



Overload relay 70...90 A Thermal For motor protection Size S3, Class 10 Stand-alone installation Main circuit: Screw Auxiliary circuit: Screw Manual-Automatic-Reset

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| 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 |
| power loss [W] for rated value of the current at AC in hot operating state | 21 W |
| • per pole | 7 W |
| 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 protective separation | |
| • in networks with ungrounded 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 ungrounded star point between main and auxiliary circuit | 440 V |
| • in networks with grounded star point between main and auxiliary circuit | 440 V |
| shock resistance according to IEC 60068-2-27 | 8g / 11 ms |
| recovery time after overload trip | |
| • with automatic reset typical | 10 min |
| • with remote-reset | 10 min |
| • with manual reset | 10 min |
| reference code according to IEC 81346-2 | F |
| Substance Prohibition (Date) | 03/01/2017 |
| SVHC substance name | Lead - 7439-92-1 |
| Weight | 0.86 kg |
| Ambient conditions | |
| installation altitude at height above sea level maximum | 2 000 m |
| ambient temperature | |
| • during operation | -40 ... +70 °C |
| • during storage | -55 ... +80 °C |
| • during transport | -55 ... +80 °C |
| temperature compensation | -40 ... +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 | 70 ... 90 A |
| operating voltage | |

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| <ul style="list-style-type: none"> ● rated value | 1 000 V |
| <ul style="list-style-type: none"> ● at AC-3e rated value maximum | 1 000 V |
| operating frequency rated value | 50 ... 60 Hz |
| operational current rated value | 90 A |
| operational current at AC-3e at 400 V rated value | 90 A |
| operating power | |
| <ul style="list-style-type: none"> ● at AC-3 <ul style="list-style-type: none"> — at 400 V rated value — at 500 V rated value — at 690 V rated value ● at AC-3e <ul style="list-style-type: none"> — at 400 V rated value — at 500 V rated value — at 690 V rated value | 45 kW 55 kW 75 kW 45 kW 55 kW 75 kW |

Auxiliary circuit

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|---|---|
| design of the auxiliary switch | integrated |
| number of NC contacts for auxiliary contacts | 1 |
| <ul style="list-style-type: none"> ● note | for contactor disconnection |
| number of NO contacts for auxiliary contacts | 1 |
| <ul style="list-style-type: none"> ● note | for message "Tripped" |
| number of CO contacts for auxiliary contacts | 0 |
| operational current of auxiliary contacts at AC-15 | |
| <ul style="list-style-type: none"> ● at 24 V ● at 110 V ● at 120 V ● at 125 V ● at 230 V ● at 400 V ● at 690 V | 3 A 3 A 3 A 3 A 2 A 1 A 0.75 A |
| operational current of auxiliary contacts at DC-13 | |
| <ul style="list-style-type: none"> ● at 24 V ● at 60 V ● at 110 V ● at 125 V ● at 220 V | 2 A 0.3 A 0.22 A 0.22 A 0.11 A |
| design of the miniature circuit breaker for short-circuit protection of the auxiliary switch required | 6A (SCC less than equal to 0.5 kA; U less than equal to 260V) |
| contact rating of auxiliary contacts according to UL | B600 / R300 |

Protective and monitoring functions

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|---------------------------------------|----------|
| trip class | CLASS 10 |
| design of the overload release | thermal |

UL/CSA ratings

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| full-load current (FLA) for 3-phase AC motor | |
| <ul style="list-style-type: none"> ● at 480 V rated value ● at 600 V rated value | 77 A 77 A |

Short-circuit protection

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| design of the fuse link | |
| <ul style="list-style-type: none"> ● for short-circuit protection of the main circuit <ul style="list-style-type: none"> — with type of coordination 1 required — with type of coordination 2 required ● for short-circuit protection of the auxiliary switch required | 690 V: gG: 250 A; 1000 V: a.M. / g.B.: 160 A 690 V: gG: 160 A; 1000 V: a.M. / g.B.: 160 A fuse gG: 6 A, quick: 10 A |

Installation/ mounting/ dimensions

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|--------------------------|---|
| mounting position | stand-alone installation: with a vertical mounting plane +/-135° rotatable and +/-45° tiltable; for more details see manual |
| fastening method | stand-alone installation |
| height | 120 mm |
| width | 70 mm |
| depth | 140 mm |

Connections/ Terminals

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| product component removable terminal for auxiliary and control circuit | No |
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|---|--|
| type of electrical connection | |
| <ul style="list-style-type: none"> • for main current circuit • for auxiliary and control circuit | <p>screw-type terminals</p> <p>screw-type terminals</p> |
| arrangement of electrical connectors for main current circuit | Top and bottom |
| type of connectable conductor cross-sections | |
| <ul style="list-style-type: none"> • for main contacts <ul style="list-style-type: none"> — solid — stranded — solid or stranded — finely stranded with core end processing • for AWG cables for main contacts | <p>2x (2.5 ... 16 mm²)</p> <p>2x (6 ... 16 mm²), 2x (10 ... 50 mm²), 1x (10 ... 70 mm²)</p> <p>2x (2.5 ... 50 mm²), 1x (10 ... 70 mm²)</p> <p>2x (2.5 ... 35 mm²), 1x (2.5 ... 50 mm²)</p> <p>2x (10 ... 1/0), 1x (10 ... 2/0)</p> |
| type of connectable conductor cross-sections | |
| <ul style="list-style-type: none"> • for auxiliary contacts <ul style="list-style-type: none"> — solid or stranded — finely stranded with core end processing • for AWG cables for auxiliary contacts | <p>2x (0.5 ... 1.5 mm²), 2x (0.75 ... 2.5 mm²)</p> <p>2x (0.5 ... 1.5 mm²), 2x (0.75 ... 2.5 mm²)</p> <p>2x (20 ... 16), 2x (18 ... 14)</p> |
| tightening torque | |
| <ul style="list-style-type: none"> • for main contacts for ring cable lug | 4.5 ... 6 N·m |
| outer diameter of the usable ring cable lug maximum | 19 mm |
| tightening torque | |
| <ul style="list-style-type: none"> • for main contacts with screw-type terminals • for auxiliary contacts with screw-type terminals | <p>4.5 ... 6 N·m</p> <p>0.8 ... 1.2 N·m</p> |
| design of screwdriver shaft | Hexagonal socket |
| size of the screwdriver tip | 4 mm hexagon socket |
| design of the thread of the connection screw | |
| <ul style="list-style-type: none"> • for main contacts • of the auxiliary and control contacts | <p>M8</p> <p>M3</p> |

IEC 61508

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| T1 value | |
| <ul style="list-style-type: none"> • for proof test interval or service life according to IEC 61508 | 20 a |

Electrical Safety

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| protection class IP on the front according to IEC 60529 | IP20 |
| touch protection on the front according to IEC 60529 | finger-safe, for vertical contact from the front |

Display

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| display version for switching status | Slide switch |
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Approvals Certificates

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|---------------------------------|---------------------------------------|
| General Product Approval | For use in hazardous locations |
|---------------------------------|---------------------------------------|



For use in hazardous locations **Test Certificates** **Maritime application**



[Miscellaneous](#)

[Special Test Certificate](#)

[Type Test Certificates/Test Report](#)



Maritime application **other**



other **Railway** **Environment**

Further information**Information on the packaging**

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

Information for data generation and storage

<https://support.industry.siemens.com/cs/ww/en/view/109995012>

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=3RU2146-4LB1>

Cax online generator

<https://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RU2146-4LB1>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RU2146-4LB1>

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

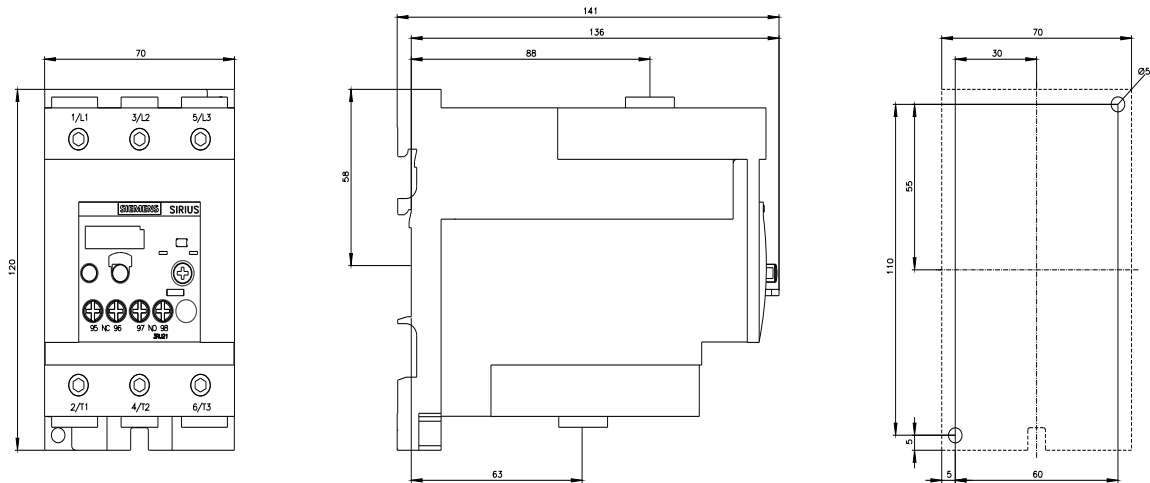
https://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RU2146-4LB1&lang=en

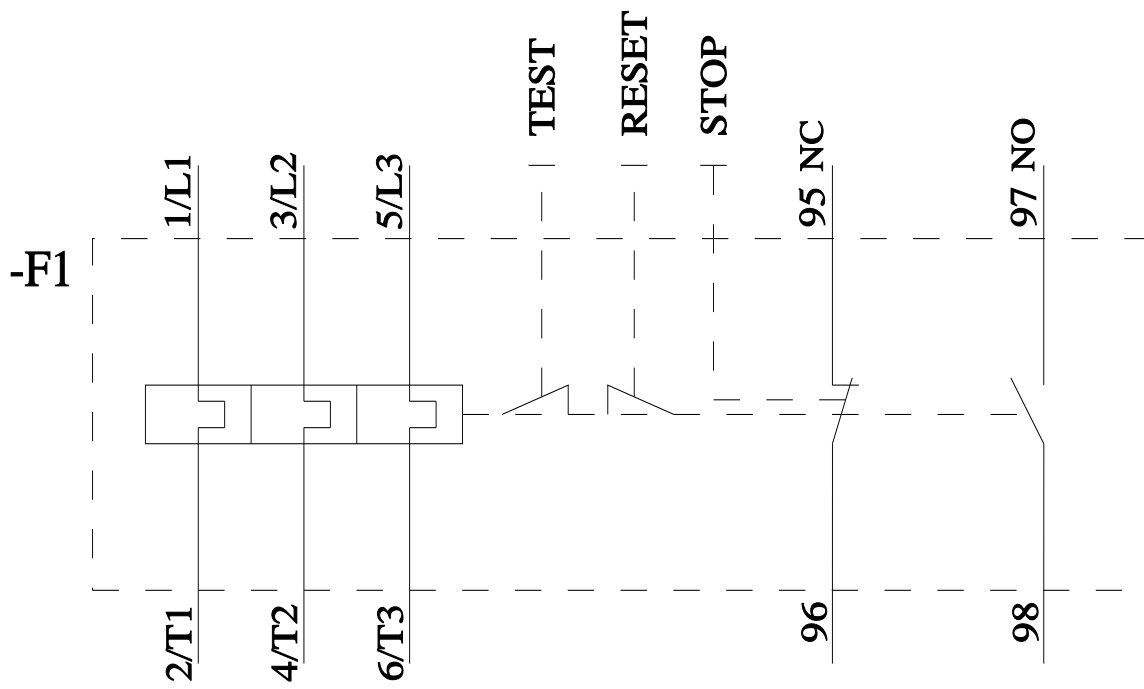
Characteristic: Tripping characteristics, I²t, Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3RU2146-4LB1/char>

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

<https://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RU2146-4LB1&objecttype=14&gridview=view1>





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