

THERM. OVERLOAD RELAY 70...90 A 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	
<ul style="list-style-type: none"> <li>in networks with grounded star point between auxiliary and auxiliary circuit</li> </ul>	440 V
<ul style="list-style-type: none"> <li>in networks with grounded star point between auxiliary and auxiliary circuit</li> </ul>	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>in networks with grounded star point between main and auxiliary circuit</li> </ul>	440 V

<b>Protection class IP</b>	
• on the front	IP20
• of the terminal	IP00
<b>Shock resistance</b>	
• acc. to IEC 60068-2-27	8g / 11 ms
<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
Certificate of suitability relating to ATEX	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>Installation altitude at height above sea level</b>	
• maximum	2 000 m
<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
Relative humidity during operation	0 ... 90 %

### 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>	
• 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>	90 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	77 A
• at 600 V rated value	77 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: 160 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>	
<ul style="list-style-type: none"> <li>for main contacts with screw-type terminals</li> </ul>	4.5 ... 6 N·m
<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> </ul>	M8

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

<b>Display</b>	
<b>Display version</b>	
<ul style="list-style-type: none"> <li>for switching status</li> </ul>	Slide switch

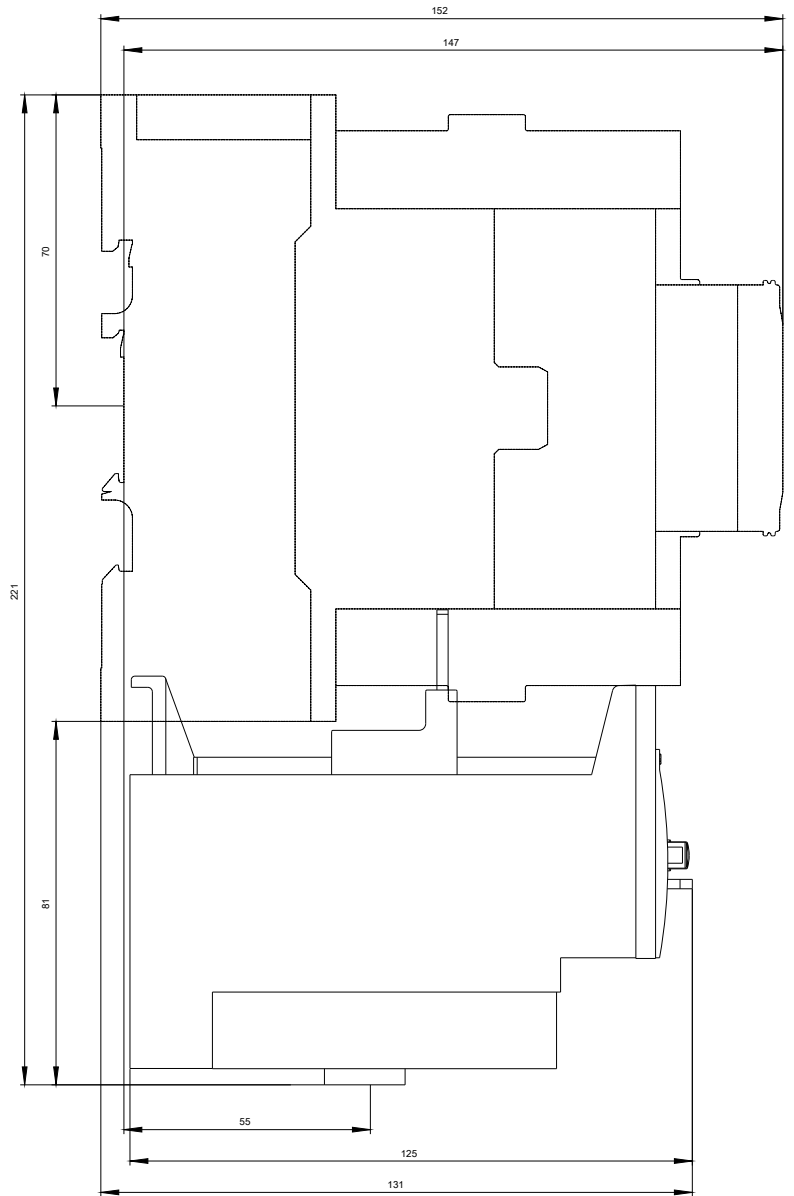
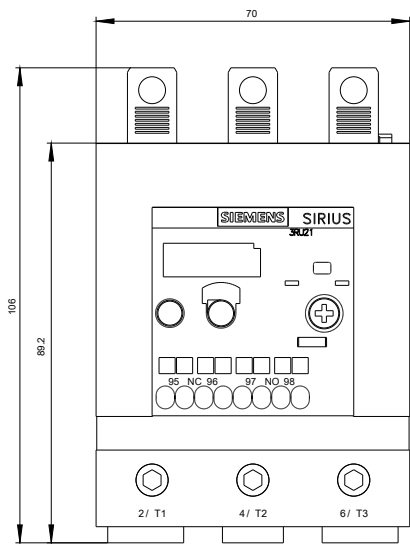
**Certificates/approvals**

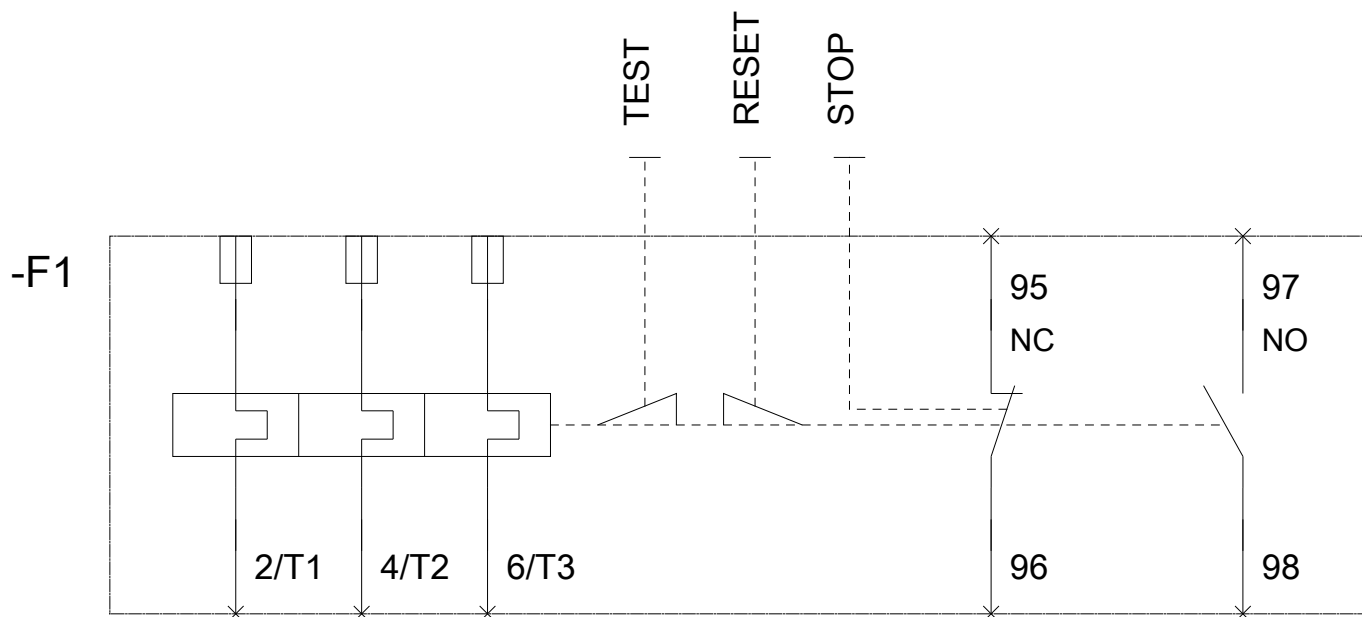
<b>General Product Approval</b>	<b>Declaration of Conformity</b>	<b>Test Certificates</b>
 CCC	 CSA	 UL
		
 EG-Konf.		
<a href="#">Type Test Certificates/Test Report</a>		

<b>Test Certificates</b>	<b>other</b>
<a href="#">Special Test 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=3RU2146-4LD0>
- Cax online generator**  
<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RU2146-4LD0>
- Service&Support (Manuals, Certificates, Characteristics, FAQs,...)**  
<https://support.industry.siemens.com/cs/ww/en/ps/3RU2146-4LD0>
- Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)**  
[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RU2146-4LD0&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RU2146-4LD0&lang=en)





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