



Overload relay 160...630 A for motor protection Size S10/S12, CLASS 5...30E Contactor mounting/stand-alone installation Main circuit: busbar connection Auxiliary circuit: Screw terminal Manual-Automatic-Reset Internal ground fault detection

| | |
|--------------------------|----------------------------|
| product brand name | SIRIUS |
| product designation | solid-state overload relay |
| product type designation | 3RB2 |

General technical data

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|---|--|
| size of overload relay | S10, S12 |
| size of contactor can be combined company-specific | S10, S12 |
| insulation voltage with degree of pollution 3 at AC 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 | 300 V |
| • between auxiliary and auxiliary circuit | 300 V |
| • between main and auxiliary circuit | 600 V |
| • between main and auxiliary circuit | 690 V |
| shock resistance | 15g / 11 ms |
| • according to IEC 60068-2-27 | 15g / 11 ms; Signaling contact 97 / 98 in position "Tripped": 8g / 11 ms |
| vibration resistance | 1-6 Hz, 15 mm; 6-500 Hz, 20 m/s ² ; 10 cycles |
| thermal current | 630 A |
| type of protection according to ATEX directive 2014/34/EU | Ex II (2) G [Ex e] [Ex d] [Ex px] ; Ex II (2) D [Ex t] [Ex p] |
| certificate of suitability according to ATEX directive 2014/34/EU | PTB 06 ATEX 3001 |
| reference code according to IEC 81346-2 | F |
| Substance Prohibitance (Date) | 07/01/2006 |

Ambient conditions

| | |
|---|----------------|
| installation altitude at height above sea level maximum | 2 000 m |
| ambient temperature | |
| • during operation | -25 ... +60 °C |
| • during storage | -40 ... +80 °C |
| • during transport | -40 ... +80 °C |
| temperature compensation | -25 ... +60 °C |
| relative humidity during operation | 10 ... 95 % |

Main circuit

| | |
|---|---------------|
| number of poles for main current circuit | 3 |
| adjustable current response value current of the current-dependent overload release | 160 ... 630 A |
| operating voltage | |
| • rated value | 1 000 V |
| • for remote-reset function at DC | 24 V |
| • at AC-3e rated value maximum | 1 000 V |
| operating frequency rated value | 50 ... 60 Hz |

| | |
|--|---|
| operational current rated value | 630 A |
| operational current at AC-3e at 400 V rated value | 630 A |
| operating power | |
| • for 3-phase motors at 400 V at 50 Hz | 90 ... 355 kW |
| • for AC motors at 500 V at 50 Hz | 132 ... 400 kW |
| • for AC motors at 690 V at 50 Hz | 160 ... 560 kW |
| Auxiliary circuit | |
| design of the auxiliary switch | integrated |
| number of NC contacts for auxiliary contacts | 1 |
| • note | for contactor disconnection |
| number of NO contacts for auxiliary contacts | 1 |
| • note | for message "tripped" |
| number of CO contacts for auxiliary contacts | 0 |
| operational current of auxiliary contacts at AC-15 | |
| • at 24 V | 4 A |
| • at 110 V | 4 A |
| • at 120 V | 4 A |
| • at 125 V | 4 A |
| • at 230 V | 3 A |
| operational current of auxiliary contacts at DC-13 | |
| • at 24 V | 2 A |
| • at 60 V | 0.55 A |
| • at 110 V | 0.3 A |
| • at 125 V | 0.3 A |
| • at 220 V | 0.11 A |
| Protective and monitoring functions | |
| trip class | CLASS 5E, 10E, 20E and 30E adjustable |
| design of the overload release | electronic |
| response value current of the grounding protection minimum | 0.75 x IMotor |
| response time of the grounding protection in settled state | 1 000 ms |
| operating range of the grounding protection relating to current set value | |
| • minimum | IMotor > lower current setting value |
| • maximum | IMotor < upper current setting value x 3.5 |
| UL/CSA ratings | |
| full-load current (FLA) for 3-phase AC motor | |
| • at 480 V rated value | 630 A |
| • at 600 V rated value | 630 A |
| contact rating of auxiliary contacts according to UL | B600 / R300 |
| Short-circuit protection | |
| design of the fuse link | |
| • for short-circuit protection of the main circuit | |
| — with type of coordination 1 required | gG: 800 A, Class L: 1600 A |
| — with type of assignment 2 required | gG: 630 A |
| • for short-circuit protection of the auxiliary switch required | fuse gG: 6 A |
| Installation/ mounting/ dimensions | |
| mounting position | any |
| fastening method | Contactor mounting/stand-alone installation |
| height | 119 mm |
| width | 120 mm |
| depth | 155 mm |
| Connections/ Terminals | |
| product component removable terminal for auxiliary and control circuit | Yes |
| type of electrical connection | |
| • for main current circuit | busbar connection |
| • for auxiliary and control circuit | screw-type terminals |
| arrangement of electrical connectors for main current circuit | Top and bottom |
| type of connectable conductor cross-sections | |

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|--|--|
| <ul style="list-style-type: none"> • for auxiliary contacts <ul style="list-style-type: none"> — solid — solid or stranded — finely stranded with core end processing • at AWG cables for auxiliary contacts | 1x (0.5 ... 4 mm ²), 2x (0.5 ... 2.5 mm ²) 1x (0.5 ... 4 mm ²), 2x (0.5 ... 2.5 mm ²) 1x (0.5 ... 2.5 mm ²), 2x (0.5 ... 1.5 mm ²) 2x (20 ... 14) |
| tightening torque | |
| <ul style="list-style-type: none"> • for main contacts with screw-type terminals • for auxiliary contacts with screw-type terminals | 20 ... 22 N·m 0.8 ... 1.2 N·m |
| design of the thread of the connection screw | |
| <ul style="list-style-type: none"> • for main contacts • of the auxiliary and control contacts | M10 M3 |

Safety related data

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| protection class IP on the front according to IEC 60529 | IP00; IP20 with box terminal/cover |
| touch protection on the front according to IEC 60529 | finger-safe, for vertical contact from the front with box terminal/cover |

Communication/ Protocol

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| type of voltage supply via input/output link master | No |
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Electromagnetic compatibility

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|---|---|
| conducted interference | |
| <ul style="list-style-type: none"> • due to burst according to IEC 61000-4-4 | 2 kV (power ports), 1 kV (signal ports) corresponds to degree of severity 3 |
| <ul style="list-style-type: none"> • due to conductor-earth surge according to IEC 61000-4-5 | 2 kV (line to earth) corresponds to degree of severity 3 |
| <ul style="list-style-type: none"> • due to conductor-conductor surge according to IEC 61000-4-5 | 1 kV (line to line) corresponds to degree of severity 3 |
| <ul style="list-style-type: none"> • due to high-frequency radiation according to IEC 61000-4-6 | 10 V in frequency range 0.15 to 80 MHz, modulation 80 % AM with 1 kHz |
| field-based interference according to IEC 61000-4-3 | 10 V/m |
| electrostatic discharge according to IEC 61000-4-2 | 6 kV contact discharge / 8 kV air discharge |

Display

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| display version for switching status | Slide switch |
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Certificates/ approvals

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|---------------------------------|------------|
| General Product Approval | EMC |
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[Confirmation](#)



| | | | |
|---------------------------------------|----------------------------------|--------------------------|--------------------------|
| For use in hazardous locations | Declaration of Conformity | Test Certificates | Marine / Shipping |
|---------------------------------------|----------------------------------|--------------------------|--------------------------|



[Type Test Certificates/Test Report](#)

[Special Test Certificate](#)



| | |
|--------------------------|--------------|
| Marine / Shipping | other |
|--------------------------|--------------|



[Miscellaneous](#)

[Confirmation](#)

Further information

Information on the packaging

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

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

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

Industry Mall (Online ordering system)

<https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RB2163-4MC2>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RB2163-4MC2>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RB2163-4MC2>

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

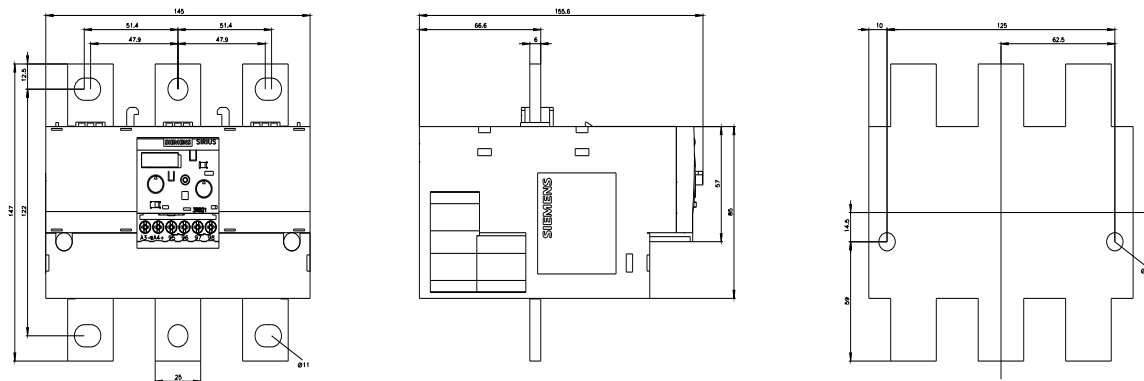
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RB2163-4MC2&lang=en

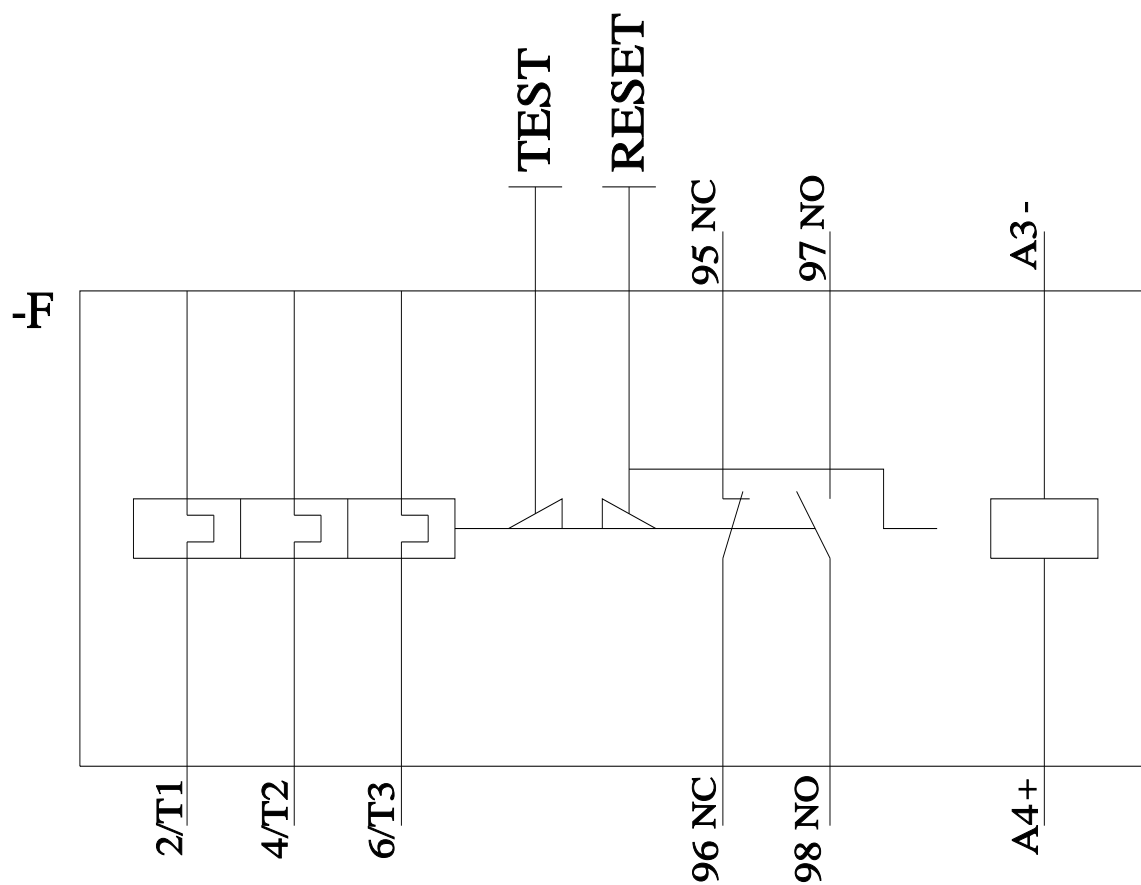
Characteristic: Tripping characteristics, I²t, Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3RB2163-4MC2/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RB2163-4MC2&objecttype=14&gridview=view1>





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