



power contactor AC-1 690 A / 690 V / 40 °C 3-pole,  $U_c$ : 200-277 V AC(50-60 Hz) / DC PLC input 24 V DC drive: electronic auxiliary contacts 2 NO + 2 NC main circuit: busbar control and auxiliary circuit: screw terminal with remaining lifetime indicator

|                                                                                       |                                                                                                                                                                                    |
|---------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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                                                        | 185.69 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 current-dependent                                   | 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                                                                               | 8,5 g / 5 ms, 4,2 g / 10 ms                                                                                                                                                        |
| • at DC                                                                               | 8,5 g / 5 ms, 4,2 g / 10 ms                                                                                                                                                        |
| shock resistance with sine pulse                                                      |                                                                                                                                                                                    |
| • at AC                                                                               | 13,4 g / 5 ms, 6,5 g / 10 ms                                                                                                                                                       |
| • at DC                                                                               | 13,4 g / 5 ms, 6,5 g / 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 (day/month/year)                                               | 05/01/2012                                                                                                                                                                         |
| SVHC substance name                                                                   | Lead CAS-No. 7439-92-1<br>Lead monoxide (lead oxide) CAS-No. 1317-36-8<br>2-methyl-1-(4-methylthiophenyl)-2-morpholinopropan-1-one CAS-No. 71868-10-5<br>Melamine CAS-No. 108-78-1 |
| Net Weight                                                                            | 10.71 kg                                                                                                                                                                           |
| <b>Ambient conditions</b>                                                             |                                                                                                                                                                                    |
| installation altitude at height above sea level maximum                               | 2 000 m                                                                                                                                                                            |

|                                                                       |                |
|-----------------------------------------------------------------------|----------------|
| <b>ambient temperature</b>                                            |                |
| • during operation                                                    | -25 ... +60 °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>number of NC contacts for main contacts</b>                        | 0              |
| <b>type of voltage for main current circuit</b>                       | AC             |
| <b>operational current</b>                                            |                |
| • at AC-1                                                             |                |
| — up to 690 V at ambient temperature 40 °C rated value                | 690 A          |
| — up to 690 V at ambient temperature 55 °C rated value                | 600 A          |
| — up to 690 V at ambient temperature 60 °C rated value                | 600 A          |
| • at AC-3                                                             |                |
| — at 400 V rated value                                                | 170 A          |
| — at 690 V rated value                                                | 170 A          |
| minimum cross-section in main circuit at maximum AC-1 rated value     | 480 mm²        |
| <b>operational current</b>                                            |                |
| • at 1 current path at DC-1                                           |                |
| — at 24 V rated value                                                 | 500 A          |
| — at 60 V rated value                                                 | 500 A          |
| — at 110 V rated value                                                | 33 A           |
| — at 220 V rated value                                                | 3.8 A          |
| — at 440 V rated value                                                | 0.9 A          |
| — at 600 V rated value                                                | 0.6 A          |
| • with 2 current paths in series at DC-1                              |                |
| — at 24 V rated value                                                 | 500 A          |
| — at 60 V rated value                                                 | 500 A          |
| — at 110 V rated value                                                | 500 A          |
| — at 220 V rated value                                                | 500 A          |
| — at 440 V rated value                                                | 4 A            |
| — at 600 V rated value                                                | 2 A            |
| • with 3 current paths in series at DC-1                              |                |
| — at 24 V rated value                                                 | 500 A          |
| — at 60 V rated value                                                 | 500 A          |
| — at 110 V rated value                                                | 500 A          |
| — at 220 V rated value                                                | 500 A          |
| — at 440 V rated value                                                | 11 A           |
| — at 600 V rated value                                                | 5.2 A          |
| • at 1 current path at DC-3 at DC-5                                   |                |
| — at 24 V rated value                                                 | 500 A          |
| — at 60 V rated value                                                 | 11 A           |
| — at 110 V rated value                                                | 3 A            |
| — at 220 V rated value                                                | 0.6 A          |
| — at 440 V rated value                                                | 0.18 A         |
| — at 600 V rated value                                                | 0.125 A        |
| • with 2 current paths in series at DC-3 at DC-5                      |                |
| — at 24 V rated value                                                 | 500 A          |
| — at 60 V rated value                                                 | 500 A          |
| — at 110 V rated value                                                | 500 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         |

|                                                                                                                                                                                                                                                                                                                                                              |                                                     |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|
| <ul style="list-style-type: none"> <li>• with 3 current paths in series at DC-3 at DC-5 <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> </ul>                   | 500 A<br>500 A<br>500 A<br>500 A<br>1.4 A<br>0.75 A |
| <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                              |
| <b>operating frequency</b> <ul style="list-style-type: none"> <li>• at AC-1 maximum</li> </ul>                                                                                                                                                                                                                                                               | 600 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>                                                                                                                                                                                                                 | 200 ... 277 V<br>200 ... 277 V                      |
| <b>control supply voltage at DC rated value</b>                                                                                                                                                                                                                                                                                                              | 200 ... 277 V                                       |
| <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>type of PLC-control input according to IEC 60947-1</b>                                                                                                                                                                                                                                                                                                    | Type 2                                              |
| <b>consumed current at PLC-control input according to IEC 60947-1 maximum</b>                                                                                                                                                                                                                                                                                | 20 mA                                               |
| <b>design of the surge suppressor</b>                                                                                                                                                                                                                                                                                                                        | with varistor                                       |
| <b>apparent pick-up power</b> <ul style="list-style-type: none"> <li>• at minimum rated control supply voltage at AC <ul style="list-style-type: none"> <li>— at 50 Hz</li> <li>— at 60 Hz</li> </ul> </li> <li>• at maximum rated control supply voltage at AC <ul style="list-style-type: none"> <li>— at 60 Hz</li> <li>— at 50 Hz</li> </ul> </li> </ul> | 560 VA<br>560 VA<br>750 VA<br>750 VA                |
| <b>apparent pick-up power of magnet coil at AC</b> <ul style="list-style-type: none"> <li>• at 50 Hz</li> </ul>                                                                                                                                                                                                                                              | 750 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</b> <ul style="list-style-type: none"> <li>• at minimum rated control supply voltage at DC</li> <li>• at maximum rated control supply voltage at DC</li> </ul>                                                                                                                                                                     | 3 VA<br>3.6 VA                                      |
| <b>apparent holding power</b> <ul style="list-style-type: none"> <li>• at minimum rated control supply voltage at AC <ul style="list-style-type: none"> <li>— at 50 Hz</li> <li>— at 60 Hz</li> </ul> </li> <li>• at maximum rated control supply voltage at AC <ul style="list-style-type: none"> <li>— at 50 Hz</li> <li>— at 60 Hz</li> </ul> </li> </ul> | 5.6 VA<br>5.6 VA<br>9 VA<br>9 VA                    |
| <b>apparent holding power of magnet coil at AC</b> <ul style="list-style-type: none"> <li>• at 50 Hz</li> </ul>                                                                                                                                                                                                                                              | 7 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>                                                                                                                                                                                                                                | 0.8                                                 |
| <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> <ul style="list-style-type: none"> <li>• at AC</li> </ul>                                                                                                                                                                                                                                                                               | 60 ... 90 ms                                        |

|                                                                                                           |                                                                                                                          |
|-----------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| • at DC                                                                                                   | 60 ... 90 ms                                                                                                             |
| <b>opening delay</b>                                                                                      |                                                                                                                          |
| • at AC                                                                                                   | 80 ... 100 ms                                                                                                            |
| • 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                                                                                                                        |
| • attachable                                                                                              | 4                                                                                                                        |
| • instantaneous contact                                                                                   | 1                                                                                                                        |
| <b>number of NO contacts for auxiliary contacts</b>                                                       | 2                                                                                                                        |
| • attachable                                                                                              | 4                                                                                                                        |
| • instantaneous contact                                                                                   | 1                                                                                                                        |
| 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)                                                                          |
| <b>Short-circuit protection</b>                                                                           |                                                                                                                          |
| 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 coordination 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)                                                                                                   |
| <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 |
| fastening method side-by-side mounting                                                                    | Yes                                                                                                                      |
| <b>fastening method</b>                                                                                   | screw fixing                                                                                                             |
| <b>height</b>                                                                                             | 214 mm                                                                                                                   |
| <b>width</b>                                                                                              | 180 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>                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                |
| <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>                                                                                    | Connection bar<br>screw-type terminals<br>Screw-type terminals<br>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>type of connectable conductor cross-sections</b>                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                |
| <ul style="list-style-type: none"> <li>• for AWG cables for main contacts</li> </ul>                                                                                                                                                                                                  | 2/0 ... 500 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>                                                                                                                                                                                             | 70 ... 240 mm <sup>2</sup><br>70 ... 240 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>• for 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 |
| <b>AWG number as coded connectable conductor cross section for auxiliary contacts</b>                                                                                                                                                                                                 | 18 ... 14                                                                                                                                                                                                                                                                                                                                      |

## 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>service life maximum</b>                                                                                                                                     | 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 |

## Approvals Certificates

|                    |                                 |
|--------------------|---------------------------------|
| <b>Environment</b> | <b>General Product Approval</b> |
|--------------------|---------------------------------|

[Environmental Confirmations](#)



|            |                          |                          |                             |
|------------|--------------------------|--------------------------|-----------------------------|
| <b>EMV</b> | <b>Functional Safety</b> | <b>Test Certificates</b> | <b>Maritime application</b> |
|------------|--------------------------|--------------------------|-----------------------------|



[Type Examination Certificate](#)

[Type Test Certificates/Test Report](#)

[Special Test Certificate](#)



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

[Miscellaneous](#)

[Confirmation](#)

[Confirmation](#)

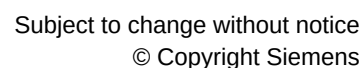


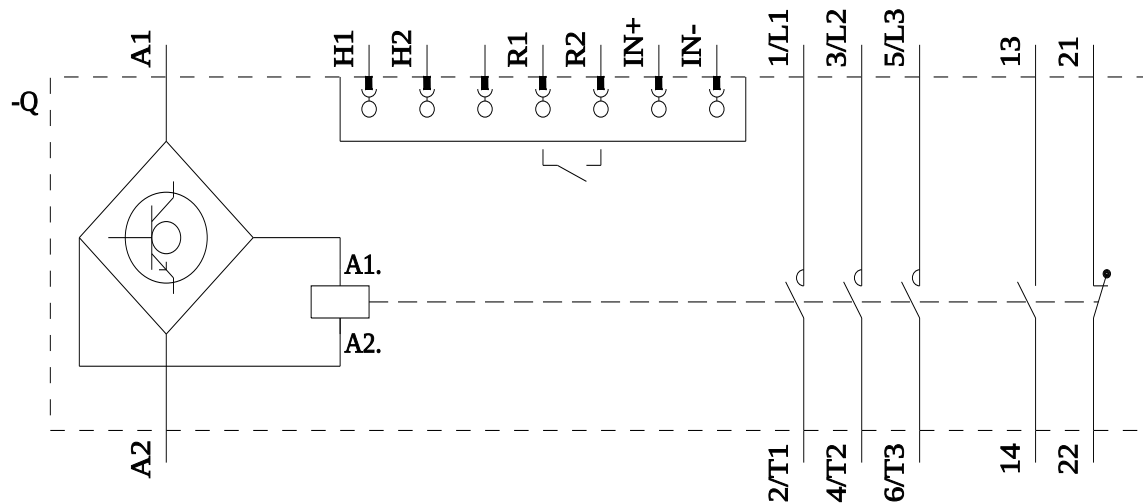
[Special Test Certificate](#)

## Further information

Information on the packaging

[https://curves.simaris.siemens.com/curves/<mmp\\_prod\\_noCOMP="HAUPT"></mmp\\_prod\\_no>](https://curves.simaris.siemens.com/curves/<mmp_prod_noCOMP="HAUPT"></mmp_prod_no>)





last modified:

4/16/2026