SIEMENS

Data sheet 3RU2146-4KB0

Overload relay 57...75 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	18.9 W
• at AC in hot operating state per pole	6.3 W
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	
• 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

• in networks with grounded star point between main and auxiliary circuit	440 V
Protection class IP	
• on the front	IP20
• of the terminal	IP00
Shock resistance	
• acc. to IEC 60068-2-27	8g / 11 ms
Recovery time	
• 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
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	
• 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 pick-up value current of the current-dependent overload release	57 ... 75 A
Operating voltage	
• rated value	690 V
• at AC-3 rated value maximum	690 V
Operating frequency rated value	50 ... 60 Hz
Operating current rated value	75 A

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
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	65 A
• at 600 V rated value	62 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	Contactor mounting
Height	105 mm
Width	70 mm
Depth	125 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 mm²)
— stranded	2x (6 ... 16 mm²), 2x (10 ... 50 mm²), 1x (10 ... 70 mm²)
— single or multi-stranded	2x (2,5 ... 50 mm²), 1x (10 ... 70 mm²)
— finely stranded with core end processing	2x (2.5 ... 35 mm²), 1x (2.5 ... 50 mm²)
• 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 mm²), 2x (0,75 ... 2,5 mm²)
— finely stranded with core end processing	2x (0.5 ... 1.5 mm²), 2x (0.75 ... 2.5 mm²)
• 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
• 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	
• for main contacts	M8
• 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

Display

Display version	
• 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 | Confirmation | Special Test Certificate

Further information

Information- and Downloadcenter (Catalogs, Brochures,…)
www.siemens.com/sirius/catalogs

Industry Mall (Online ordering system)
https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RU2146-4KB0

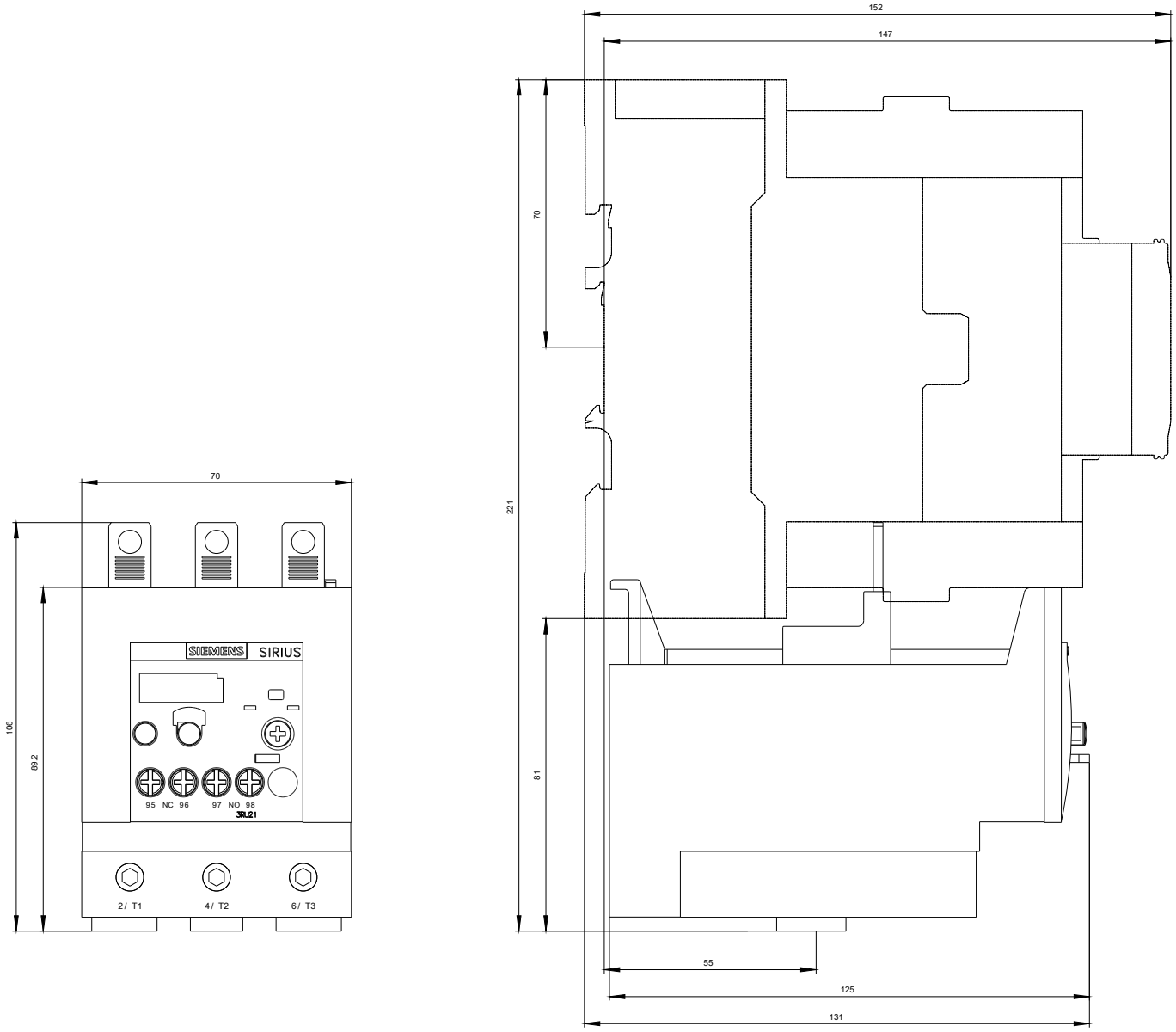
Cax online generator
http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RU2146-4KB0

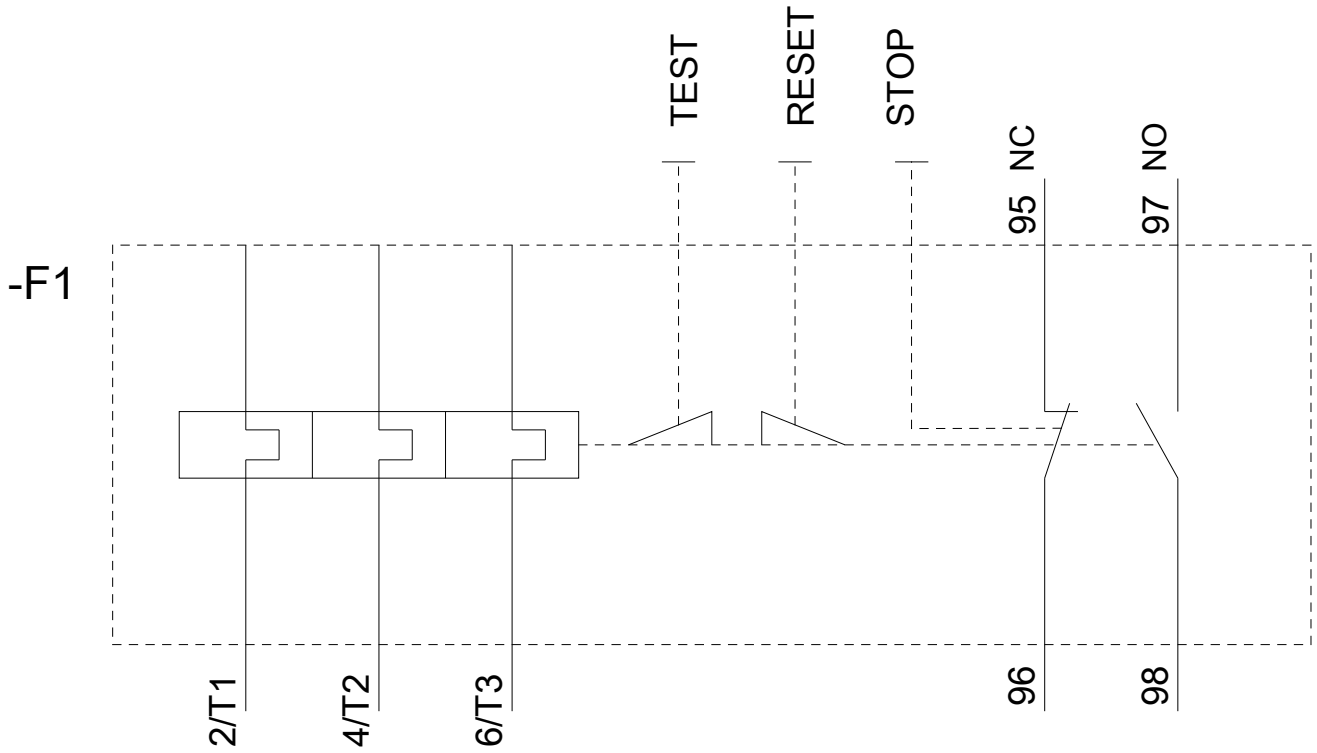
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)
https://support.industry.siemens.com/cs/ww/en/ps/3RU2146-4KB0

Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RU2146-4KB0&lang=en

Characteristic: Tripping characteristics, I²t, Let-through current
https://support.industry.siemens.com/cs/ww/en/ps/3RU2146-4KB0/char

Further characteristics (e.g. electrical endurance, switching frequency)
http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RU2146-4KB0&objecttype=14&gridview=view1





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