

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



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	
<ul style="list-style-type: none"> at AC in hot operating state 	21 W
<ul style="list-style-type: none"> 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	
<ul style="list-style-type: none"> in networks with grounded star point between auxiliary and auxiliary circuit 	440 V
<ul style="list-style-type: none"> in networks with grounded star point between auxiliary and auxiliary circuit 	440 V
<ul style="list-style-type: none"> in networks with grounded star point between main and auxiliary circuit 	440 V

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

Ambient conditions

Installation altitude at height above sea level <ul style="list-style-type: none"> maximum 	2 000 m
Ambient temperature <ul style="list-style-type: none"> during operation during storage during transport 	-40 ... +70 °C -55 ... +80 °C -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 pick-up value current of the current-dependent overload release	70 ... 90 A
Operating voltage <ul style="list-style-type: none"> rated value at AC-3 rated value maximum 	690 V 690 V
Operating frequency rated value	50 ... 60 Hz
Operating current rated value	90 A

Auxiliary circuit

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

Operating current of auxiliary contacts at AC-15	
• 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
Operating current of auxiliary contacts at DC-13	
• 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
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

Trip class	CLASS 10
Design of the overload release	thermal

UL/CSA ratings

Full-load current (FLA) for three-phase AC motor	
• at 480 V rated value	77 A
• at 600 V rated value	77 A

Short-circuit protection

Design of the fuse link	
• 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

Mounting position	any
Mounting type	stand-alone installation
Height	120 mm
Width	70 mm
Depth	140 mm
Required spacing	
• 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

Product function	
• removable terminal for auxiliary and control circuit	No
Type of electrical connection	
• for main current circuit	screw-type terminals
• for auxiliary and control current circuit	screw-type terminals
Arrangement of electrical connectors for main current circuit	Top and bottom
Type of connectable conductor cross-sections	
• for main contacts	
— solid	2x (2.5 ... 16 mm ²)
— stranded	2x (6 ... 16 mm ²), 2x (10 ... 50 mm ²), 1x (10 ... 70 mm ²)
— single or multi-stranded	2x (2,5 ... 50 mm ²), 1x (10 ... 70 mm ²)
— finely stranded with core end processing	2x (2.5 ... 35 mm ²), 1x (2.5 ... 50 mm ²)
• at AWG conductors for main contacts	2x (10 ... 1/0), 1x (10 ... 2/0)
Type of connectable conductor cross-sections	
• for auxiliary contacts	
— single or multi-stranded	2x (0,5 ... 1,5 mm ²), 2x (0,75 ... 2,5 mm ²)
— finely stranded with core end processing	2x (0.5 ... 1.5 mm ²), 2x (0.75 ... 2.5 mm ²)
• at AWG conductors for auxiliary contacts	2x (20 ... 16), 2x (18 ... 14)
Tightening torque	
• 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	
• for main contacts with screw-type terminals	4.5 ... 6 N·m

<ul style="list-style-type: none"> for auxiliary contacts with screw-type terminals 	0.8 ... 1.2 N·m
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 	M8
<ul style="list-style-type: none"> of the auxiliary and control contacts 	M3













Safety related data

T1 value for proof test interval or service life acc. to IEC 61508	20 y
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Display

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

Certificates/ approvals

General Product Approval			For use in hazardous locations		
 CCC	 CSA	 UL	 EAC	 IECEX	 ATEX
Declaration of Conformity	Test Certificates	Marine / Shipping			
 EG-Konf.	Miscellaneous Type Test Certificates/Test Report	Special Test Certificate	 ABS	 LRS	
Marine / Shipping	other	Railway			
 PRS	 RINA	 DNV-GL DNVGL.COM/AF	Confirmation	Special Test Certificate	

Further information

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

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

<http://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, ...)

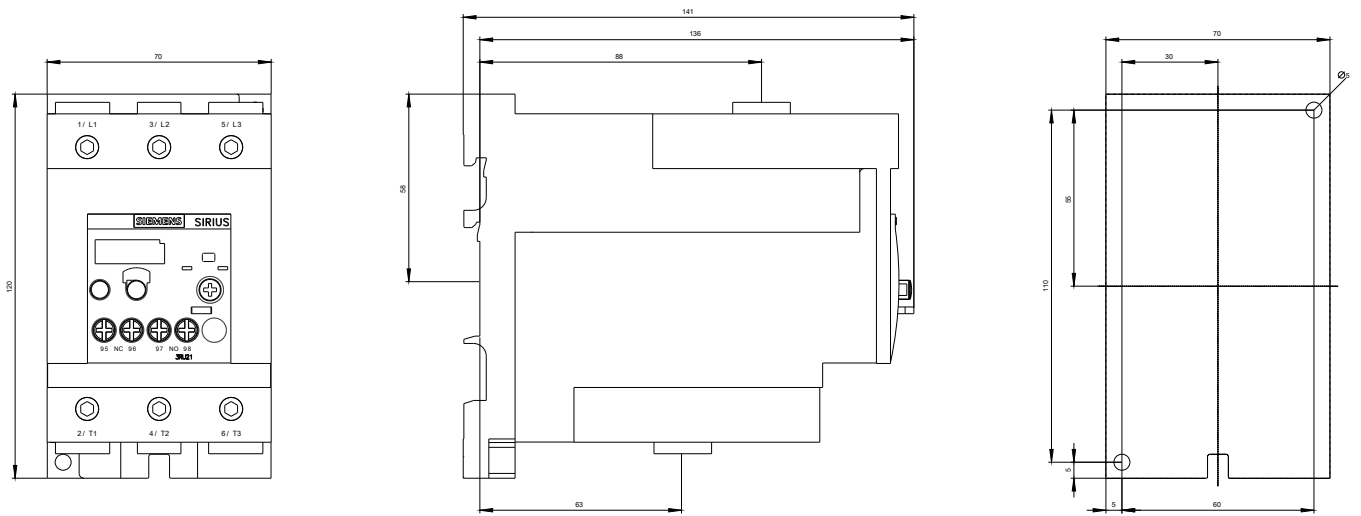
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RU2146-4LB1&lang=en

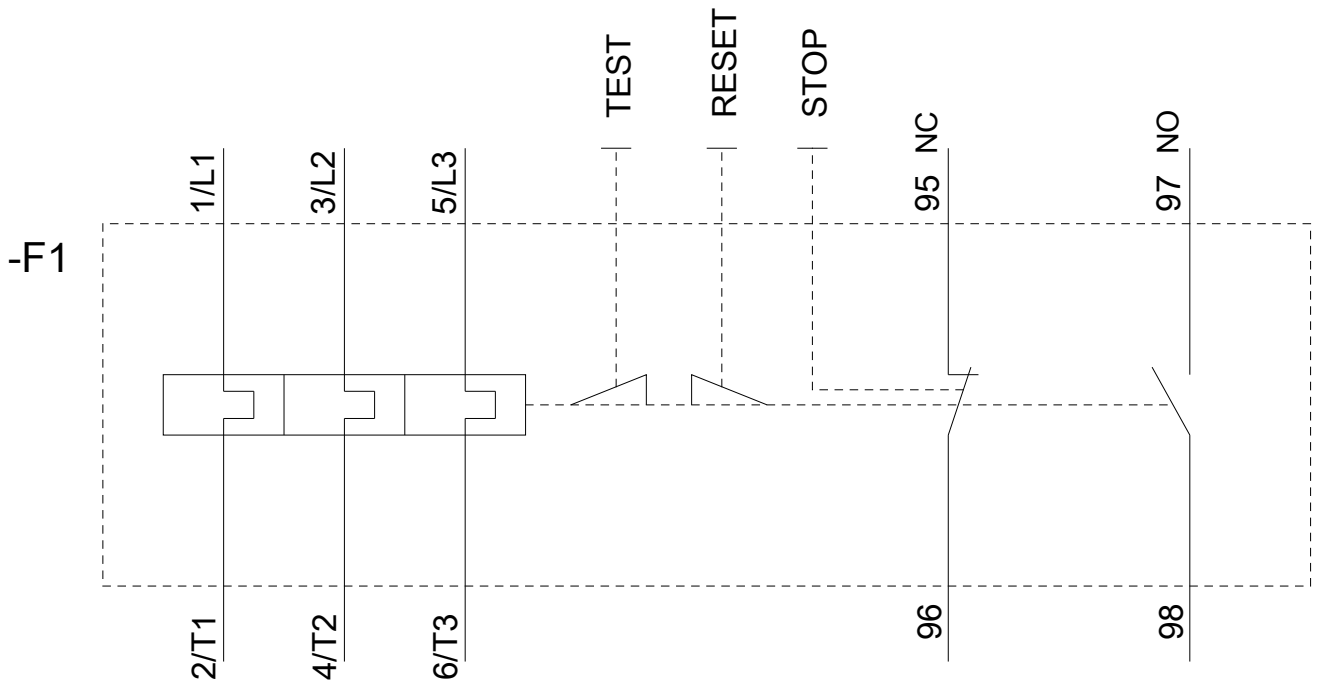
Characteristic: Tripping characteristics, I²t, Let-through current

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

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

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





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