



Traction contactor, AC-3 225 A, 110 kW / 400 V Coil 24 V DC x (0.7-1.25)  
 PLC input 24-110 V DC Auxiliary contacts 2 NO + 2 NC 3-pole size S10  
 Busbar connections Coil connection: screw 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>   | 3RT1                          |
| <b>General technical data</b>   |                               |
| <b>size of contactor</b>  | S10                           |
| <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  | 51 W                          |
| • at AC in hot operating state per pole   | 17 W                          |
| • without load current share typical  | 3.4 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   | 500 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                         |
| shock resistance for railway applications according to EN 61373                                       | Category 1, Class B           |
| <b>shock resistance at rectangular impulse</b>  |                               |
| • at DC   | 8,5g / 5 ms, 4,2g / 10 ms     |
| <b>shock resistance with sine pulse</b>   |                               |
| • at DC   | 13,4g / 5 ms, 6,5g / 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>  | 09/06/2016                    |
| <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                |

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|---|---|
| <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>number of NC contacts for main contacts</b>                          | 0   |
| <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             | 275 A   |
| • at AC-1   |   |
| — up to 690 V at ambient temperature 40 °C rated value                  | 275 A   |
| — up to 690 V at ambient temperature 60 °C rated value                  | 250 A   |
| — up to 1000 V at ambient temperature 60 °C rated value                 | 100 A   |
| • at AC-2 at 400 V rated value  | 225 A   |
| • at AC-3   |   |
| — at 400 V rated value  | 225 A   |
| — at 500 V rated value  | 225 A   |
| — at 690 V rated value  | 225 A   |
| — at 1000 V rated value   | 68 A  |
| • at AC-3e  |   |
| — at 400 V rated value  | 225 A   |
| — at 500 V rated value  | 225 A   |
| — at 1000 V rated value   | 68 A  |
| • at AC-4 at 400 V rated value  | 195 A   |
| <b>minimum cross-section in main circuit</b>                            |   |
| • at maximum AC-1 rated value   | 150 mm <sup>2</sup>   |
| • at maximum Ith rated value  | 150 mm <sup>2</sup>   |
| <b>operational current for approx. 200000 operating cycles at AC-4</b>  |   |
| • at 400 V rated value  | 96 A  |
| • at 690 V rated value  | 85 A  |
| <b>operating power</b>  |   |
| • at AC-2 at 400 V rated value  | 110 kW  |
| • at AC-3   |   |
| — at 230 V rated value  | 73 kW   |
| — at 400 V rated value  | 110 kW  |
| — at 500 V rated value  | 160 kW  |
| — at 690 V rated value  | 200 kW  |
| — at 1000 V rated value   | 90 kW   |
| • at AC-3e  |   |
| — at 230 V rated value  | 73 kW   |
| — at 400 V rated value  | 110 kW  |
| — at 500 V rated value  | 160 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  | 54 kW   |
| • at 690 V rated value  | 82 kW   |
| <b>short-time withstand current in cold operating state up to 40 °C</b> |   |
| • limited to 1 s switching at zero current maximum                      | 4 000 A; Use minimum cross-section acc. to AC-1 rated value |
| • limited to 5 s switching at zero current maximum                      | 2 807 A; Use minimum cross-section acc. to AC-1 rated value |
| • limited to 10 s switching at zero current maximum                     | 2 082 A; Use minimum cross-section acc. to AC-1 rated value |
| • limited to 30 s switching at zero current maximum                     | 1 397 A; Use minimum cross-section acc. to AC-1 rated value |
| • limited to 60 s switching at zero current maximum                     | 1 144 A; Use minimum cross-section acc. to AC-1 rated value |

|   |   |
|---|---|
| <b>no-load switching frequency</b>  |   |
| • at DC   | 700 1/h                                 |
| <b>operating frequency</b>  |   |
| • at AC-1 maximum   | 700 1/h                                 |
| • at AC-2 maximum   | 250 1/h                                 |
| • at AC-3 maximum   | 500 1/h                                 |
| • at AC-3e maximum  | 500 1/h                                 |
| • at AC-2 at AC-3e maximum  | 250 1/h                                 |
| • at AC-4 maximum   | 130 1/h                                 |
| <b>operating frequency</b>  |   |
| • at DC-1 maximum   | 350 1/h                                 |
| • at DC-3 maximum   | 250 1/h                                 |
| • at DC-5 maximum   | 250 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                                      | 275 A                                   |
| • up to 70 °C according to IEC 60077 rated value                                      | 215 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   | 24 V                                    |
| <b>consumed current at PLC-control input according to IEC 60947-1 maximum</b>         | 2 mA                                    |
| <b>voltage at PLC-control input rated value</b>                                       | 24 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>   | 580 W                                   |
| <b>holding power of magnet coil at DC</b>   | 3.4 W                                   |
| <b>closing delay</b>  |   |
| • at DC   | 45 ... 80 ms                            |
| <b>opening delay</b>  |   |
| • at DC   | 80 ... 100 ms                           |
| <b>arcing time</b>  | 10 ... 15 ms                            |
| <b>control version of the switch operating mechanism</b>                              | PLC-IN or Standard A1 - A2 (adjustable) |
| <b>Auxiliary circuit</b>  |   |
| <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                                       |
| operational current at AC-12 maximum  | 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                                     |
| <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   | 6 A                                     |
| • at 48 V rated value   | 2 A                                     |
| • at 60 V rated value   | 2 A                                     |

|   |   |
|---|---|
| <ul style="list-style-type: none"> <li>• at 110 V rated value</li> <li>• at 125 V rated value</li> <li>• at 220 V rated value</li> <li>• at 600 V rated value</li> </ul>  | <p>1 A</p> <p>0.9 A</p> <p>0.3 A</p> <p>0.1 A</p>   |
| <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>  | <p>180 A</p> <p>182 A</p>   |
| <b>yielded mechanical performance [hp]</b>  |   |
| <ul style="list-style-type: none"> <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>  | <p>60 hp</p> <p>75 hp</p> <p>150 hp</p> <p>200 hp</p>   |
| <b>contact rating of auxiliary contacts according to UL</b>   | A600 / Q600   |
| <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>   | <p>gG: 500 A (690 V, 100 kA)</p> <p>gG: 400 A (690 V, 100 kA), aM: 315 A (690 V, 50 kA), BS88: 400 A (415 V, 50 kA)</p> <p>gG: 10 A (500 V, 1 kA)</p>       |
| <b>Installation/ mounting/ dimensions</b>   |   |
| <b>mounting position</b>  | with vertical mounting surface +/-90° rotatable, with vertical mounting surface +/- 22.5° tiltable to the front and back                                    |
| <b>fastening method</b>   | screw fixing  |
| <ul style="list-style-type: none"> <li>• side-by-side mounting</li> </ul>   | Yes   |
| <b>height</b>   | 210 mm  |
| <b>width</b>  | 145 mm  |
| <b>depth</b>  | 202 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> | <p>20 mm</p> <p>10 mm</p> <p>10 mm</p> <p>10 mm</p> <p>20 mm</p> <p>10 mm</p> <p>10 mm</p> <p>10 mm</p> <p>20 mm</p> <p>10 mm</p> <p>10 mm</p> <p>10 mm</p> |
| <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> </ul>   | <p>screw-type terminals</p> <p>screw-type terminals</p>   |
| <b>width of connection bar</b>  | 25 mm   |
| <b>thickness of connection bar</b>  | 6 mm  |
| <b>diameter of holes</b>  | 11 mm   |
| <b>number of holes</b>  | 1   |
| <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>— solid or stranded</li> </ul> </li> <li>• at AWG cables for main contacts</li> </ul>   | <p>2x (70 ... 240 mm<sup>2</sup>)</p> <p>2/0 ... 500 kcmil</p>  |

|  |   |
|--|---|
| <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>— solid or stranded</li> <li>— finely stranded with core end processing</li> </ul> </li> <li>• at AWG cables for auxiliary contacts</li> </ul> | <p>2x (0.5 ... 1.5 mm<sup>2</sup>), 2x (0.75 ... 2.5 mm<sup>2</sup>), max. 2x (0.75 ... 4 mm<sup>2</sup>)</p> <p>2x (0,5 ... 1,5 mm<sup>2</sup>), 2x (0,75 ... 2,5 mm<sup>2</sup>), max. 2x (0,75 ... 4 mm<sup>2</sup>)</p> <p>2x (0.5 ... 1.5 mm<sup>2</sup>), 2x (0.75 ... 2.5 mm<sup>2</sup>)</p> <p>2x (20 ... 16), 2x (18 ... 14), 1x 12</p> |
| <b>AWG number as coded connectable conductor cross section</b>   |   |
| <ul style="list-style-type: none"> <li>• for auxiliary contacts</li> </ul>   | 18 ... 14   |

|   |  |
|---|--|
| <b>Safety related data</b>  |  |
| <b>product function</b>   |  |
| <ul style="list-style-type: none"> <li>• mirror contact according to IEC 60947-4-1</li> <li>• positively driven operation according to IEC 60947-5-1</li> </ul> | <p>Yes</p> <p>No</p>   |
| B10 value with high demand rate according to SN 31920   | 1 000 000  |
| <b>protection class IP on the front according to IEC 60529</b>  | IP00; IP20 with box terminal/cover                                       |
| <b>touch protection on the front according to IEC 60529</b>   | finger-safe, for vertical contact from the front with box terminal/cover |

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

|                                 |  |
|---------------------------------|--|
| <b>Certificates/ approvals</b>  |  |
| <b>General Product Approval</b> |  |



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|            |  |                                  |                          |
|------------|--|----------------------------------|--------------------------|
| <b>EMC</b> | <b>Functional Safety/Safety of Machinery</b> | <b>Declaration of Conformity</b> | <b>Test Certificates</b> |
|------------|--|----------------------------------|--------------------------|



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

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[Miscellaneous](#)

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[Special Test Certificate](#)

|                            |
|----------------------------|
| <b>Further information</b> |
|----------------------------|

**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=3RT1064-6XB46-0LA2>

**Cax online generator**

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT1064-6XB46-0LA2>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RT1064-6XB46-0LA2>

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

[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RT1064-6XB46-0LA2&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT1064-6XB46-0LA2&lang=en)

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RT1064-6XB46-0LA2/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT1064-6XB46-0LA2&objecttype=14&gridview=view1>

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