

Circuit breaker size S0 for system protection with approval circuit breaker UL 489, CSA C22.2 No.5-02 A-release 20 A N-release 260 A screw terminal Standard switching capacity



|                          |                                                           |
|--------------------------|-----------------------------------------------------------|
| Product brand name       | SIRIUS                                                    |
| Product designation      | Circuit breaker                                           |
| Design of the product    | For system protection according to UL 489/CSA C22.2 No. 5 |
| Product type designation | 3RV2                                                      |

| General technical data                                                    |        |
|---------------------------------------------------------------------------|--------|
| Size of the circuit-breaker                                               | S0     |
| Product extension                                                         |        |
| • Auxiliary switch                                                        | Yes    |
| Power loss [W] for rated value of the current                             |        |
| • at AC in hot operating state                                            | 10.5 W |
| • at AC in hot operating state per pole                                   | 3.5 W  |
| Insulation voltage with degree of pollution 3 at AC rated value           | 690 V  |
| Surge voltage resistance rated value                                      | 6 kV   |
| maximum permissible voltage for safe isolation                            |        |
| • in networks with grounded star point between main and auxiliary circuit | 400 V  |
| • in networks with grounded star point between main and auxiliary circuit | 400 V  |

|                                                   |             |
|---------------------------------------------------|-------------|
| <b>Protection class IP</b>                        |             |
| • on the front                                    | IP20        |
| • of the terminal                                 | IP00        |
| <b>Shock resistance</b>                           |             |
| • acc. to IEC 60068-2-27                          | 25g / 11 ms |
| <b>Mechanical service life (switching cycles)</b> |             |
| • of the main contacts typical                    | 100 000     |
| • of auxiliary contacts typical                   | 100 000     |
| <b>Electrical endurance (switching cycles)</b>    |             |
| • typical                                         | 100 000     |
| <b>Reference code acc. to DIN EN 81346-2</b>      | Q           |

#### Ambient conditions

|                                                        |                |
|--------------------------------------------------------|----------------|
| <b>Installation altitude at height above sea level</b> |                |
| • maximum                                              | 2 000 m        |
| <b>Ambient temperature</b>                             |                |
| • during operation                                     | -20 ... +60 °C |
| • during storage                                       | -50 ... +80 °C |
| • during transport                                     | -50 ... +80 °C |
| <b>Temperature compensation</b>                        | -20 ... +60 °C |
| Relative humidity during operation                     | 10 ... 95 %    |

#### Main circuit

|                                                 |              |
|-------------------------------------------------|--------------|
| <b>Number of poles for main current circuit</b> | 3            |
| <b>Operating voltage</b>                        |              |
| • rated value                                   | 690 V        |
| • at AC-3 rated value maximum                   | 690 V        |
| <b>Operating frequency rated value</b>          | 50 ... 60 Hz |
| <b>Operating current rated value</b>            | 20 A         |
| <b>Operating current</b>                        |              |
| • at AC-3                                       |              |
| — at 400 V rated value                          | 20 A         |
| <b>Operating power</b>                          |              |
| • at AC-3                                       |              |
| — at 230 V rated value                          | 5 500 W      |
| — at 400 V rated value                          | 7 500 W      |
| — at 500 V rated value                          | 11 000 W     |
| — at 690 V rated value                          | 15 000 W     |
| <b>Operating frequency</b>                      |              |
| • at AC-3 maximum                               | 15 1/h       |

#### Auxiliary circuit

|                                                     |   |
|-----------------------------------------------------|---|
| <b>Number of NC contacts for auxiliary contacts</b> | 0 |
| <b>Number of NO contacts for auxiliary contacts</b> | 0 |

|                                                                                                |            |
|------------------------------------------------------------------------------------------------|------------|
| <b>Number of CO contacts</b>                                                                   |            |
| • for auxiliary contacts                                                                       | 0          |
| <b>Protective and monitoring functions</b>                                                     |            |
| <b>Product function</b>                                                                        |            |
| • Ground fault detection                                                                       | No         |
| • Phase failure detection                                                                      | No         |
| <b>Design of the overload release</b>                                                          | thermal    |
| <b>Operational short-circuit current breaking capacity (Ics) at AC</b>                         |            |
| • at 240 V rated value                                                                         | 100 kA     |
| • at 400 V rated value                                                                         | 25 kA      |
| • at 500 V rated value                                                                         | 5 kA       |
| • at 690 V rated value                                                                         | 2 kA       |
| <b>Maximum short-circuit current breaking capacity (Icu)</b>                                   |            |
| • at AC at 240 V rated value                                                                   | 100 kA     |
| • at AC at 400 V rated value                                                                   | 55 kA      |
| • at AC at 500 V rated value                                                                   | 10 kA      |
| • at AC at 690 V rated value                                                                   | 4 kA       |
| • at 480 AC Y/277 V acc. to UL 489 rated value                                                 | 50 000 A   |
| <b>Response value current</b>                                                                  |            |
| • of instantaneous short-circuit trip unit                                                     | 260 A      |
| <b>UL/CSA ratings</b>                                                                          |            |
| <b>Yielded mechanical performance [hp]</b>                                                     |            |
| • for single-phase AC motor                                                                    |            |
| — at 110/120 V rated value                                                                     | 1.5 hp     |
| — at 230 V rated value                                                                         | 3 hp       |
| • for three-phase AC motor                                                                     |            |
| — at 200/208 V rated value                                                                     | 5 hp       |
| — at 220/230 V rated value                                                                     | 5 hp       |
| — at 460/480 V rated value                                                                     | 10 hp      |
| <b>Short-circuit protection</b>                                                                |            |
| <b>Product function Short circuit protection</b>                                               | Yes        |
| <b>Design of the short-circuit trip</b>                                                        | magnetic   |
| <b>Design of the fuse link for IT network for short-circuit protection of the main circuit</b> |            |
| • at 400 V                                                                                     | gL/gG 63 A |
| • at 500 V                                                                                     | gL/gG 50 A |
| • at 690 V                                                                                     | gL/gG 50 A |
| <b>Installation/ mounting/ dimensions</b>                                                      |            |
| <b>Mounting position</b>                                                                       | any        |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                        |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
| <b>Mounting type</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | screw and snap-on mounting onto 35 mm standard mounting rail according to DIN EN 60715 |
| <b>Height</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 144 mm                                                                                 |
| <b>Width</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 45 mm                                                                                  |
| <b>Depth</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 97 mm                                                                                  |
| <b>Required spacing</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                        |
| <ul style="list-style-type: none"> <li>• for grounded parts at 400 V <ul style="list-style-type: none"> <li>— downwards 30 mm</li> <li>— upwards 30 mm</li> <li>— Backwards 0 mm</li> <li>— at the side 9 mm</li> <li>— forwards 0 mm</li> </ul> </li> <li>• for live parts at 400 V <ul style="list-style-type: none"> <li>— downwards 30 mm</li> <li>— upwards 30 mm</li> <li>— Backwards 0 mm</li> <li>— at the side 9 mm</li> <li>— forwards 0 mm</li> </ul> </li> <li>• for grounded parts at 500 V <ul style="list-style-type: none"> <li>— downwards 30 mm</li> <li>— upwards 30 mm</li> <li>— Backwards 0 mm</li> <li>— at the side 9 mm</li> <li>— forwards 0 mm</li> </ul> </li> <li>• for live parts at 500 V <ul style="list-style-type: none"> <li>— downwards 30 mm</li> <li>— upwards 30 mm</li> <li>— Backwards 0 mm</li> <li>— at the side 9 mm</li> <li>— forwards 0 mm</li> </ul> </li> <li>• for grounded parts at 690 V <ul style="list-style-type: none"> <li>— downwards 50 mm</li> <li>— upwards 50 mm</li> <li>— Backwards 0 mm</li> <li>— at the side 30 mm</li> <li>— forwards 0 mm</li> </ul> </li> <li>• for live parts at 690 V <ul style="list-style-type: none"> <li>— downwards 50 mm</li> <li>— upwards 50 mm</li> <li>— Backwards 0 mm</li> <li>— at the side 30 mm</li> </ul> </li> </ul> |                                                                                        |

## Connections/ Terminals

|                                                                                                                                                                                                                                                                                                    |                                                                                                                                   |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| <b>Product function</b> <ul style="list-style-type: none"> <li>removable terminal for auxiliary and control circuit</li> </ul>                                                                                                                                                                     | No                                                                                                                                |
| <b>Type of electrical connection</b> <ul style="list-style-type: none"> <li>for main current circuit</li> </ul>                                                                                                                                                                                    | screw-type terminals                                                                                                              |
| <b>Arrangement of electrical connectors for main current circuit</b>                                                                                                                                                                                                                               | Top and bottom                                                                                                                    |
| <b>Type of connectable conductor cross-sections</b> <ul style="list-style-type: none"> <li>for main contacts <ul style="list-style-type: none"> <li>single or multi-stranded</li> <li>finely stranded with core end processing</li> </ul> </li> <li>at AWG conductors for main contacts</li> </ul> | 1 ... 10 mm <sup>2</sup> , max. 2x 10 mm <sup>2</sup><br>1 ... 16 mm <sup>2</sup> , max. 6 + 16 mm <sup>2</sup><br>2x (14 ... 10) |
| <b>Tightening torque</b> <ul style="list-style-type: none"> <li>for main contacts with screw-type terminals</li> </ul>                                                                                                                                                                             | 2.5 ... 3 N·m                                                                                                                     |
| <b>Design of screwdriver shaft</b>                                                                                                                                                                                                                                                                 | Diameter 5 to 6 mm                                                                                                                |
| <b>Size of the screwdriver tip</b>                                                                                                                                                                                                                                                                 | Pozidriv 2                                                                                                                        |
| <b>Design of the thread of the connection screw</b> <ul style="list-style-type: none"> <li>for main contacts</li> </ul>                                                                                                                                                                            | M4                                                                                                                                |

## Safety related data

|                                                                                                                                                                                 |              |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| <b>B10 value</b> <ul style="list-style-type: none"> <li>with high demand rate acc. to SN 31920</li> </ul>                                                                       | 5 000        |
| <b>Proportion of dangerous failures</b> <ul style="list-style-type: none"> <li>with low demand rate acc. to SN 31920</li> <li>with high demand rate acc. to SN 31920</li> </ul> | 50 %<br>50 % |
| <b>Failure rate [FIT]</b> <ul style="list-style-type: none"> <li>with low demand rate acc. to SN 31920</li> </ul>                                                               | 50 FIT       |
| <b>T1 value for proof test interval or service life acc. to IEC 61508</b>                                                                                                       | 10 y         |
| <b>Display version</b> <ul style="list-style-type: none"> <li>for switching status</li> </ul>                                                                                   | Handle       |

## Certificates/ approvals

| General Product Approval                                                          |                                                                                   |                                                                                   | Declaration of Conformity                                                         | Test Certificates                                                                   |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|  |  |  |  | <a href="#">Miscellaneous</a><br><a href="#">Type Test Certificates/Test Report</a> |
| CSA                                                                               | UL                                                                                |                                                                                   | EG-Konf.                                                                          |                                                                                     |

| Test Certificates                        | Marine / Shipping                                                                                   | other                                                                                      |
|------------------------------------------|-----------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|
| <a href="#">Special Test Certificate</a> | <br>BUREAU VERITAS | <a href="#">Confirmation</a>                                                               |
|                                          | <br>LRS            | <br>RMRS  |
|                                          |                                                                                                     | <br>VDE |

| Railway                             |
|-------------------------------------|
| <a href="#">Vibration and Shock</a> |

#### Further information

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

<https://www.siemens.com/ic10>

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

<https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RV2721-4BD10>

##### Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RV2721-4BD10>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RV2721-4BD10>

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

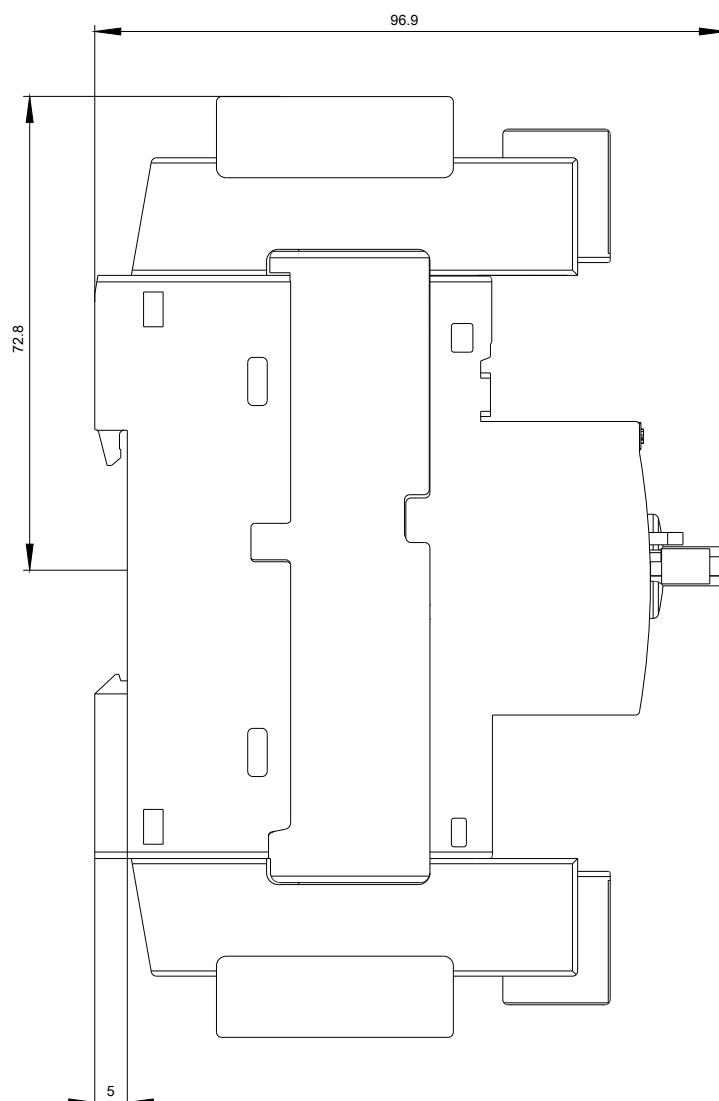
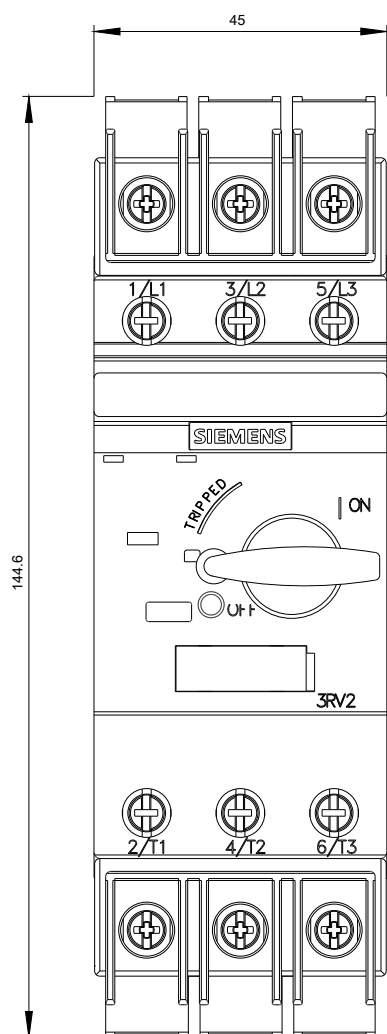
[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RV2721-4BD10&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RV2721-4BD10&lang=en)

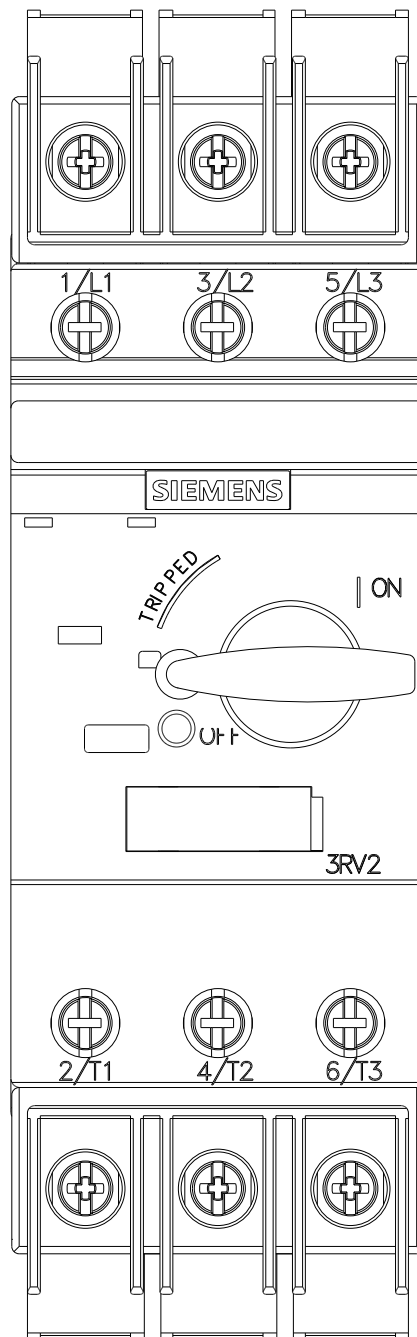
##### Characteristic: Tripping characteristics, I<sub>t</sub>, Let-through current

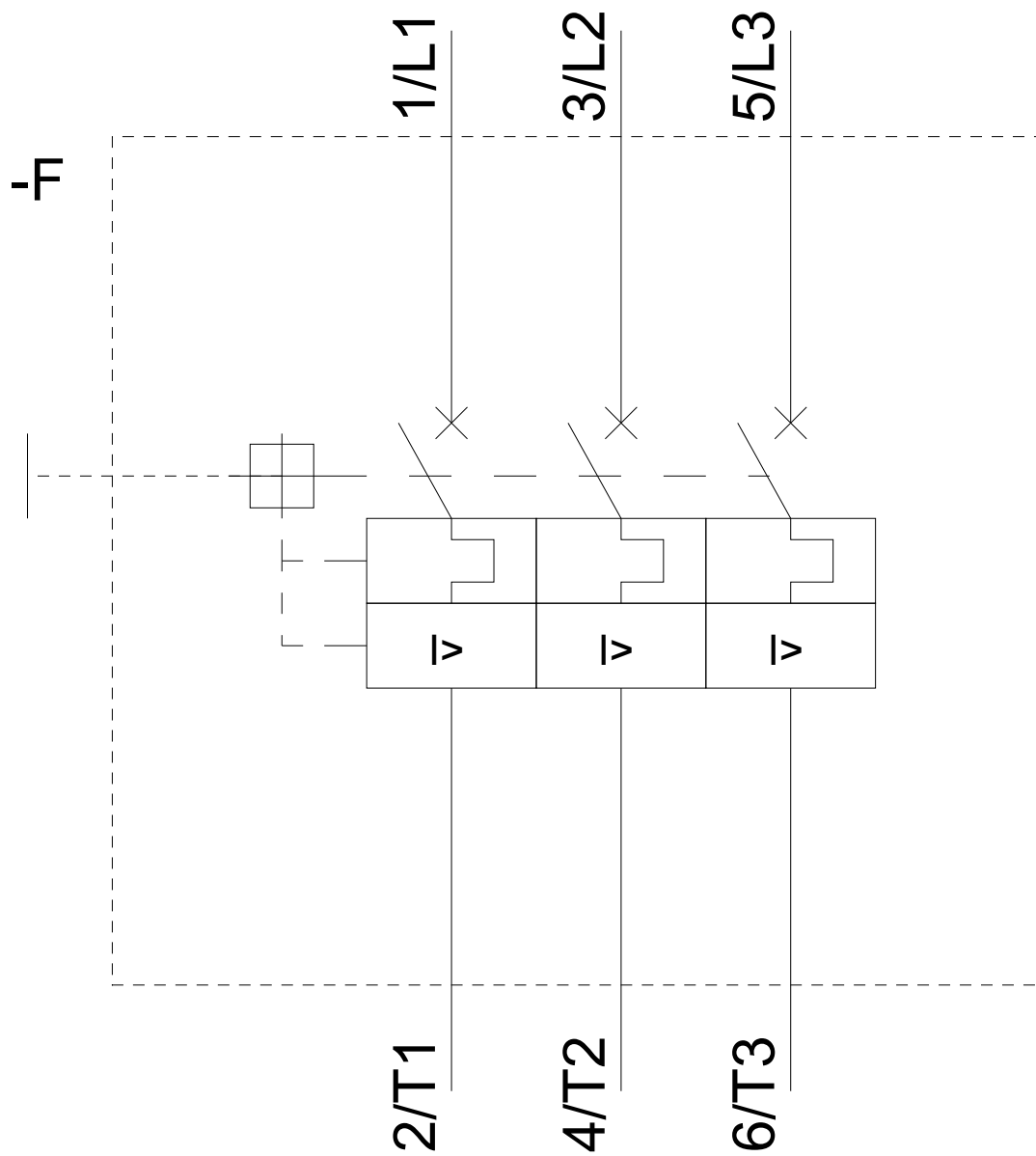
<https://support.industry.siemens.com/cs/ww/en/ps/3RV2721-4BD10/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RV2721-4BD10&objecttype=14&gridview=view1>







last modified:

03/05/2020