

Traction contactor, AC-3 150 A, 75 kW / 400 V Coil 72 V DC x (0.7-1.25) PLC input 24-110 V DC Auxiliary contacts 2 NO + 2 NC 3-pole size S6 Busbar connections Coil connection: Spring-type terminal



Figure similar

|                                                               |                 |
|---------------------------------------------------------------|-----------------|
| Product brand name                                            | SIRIUS          |
| Product designation                                           | Power contactor |
| Product type designation                                      | 3RT1            |
| General technical data                                        |                 |
| Size of contactor                                             | S6              |
| 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            |
| maximum permissible voltage for safe isolation                |                 |

|                                                                                                                                                                                                                                                                                               |                                                           |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• between coil and main contacts acc. to EN 60947-1</li> </ul>                                                                                                                                                                                         | 690 V                                                     |
| <b>Protection class IP</b> <ul style="list-style-type: none"> <li>• on the front</li> <li>• of the terminal</li> </ul>                                                                                                                                                                        | IP00; IP20 on the front with cover / box terminal<br>IP00 |
| <b>Shock resistance</b> <ul style="list-style-type: none"> <li>• for railway applications acc. to DIN EN 61373</li> </ul>                                                                                                                                                                     | Category 1, Class B                                       |
| <b>Shock resistance at rectangular impulse</b> <ul style="list-style-type: none"> <li>• at DC</li> </ul>                                                                                                                                                                                      | 8,5g / 5 ms, 4,2g / 10 ms                                 |
| <b>Shock resistance with sine pulse</b> <ul style="list-style-type: none"> <li>• at DC</li> </ul>                                                                                                                                                                                             | 13,4g / 5 ms, 6,5g / 10 ms                                |
| <b>Mechanical service life (switching cycles)</b> <ul style="list-style-type: none"> <li>• of contactor typical</li> <li>• of the contactor with added electronics-compatible auxiliary switch block typical</li> <li>• of the contactor with added auxiliary switch block typical</li> </ul> | 10 000 000<br>5 000 000<br>10 000 000                     |
| <b>Reference code acc. to DIN EN 81346-2</b>                                                                                                                                                                                                                                                  | Q                                                         |

#### Ambient conditions

|                                                                                                                           |                                  |
|---------------------------------------------------------------------------------------------------------------------------|----------------------------------|
| <b>Installation altitude at height above sea level</b> <ul style="list-style-type: none"> <li>• maximum</li> </ul>        | 2 000 m                          |
| <b>Ambient temperature</b> <ul style="list-style-type: none"> <li>• during operation</li> <li>• during storage</li> </ul> | -40 ... +70 °C<br>-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>Number of NC contacts for main contacts</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 0                                                 |
| <b>Operating voltage</b> <ul style="list-style-type: none"> <li>• at AC-3 rated value maximum</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                 | 1 000 V                                           |
| <b>Operating current</b> <ul style="list-style-type: none"> <li>• at AC-1 at 400 V <ul style="list-style-type: none"> <li>— rated value</li> <li>— at ambient temperature 40 °C rated value</li> </ul> </li> <li>• at AC-1 <ul style="list-style-type: none"> <li>— up to 690 V at ambient temperature 40 °C rated value</li> <li>— up to 690 V at ambient temperature 60 °C rated value</li> <li>— up to 1000 V at ambient temperature 60 °C rated value</li> </ul> </li> <li>• at AC-2 at 400 V rated value</li> </ul> | 185 A<br>185 A<br>185 A<br>160 A<br>90 A<br>150 A |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                          |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• at AC-3 <ul style="list-style-type: none"> <li>— at 400 V rated value</li> <li>— at 500 V rated value</li> <li>— at 690 V rated value</li> <li>— at 1000 V rated value</li> </ul> </li> <li>• at AC-4 at 400 V rated value</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 150 A<br>150 A<br>150 A<br>65 A<br>132 A                                                                                                 |
| <b>Connectable conductor cross-section in main circuit at AC-1</b> <ul style="list-style-type: none"> <li>• at 60 °C minimum permissible</li> <li>• at 40 °C minimum permissible</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 70 mm <sup>2</sup><br>95 mm <sup>2</sup>                                                                                                 |
| <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> <li>• at 690 V rated value</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 68 A<br>57 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> <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> <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> | 160 A<br>18 A<br>3.4 A<br>0.8 A<br>0.5 A<br><br>160 A<br>160 A<br>20 A<br>3.2 A<br>1.6 A<br><br>160 A<br>160 A<br>160 A<br>11.5 A<br>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> <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> </ul> </li> </ul>                                                                                                                                                                                                                                                                                                                                                                            | 160 A<br>2.5 A<br>0.6 A<br>0.17 A<br>0.12 A<br><br>160 A                                                                                 |

|                                                                                               |           |
|-----------------------------------------------------------------------------------------------|-----------|
| — at 110 V rated value                                                                        | 160 A     |
| — at 220 V rated value                                                                        | 2.5 A     |
| — at 440 V rated value                                                                        | 0.65 A    |
| — at 600 V rated value                                                                        | 0.37 A    |
| • with 3 current paths in series at DC-3 at DC-5                                              |           |
| — at 24 V rated value                                                                         | 160 A     |
| — at 110 V rated value                                                                        | 160 A     |
| — at 220 V rated value                                                                        | 160 A     |
| — at 440 V rated value                                                                        | 1.4 A     |
| — at 600 V rated value                                                                        | 0.75 A    |
| <b>Operating power</b>                                                                        |           |
| • at AC-1                                                                                     |           |
| — at 230 V at 60 °C rated value                                                               | 60 kW     |
| — at 400 V rated value                                                                        | 105 kW    |
| — at 400 V at 60 °C rated value                                                               | 105 kW    |
| — at 690 V at 60 °C rated value                                                               | 181 kW    |
| — at 1000 V at 60 °C rated value                                                              | 148 kW    |
| • at AC-2 at 400 V rated value                                                                | 75 kW     |
| • at AC-3                                                                                     |           |
| — at 230 V rated value                                                                        | 50 kW     |
| — at 400 V rated value                                                                        | 75 kW     |
| — at 500 V rated value                                                                        | 90 kW     |
| — at 690 V rated value                                                                        | 132 kW    |
| — at 1000 V rated value                                                                       | 90 kW     |
| <b>Operating power for approx. 200000 operating cycles at AC-4</b>                            |           |
| • at 400 V rated value                                                                        | 38 kW     |
| • at 690 V rated value                                                                        | 55 kW     |
| <b>Thermal short-time current limited to 10 s</b>                                             |           |
|                                                                                               | 1.3 kA    |
| <b>Power loss [W] at AC-3 at 400 V for rated value of the operating current per conductor</b> |           |
|                                                                                               | 9 W       |
| <b>No-load switching frequency</b>                                                            |           |
| • at DC                                                                                       | 1 000 1/h |
| <b>Operating frequency</b>                                                                    |           |
| • at AC-1 maximum                                                                             | 800 1/h   |
| • at AC-2 maximum                                                                             | 300 1/h   |
| • at AC-3 maximum                                                                             | 750 1/h   |
| • at AC-4 maximum                                                                             | 130 1/h   |
| <b>Operating frequency</b>                                                                    |           |
| • at DC-1 maximum                                                                             | 400 1/s   |
| • at DC-3 maximum                                                                             | 350 1/s   |
| • at DC-5 maximum                                                                             | 350 1/s   |

## Ratings for railway applications

|                                                                      |                    |
|----------------------------------------------------------------------|--------------------|
| <b>Thermal current (I<sub>th</sub>) up to 690 V</b>                  |                    |
| • up to 40 °C according to IEC 60077 rated value                     | 185 A              |
| • up to 70 °C according to IEC 60077 rated value                     | 140 A              |
| <b>Connectable conductor cross-section in main circuit</b>           |                    |
| • up to 40 °C according to IEC 60077 rated value minimum permissible | 95 mm <sup>2</sup> |
| • up to 70 °C according to IEC 60077 rated value minimum permissible | 95 mm <sup>2</sup> |

## Control circuit/ Control

|                                                                                       |                                         |
|---------------------------------------------------------------------------------------|-----------------------------------------|
| <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                                                                         | 72 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>Closing power of magnet coil at DC</b>                                             | 320 W                                   |
| <b>Holding power of magnet coil at DC</b>                                             | 2.8 W                                   |
| <b>Closing delay</b>                                                                  |                                         |
| • at DC                                                                               | 35 ... 75 ms                            |
| <b>Opening delay</b>                                                                  |                                         |
| • at DC                                                                               | 80 ... 90 ms                            |
| <b>Arcing time</b>                                                                    | 10 ... 15 ms                            |
| <b>Control version of the switch operating mechanism</b>                              | PLC-IN or Standard A1 - A2 (adjustable) |

## Auxiliary circuit

|                                                     |      |
|-----------------------------------------------------|------|
| <b>Number of NC contacts for auxiliary contacts</b> | 2    |
| • instantaneous contact                             | 2    |
| <b>Number of NO contacts for auxiliary contacts</b> | 2    |
| • instantaneous contact                             | 2    |
| <b>Operating current at AC-12 maximum</b>           | 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  |
| <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                                      | 156 A       |
| • at 600 V rated value                                      | 144 A       |
| <b>Yielded mechanical performance [hp]</b>                  |             |
| • for single-phase AC motor<br>— at 230 V rated value       | 30 hp       |
| • for three-phase AC motor<br>— at 200/208 V rated value    | 50 hp       |
| — at 220/230 V rated value                                  | 60 hp       |
| — at 460/480 V rated value                                  | 125 hp      |
| — at 575/600 V rated value                                  | 150 hp      |
| <b>Contact rating of auxiliary contacts according to UL</b> | A600 / Q600 |

#### Short-circuit protection

|                                                                                              |                                                                                 |
|----------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|
| <b>Product function Short circuit protection</b>                                             | No                                                                              |
| <b>Design of the fuse link</b>                                                               |                                                                                 |
| • for short-circuit protection of the main circuit<br>— with type of coordination 1 required | gG: 355 A (690 V, 100 kA)                                                       |
| — with type of assignment 2 required                                                         | gG: 315 A (690 V, 100 kA), aM: 200 A (690 V, 50 kA), BS88: 315 A (415 V, 50 kA) |
| • for short-circuit protection of the auxiliary switch required                              | fuse gG: 10 A                                                                   |

#### Installation/ mounting/ dimensions

|                          |                                                                                                                          |
|--------------------------|--------------------------------------------------------------------------------------------------------------------------|
| <b>Mounting position</b> | with vertical mounting surface +/-90° rotatable, with vertical mounting surface +/- 22.5° tiltable to the front and back |
| <b>Mounting type</b>     | screw fixing                                                                                                             |
| • Side-by-side mounting  | Yes                                                                                                                      |
| <b>Height</b>            | 172 mm                                                                                                                   |
| <b>Width</b>             | 120 mm                                                                                                                   |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |        |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|
| <b>Depth</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 170 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 20 mm</li> <li>— upwards 10 mm</li> <li>— downwards 10 mm</li> <li>— at the side 10 mm</li> </ul> </li> <li>• for grounded parts <ul style="list-style-type: none"> <li>— forwards 20 mm</li> <li>— upwards 10 mm</li> <li>— at the side 10 mm</li> <li>— downwards 10 mm</li> </ul> </li> <li>• for live parts <ul style="list-style-type: none"> <li>— forwards 20 mm</li> <li>— upwards 10 mm</li> <li>— downwards 10 mm</li> <li>— at the side 10 mm</li> </ul> </li> </ul> |        |

#### Connections/Terminals

|                                                                                                                                                                                                                                                                                                                                          |                                                                                                                    |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|
| <b>Type of electrical connection</b>                                                                                                                                                                                                                                                                                                     |                                                                                                                    |
| <ul style="list-style-type: none"> <li>• for main current circuit</li> <li>• for auxiliary and control current circuit</li> </ul>                                                                                                                                                                                                        | screw-type terminals<br>spring-loaded 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>— single or multi-stranded</li> </ul> </li> <li>• at AWG conductors for main contacts</li> </ul>                                                                                                                                       | 2x (25 ... 120 mm²)<br>4 ... 250 kcmil                                                                             |
| <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</li> <li>— single or multi-stranded</li> <li>— finely stranded with core end processing</li> <li>— finely stranded without core end processing</li> </ul> </li> <li>• at AWG conductors for auxiliary contacts</li> </ul> | 2x (0.25 ... 2.5 mm²)<br>2x (0,25 ... 2,5 mm²)<br>2x (0.25 ... 1.5 mm²)<br>2x (0.25 ... 2.5 mm²)<br>2x (24 ... 14) |
| <b>AWG number as coded connectable conductor cross section</b>                                                                                                                                                                                                                                                                           |                                                                                                                    |
| <ul style="list-style-type: none"> <li>• for auxiliary contacts</li> </ul>                                                                                                                                                                                                                                                               | 24 ... 14                                                                                                          |

#### Safety related data

|                                                                                                                                                       |           |
|-------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| <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 |

|                                     |                                                                  |
|-------------------------------------|------------------------------------------------------------------|
| Protection against electrical shock | finger-safe when touched vertically from front acc. to IEC 60529 |
|-------------------------------------|------------------------------------------------------------------|

## Communication/ Protocol

|                                    |    |
|------------------------------------|----|
| Product function Bus communication | No |
|------------------------------------|----|

## Certificates/approvals

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



[Type Examination Certificate](#)



EG-Konf.

| Test Certificates | other | Railway |
|-------------------|-------|---------|
|-------------------|-------|---------|

[Special Test Certificate](#)

[Confirmation](#)

[Miscellaneous](#)

[Vibration and Shock](#)

[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=3RT1055-2XJ46-0LA2>

**Cax online generator**

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT1055-2XJ46-0LA2>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RT1055-2XJ46-0LA2>

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

[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RT1055-2XJ46-0LA2&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT1055-2XJ46-0LA2&lang=en)

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RT1055-2XJ46-0LA2/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT1055-2XJ46-0LA2&objecttype=14&gridview=view1>



