
| <b>size of contactor</b>                                                                              | S3                            |
| <b>product extension</b>                                                                              |                               |
| • function module for communication                                                                   | No                            |
| • auxiliary switch                                                                                    | Yes                           |
| <b>power loss [W] for rated value of the current</b>                                                  |                               |
| • at AC in hot operating state                                                                        | 15.9 W                        |
| • at AC in hot operating state per pole                                                               | 5.3 W                         |
| • without load current share typical                                                                  | 1 W                           |
| <b>insulation voltage</b>                                                                             |                               |
| • 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                         |
| <b>surge voltage resistance</b>                                                                       |                               |
| • of main circuit rated value                                                                         | 8 kV                          |
| • of auxiliary circuit rated value                                                                    | 6 kV                          |
| maximum permissible voltage for safe isolation between coil and main contacts according to EN 60947-1 | 690 V                         |
| <b>shock resistance at rectangular impulse</b>                                                        |                               |
| • at DC                                                                                               | 6.7 g / 5 ms, 4.0 g / 10 ms   |
| <b>shock resistance with sine pulse</b>                                                               |                               |
| • at DC                                                                                               | 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 according to IEC 81346-2</b>                                                        | Q                             |
| <b>Substance Prohibitance (Date)</b>                                                                  | 03/01/2017                    |
| <b>Ambient conditions</b>                                                                             |                               |
| installation altitude at height above sea level maximum                                               | 2 000 m                       |
| <b>ambient temperature</b>                                                                            |                               |
| • during operation                                                                                    | -40 ... +70 °C                |
| • during storage                                                                                      | -55 ... +80 °C                |
| <b>relative humidity minimum</b>                                                                      | 10 %                          |

|                                                                         |                                                             |
|-------------------------------------------------------------------------|-------------------------------------------------------------|
| <b>relative humidity at 55 °C according to IEC 60068-2-30 maximum</b>   | 95 %                                                        |
| <b>Main circuit</b>                                                     |                                                             |
| <b>number of poles for main current circuit</b>                         | 3                                                           |
| <b>number of NO contacts for main contacts</b>                          | 3                                                           |
| <b>operating voltage</b>                                                |                                                             |
| • at AC-3 rated value maximum                                           | 1 000 V                                                     |
| • at AC-3e rated value maximum                                          | 1 000 V                                                     |
| <b>operational current</b>                                              |                                                             |
| • at AC-1 at 400 V at ambient temperature 40 °C rated value             | 125 A                                                       |
| • at AC-1                                                               |                                                             |
| — up to 690 V at ambient temperature 40 °C rated value                  | 125 A                                                       |
| — up to 690 V at ambient temperature 60 °C rated value                  | 105 A                                                       |
| • at AC-2 at 400 V rated value                                          | 80 A                                                        |
| • at AC-3                                                               |                                                             |
| — at 400 V rated value                                                  | 80 A                                                        |
| — at 500 V rated value                                                  | 80 A                                                        |
| — at 690 V rated value                                                  | 58 A                                                        |
| — at 1000 V rated value                                                 | 30 A                                                        |
| • at AC-3e                                                              |                                                             |
| — at 400 V rated value                                                  | 80 A                                                        |
| — at 500 V rated value                                                  | 80 A                                                        |
| — at 690 V rated value                                                  | 58 A                                                        |
| — at 1000 V rated value                                                 | 30 A                                                        |
| • at AC-4 at 400 V rated value                                          | 66 A                                                        |
| <b>minimum cross-section in main circuit</b>                            |                                                             |
| • at maximum AC-1 rated value                                           | 50 mm <sup>2</sup>                                          |
| • at maximum Ith rated value                                            | 50 mm <sup>2</sup>                                          |
| <b>operational current for approx. 200000 operating cycles at AC-4</b>  |                                                             |
| • at 400 V rated value                                                  | 34 A                                                        |
| • at 690 V rated value                                                  | 24 A                                                        |
| <b>operating power</b>                                                  |                                                             |
| • at AC-2 at 400 V rated value                                          | 37 kW                                                       |
| • at AC-3                                                               |                                                             |
| — at 230 V rated value                                                  | 22 kW                                                       |
| — at 400 V rated value                                                  | 37 kW                                                       |
| — at 500 V rated value                                                  | 45 kW                                                       |
| — at 690 V rated value                                                  | 55 kW                                                       |
| — at 1000 V rated value                                                 | 37 kW                                                       |
| • at AC-3e                                                              |                                                             |
| — at 230 V rated value                                                  | 22 kW                                                       |
| — at 400 V rated value                                                  | 37 kW                                                       |
| — at 500 V rated value                                                  | 45 kW                                                       |
| — at 690 V rated value                                                  | 55 kW                                                       |
| — at 1000 V rated value                                                 | 37 kW                                                       |
| <b>operating power for approx. 200000 operating cycles at AC-4</b>      |                                                             |
| • at 400 V rated value                                                  | 17.9 kW                                                     |
| • at 690 V rated value                                                  | 21.8 kW                                                     |
| <b>short-time withstand current in cold operating state up to 40 °C</b> |                                                             |
| • limited to 1 s switching at zero current maximum                      | 1 500 A; Use minimum cross-section acc. to AC-1 rated value |
| • limited to 5 s switching at zero current maximum                      | 1 186 A; Use minimum cross-section acc. to AC-1 rated value |
| • limited to 10 s switching at zero current maximum                     | 851 A; Use minimum cross-section acc. to AC-1 rated value   |
| • limited to 30 s switching at zero current maximum                     | 538 A; Use minimum cross-section acc. to AC-1 rated value   |
| • limited to 60 s switching at zero current maximum                     | 423 A; Use minimum cross-section acc. to AC-1 rated value   |
| <b>no-load switching frequency</b>                                      |                                                             |
| • at DC                                                                 | 1 000 1/h                                                   |

|                                                                                       |                  |
|---------------------------------------------------------------------------------------|------------------|
| <b>operating frequency</b>                                                            |                  |
| • at AC-2 at AC-3e maximum                                                            | 400 1/h          |
| • at AC-4 maximum                                                                     | 300 1/h          |
| <b>Ratings for railway applications</b>                                               |                  |
| <b>thermal current (I<sub>th</sub>) up to 690 V</b>                                   |                  |
| • up to 40 °C according to IEC 60077 rated value                                      | 125 A            |
| • up to 70 °C according to IEC 60077 rated value                                      | 90 A             |
| <b>Control circuit/ Control</b>                                                       |                  |
| <b>type of voltage</b>                                                                | DC               |
| <b>type of voltage of the control supply voltage</b>                                  | DC               |
| <b>control supply voltage at DC</b>                                                   |                  |
| • rated value                                                                         | 110 V            |
| <b>operating range factor control supply voltage rated value of magnet coil at DC</b> |                  |
| • initial value                                                                       | 0.7              |
| • full-scale value                                                                    | 1.25             |
| <b>design of the surge suppressor</b>                                                 | with varistor    |
| <b>inrush current peak</b>                                                            | 1.5 A            |
| <b>duration of inrush current peak</b>                                                | 50 µs            |
| <b>locked-rotor current mean value</b>                                                | 1.1 A            |
| <b>locked-rotor current peak</b>                                                      | 2.7 A            |
| <b>duration of locked-rotor current</b>                                               | 150 ms           |
| <b>holding current mean value</b>                                                     | 15 mA            |
| <b>closing power of magnet coil at DC</b>                                             | 64 W             |
| <b>holding power of magnet coil at DC</b>                                             | 1 W              |
| <b>closing delay</b>                                                                  |                  |
| • at DC                                                                               | 50 ... 70 ms     |
| <b>opening delay</b>                                                                  |                  |
| • 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                |
| • instantaneous contact                                                               | 1                |
| <b>number of NO contacts for auxiliary contacts</b>                                   | 1                |
| • 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              |
| • at 220 V rated value                                                                | 1 A              |
| • at 600 V rated value                                                                | 0.15 A           |
| <b>operational current at DC-13</b>                                                   |                  |
| • at 24 V rated value                                                                 | 10 A             |
| • at 48 V rated value                                                                 | 2 A              |
| • at 60 V rated value                                                                 | 2 A              |
| • at 110 V rated value                                                                | 1 A              |
| • at 125 V rated value                                                                | 0.9 A            |
| • at 220 V rated value                                                                | 0.3 A            |
| • at 600 V rated value                                                                | 0.1 A            |
| <b>UL/CSA ratings</b>                                                                 |                  |
| <b>full-load current (FLA) for 3-phase AC motor</b>                                   |                  |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                   |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• at 480 V rated value</li> <li>• at 600 V rated value</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                              | 77 A<br>62 A                                                                                                                                                                      |
| <b>yielded mechanical performance [hp]</b> <ul style="list-style-type: none"> <li>• for single-phase AC motor <ul style="list-style-type: none"> <li>— at 110/120 V rated value</li> <li>— at 230 V rated value</li> </ul> </li> <li>• for 3-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>                                                                                      | 7.5 hp<br>15 hp<br><br>25 hp<br>30 hp<br>60 hp<br>60 hp                                                                                                                           |
| <b>contact rating of auxiliary contacts according to UL</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | A600 / P600                                                                                                                                                                       |
| <b>Short-circuit protection</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                   |
| <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), aM: 160 A (690 V, 100 kA), BS88: 200 A (415 V, 80 kA)<br>gG: 160A (690V,100kA), aM: 80A (690V,100kA), BS88: 125A (415V,80kA)<br>gG: 10 A (500 V, 1 kA) |
| <b>Installation/ mounting/ dimensions</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                   |
| <b>mounting position</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | +/-180° rotation possible on vertical mounting surface; can be tilted forward and backward by +/- 22.5° on vertical mounting surface                                              |
| <b>fastening method</b> <ul style="list-style-type: none"> <li>• side-by-side mounting</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                     | screw and snap-on mounting onto 35 mm standard mounting rail according to DIN EN 60715<br>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                                                                   |
| <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>spring-loaded terminals<br>Spring-type terminals<br>Spring-type terminals                                                                                 |
| <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>— finely stranded with core end processing</li> </ul> </li> <li>• at AWG cables for main contacts</li> </ul>                                                                                                                                                                                                                                                                                    | 2x (2.5 ... 35 mm²), 1x (2.5 ... 50 mm²)<br>2x (10 ... 1/0), 1x (10 ... 2)                                                                                                        |
| <b>type of connectable conductor cross-sections</b> <ul style="list-style-type: none"> <li>• for auxiliary contacts <ul style="list-style-type: none"> <li>— solid or stranded</li> <li>— finely stranded with core end processing</li> </ul> </li> </ul>                                                                                                                                                                                                                                                                                             | 2x (0.5 ... 2.5 mm²)<br>2x (0.5 ... 1.5 mm²)                                                                                                                                      |

|                                                                |                                   |
|----------------------------------------------------------------|-----------------------------------|
| — finely stranded without core end processing                  | 2x (0.5 ... 2.5 mm <sup>2</sup> ) |
| • at AWG cables for auxiliary contacts                         | 2x (20 ... 16)                    |
| <b>AWG number as coded connectable conductor cross section</b> |                                   |
| • for main contacts                                            | 10 ... 2                          |
| • for auxiliary contacts                                       | 20 ... 14                         |

| Safety related data                                            |                                                  |
|----------------------------------------------------------------|--------------------------------------------------|
| <b>product function</b>                                        |                                                  |
| • mirror contact according to IEC 60947-4-1                    | Yes                                              |
| • positively driven operation according to IEC 60947-5-1       | No                                               |
| B10 value with high demand rate according to SN 31920          | 1 000 000                                        |
| <b>proportion of dangerous failures</b>                        |                                                  |
| • with low demand rate according to SN 31920                   | 40 %                                             |
| • with high demand rate according to SN 31920                  | 73 %                                             |
| failure rate [FIT] with low demand rate according to SN 31920  | 100 FIT                                          |
| <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 |
|-------------------------------------------|----|

#### Certificates/ approvals

##### General Product Approval



[Confirmation](#)



[KC](#)



| EMC | Functional Safety/Safety of Machinery | Declaration of Conformity | Test Certificates | Marine / Shipping |
|-----|---------------------------------------|---------------------------|-------------------|-------------------|
|-----|---------------------------------------|---------------------------|-------------------|-------------------|



[Type Examination Certificate](#)



EG-Konf.

[UK Declaration of Conformity](#)

[Type Test Certificates/Test Report](#)



ABS

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



LRS



PRS



RINA



RMRS

[Confirmation](#)

[Vibration and Shock](#)

#### Railway

[Special Test Certificate](#)

[Type Test Certificates/Test Report](#)

#### 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=3RT2045-3XF40-0LA2>

[Cax online generator](#)

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2045-3XF40-0LA2>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RT2045-3XF40-0LA2>

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

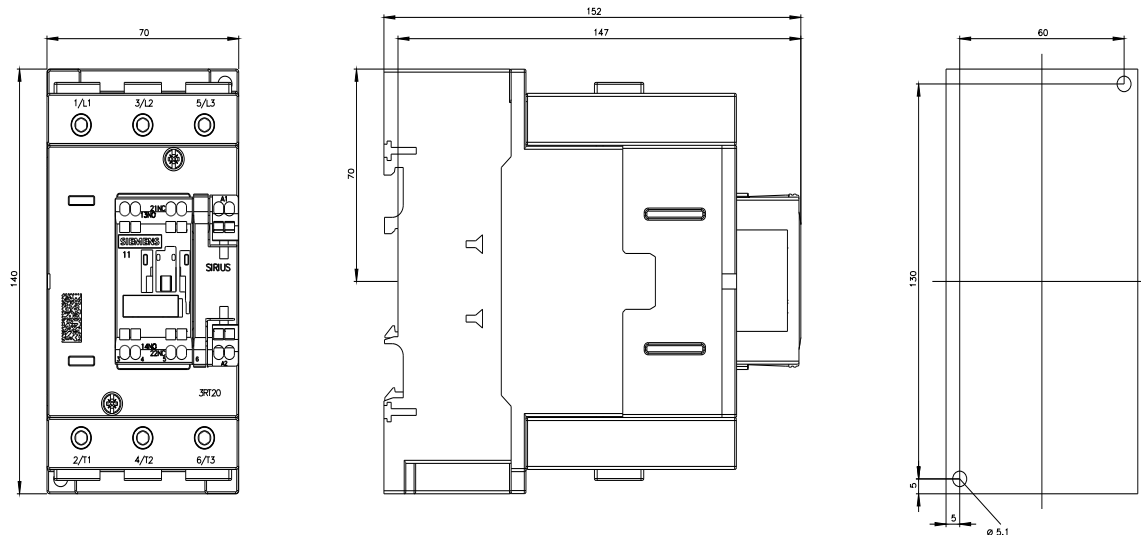
[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RT2045-3XF40-0LA2&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2045-3XF40-0LA2&lang=en)

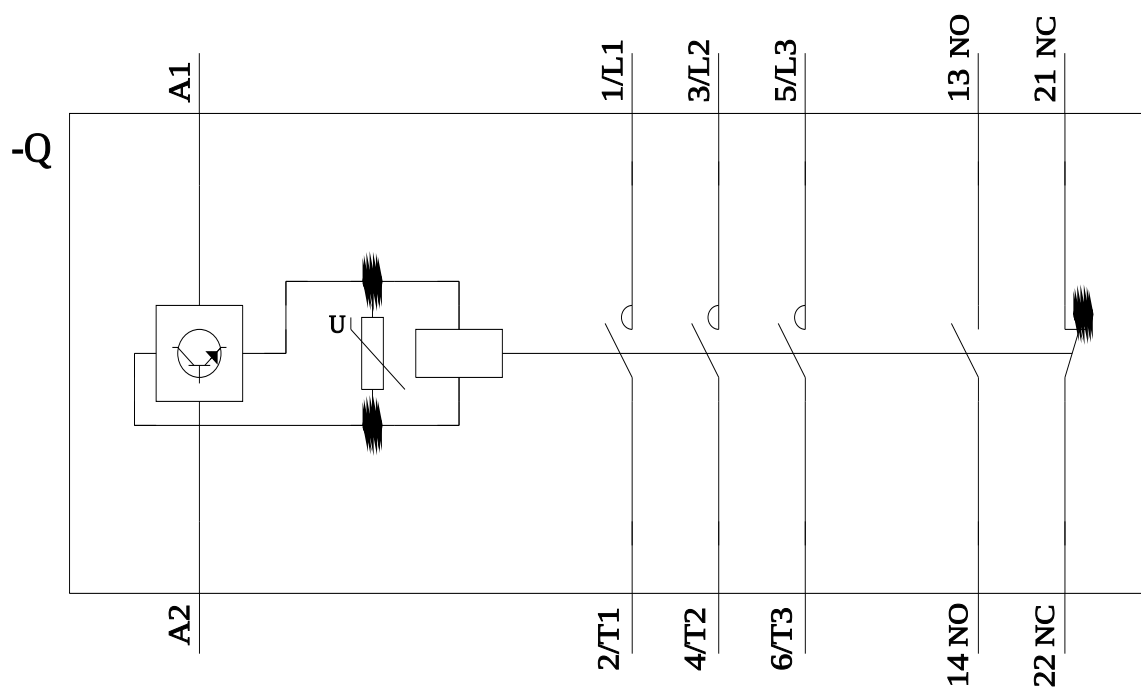
Characteristic: Tripping characteristics,  $I^2t$ , Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3RT2045-3XF40-0LA2/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2045-3XF40-0LA2&objecttype=14&gridview=view1>





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