



power contactor AC-1 690 A / 690 V / 40 °C 3-pole, U<sub>c</sub>: 96-127 V AC(50-60 Hz) / DC F-PLC input 24 V DC drive: electronic auxiliary contacts 2 NO + 2 NC main circuit: busbar control and auxiliary circuit: screw terminal

|   |  |
|---|--|
| product brand name  | SIRIUS   |
| product designation   | Contacteur   |
| product type designation  | 3RT14  |
| <b>General technical data</b>   |  |
| size of contactor   | S12  |
| product extension   |  |
| • function module for communication   | No   |
| • auxiliary switch  | Yes  |
| power loss [W] for rated value of the current   |  |
| • at AC in hot operating state  | 185.7 W  |
| • at AC in hot operating state per pole   | 61.9 W   |
| • without load current share typical  | 3.6 W  |
| type of calculation of power loss depending on pole                                   | quadratic  |
| 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                         | 500 V  |
| surge voltage resistance  |  |
| • of main circuit rated value   | 8 kV   |
| • of auxiliary circuit rated value  | 6 kV   |
| shock resistance at rectangular impulse   |  |
| • at AC   | 8,5g / 5 ms, 4,2g / 10 ms  |
| • at DC   | 8,5g / 5 ms, 4,2g / 10 ms  |
| shock resistance with sine pulse  |  |
| • at AC   | 13,4g / 5 ms, 6,5g / 10 ms   |
| • at DC   | 13,4g / 5 ms, 6,5g / 10 ms   |
| mechanical service life (operating cycles)  |  |
| • 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   |
| reference code according to IEC 81346-2   | Q  |
| Substance Prohibitance (Date)   | 03/01/2017   |
| SVHC substance name   | Lead - 7439-92-1<br>Lead monoxide (lead oxide) - 1317-36-8<br>2,2',6,6'-tetrabromo-4,4'-isopropylidenediphenol - 79-94-7<br>2-methyl-1-(4-methylthiophenyl)-2-morpholinopropan-1-one - 71868-10-5<br>Melamine - 108-78-1<br>Perfluorobutane sulfonic acid (PFBS) and its salts - - |
| Weight  | 10.407 kg  |
| <b>Ambient conditions</b>   |  |
| installation altitude at height above sea level maximum                               | 2 000 m  |
| ambient temperature   |  |

|  |  |
|--|--|
| <ul style="list-style-type: none"> <li>• during operation</li> <li>• during storage</li> </ul>   | -25 ... +60 °C<br>-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>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>   | 690 A<br>600 A<br>600 A<br>170 A<br>170 A  |
| minimum cross-section in main circuit at maximum AC-1 rated value  | 480 mm²  |
| <b>operational current</b>   |  |
| <ul style="list-style-type: none"> <li>• <b>at 1 current path at DC-1</b> <ul style="list-style-type: none"> <li>— at 24 V rated value</li> <li>— at 60 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>• <b>with 2 current paths in series at DC-1</b> <ul style="list-style-type: none"> <li>— at 24 V rated value</li> <li>— at 60 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>• <b>with 3 current paths in series at DC-1</b> <ul style="list-style-type: none"> <li>— at 24 V rated value</li> <li>— at 60 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>• <b>at 1 current path at DC-3 at DC-5</b> <ul style="list-style-type: none"> <li>— at 24 V rated value</li> <li>— at 60 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>• <b>with 2 current paths in series at DC-3 at DC-5</b> <ul style="list-style-type: none"> <li>— at 24 V rated value</li> <li>— at 60 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>• <b>with 3 current paths in series at DC-3 at DC-5</b> <ul style="list-style-type: none"> <li>— at 24 V rated value</li> <li>— at 60 V rated value</li> </ul> </li> </ul> | 500 A<br>500 A<br>33 A<br>3.8 A<br>0.9 A<br>0.6 A<br>500 A<br>500 A<br>500 A<br>500 A<br>4 A<br>2 A<br>500 A<br>500 A<br>500 A<br>500 A<br>11 A<br>5.2 A<br>500 A<br>11 A<br>3 A<br>0.6 A<br>0.18 A<br>0.125 A<br>500 A<br>500 A<br>500 A<br>2.5 A<br>0.65 A<br>0.37 A<br>500 A<br>500 A |

|   |                                |
|---|--------------------------------|
| — at 110 V rated value  | 500 A                          |
| — at 220 V rated value  | 500 A                          |
| — at 440 V rated value  | 1.4 A                          |
| — at 600 V rated value  | 0.75 A                         |
| <b>no-load switching frequency</b>  |                                |
| • at AC   | 500 1/h                        |
| • at DC   | 500 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>   |                                |
| • at 50 Hz rated value  | 96 ... 127 V                   |
| • at 60 Hz rated value  | 96 ... 127 V                   |
| <b>control supply voltage at DC rated value</b>                                       | 96 ... 127 V                   |
| <b>operating range factor control supply voltage rated value of magnet coil at DC</b> |                                |
| • initial value   | 0.8                            |
| • full-scale value  | 1.1                            |
| <b>operating range factor control supply voltage rated value of magnet coil at AC</b> |                                |
| • at 50 Hz  | 0.8 ... 1.1                    |
| • at 60 Hz  | 0.8 ... 1.1                    |
| <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>design of the surge suppressor</b>   | with varistor                  |
| <b>apparent pick-up power</b>   |                                |
| • at minimum rated control supply voltage at AC                                       |                                |
| — at 50 Hz  | 560 VA                         |
| — at 60 Hz  | 560 VA                         |
| • at maximum rated control supply voltage at AC                                       |                                |
| — at 60 Hz  | 750 VA                         |
| — at 50 Hz  | 750 VA                         |
| <b>apparent pick-up power of magnet coil at AC</b>                                    |                                |
| • at 50 Hz  | 750 VA                         |
| <b>inductive power factor with closing power of the coil</b>                          |                                |
| • at 50 Hz  | 0.8                            |
| <b>apparent holding power</b>   |                                |
| • at minimum rated control supply voltage at DC                                       | 3 VA                           |
| • at maximum rated control supply voltage at DC                                       | 3.6 VA                         |
| <b>apparent holding power</b>   |                                |
| • at minimum rated control supply voltage at AC                                       |                                |
| — at 50 Hz  | 5.6 VA                         |
| — at 60 Hz  | 5.6 VA                         |
| • at maximum rated control supply voltage at AC                                       |                                |
| — at 50 Hz  | 9 VA                           |
| — at 60 Hz  | 9 VA                           |
| <b>apparent holding power of magnet coil at AC</b>                                    |                                |
| • at 50 Hz  | 7 VA                           |
| <b>inductive power factor with the holding power of the coil</b>                      |                                |
| • at 50 Hz  | 0.8                            |
| <b>closing power of magnet coil at DC</b>   | 800 W                          |
| <b>holding power of magnet coil at DC</b>   | 3.6 W                          |
| <b>closing delay</b>  |                                |
| • at AC   | 60 ... 75 ms                   |
| • at DC   | 60 ... 75 ms                   |
| <b>opening delay</b>  |                                |
| • at AC   | 115 ... 130 ms                 |
| • at DC   | 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  |
| <b>contact reliability of auxiliary contacts</b>  | 1 faulty switching per 100 million (17 V, 1 mA)  |
| Short-circuit protection  |  |
| design of the miniature circuit breaker for short-circuit protection of the auxiliary circuit up to 230 V | C characteristic: 10 A; 0.4 kA   |
| <b>design of the fuse link</b>  |  |
| • for short-circuit protection of the main circuit  |  |
| — with type of coordination 1 required  | gG: 800 A (690 V, 50 kA)   |
| — with type of assignment 2 required  | gR: 710 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 |
| fastening method side-by-side mounting  | Yes  |
| <b>fastening method</b>   | screw fixing   |
| <b>height</b>   | 214 mm   |
| <b>width</b>  | 160 mm   |
| <b>depth</b>  | 225 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   |
| • at contactor for auxiliary contacts   | Screw-type terminals   |
| • of magnet coil  | Screw-type terminals   |
| <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>connectable conductor cross-section for main contacts</b>         |  |
| • solid or stranded  | 70 ... 240 mm²   |
| • stranded   | 70 ... 240 mm²   |
| <b>connectable conductor cross-section for auxiliary contacts</b>    |  |
| • solid or stranded  | 0.5 ... 4 mm²  |
| • finely stranded with core end processing                           | 0.5 ... 2.5 mm²  |
| <b>type of connectable conductor cross-sections</b>                  |  |
| • for auxiliary contacts   |  |
| — solid  | 2x (0.5 ... 1.5 mm²), 2x (0.75 ... 2.5 mm²), max. 2x (0.75 ... 4 mm²)    |
| — solid or stranded  | 2x (0.5 ... 1.5 mm²), 2x (0.75 ... 2.5 mm²), max. 2x (0.75 ... 4 mm²)    |
| — finely stranded with core end processing                           | 2x (0.5 ... 1.5 mm²), 2x (0.75 ... 2.5 mm²)                              |
| • for AWG cables for auxiliary contacts                              | 2x (20 ... 16), 2x (18 ... 14), 1x 12                                    |
| <b>Safety related data</b>   |  |
| <b>product function</b>  |  |
| • mirror contact according to IEC 60947-4-1                          | Yes  |
| • positively driven operation according to IEC 60947-5-1             | No   |
| • suitable for safety function                                       | Yes  |
| suitability for use safety-related switching OFF                     | Yes  |
| <b>safe state</b>  | off  |
| <b>stop category according to IEC 60204-1</b>                        | 0  |
| <b>proportion of dangerous failures</b>                              |  |
| • with low demand rate according to SN 31920                         | 40 %   |
| • with high demand rate according to SN 31920                        | 73 %   |
| <b>B10 value with high demand rate according to SN 31920</b>         | 1 000 000  |
| <b>failure rate [FIT] with low demand rate according to SN 31920</b> | 100 FIT  |
| <b>IEC 62061</b>   |  |
| <b>Safety Integrity Level (SIL) according to IEC 62061</b>           | SIL 2  |
| PFHD with high demand rate according to IEC 62061                    | 4.5E-7 1/h   |
| <b>ISO 13849</b>   |  |
| <b>performance level (PL) according to ISO 13849-1</b>               | PL c   |
| <b>category according to ISO 13849-1</b>                             | 2  |
| <b>device type according to ISO 13849-1</b>                          | 1  |
| <b>overdimensioning according to ISO 13849-2 necessary</b>           | Yes  |
| <b>IEC 61508</b>   |  |
| Safety Integrity Level (SIL) according to IEC 61508                  | 2  |
| <b>safety device type according to IEC 61508-2</b>                   | Type B   |
| <b>PFHD with high demand rate according to IEC 61508</b>             | 4.5E-7 1/h   |
| PFDavg with low demand rate according to IEC 61508                   | 0.007  |
| <b>Safe failure fraction (SFF)</b>                                   | 93 %   |
| hardware fault tolerance according to IEC 61508                      | 0  |
| T1 value of service life according to IEC 61508                      | 20 a   |
| <b>Electrical Safety</b>   |  |
| <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>Approvals Certificates</b>  |  |
| <b>General Product Approval</b>                                      |  |
| EMV  |  |



|  |  |  |  |
|--|--|--|--|
| Functional Safety                            | Test Certificates                                  | other                                    | Railway                                  |
| <a href="#">Type Examination Certificate</a> | <a href="#">Type Test Certificates/Test Report</a> | <a href="#">Special Test Certificate</a> | <a href="#">Confirmation</a>             |
|  |  |  | <a href="#">Miscellaneous</a>            |
|  |  |  | <a href="#">Special Test Certificate</a> |

## Environment

[Environmental Confirmations](#)

## Further information

Information on the packaging

<https://support.industry.siemens.com/cs/ww/en/view/109813875>

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=3RT1476-6SF36>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT1476-6SF36>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RT1476-6SF36>

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

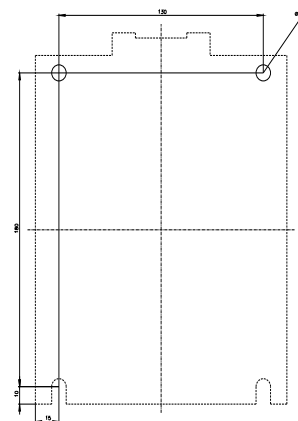
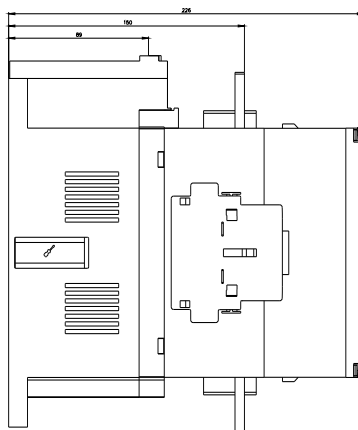
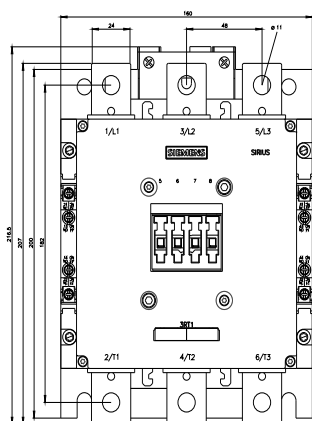
[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RT1476-6SF36&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT1476-6SF36&lang=en)

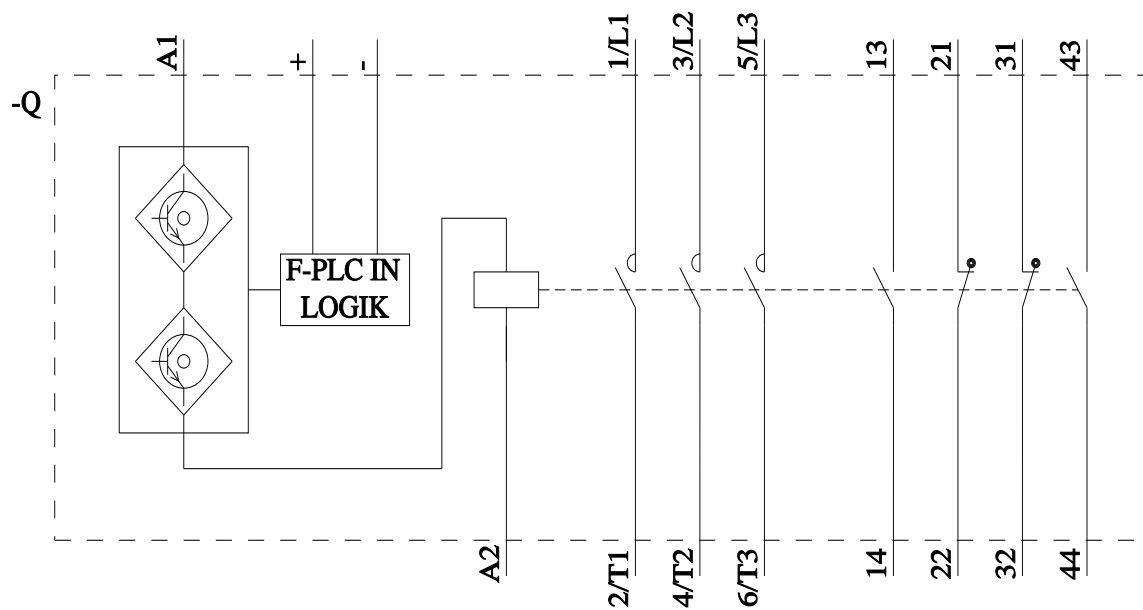
Characteristic: Tripping characteristics, I<sub>t</sub>, Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3RT1476-6SF36/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT1476-6SF36&objecttype=14&gridview=view1>





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