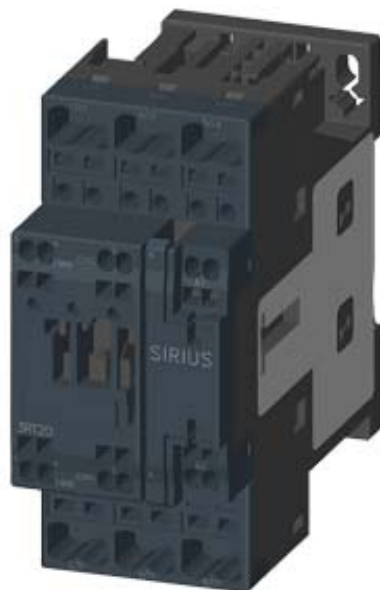




CONTACTOR, AC-3, 18.5KW/400V, 1NO+1NC,  
AC 24V 50/60HZ, 3-POLE,  
SZ S0 SPRING-LOADED TERMINAL

## General technical data:

|                                                              |    |                            |
|--------------------------------------------------------------|----|----------------------------|
| product brand name                                           |    | SIRIUS                     |
| Size of the contactor                                        |    | S0                         |
| Product extension                                            |    |                            |
| • auxiliary switch                                           |    | Yes                        |
| • function module for communication                          |    | No                         |
| Protection class IP / on the front                           |    | IP20                       |
| Protection against electrical shock                          |    | finger-safe                |
| Degree of pollution                                          |    | 3                          |
| Installation altitude / at a height over sea level / maximum | m  | 2,000                      |
| Ambient temperature                                          |    |                            |
| • during storage                                             | °C | -55 ... +80                |
| • during operating                                           | °C | -25 ... +60                |
| Shock resistance                                             |    |                            |
| • at rectangular impulse                                     |    |                            |
| • at AC                                                      |    | 8,3g / 5 ms, 5,3g / 10 ms  |
| • at sine pulse                                              |    |                            |
| • at AC                                                      |    | 13,5g / 5 ms, 8,3g / 10 ms |
| Impulse voltage resistance / rated value                     | kV | 6                          |
| Insulation voltage / rated value                             | V  | 690                        |

|                                                                                                                               |                 |            |
|-------------------------------------------------------------------------------------------------------------------------------|-----------------|------------|
| <b>Maximum permissible voltage for protective separation / between coil and main contacts / in accordance with EN 60947-1</b> | V               | 400        |
| <b>Mechanical operating cycles as operating time</b>                                                                          |                 |            |
| • of the contactor / typical                                                                                                  |                 | 10,000,000 |
| • of the contactor with added auxiliary switch block / typical                                                                |                 | 10,000,000 |
| • of the contactor with added electronics-compatible auxiliary switch block / typical                                         |                 | 5,000,000  |
| <b>Main circuit:</b>                                                                                                          |                 |            |
| <b>Number of NC contacts / for main contacts</b>                                                                              |                 | 0          |
| <b>Number of NO contacts / for main contacts</b>                                                                              |                 | 3          |
| <b>Connectable conductor cross-section / in main circuit</b>                                                                  |                 |            |
| • at AC-1                                                                                                                     |                 |            |
| • at 40 °C / minimum permissible                                                                                              | mm <sup>2</sup> | 10         |
| • at 60 °C / minimum permissible                                                                                              | mm <sup>2</sup> | 10         |
| <b>Operating current</b>                                                                                                      |                 |            |
| • at AC-1 / up to 690 V                                                                                                       |                 |            |
| • at 40 °C ambient temperature / rated value                                                                                  | A               | 50         |
| • at 60 °C ambient temperature / rated value                                                                                  | A               | 42         |
| • at AC-2 / at 400 V / rated value                                                                                            | A               | 38         |
| • at AC-3                                                                                                                     |                 |            |
| • at 400 V / rated value                                                                                                      | A               | 38         |
| • at 500 V / rated value                                                                                                      | A               | 32         |
| • at 690 V / rated value                                                                                                      | A               | 21         |
| • at AC-4 / at 400 V / rated value                                                                                            | A               | 22         |
| <b>Operational current / for ≥ 200000 operating cycles / at AC-4</b>                                                          |                 |            |
| • at 400 V / rated value                                                                                                      | A               | 12         |
| • at 690 V / rated value                                                                                                      | A               | 12         |
| <b>Operating current</b>                                                                                                      |                 |            |
| • with 1 current path / at DC-1                                                                                               |                 |            |
| • at 24 V / rated value                                                                                                       | A               | 35         |
| • at 110 V / rated value                                                                                                      | A               | 4.5        |
| • at 220 V / rated value                                                                                                      | A               | 1          |
| • at 440 V / rated value                                                                                                      | A               | 0.4        |
| • at 600 V / rated value                                                                                                      | A               | 0.25       |
| • with 2 current paths in series / at DC-1                                                                                    |                 |            |
| • at 24 V / rated value                                                                                                       | A               | 35         |
| • at 110 V / rated value                                                                                                      | A               | 35         |
| • at 220 V / rated value                                                                                                      | A               | 5          |
| • at 440 V / rated value                                                                                                      | A               | 1          |
| • at 600 V / rated value                                                                                                      | A               | 0.8        |

|                                                                                                                                                                                                                                                                                                                           |    |      |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|------|
| <ul style="list-style-type: none"> <li>• with 3 current paths in series / at DC-1 <ul style="list-style-type: none"> <li>• at 24 V / rated value</li> <li>• at 110 V / rated value</li> <li>• at 220 V / rated value</li> <li>• at 440 V / rated value</li> <li>• at 600 V / rated value</li> </ul> </li> </ul>           | A  | 35   |
|                                                                                                                                                                                                                                                                                                                           | A  | 35   |
|                                                                                                                                                                                                                                                                                                                           | A  | 35   |
|                                                                                                                                                                                                                                                                                                                           | A  | 2.9  |
|                                                                                                                                                                                                                                                                                                                           | A  | 1.4  |
| <b>Operating current</b>                                                                                                                                                                                                                                                                                                  |    |      |
| <ul style="list-style-type: none"> <li>• with 1 current path / at DC-3 / at DC-5 <ul style="list-style-type: none"> <li>• at 24 V / rated value</li> <li>• at 110 V / rated value</li> <li>• at 220 V / rated value</li> <li>• at 440 V / rated value</li> <li>• at 600 V / rated value</li> </ul> </li> </ul>            | A  | 20   |
|                                                                                                                                                                                                                                                                                                                           | A  | 2.5  |
|                                                                                                                                                                                                                                                                                                                           | A  | 1    |
|                                                                                                                                                                                                                                                                                                                           | A  | 0.09 |
|                                                                                                                                                                                                                                                                                                                           | A  | 0.06 |
| <ul style="list-style-type: none"> <li>• with 2 current paths in series / at DC-3 / at DC-5 <ul style="list-style-type: none"> <li>• at 24 V / rated value</li> <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> | A  | 35   |
|                                                                                                                                                                                                                                                                                                                           | A  | 15   |
|                                                                                                                                                                                                                                                                                                                           | A  | 3    |
|                                                                                                                                                                                                                                                                                                                           | A  | 0.27 |
|                                                                                                                                                                                                                                                                                                                           | A  | 0.16 |
| <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 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> | A  | 35   |
|                                                                                                                                                                                                                                                                                                                           | A  | 35   |
|                                                                                                                                                                                                                                                                                                                           | A  | 10   |
|                                                                                                                                                                                                                                                                                                                           | A  | 0.6  |
|                                                                                                                                                                                                                                                                                                                           | A  | 0.6  |
| <b>Operating performance</b>                                                                                                                                                                                                                                                                                              |    |      |
| • at AC-1 / at 230 V / rated value                                                                                                                                                                                                                                                                                        | kW | 16   |
| • at AC-1 / at 400 V / rated value                                                                                                                                                                                                                                                                                        | kW | 28   |
| • at AC-1 / at 690 V / rated value                                                                                                                                                                                                                                                                                        | kW | 48   |
| • at AC-2                                                                                                                                                                                                                                                                                                                 |    |      |
| • at 400 V / rated value                                                                                                                                                                                                                                                                                                  | kW | 18.5 |
| • at AC-3                                                                                                                                                                                                                                                                                                                 |    |      |
| • at 230 V / rated value                                                                                                                                                                                                                                                                                                  | kW | 11   |
| • at 400 V / rated value                                                                                                                                                                                                                                                                                                  | kW | 18.5 |
| • at 690 V / rated value                                                                                                                                                                                                                                                                                                  | kW | 18.5 |
| • at AC-4                                                                                                                                                                                                                                                                                                                 |    |      |
| • at 400 V / rated value                                                                                                                                                                                                                                                                                                  | kW | 11   |
| <b>Operating performance / for <math>\geq 200000</math> operating cycles / at AC-4</b>                                                                                                                                                                                                                                    |    |      |
| • at 400 V / rated value                                                                                                                                                                                                                                                                                                  | kW | 6    |
| • at 690 V / rated value                                                                                                                                                                                                                                                                                                  | kW | 10.3 |

|                                                                                                                                   |                          |                            |
|-----------------------------------------------------------------------------------------------------------------------------------|--------------------------|----------------------------|
| <b>Thermal short-time current / restricted to 10 s</b>                                                                            | A                        | 304                        |
| <b>Active power loss / at AC-3 / at 400 V / with rated Operating current value / per conductor</b>                                | W                        | 3.8                        |
| <b>Off-load operating frequency</b><br>• at AC                                                                                    | 1/h                      | 5,000                      |
| <b>Frequency of operation</b><br>• with AC-1 / maximum<br>• with AC-2 / maximum<br>• with AC-3 / maximum<br>• with AC-4 / maximum | 1/h<br>1/h<br>1/h<br>1/h | 1,000<br>750<br>750<br>250 |

#### Control circuit/ Control:

|                                                                                                                                                                         |          |                             |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-----------------------------|
| <b>Voltage type / of control feed voltage</b>                                                                                                                           |          | AC                          |
| <b>Control supply voltage</b><br>• at 50 Hz / at AC / rated value<br>• at 60 Hz / at AC / rated value                                                                   | V<br>V   | 24<br>24                    |
| <b>Operating range factor control supply voltage rated value / of the magnet coil</b><br>• at 50 Hz / for AC<br>• at 60 Hz / for AC                                     |          | 0.8 ... 1.1<br>0.85 ... 1.1 |
| <b>Apparent pull-in power / of the solenoid / for AC</b>                                                                                                                | V·A      | 81                          |
| <b>Apparent holding power / of the solenoid / for AC</b>                                                                                                                | V·A      | 10.5                        |
| <b>Inductive power factor</b><br>• with the pull-in power of the coil<br>• with the pull-in power of the coil                                                           |          | 0.82<br>0.25                |
| <b>Closing delay</b><br>• at AC                                                                                                                                         | ms       | 8 ... 40                    |
| <b>Opening delay</b><br>• at AC                                                                                                                                         | ms       | 4 ... 16                    |
| <b>Arcing time</b>                                                                                                                                                      | ms       | 10 ... 10                   |
| <b>Residual current / of electronics / for control with signal &lt;0&gt;</b><br>• at 230 V / with AC / maximum permissible<br>• at 24 V / with DC / maximum permissible | mA<br>mA | 7<br>16                     |

#### Auxiliary circuit:

|                                                                                 |   |                                                 |
|---------------------------------------------------------------------------------|---|-------------------------------------------------|
| <b>Contact reliability / of the auxiliary contacts</b>                          |   | 1 faulty switching per 100 million (17 V, 1 mA) |
| <b>Number of NC contacts / for auxiliary contacts / instantaneous switching</b> |   | 1                                               |
| <b>Number of NO contacts / for auxiliary contacts / instantaneous switching</b> |   | 1                                               |
| <b>Operating current</b><br>• at AC-12 / maximum                                | A | 10                                              |

|                                     |   |      |
|-------------------------------------|---|------|
| • at AC-15                          |   |      |
| • at 230 V / rated value            | A | 10   |
| • at 400 V / rated value            | A | 3    |
| • at 500 V / rated value            | A | 2    |
| • at 690 V / rated value            | A | 1    |
| <b>Operating current / at DC-12</b> |   |      |
| • at 24 V / rated value             | A | 10   |
| • at 48 V / rated value             | A | 6    |
| • at 60 V / rated value             | A | 6    |
| • at 110 V / rated value            | A | 3    |
| • at 125 V / rated value            | A | 2    |
| • at 220 V / rated value            | A | 1    |
| • at 440 V / rated value            | A | 0.3  |
| • at 600 V / rated value            | A | 0.15 |
| <b>Operating current / at DC-13</b> |   |      |
| • at 24 V / rated value             | A | 10   |
| • at 48 V / rated value             | A | 2    |
| • at 60 V / rated value             | A | 2    |
| • at 110 V / rated value            | A | 1    |
| • at 125 V / rated value            | A | 0.9  |
| • at 220 V / rated value            | A | 0.3  |
| • at 440 V / rated value            | A | 0.14 |
| • at 600 V / rated value            | A | 0.1  |

#### UL/CSA ratings:

|                                                                              |    |             |
|------------------------------------------------------------------------------|----|-------------|
| <b>yielded mechanical performance [hp]</b>                                   |    |             |
| • for single-phase squirrel cage motors                                      |    |             |
| • at 110/120 V / rated value                                                 | hp | 3           |
| • at 230 V / rated value                                                     | hp | 5           |
| • for three-phase squirrel cage motors                                       |    |             |
| • at 200/208 V / rated value                                                 | hp | 10          |
| • at 220/230 V / rated value                                                 | hp | 10          |
| • at 460/480 V / rated value                                                 | hp | 25          |
| • at 575/600 V / rated value                                                 | hp | 25          |
| <b>Full-load current (FLA) / for 3-phase motor</b>                           |    |             |
| • at 480 V / rated value                                                     | A  | 34          |
| • at 600 V / rated value                                                     | A  | 27          |
| <b>Contact rating designation / for auxiliary contacts / according to UL</b> |    | A600 / Q600 |

#### Short-circuit:

|                                |  |  |
|--------------------------------|--|--|
| <b>Design of the fuse link</b> |  |  |
|--------------------------------|--|--|

- for short-circuit protection of the auxiliary switch / required
- for short-circuit protection of the main circuit
  - with type of assignment 1 / required
- at type of coordination 2 / required

fuse gL/gG: 10 A

gL/gG LV HRC 3NA, DIAZED 5SB, NEOZED 5SE:  
100 A

gL/gG LV HRC 3NA, DIAZED 5SB, NEOZED 5SE:  
35A

#### Installation/ mounting/ dimensions:

|                                                                     |    |                                                                                                                                            |
|---------------------------------------------------------------------|----|--------------------------------------------------------------------------------------------------------------------------------------------|
| <b>mounting position</b>                                            |    | +/-180° rotation possible on vertical mounting surface;<br>can be tilted forward and backward by +/- 22.5° on<br>vertical mounting surface |
| <b>Mounting type</b>                                                |    | screw and snap-on mounting onto 35 mm standard<br>mounting rail according to DIN EN 50022                                                  |
| <b>Mounting type / series installation</b>                          |    | Yes                                                                                                                                        |
| <b>Width</b>                                                        | mm | 45                                                                                                                                         |
| <b>Height</b>                                                       | mm | 102                                                                                                                                        |
| <b>Depth</b>                                                        | mm | 97                                                                                                                                         |
| <b>Distance, to be maintained, to the ranks assembly / sideways</b> | mm | 0                                                                                                                                          |

#### Connections/ terminals:

##### Design of the electrical connection

- for main current circuit
- for auxiliary and control current circuit
- for main contacts / finely stranded / with conductor end  
processing
- for main contacts / finely stranded / without conductor final  
cutting
- for AWG conductors / for main contacts
- for auxiliary contacts / finely stranded / with conductor end  
processing
- for auxiliary contacts / finely stranded / without conductor final  
cutting
- for AWG conductors / for auxiliary contacts

spring-loaded terminals

spring-loaded terminals

2x (1 ... 6 mm²)

2x (1 ... 6 mm²)

2x (18 ... 8)

2x (0.5 ... 1.5 mm²)

2x (0.5 ... 2.5 mm²)

2x (20 ... 14)

#### Safety related data:

|                                                                                                                                                                                                   |        |           |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|-----------|
| <b>B10 value / with high demand rate</b> <ul style="list-style-type: none"> <li>• according to SN 31920</li> </ul>                                                                                |        | 1,000,000 |
| <b>T1 value / for proof test interval or service life</b> <ul style="list-style-type: none"> <li>• according to IEC 61508</li> </ul>                                                              | a      | 20        |
| <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> | %<br>% | 40<br>73  |
| <b>Failure rate [FIT] / with low demand rate</b> <ul style="list-style-type: none"> <li>• according to SN 31920</li> </ul>                                                                        | FIT    | 100       |

#### Product function

- mirror contact to IEC 60947-4-1
- positively driven operation to IEC 60947-5-1

Yes

No

#### Certificates/ approvals:

##### General Product Approval

##### EMC

##### Functional Safety / Safety of Machinery



CCC



CSA



UL



C-TICK

[Type Examination](#)

##### Declaration of Conformity

##### Test Certificates



EG-Konf.

[Special Test  
Certificate](#)

[Type Test  
Certificates/Test  
Report](#)

#### Shipping Approval



ABS



BUREAU  
VERITAS



DNV



GL



LRS



PRS

#### Shipping Approval

#### other



RINA



RMRS

[Confirmation](#)



VDE

[Environmental  
Confirmations](#)

#### Further information:

##### Information- and Downloadcenter (Catalogs, Brochures,...)

<http://www.siemens.com/industrial-controls/catalogs>

##### Industry Mall (Online ordering system)

<http://mall.industry.siemens.com/>

##### Cax online generator

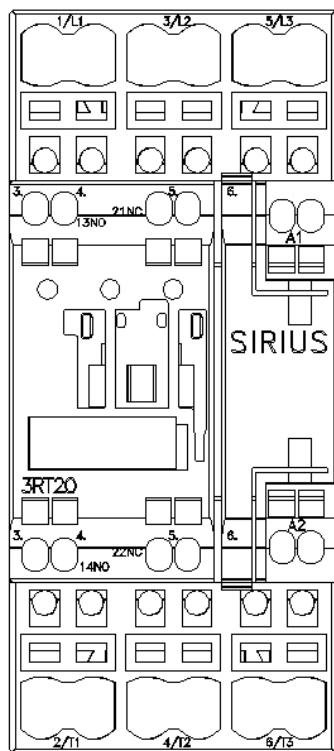
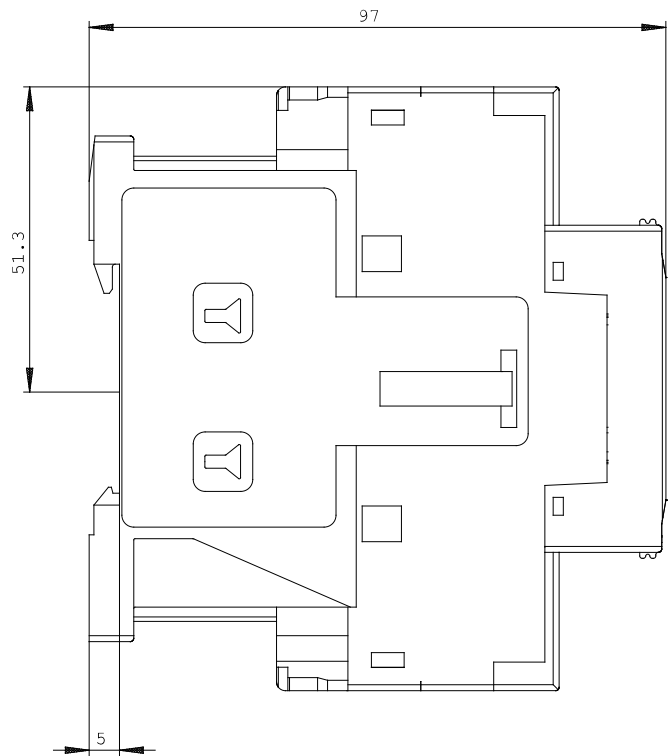
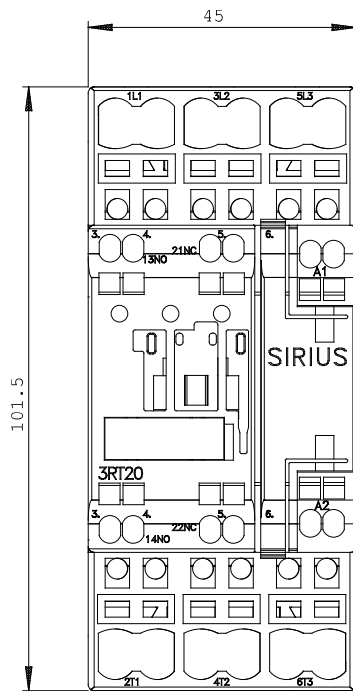
<http://www.siemens.com/cax>

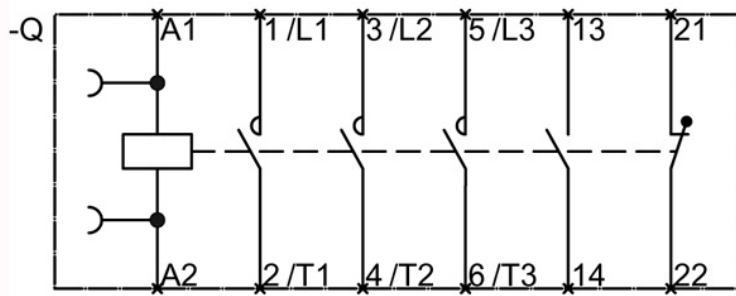
##### Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

<http://support.automation.siemens.com/WW/view/en/3RT2028-2AC20/all>

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

[http://www.automation.siemens.com/bilddb/cax\\_en.aspx?mlfb=3RT2028-2AC20](http://www.automation.siemens.com/bilddb/cax_en.aspx?mlfb=3RT2028-2AC20)





last change:

Aug 4, 2014