








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 at AC in hot operating state	21 W
• per pole	7 W
type of calculation of power loss current-dependent	quadratic
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 Prohibitance (day/month/year)	03/01/2017
SVHC substance name	Lead CAS-No. 7439-92-1
Net 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	
• rated value	1 000 V
• 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	
• at AC-3	
— at 400 V rated value	45 kW
— at 500 V rated value	55 kW
— at 690 V rated value	75 kW
• at AC-3e	
— at 400 V rated value	45 kW
— at 500 V rated value	55 kW
— at 690 V rated value	75 kW
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
operational 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
• at 690 V	0.75 A
operational 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 3-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	690 V: gG: 250 A; 1000 V: a.M. / g.B.: 160 A
— with type of coordination 2 required	690 V: gG: 160 A; 1000 V: a.M. / g.B.: 160 A
• for short-circuit protection of the auxiliary switch required	fuse gG: 6 A, quick: 10 A
Installation/ mounting/ dimensions	
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		
product component removable terminal for auxiliary and control circuit	No	
type of electrical connection		
<ul style="list-style-type: none"> • for main current circuit • for auxiliary and control circuit 	screw-type terminals screw-type terminals	
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 	2x (2.5 ... 16 mm ²) 2x (6 ... 16 mm ²), 2x (10 ... 50 mm ²), 1x (10 ... 70 mm ²) 2x (2,5 ... 50 mm ²), 1x (10 ... 70 mm ²) 2x (2.5 ... 35 mm ²), 1x (2.5 ... 50 mm ²) 2x (10 ... 1/0), 1x (10 ... 2/0)	
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 	2x (0.5 ... 1.5 mm ²), 2x (0.75 ... 2.5 mm ²) 2x (0.5 ... 1.5 mm ²), 2x (0.75 ... 2.5 mm ²) 2x (20 ... 16), 2x (18 ... 14)	
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 	4.5 ... 6 N·m 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 • of the auxiliary and control contacts 	M8 M3	
Safety related data		
failure rate [FIT] with low demand rate according to SN 31920	50 FIT	
MTTF with high demand rate	2 280 a	
IEC 61508		
T1 value		
<ul style="list-style-type: none"> • for proof test interval or service life according to IEC 61508 	20 a	
Electrical Safety		
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		
display version for switching status	Slide switch	
Approvals Certificates		
Environment	General Product Approval	
Environmental Conformations	    	
For use in hazardous locations	Test Certificates	Maritime application



IECEX



ATEX

[Special Test Certificate](#)

[Type Test Certificates/Test Report](#)



ABS



BUREAU
VERITAS

Maritime application

other



DNV



LRS



PRS



RINA



RMRS

[Confirmation](#)

other

Railway



[Special Test Certificate](#)

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>

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, ...)

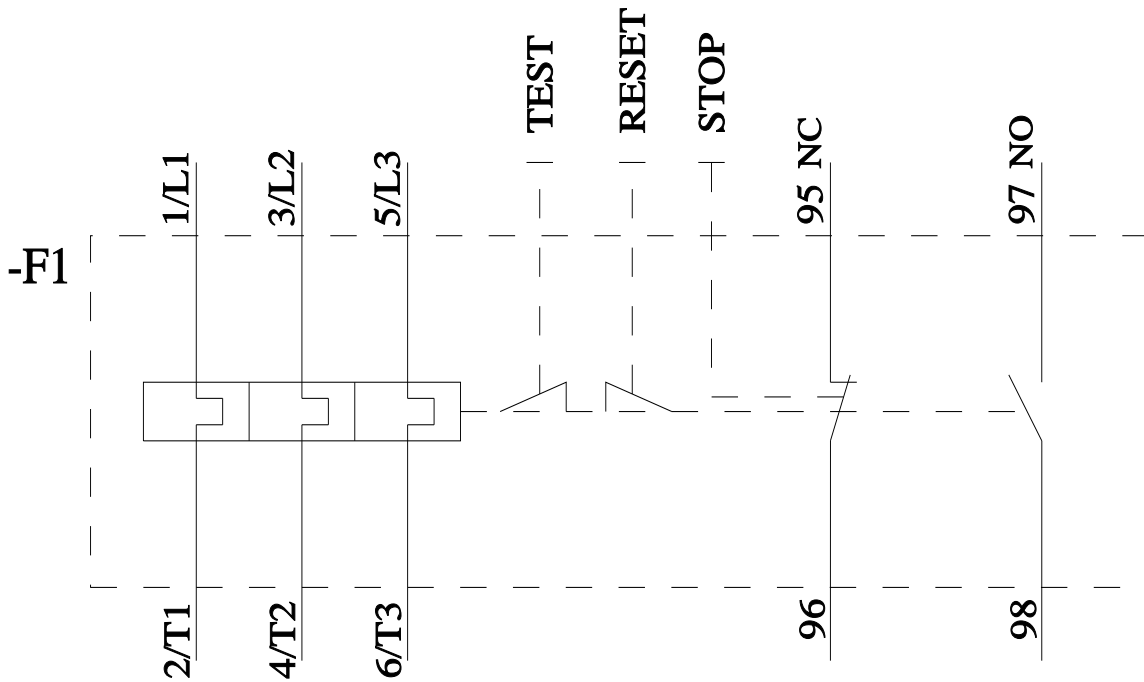
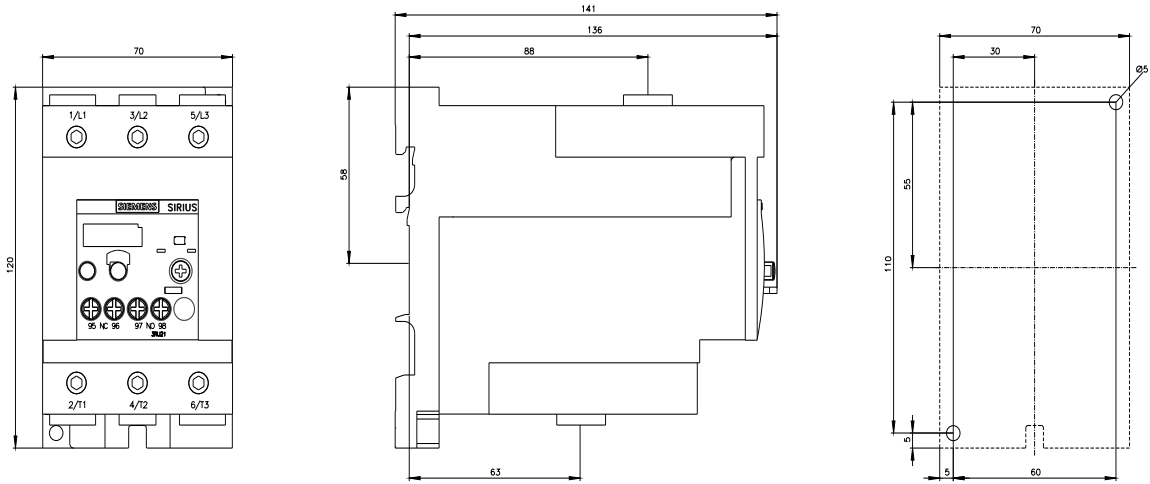
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Characteristic curves

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