



Contactor, AC-1, 275 A/690 V/40 °C, S6, 3-pole, 96-127 V AC/DC, F-PLC-IN with varistor, 2 NO+2 NC, Connection rail/ screw terminal

|   |   |
|---|---|
| <b>product brand name</b>   | SIRIUS  |
| <b>product designation</b>  | Contactor   |
| <b>product type designation</b>   | 3RT14   |
| <b>General technical data</b>   |   |
| <b>size of contactor</b>  | S6  |
| <b>product extension</b>  |   |
| <ul style="list-style-type: none"> <li>function module for communication</li> <li>auxiliary switch</li> </ul>   | <p>No</p> <p>Yes</p>  |
| <b>power loss [W] for rated value of the current</b>  |   |
| <ul style="list-style-type: none"> <li>at AC in hot operating state</li> <li>at AC in hot operating state per pole</li> <li>without load current share typical</li> </ul>   | <p>86.4 W</p> <p>28.8 W</p> <p>2.8 W</p>                            |
| <b>insulation voltage</b>   |   |
| <ul style="list-style-type: none"> <li>of main circuit with degree of pollution 3 rated value</li> <li>of auxiliary circuit with degree of pollution 3 rated value</li> </ul>   | <p>1 000 V</p> <p>500 V</p>   |
| <b>surge voltage resistance</b>   |   |
| <ul style="list-style-type: none"> <li>of main circuit rated value</li> <li>of auxiliary circuit rated value</li> </ul>   | <p>8 kV</p> <p>6 kV</p>   |
| <b>shock resistance at rectangular impulse</b>  |   |
| <ul style="list-style-type: none"> <li>at AC</li> <li>at DC</li> </ul>  | <p>8,5g / 5 ms, 4,2g / 10 ms</p> <p>8,5g / 5 ms, 4,2g / 10 ms</p>   |
| <b>shock resistance with sine pulse</b>   |   |
| <ul style="list-style-type: none"> <li>at AC</li> <li>at DC</li> </ul>  | <p>13,4g / 5 ms, 6,5g / 10 ms</p> <p>13,4g / 5 ms, 6,5g / 10 ms</p> |
| <b>mechanical service life (switching cycles)</b>   |   |
| <ul style="list-style-type: none"> <li>of contactor typical</li> <li>of the contactor with added electronically optimized auxiliary switch block typical</li> <li>of the contactor with added auxiliary switch block typical</li> </ul> | <p>10 000 000</p> <p>5 000 000</p> <p>10 000 000</p>                |
| <b>reference code according to IEC 81346-2</b>  | Q   |
| <b>Substance Prohibitation (Date)</b>   | 03/01/2017  |
| <b>Ambient conditions</b>   |   |
| installation altitude at height above sea level maximum   | 2 000 m   |
| <b>ambient temperature</b>  |   |
| <ul style="list-style-type: none"> <li>during operation</li> <li>during storage</li> </ul>  | <p>-25 ... +60 °C</p> <p>-55 ... +80 °C</p>                         |
| <b>relative humidity minimum</b>  | 10 %  |
| <b>relative humidity at 55 °C according to IEC 60068-2-30</b>   | 95 %  |

|  |   |
|--|---|
| <b>maximum</b>   |   |
| <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>type of voltage for main current circuit</b>  | AC                                      |
| <b>operational current</b>   |   |
| <ul style="list-style-type: none"> <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 55 °C rated value</li> <li>— up to 690 V at ambient temperature 60 °C rated value</li> </ul> </li> <li>● at AC-3 <ul style="list-style-type: none"> <li>— at 400 V rated value</li> <li>— at 690 V rated value</li> </ul> </li> </ul> | 275 A<br>250 A<br>250 A<br>97 A<br>97 A |
| minimum cross-section in main circuit at maximum AC-1 rated value  | 140 mm <sup>2</sup>                     |
| <b>no-load switching frequency</b>   |   |
| <ul style="list-style-type: none"> <li>● at AC</li> <li>● at DC</li> </ul>   | 1 000 1/h<br>1 000 1/h                  |
| operating frequency at AC-1 maximum  | 200 1/h                                 |
| <b>Control circuit/ Control</b>  |   |
| <b>type of voltage</b>   | AC/DC                                   |
| <b>type of voltage of the control supply voltage</b>   | AC/DC                                   |
| <b>control supply voltage at AC</b>  |   |
| <ul style="list-style-type: none"> <li>● at 50 Hz rated value</li> <li>● at 60 Hz rated value</li> </ul>   | 96 ... 127 V<br>96 ... 127 V            |
| <b>control supply voltage at DC</b>  |   |
| <ul style="list-style-type: none"> <li>● rated value</li> </ul>  | 96 ... 127 V                            |
| <b>type of PLC-control input according to IEC 60947-1</b>  | Type 1                                  |
| <b>consumed current at PLC-control input according to IEC 60947-1 maximum</b>  | 30 mA                                   |
| <b>operating range factor control supply voltage rated value of magnet coil at DC</b>  |   |
| <ul style="list-style-type: none"> <li>● initial value</li> <li>● full-scale value</li> </ul>  | 0.8<br>1.1                              |
| <b>operating range factor control supply voltage rated value of magnet coil at AC</b>  |   |
| <ul style="list-style-type: none"> <li>● at 50 Hz</li> <li>● at 60 Hz</li> </ul>   | 0.8 ... 1.1<br>0.8 ... 1.1              |
| <b>design of the surge suppressor</b>  | with varistor                           |
| <b>apparent pick-up power of magnet coil at AC</b>   |   |
| <ul style="list-style-type: none"> <li>● at 50 Hz</li> </ul>   | 280 VA                                  |
| <b>inductive power factor with closing power of the coil</b>   |   |
| <ul style="list-style-type: none"> <li>● at 50 Hz</li> </ul>   | 0.8                                     |
| <b>apparent holding power of magnet coil at AC</b>   |   |
| <ul style="list-style-type: none"> <li>● at 50 Hz</li> </ul>   | 4.4 VA                                  |
| <b>inductive power factor with the holding power of the coil</b>   |   |
| <ul style="list-style-type: none"> <li>● at 50 Hz</li> </ul>   | 0.5                                     |
| <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>   |   |
| <ul style="list-style-type: none"> <li>● at AC</li> <li>● at DC</li> </ul>   | 60 ... 75 ms<br>60 ... 75 ms            |
| <b>opening delay</b>   |   |
| <ul style="list-style-type: none"> <li>● at AC</li> <li>● at DC</li> </ul>   | 115 ... 130 ms<br>115 ... 130 ms        |
| <b>arcing time</b>   | 10 ... 15 ms                            |
| <b>control version of the switch operating mechanism</b>   | Fail-safe PLC input (F-PLC-IN)          |

| Auxiliary circuit   |  |
|---|--|
| <b>number of NC contacts for auxiliary contacts</b>   | 2  |
| • attachable  | 4  |
| • instantaneous contact   | 2  |
| <b>number of NO contacts for auxiliary contacts</b>   | 2  |
| • attachable  | 4  |
| • 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  |
| • at 690 V rated value  | 1 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  |
| design of the miniature circuit breaker for short-circuit protection of the auxiliary switch required | gG: 10 A (230 V, 400 A)  |
| <b>contact reliability of auxiliary contacts</b>  | 1 faulty switching per 100 million (17 V, 1 mA)  |
| Short-circuit protection  |  |
| <b>product function short circuit protection</b>  | No   |
| <b>design of the fuse link</b>  |  |
| • for short-circuit protection of the main circuit  |  |
| — with type of coordination 1 required  | gG: 355 A (690 V, 100 kA)  |
| — with type of assignment 2 required  | gR: 350 A (690 V, 100 kA)  |
| • for short-circuit protection of the auxiliary switch required                                       | gG: 10 A (500 V, 1 kA)   |
| 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>fastening method</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>   |  |
| • with side-by-side mounting  |  |
| — forwards  | 20 mm  |
| — upwards   | 10 mm  |
| — downwards   | 10 mm  |
| — at the side   | 0 mm   |
| • for grounded parts  |  |
| — forwards  | 20 mm  |
| — upwards   | 10 mm  |
| — at the side   | 10 mm  |
| — downwards   | 10 mm  |
| • for live parts  |  |
| — forwards  | 20 mm  |
| — upwards   | 10 mm  |
| — downwards   | 10 mm  |
| — at the side   | 10 mm  |
| Connections/ Terminals  |  |
| <b>type of electrical connection</b>  |  |
| • for main current circuit  | Connection bar   |
| • for auxiliary and control circuit   | screw-type terminals   |

|  |  |
|--|--|
| <ul style="list-style-type: none"> <li>• at contactor for auxiliary contacts</li> <li>• of magnet coil</li> </ul>  | Screw-type terminals<br>Screw-type terminals   |
| <b>width of connection bar</b>   | 17 mm  |
| <b>thickness of connection bar</b>   | 3 mm   |
| <b>diameter of holes</b>   | 9 mm   |
| <b>number of holes</b>   | 1  |
| <b>type of connectable conductor cross-sections</b>  |  |
| <ul style="list-style-type: none"> <li>• at AWG cables for main contacts</li> </ul>  | 4 ... 250 kcmil  |
| <b>connectable conductor cross-section for main contacts</b>   |  |
| <ul style="list-style-type: none"> <li>• solid or stranded</li> <li>• stranded</li> </ul>  | 25 ... 120 mm <sup>2</sup><br>25 ... 120 mm <sup>2</sup>   |
| <b>connectable conductor cross-section for auxiliary contacts</b>  |  |
| <ul style="list-style-type: none"> <li>• solid or stranded</li> <li>• finely stranded with core end processing</li> </ul>  | 0.5 ... 4 mm <sup>2</sup><br>0.5 ... 2.5 mm <sup>2</sup>   |
| <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> | 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> )<br>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> )<br>2x (0.5 ... 1.5 mm <sup>2</sup> ), 2x (0.75 ... 2.5 mm <sup>2</sup> )<br>2x (20 ... 16), 2x (18 ... 14), 1x 12 |

### Safety related data

|   |  |
|---|--|
| <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> | Yes<br>No  |
| <b>safety device type according to IEC 61508-2</b>  | Type B   |
| B10 value with high demand rate according to SN 31920   | 1 000 000  |
| Safety Integrity Level (SIL) according to IEC 61508   | 2  |
| <b>SIL Claim Limit (subsystem) according to EN 62061</b>  | 2  |
| performance level (PL) according to EN ISO 13849-1  | c  |
| category according to EN ISO 13849-1  | 2  |
| <b>stop category according to EN 60204-1</b>  | 0  |
| <b>proportion of dangerous failures</b>   |  |
| <ul style="list-style-type: none"> <li>• with low demand rate according to SN 31920</li> <li>• with high demand rate according to SN 31920</li> </ul>           | 40 %<br>73 %   |
| PFHD with high demand rate according to EN 62061  | 0.00000045 1/h   |
| <b>PFDavg with low demand rate according to IEC 61508</b>   | 0.007  |
| <b>MTBF</b>   | 75 y   |
| <b>hardware fault tolerance according to IEC 61508</b>  | 0  |
| T1 value for proof test interval or service life according to IEC 61508   | 20 y   |
| <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 |

### Certificates/ approvals

#### General Product Approval



[Confirmation](#)



[KC](#)



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



Type Examination Certificate



Type Test Certificates/Test Report

Special Test Certificate

Confirmation

other Railway

Miscellaneous

Special Test Certificate

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=3RT1456-6SF36>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT1456-6SF36>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RT1456-6SF36>

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

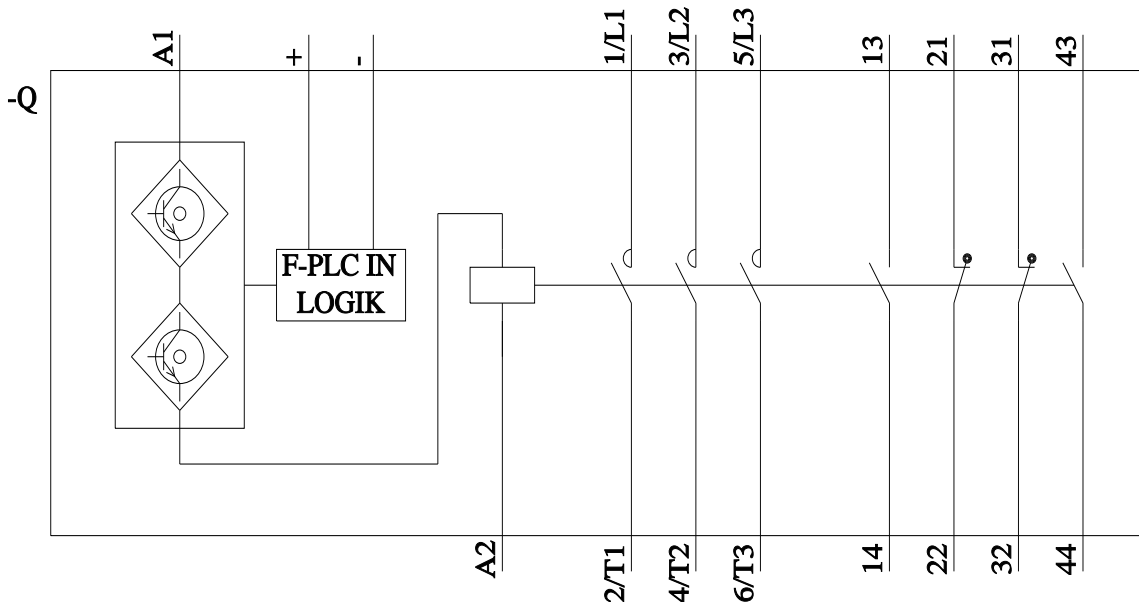
[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RT1456-6SF36&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT1456-6SF36&lang=en)

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RT1456-6SF36/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT1456-6SF36&objecttype=14&gridview=view1>



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