SIEMENS

Data sheet 3RU2146-4JB1

Overload relay 45...63 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	17.1 W
● per pole	5.7 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 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 (Date)	03/01/2017
SVHC substance name	Lead - 7439-92-1
Net Weight	0.786 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 %
Environmental footprint	
Environmental Product Declaration(EPD)	Yes
global warming potential [CO2 eq] total	121 kg

global warming potential [CO2 eq] during manufacturing	4.24 kg
global warming potential [CO2 eq] during sales	0.207 kg
global warming potential [CO2 eq] during operation	117 kg
global warming potential [CO2 eq] after end of life	-0.229 kg
Main circuit	
number of poles for main current circuit	3
adjustable current response value current of the current-dependent overload release	45 ... 63 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	63 A
operational current at AC-3e at 400 V rated value	63 A
operating power	
● at AC-3	
— at 400 V rated value	30 kW
— at 500 V rated value	37 kW
— at 690 V rated value	55 kW
● at AC-3e	
— at 400 V rated value	30 kW
— at 500 V rated value	37 kW
— at 690 V rated value	55 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	52 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	690 V: gG: 160 A; 1000 V: a.M. / g.B.: 125 A
— with type of coordination 2 required	690 V: gG: 125 A; 1000 V: a.M. / g.B.: 125 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	
● for main current circuit	screw-type terminals
● for auxiliary and control 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)
— solid or 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)
● for AWG cables for main contacts	2x (10 ... 1/0), 1x (10 ... 2/0)
type of connectable conductor cross-sections	
● for auxiliary contacts	
— solid or 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)
● for AWG cables 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 m
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
IEC 61508	
T1 value	
● 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	

General Product Approval					For use in hazardous locations
CCC	EG-Konf.	UKCA	UL	EAC	ATEX

For use in hazardous locations	Test Certificates	Maritime application

IECEx

Type Test Certificates/Test Report

Special Test Certificate

ABS

BUREAU VERITAS

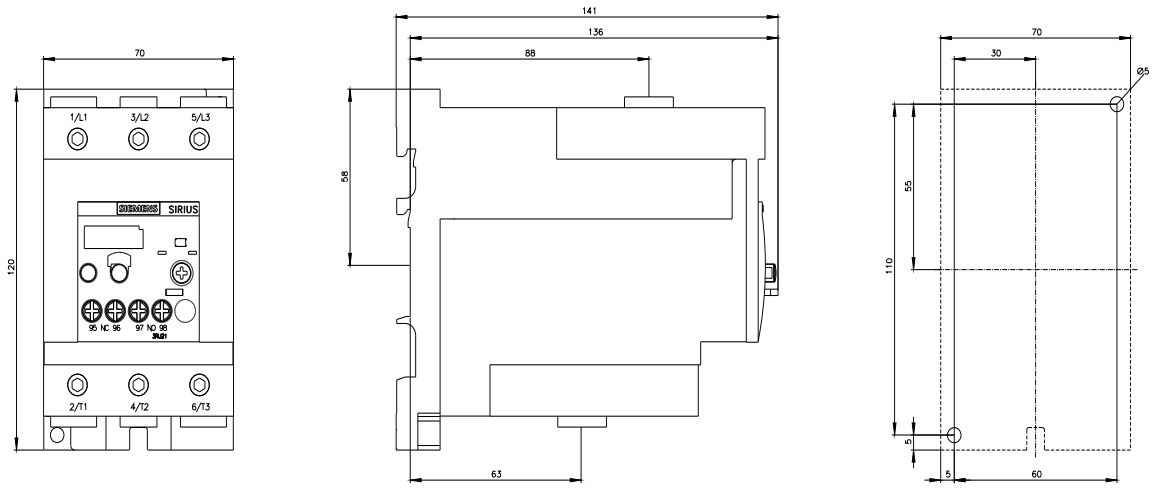
DNV

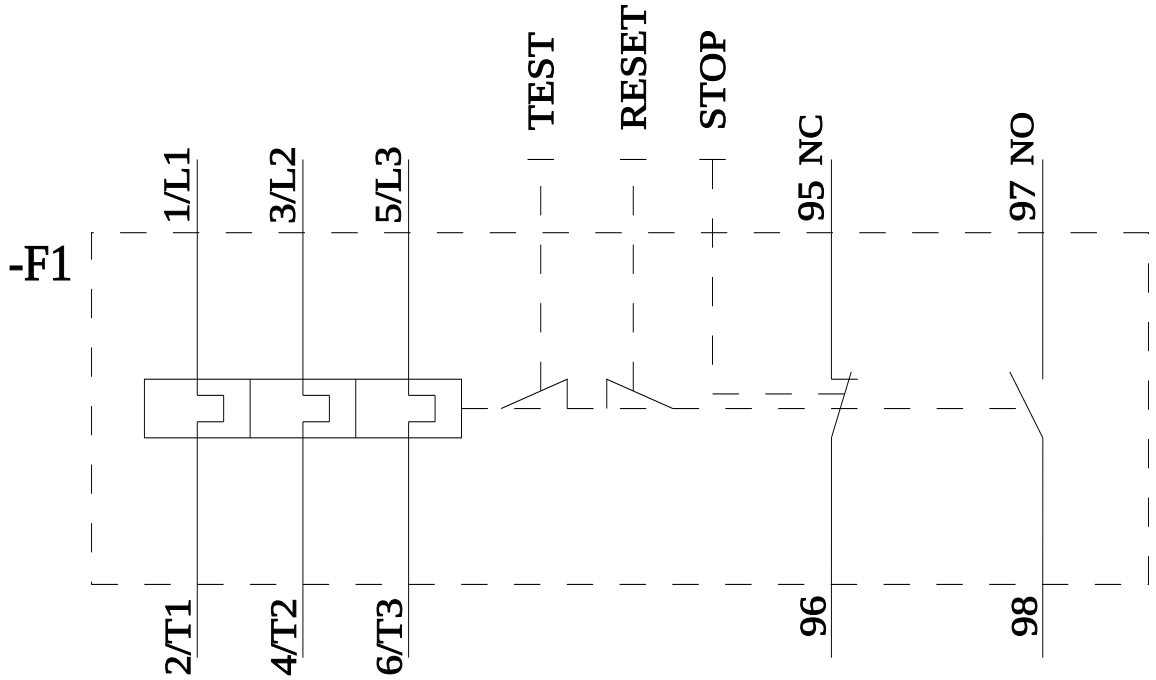
Maritime application				other	
LRS	PRS	RINA	RMRS	产品合格 QC PASS	Confirmation

Railway	Environment	
Special Test Certificate	EPD	Environmental Confirmations

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=3RU2146-4JB1
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)
https://support.industry.siemens.com/cs/ww/en/ps/3RU2146-4JB1
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)
https://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RU2146-4JB1&lang=en
Cax online generator
https://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RU2146-4JB1
Characteristic curves
https://curves.simaris.siemens.com/curves/<mmp_prod_noCOMP="HAUPT"></mmp_prod__no>





last modified: 6/1/2025