

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



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
• at AC in hot operating state 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 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

<ul style="list-style-type: none"> <li>• in networks with grounded star point between main and auxiliary circuit</li> </ul>	440 V
<ul style="list-style-type: none"> <li>• protection class IP on the front</li> </ul>	IP20
<ul style="list-style-type: none"> <li>• Protection class IP of the terminal</li> </ul>	IP00
<b>Shock resistance</b>	
<ul style="list-style-type: none"> <li>• acc. to IEC 60068-2-27</li> </ul>	8g / 11 ms
<b>Recovery time</b>	
<ul style="list-style-type: none"> <li>• after overload trip with automatic reset typical</li> </ul>	10 min
<ul style="list-style-type: none"> <li>• after overload trip with remote-reset</li> </ul>	10 min
<ul style="list-style-type: none"> <li>• after overload trip with manual reset</li> </ul>	10 min
<b>Type of protection according to ATEX directive 2014/34/EU</b>	Ex II (2) GD
Certificate of suitability according to ATEX directive 2014/34/EU	DMT 98 ATEX G 001
<b>Reference code acc. to DIN EN 81346-2</b>	F

#### Ambient conditions

<b>Installation altitude at height above sea level</b>	
<ul style="list-style-type: none"> <li>• maximum</li> </ul>	2 000 m
<b>Ambient temperature</b>	
<ul style="list-style-type: none"> <li>• during operation</li> </ul>	-40 ... +70 °C
<ul style="list-style-type: none"> <li>• during storage</li> </ul>	-55 ... +80 °C
<ul style="list-style-type: none"> <li>• during transport</li> </ul>	-55 ... +80 °C
<b>Temperature compensation</b>	-40 ... +60 °C
Relative humidity during operation	10 ... 95 %

#### 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>	70 ... 90 A
<b>Operating voltage</b>	
<ul style="list-style-type: none"> <li>• rated value</li> </ul>	690 V
<ul style="list-style-type: none"> <li>• at AC-3 rated value maximum</li> </ul>	690 V
<b>Operating frequency rated value</b>	50 ... 60 Hz
<b>Operating current rated value</b>	90 A

#### Auxiliary circuit

<b>Design of the auxiliary switch</b>	integrated
<b>Number of NC contacts for auxiliary contacts</b>	1
<ul style="list-style-type: none"> <li>• Note</li> </ul>	for contactor disconnection
<b>Number of NO contacts for auxiliary contacts</b>	1
<ul style="list-style-type: none"> <li>• Note</li> </ul>	for message "Tripped"
<b>Number of CO contacts</b>	
<ul style="list-style-type: none"> <li>• for auxiliary contacts</li> </ul>	0

<ul style="list-style-type: none"> <li>operating current of auxiliary contacts at AC-15 at 24 V</li> </ul>	3 A
<ul style="list-style-type: none"> <li>Operating current of auxiliary contacts at AC-15 at 110 V</li> </ul>	3 A
<ul style="list-style-type: none"> <li>Operating current of auxiliary contacts at AC-15 at 120 V</li> </ul>	3 A
<ul style="list-style-type: none"> <li>Operating current of auxiliary contacts at AC-15 at 125 V</li> </ul>	3 A
<ul style="list-style-type: none"> <li>Operating current of auxiliary contacts at AC-15 at 230 V</li> </ul>	2 A
<ul style="list-style-type: none"> <li>operating current of auxiliary contacts at AC-15 at 400 V</li> </ul>	1 A
<ul style="list-style-type: none"> <li>operating current of auxiliary contacts at DC-13 at 24 V</li> </ul>	2 A
<ul style="list-style-type: none"> <li>Operating current of auxiliary contacts at DC-13 at 60 V</li> </ul>	0.3 A
<ul style="list-style-type: none"> <li>Operating current of auxiliary contacts at DC-13 at 110 V</li> </ul>	0.22 A
<ul style="list-style-type: none"> <li>operating current of auxiliary contacts at DC-13 at 125 V</li> </ul>	0.22 A
<ul style="list-style-type: none"> <li>Operating current of auxiliary contacts at DC-13 at 220 V</li> </ul>	0.11 A
<b>Design of the miniature circuit breaker</b> <ul style="list-style-type: none"> <li>for short-circuit protection of the auxiliary switch required</li> </ul>	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
<b>Protective and monitoring functions</b>	
<b>Trip class</b>	CLASS 10
<b>Design of the overload release</b>	thermal
<b>UL/CSA ratings</b>	
<b>Full-load current (FLA) for three-phase AC motor</b>	
<ul style="list-style-type: none"> <li>at 480 V rated value</li> </ul>	77 A
<ul style="list-style-type: none"> <li>at 600 V rated value</li> </ul>	77 A
<b>Short-circuit protection</b>	
<b>Design of the fuse link</b>	
<ul style="list-style-type: none"> <li>for short-circuit protection of the main circuit <ul style="list-style-type: none"> <li>with type of coordination 1 required</li> <li>with type of assignment 2 required</li> </ul> </li> <li>for short-circuit protection of the auxiliary switch required</li> </ul>	gG: 250 A gG: 160 A fuse gG: 6 A, quick: 10 A
<b>Installation/ mounting/ dimensions</b>	
<ul style="list-style-type: none"> <li><b>mounting position</b></li> </ul>	any

<b>Mounting type</b>	Contacteur mounting
<b>Height</b>	105 mm
<b>Width</b>	70 mm
<b>Depth</b>	125 mm

### Connections/ Terminals

<b>Product function</b>	
<ul style="list-style-type: none"> <li>removable terminal for auxiliary and control circuit</li> </ul>	No
<ul style="list-style-type: none"> <li>Type of electrical connection for main current circuit</li> </ul>	screw-type terminals
<ul style="list-style-type: none"> <li>Type of electrical connection for auxiliary and control 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>— solid</li> <li>— stranded</li> <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>	<p>2x (2.5 ... 16 mm<sup>2</sup>)</p> <p>2x (6 ... 16 mm<sup>2</sup>), 2x (10 ... 50 mm<sup>2</sup>), 1x (10 ... 70 mm<sup>2</sup>)</p> <p>2x (2,5 ... 50 mm<sup>2</sup>), 1x (10 ... 70 mm<sup>2</sup>)</p> <p>2x (2.5 ... 35 mm<sup>2</sup>), 1x (2.5 ... 50 mm<sup>2</sup>)</p> <p>2x (10 ... 1/0), 1x (10 ... 2/0)</p>
<b>Type of connectable conductor cross-sections</b>	
<ul style="list-style-type: none"> <li>for auxiliary 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 auxiliary contacts</li> </ul>	<p>2x (0,5 ... 1,5 mm<sup>2</sup>), 2x (0,75 ... 2,5 mm<sup>2</sup>)</p> <p>2x (0.5 ... 1.5 mm<sup>2</sup>), 2x (0.75 ... 2.5 mm<sup>2</sup>)</p> <p>2x (20 ... 16), 2x (18 ... 14)</p>
<b>Tightening torque</b>	
<ul style="list-style-type: none"> <li>for main contacts for ring cable lug</li> </ul>	4.5 ... 6 N·m
<b>Outer diameter of the usable ring cable lug maximum</b>	19 mm
<b>Tightening torque</b>	
<ul style="list-style-type: none"> <li>for main contacts with screw-type terminals</li> <li>for auxiliary contacts with screw-type terminals</li> </ul>	<p>4.5 ... 6 N·m</p> <p>0.8 ... 1.2 N·m</p>
<b>Design of screwdriver shaft</b>	Hexagonal socket
<b>Size of the screwdriver tip</b>	4 mm hexagon socket
<b>Design of the thread of the connection screw</b>	
<ul style="list-style-type: none"> <li>for main contacts</li> <li>of the auxiliary and control contacts</li> </ul>	<p>M8</p> <p>M3</p>

### Safety related data

<b>T1 value for proof test interval or service life acc. to IEC 61508</b>	20 y
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### Display

<b>Display version</b>	
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- for switching status

Slide switch

## Certificates/ approvals

General Product Approval			For use in hazardous locations		
 CCC	 CSA	 UL		 IECEX	 ATEX
Declaration of Conformity		Test Certificates		Marine / Shipping	
 EG-Konf.		<a href="#">Miscellaneous</a>	<a href="#">Type Test Certificates/Test Report</a>	<a href="#">Special Test Certificate</a>	 ABS
					 LRS
Marine / Shipping			other	Railway	
 PRS	 RINA	 DNV-GL DNVGL.COM/AF	<a href="#">Confirmation</a>	<a href="#">Special Test Certificate</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=3RU2146-4LB0>

**Cax online generator**

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RU2146-4LB0>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RU2146-4LB0>

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

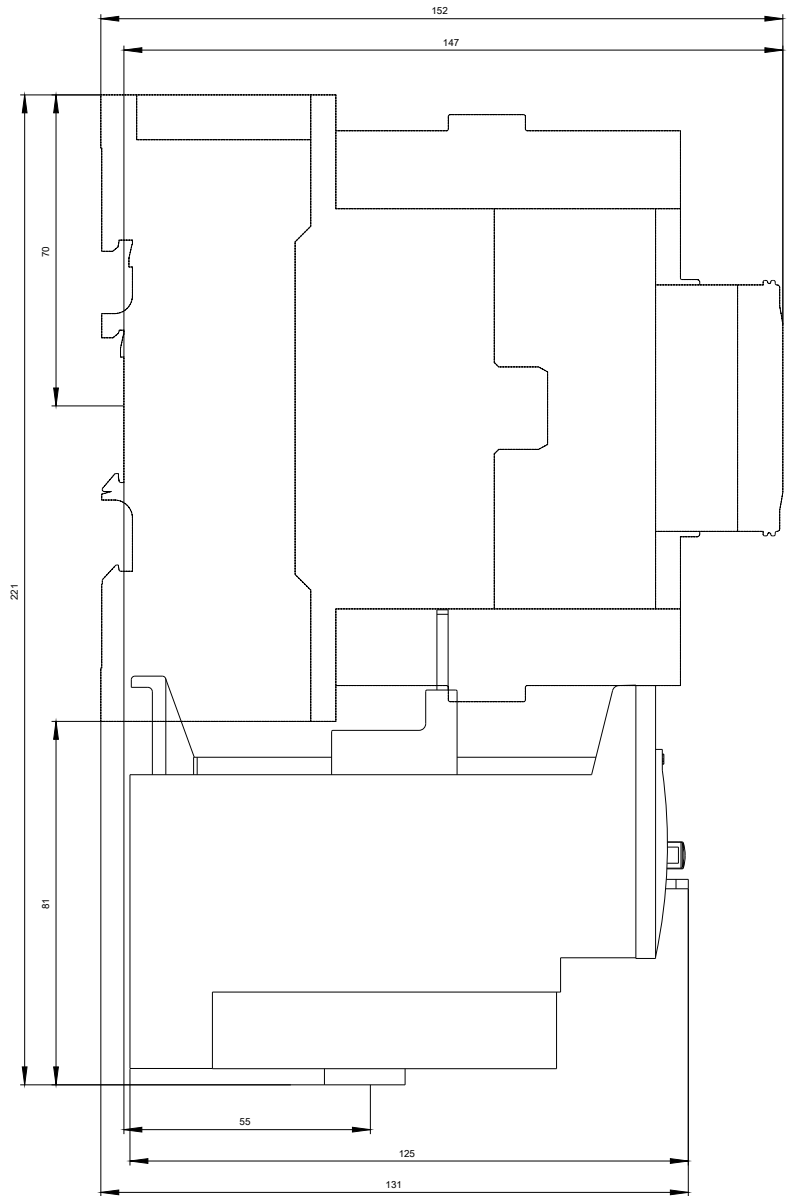
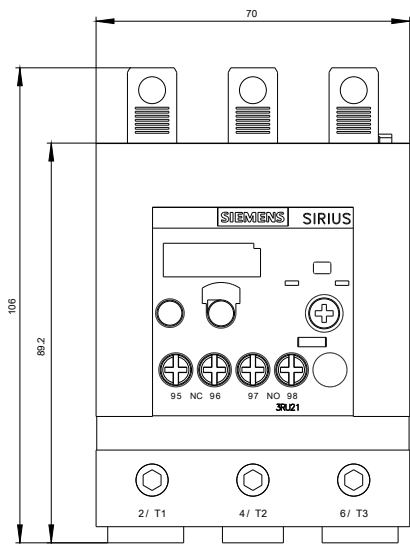
[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RU2146-4LB0&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RU2146-4LB0&lang=en)

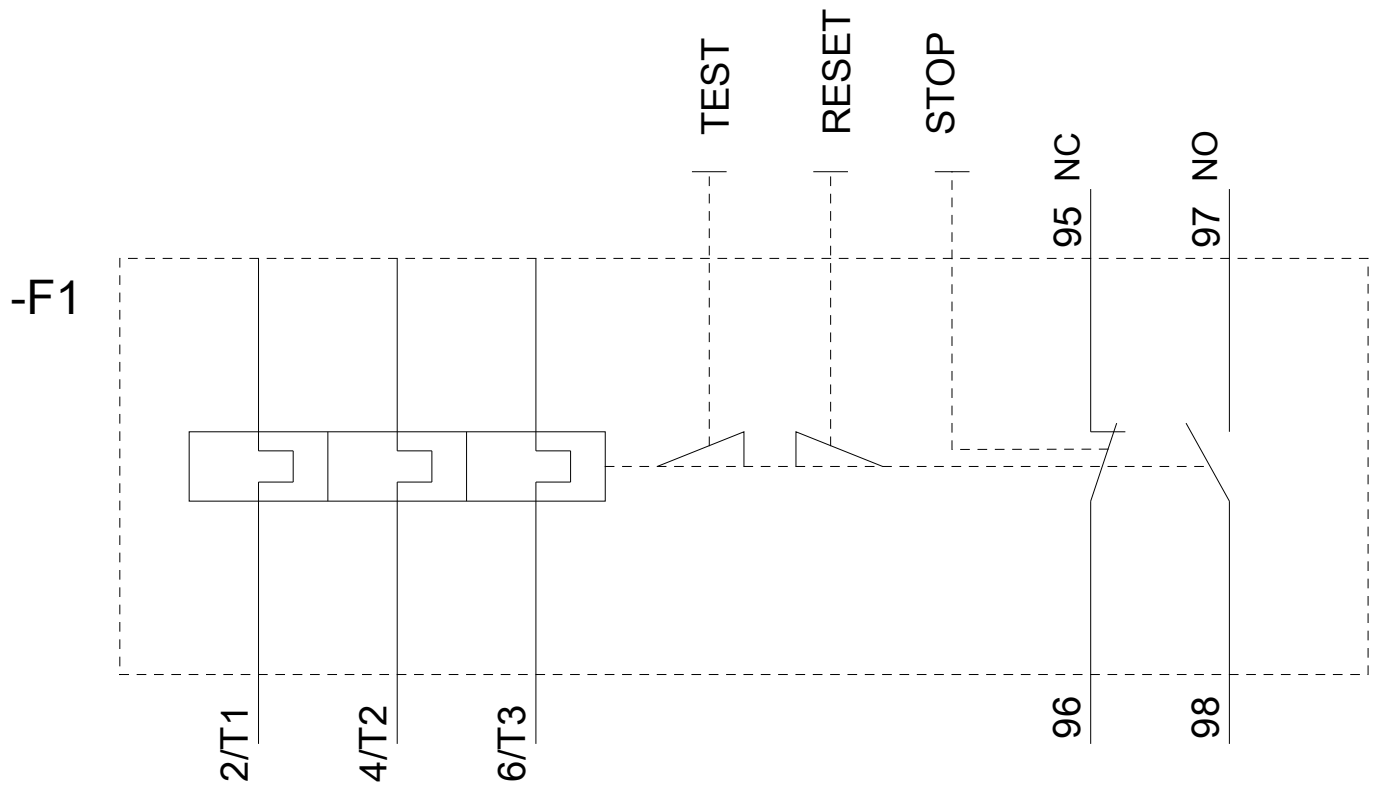
**Characteristic: Tripping characteristics, I<sup>t</sup>, Let-through current**

<https://support.industry.siemens.com/cs/ww/en/ps/3RU2146-4LB0/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RU2146-4LB0&objecttype=14&gridview=view1>





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