

THERM. OVERLOAD RELAY, 80-100A, FOR MOTOR  
PROTECTION SIZE S3, CLASS 10 FOR CONTACTOR MOUNTING  
MAIN CIRCUIT: SCREW TERMINAL AUX. CIRCUIT: SPRING-TYPE  
TER. MANUAL-AUTOMATIC-RESET



Figure similar

|                                                                                |                        |
|--------------------------------------------------------------------------------|------------------------|
| Product brand name                                                             | SIRIUS                 |
| Product designation                                                            | thermal overload relay |
| Product type designation                                                       | 3RU2                   |
| General technical data                                                         |                        |
| Size of overload relay                                                         | S3                     |
| Size of contactor can be combined company-specific                             | S3                     |
| Insulation voltage with degree of pollution 3 rated value                      | 1 000 V                |
| Surge voltage resistance rated value                                           | 8 kV                   |
| maximum permissible voltage for safe isolation                                 |                        |
| • in networks with grounded star point between auxiliary and auxiliary circuit | 440 V                  |
| • in networks with grounded star point between auxiliary and auxiliary circuit | 440 V                  |
| • in networks with grounded star point between main and auxiliary circuit      | 440 V                  |
| • in networks with grounded star point between main and auxiliary circuit      | 440 V                  |

|                                                    |                                                                  |
|----------------------------------------------------|------------------------------------------------------------------|
| <b>Protection class IP</b>                         |                                                                  |
| • on the front                                     | IP20                                                             |
| • of the terminal                                  | IP00                                                             |
| <b>Recovery time</b>                               |                                                                  |
| • after overload trip with automatic reset typical | 10 min                                                           |
| • after overload trip with remote-reset            | 10 min                                                           |
| • after overload trip with manual reset            | 10 min                                                           |
| <b>Type of protection</b>                          | on request                                                       |
| <b>Protection against electrical shock</b>         | finger-safe when touched vertically from front acc. to IEC 60529 |
| Equipment marking acc. to DIN EN 81346-2           | F                                                                |

#### Ambient conditions

|                                 |                |
|---------------------------------|----------------|
| <b>Ambient temperature</b>      |                |
| • during operation              | -40 ... +70 °C |
| • during storage                | -55 ... +80 °C |
| • during transport              | -55 ... +80 °C |
| <b>Temperature compensation</b> | -40 ... +60 °C |

#### Main circuit

|                                                                                   |              |
|-----------------------------------------------------------------------------------|--------------|
| <b>Number of poles for main current circuit</b>                                   | 3            |
| <b>Adjustable pick-up value current of the current-dependent overload release</b> | 80 ... 100 A |
| <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>                                              | 100 A        |

#### Auxiliary circuit

|                                                         |                             |
|---------------------------------------------------------|-----------------------------|
| <b>Design of the auxiliary switch</b>                   | integrated                  |
| <b>Number of NC contacts</b>                            |                             |
| • for auxiliary contacts                                | 1                           |
| — Note                                                  | for contactor disconnection |
| <b>Number of NO contacts</b>                            |                             |
| • for auxiliary contacts                                | 1                           |
| — Note                                                  | for message "Tripped"       |
| <b>Number of CO contacts</b>                            |                             |
| • for auxiliary contacts                                | 0                           |
| <b>Operating current of auxiliary contacts at AC-15</b> |                             |
| • at 24 V                                               | 3 A                         |
| • at 110 V                                              | 3 A                         |
| • at 120 V                                              | 3 A                         |
| • at 125 V                                              | 3 A                         |
| • at 230 V                                              | 2 A                         |

|                                                                 |                                                               |
|-----------------------------------------------------------------|---------------------------------------------------------------|
| • at 400 V                                                      | 1 A                                                           |
| <b>Operating current of auxiliary contacts at DC-13</b>         |                                                               |
| • at 24 V                                                       | 2 A                                                           |
| • at 60 V                                                       | 0.3 A                                                         |
| • at 110 V                                                      | 0.22 A                                                        |
| • at 125 V                                                      | 0.22 A                                                        |
| • at 220 V                                                      | 0.11 A                                                        |
| <b>Design of the miniature circuit breaker</b>                  |                                                               |
| • for short-circuit protection of the auxiliary switch required | 6A (SCC less than equal to 0.5 kA; U less than equal to 260V) |
| <b>Contact rating of auxiliary contacts according to UL</b>     | B600 / R300                                                   |

#### Protective and monitoring functions

|                                       |          |
|---------------------------------------|----------|
| <b>Trip class</b>                     | CLASS 10 |
| <b>Design of the overload release</b> | thermal  |

#### UL/CSA ratings

|                                                         |      |
|---------------------------------------------------------|------|
| <b>Full-load current (FLA) for three-phase AC motor</b> |      |
| • at 480 V rated value                                  | 96 A |
| • at 600 V rated value                                  | 99 A |

#### Short-circuit protection

|                                                                 |                           |
|-----------------------------------------------------------------|---------------------------|
| <b>Design of the fuse link</b>                                  |                           |
| • for short-circuit protection of the main circuit              |                           |
| — with type of coordination 1 required                          | gG: 250 A                 |
| — with type of assignment 2 required                            | gG: 200 A                 |
| • for short-circuit protection of the auxiliary switch required | fuse gG: 6 A, quick: 10 A |

#### Installation/ mounting/ dimensions

|                              |                 |
|------------------------------|-----------------|
| <b>Mounting position</b>     | any             |
| <b>Mounting type</b>         | direct mounting |
| <b>Height</b>                | 105 mm          |
| <b>Width</b>                 | 70 mm           |
| <b>Depth</b>                 | 125 mm          |
| <b>Required spacing</b>      |                 |
| • with side-by-side mounting |                 |
| — forwards                   | 0 mm            |
| — Backwards                  | 0 mm            |
| — upwards                    | 0 mm            |
| — downwards                  | 0 mm            |
| — at the side                | 0 mm            |
| • for grounded parts         |                 |
| — forwards                   | 0 mm            |
| — Backwards                  | 0 mm            |

|                  |      |
|------------------|------|
| — upwards        | 0 mm |
| — at the side    | 6 mm |
| — downwards      | 0 mm |
| • for live parts |      |
| — forwards       | 0 mm |
| — Backwards      | 0 mm |
| — upwards        | 0 mm |
| — downwards      | 0 mm |
| — at the side    | 6 mm |

## Connections/Terminals

|                                                                           |                                                                                                  |
|---------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| <b>Product function</b>                                                   |                                                                                                  |
| • removable terminal for auxiliary and control circuit                    | No                                                                                               |
| <b>Type of electrical connection</b>                                      |                                                                                                  |
| • for main current circuit                                                | screw-type terminals                                                                             |
| • for auxiliary and control current circuit                               | spring-loaded terminals                                                                          |
| <b>Arrangement of electrical connectors for main current circuit</b>      | Top and bottom                                                                                   |
| <b>Type of connectable conductor cross-sections</b>                       |                                                                                                  |
| • for main contacts                                                       |                                                                                                  |
| — solid                                                                   | 2x (2.5 ... 16 mm <sup>2</sup> )                                                                 |
| — stranded                                                                | 2x (6 ... 16 mm <sup>2</sup> ), 2x (10 ... 50 mm <sup>2</sup> ), 1x (10 ... 70 mm <sup>2</sup> ) |
| — single or multi-stranded                                                | 2x (2,5 ... 50 mm <sup>2</sup> ), 1x (10 ... 70 mm <sup>2</sup> )                                |
| — finely stranded with core end processing                                | 2x (2.5 ... 35 mm <sup>2</sup> ), 1x (2.5 ... 50 mm <sup>2</sup> )                               |
| • at AWG conductors for main contacts                                     | 2x (10 ... 1/0), 1x (10 ... 2/0)                                                                 |
| <b>Type of connectable conductor cross-sections</b>                       |                                                                                                  |
| • for auxiliary contacts                                                  |                                                                                                  |
| — single or multi-stranded                                                | 2x (0,5 ... 2,5 mm <sup>2</sup> )                                                                |
| — finely stranded with core end processing                                | 2x (0.5 ... 1.5 mm <sup>2</sup> )                                                                |
| — finely stranded without core end processing                             | 2x (0.5 ... 2.5 mm <sup>2</sup> )                                                                |
| • at AWG conductors for auxiliary contacts                                | 2x (20 ... 14)                                                                                   |
| <b>Tightening torque</b>                                                  |                                                                                                  |
| • for ring cable lug                                                      |                                                                                                  |
| — for main contacts                                                       | 4.5 ... 6 N·m                                                                                    |
| <b>Outer diameter of the usable ring cable lug maximum</b>                | 19 mm                                                                                            |
| <b>Tightening torque</b>                                                  |                                                                                                  |
| • for main contacts with screw-type terminals                             | 4.5 ... 6 N·m                                                                                    |
| <b>Design of screwdriver shaft</b>                                        | Hexagonal socket                                                                                 |
| <b>Safety related data</b>                                                |                                                                                                  |
| <b>T1 value for proof test interval or service life acc. to IEC 61508</b> | 20 y                                                                                             |

## Display

### Display version

- for switching status

Slide switch

## Certificates/approvals

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

| Test<br>Certificates                         | other                        |
|----------------------------------------------|------------------------------|
| <a href="#">Special Test<br/>Certificate</a> | <a href="#">Confirmation</a> |

## Further information

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

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

### Industry Mall (Online ordering system)

<https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RU2146-4MD0>

### Cax online generator

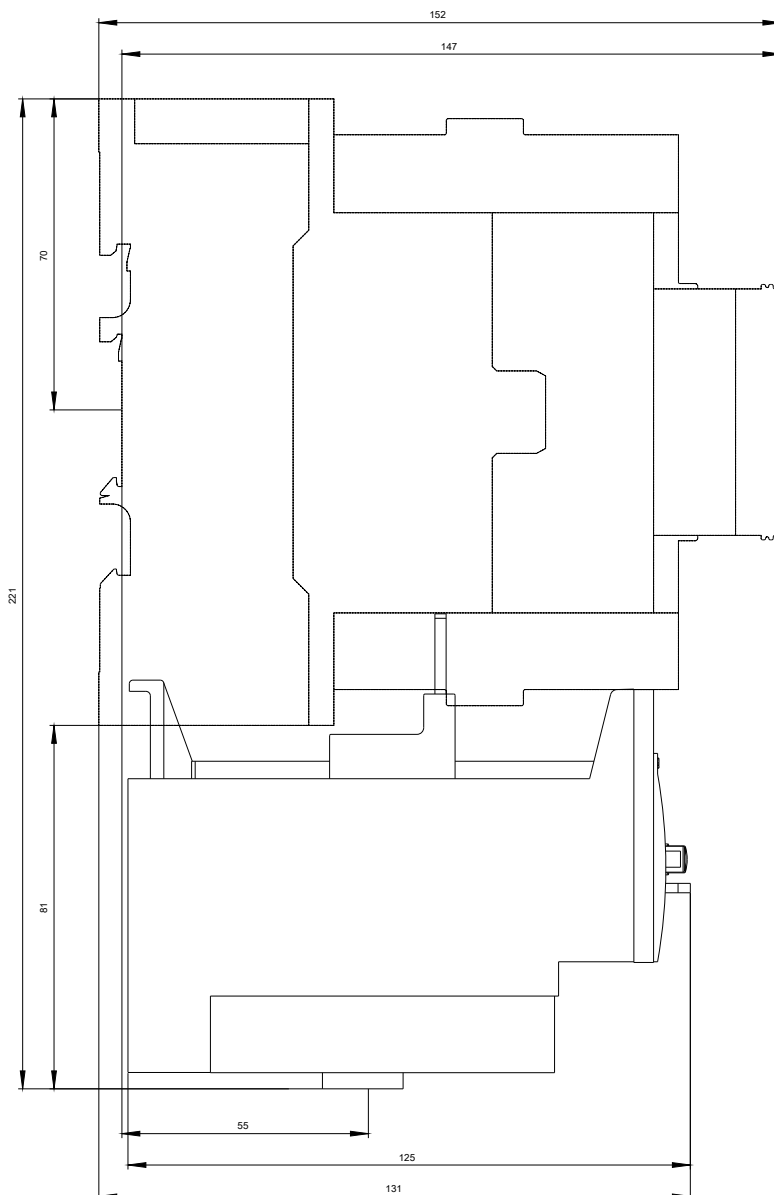
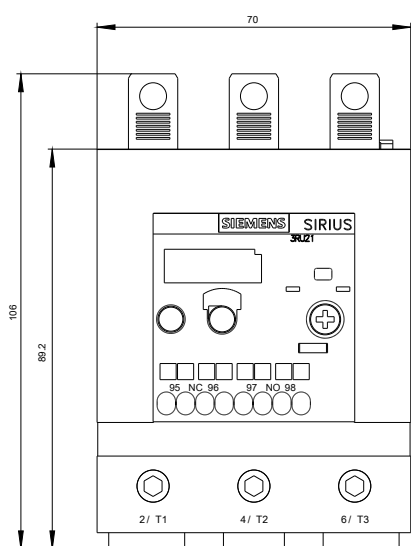
<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RU2146-4MD0>

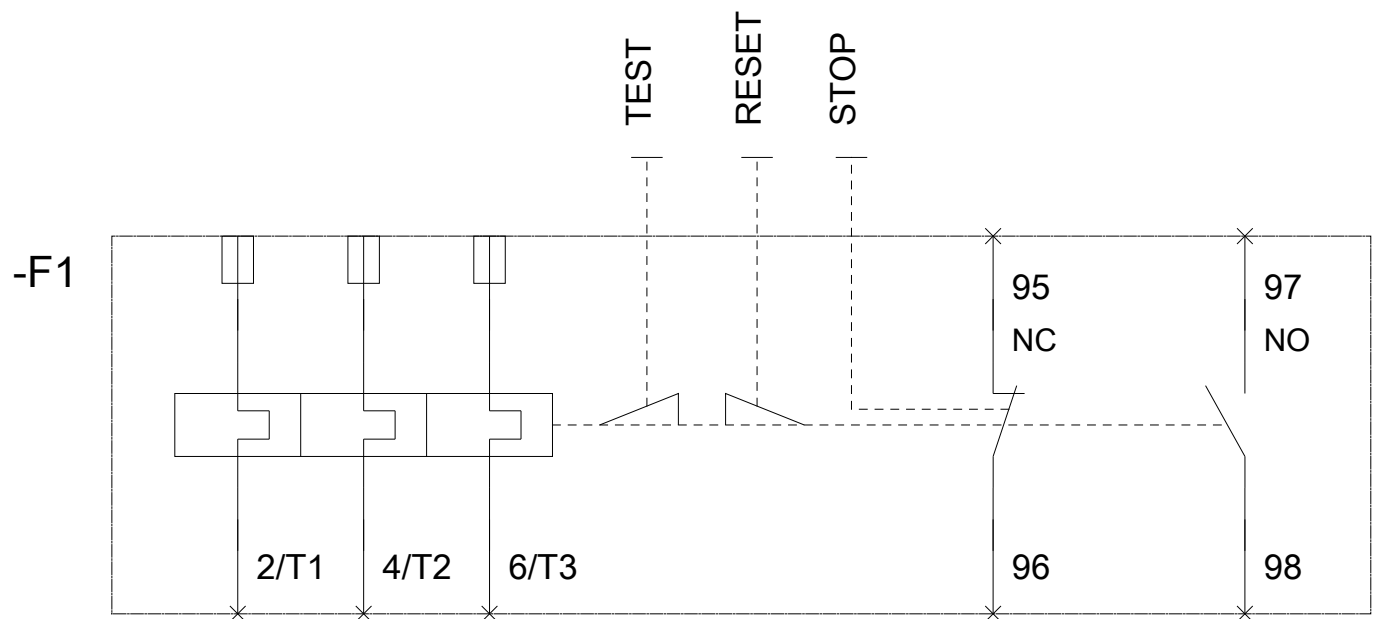
### Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

<https://support.industry.siemens.com/cs/ww/en/ps/3RU2146-4MD0>

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

[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RU2146-4MD0&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RU2146-4MD0&lang=en)





last modified:

07/17/2017