SIEMENS

Data sheet 3RU2116-1HB0



Overload relay 5.5...8.0 A Thermal For motor protection Size S00, 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	S00
size of contactor can be combined company-specific	S00
power loss [W] for rated value of the current at AC in hot operating state	6.6 W
• per pole	2.2 W
insulation voltage with degree of pollution 3 at AC rated value	690 V
surge voltage resistance rated value	6 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
reference code according to IEC 81346-2	F
Substance Prohibitance (Date)	10/01/2009
SVHC substance name	Lead - 7439-92-1
Weight	0.159 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	39.9 kg
global warming potential [CO2 eq] during manufacturing	0.921 kg
global warming potential [CO2 eq] during sales	0.039 kg
global warming potential [CO2 eq] during operation	39 kg
global warming potential [CO2 eq] after end of life	-0.015 kg
Main circuit	
number of poles for main current circuit	3

adjustable current response value current of the current-	5.5 8 A
dependent overload release	
operating voltage	
rated value	690 V
at AC-3e rated value maximum	690 V
operating frequency rated value	50 60 Hz
operational current rated value	8 A
operational current at AC-3e at 400 V rated value	8 A
operating power	
• at AC-3	
— at 400 V rated value	3 kW
— at 500 V rated value	4 kW
— at 690 V rated value	5.5 kW
• at AC-3e	
— at 400 V rated value	3 kW
— at 500 V rated value	4 kW
— at 690 V rated value	5.5 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"
	0
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
	0.11 A
• at 220 V	
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	8 A
at 600 V rated value	8 A
Short-circuit protection	
design of the fuse link	
for short-circuit protection of the auxiliary switch required	fuse gG: 6 A, quick: 10 A
	1000 go. 0 A, quion. 10 A
Installation/ mounting/ dimensions	
mounting position	for mounting on contactors: with a vertical mounting plane +/-135° rotatable & +/- 22.5° tiltable, stand-alone installation: with a vertical mounting plane +/-135° rotatable and +/-45° tiltable; for more details see manual
fastening method	Contactor mounting
height	76 mm
width	45 mm
depth	70 mm
Connections/ Terminals	7 7 11111
	NI.
product component removable terminal for auxiliary and control circuit	No
type of electrical connection	
for main current circuit	screw-type terminals

arrangement of electrical connectors for main current circuit type of connectable conductor cross-sections • for main contacts — solid or stranded — finely stranded with core end processing • for AWG cables for main contacts 2x (0.5 1,5 mm²), 2x (0.75 2,5 mm²), 2x 4 mm² 2x (20 16), 2x (18 14), 2x 12 type of connectable conductor cross-sections • for auxiliary contacts — solid or stranded — finely stranded with core end processing • for AWG cables for auxiliary contacts — solid or stranded — finely stranded with core end processing • for AWG cables for auxiliary contacts 4x (20 16), 2x (18 14), 2x 12 type of connectable conductor cross-sections • for auxiliary contacts • for AWG cables for auxiliary contacts 4x (20 15 mm²), 2x (0.75 2.5 mm²) 2x (20 15, mm²), 2x (0.75 2.5 mm²) 2x (20 16), 2x (18 14) 2x (20 15, mm²), 2x (0.75 2.5 mm²) 2x (20 16, 2x (18 14) 2x (20 16, 2x (18 14), 2x 12 4x (20 16, 2x (18	for auxiliary and control circuit	screw-type terminals
• for main contacts		Top and bottom
- solid or stranded - finely stranded with core end processing • for AWG cables for main contacts 2x (0.5 1.5 mm²), 2x (0.75 2.5 mm²) • for AWG cables for main contacts 2x (20 16), 2x (18 14), 2x 12 type of connectable conductor cross-sections • for auxiliary contacts - solid or stranded - finely stranded with core end processing • for AWG cables for auxiliary contacts - for AWG cables for auxiliary contacts • for auxiliary contacts • for auxiliary contacts • for auxiliary contacts • for main contacts with screw-type terminals • for auxiliary contacts with screw-type terminals • for main contacts • for finely stranded of the connection screw • for main contacts • for finely stranded of the connection screw • for main contacts • for finely stranded of the connection screw • for main contacts • for pain contacts • for finely stranded of the connection screw • for pain contacts • for pain contact form the front • for proof test interval or service life according to IEC • for flow • for proof test interval or service life according to IEC • for flow • for proof test interval or service life according to IEC • for flow • for proof test interval or service life according to IEC • for flow • for proof test interval or service life according to IEC • for flo	type of connectable conductor cross-sections	
• finely stranded with core end processing • for AWG cables for main contacts 2x (20 1.5 mm²), 2x (0.75 2.5 mm²) 2x (20 16), 2x (18 14), 2x 12 type of connectable conductor cross-sections • for auxiliary contacts - solid or stranded	• for main contacts	
• for AWG cables for main contacts 2x (20 16), 2x (18 14), 2x 12 type of connectable conductor cross-sections • for auxiliary contacts solid or stranded finely stranded with core end processing for AWG cables for auxiliary contacts 2x (20 15 mm²), 2x (0.75 2.5 mm²) • for AWG cables for auxiliary contacts 2x (20 16), 2x (18 14) tightening torque • for main contacts with screw-type terminals • for auxiliary contacts with screw-type terminals 2x (20 16), 2x (18 14) 1	— solid or stranded	2x (0,5 1,5 mm²), 2x (0,75 2,5 mm²), 2x 4 mm²
type of connectable conductor cross-sections • for auxiliary contacts — solid or stranded — finely stranded with core end processing • for AWG cables for auxiliary contacts 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 with screw-type terminals • for auxiliary contacts with screw-type terminals • for auxiliary contacts with screw-type terminals • for auxiliary contacts with screw-type terminals 0.8 1.2 N·m design of screwdriver shaft Diameter 5 6 mm size of the screwdriver tip Pozidriv PZ 2 design of the thread of the connection screw • for main contacts • of the auxiliary and control contacts M3 Safety related data failure rate [FIT] with low demand rate according to SN 31920 MTTF with high demand rate 2 280 a IEC 61508 T1 value • for proof test interval or service life according to IEC 60529 finger-safe, for vertical contact from the front Display	 finely stranded with core end processing 	2x (0.5 1.5 mm²), 2x (0.75 2.5 mm²)
• for auxiliary contacts — solid or stranded — finely stranded with core end processing • for AWG cables for auxiliary contacts 2x (0.5 1.5 mm²), 2x (0.75 2.5 mm²) 2x (0.5 1.5 mm²), 2x (0.75 2.5 mm²) 2x (0.5 1.5 mm²), 2x (0.75 2.5 mm²) 2x (20 16), 2x (18 14) tightening torque • for main contacts with screw-type terminals • for auxiliary contacts with screw-type terminals • for auxiliary contacts with screw-type terminals 0.8 1.2 N·m design of screwdriver shaft Diameter 5 6 mm size of the screwdriver tip Pozidriv PZ 2 design of the thread of the connection screw • for main contacts	 for AWG cables for main contacts 	2x (20 16), 2x (18 14), 2x 12
- solid or stranded - finely stranded with core end processing - finely stranded with core end processing - for AWG cables for auxiliary contacts 2x (0.5 1.5 mm²), 2x (0.75 2.5 mm²) 2x (20 16), 2x (18 14) tightening torque - for main contacts with screw-type terminals - for auxiliary contacts with screw-type terminals - size of the screwdriver shaft - protection data - for main contacts - for protection data Safety - for proof test interval or service life according to IEC 60529 touch protection on the front according to IEC 60529 Touch protection on the front according to IEC 60529 Ip20 finger-safe, for vertical contact from the front Display	type of connectable conductor cross-sections	
- finely stranded with core end processing • for AWG cables for auxiliary contacts 2x (20 1.5 mm²), 2x (0.75 2.5 mm²) 2x (20 16), 2x (18 14) tightening torque • for main contacts with screw-type terminals • for auxiliary contacts with screw-type terminals • for auxiliary contacts with screw-type terminals 0.8 1.2 N·m • for auxiliary contacts with screw-type terminals 0.8 1.2 N·m • for auxiliary contacts with screw-type terminals 0.8 1.2 N·m	 for auxiliary contacts 	
• for AWG cables for auxiliary contacts tightening torque • for main contacts with screw-type terminals • for auxiliary contacts with screw-type terminals • for auxiliary contacts with screw-type terminals • for auxiliary contacts with screw-type terminals 0.8 1.2 N·m 0.8 1.2 N·m design of screwdriver shaft Diameter 5 6 mm size of the screwdriver tip Pozidriv PZ 2 design of the thread of the connection screw • for main contacts • of the auxiliary and control contacts M3 Safety related data failure rate [FIT] with low demand rate according to SN 31920 MTTF with high demand rate 12 280 a IEC 61508 T1 value • for proof test interval or service life according to IEC 61508 Electrical Safety protection class IP on the front according to IEC 60529 touch protection on the front according to IEC 60529 Display	— solid or stranded	2x (0.5 1.5 mm²), 2x (0.75 2.5 mm²)
tightening torque • for main contacts with screw-type terminals • for auxiliary contacts with screw-type terminals • for auxiliary contacts with screw-type terminals • for auxiliary contacts with screw-type terminals design of screwdriver shaft Diameter 5 6 mm size of the screwdriver tip Pozidriv PZ 2 design of the thread of the connection screw • for main contacts M3 • of the auxiliary and control contacts M3 Safety related data failure rate [FIT] with low demand rate according to SN 31920 MTTF with high demand rate 2 280 a IEC 61508 T1 value • for proof test interval or service life according to IEC 61508 Electrical Safety protection class IP on the front according to IEC 60529 touch protection on the front according to IEC 60529 finger-safe, for vertical contact from the front Display	 finely stranded with core end processing 	2x (0.5 1.5 mm²), 2x (0.75 2.5 mm²)
for main contacts with screw-type terminals for auxiliary contacts with screw-type terminals for auxiliary contacts with screw-type terminals design of screwdriver shaft Diameter 5 6 mm Pozidriv PZ 2 design of the screwdriver tip Pozidriv PZ 2 design of the thread of the connection screw for main contacts M3 of the auxiliary and control contacts M3 Safety related data failure rate [FIT] with low demand rate according to SN 31920 MTTF with high demand rate 2 280 a IEC 61508 T1 value for proof test interval or service life according to IEC 61508 Electrical Safety protection class IP on the front according to IEC 60529 touch protection on the front according to IEC 60529 Display	 for AWG cables for auxiliary contacts 	2x (20 16), 2x (18 14)
for auxiliary contacts with screw-type terminals design of screwdriver shaft size of the screwdriver tip design of the thread of the connection screw for main contacts of the auxiliary and control contacts M3 Safety related data failure rate [FIT] with low demand rate according to SN 31920 MTTF with high demand rate 2 280 a IEC 61508 T1 value for proof test interval or service life according to IEC 61508 Electrical Safety protection class IP on the front according to IEC 60529 touch protection on the front according to IEC 60529 Display O 8 1.2 N·m Diameter 5 6 mm Dia	tightening torque	
design of screwdriver shaft size of the screwdriver tip design of the thread of the connection screw of the auxiliary and control contacts failure rate [FIT] with low demand rate according to SN 31920 MTTF with high demand rate lec 61508 T1 value of or proof test interval or service life according to IEC 61508 Electrical Safety protection class IP on the front according to IEC 60529 touch protection on the front according to IEC 60529 Display	 for main contacts with screw-type terminals 	0.8 1.2 N·m
size of the screwdriver tip design of the thread of the connection screw of the auxiliary and control contacts M3 Safety related data failure rate [FIT] with low demand rate according to SN 31920 MTTF with high demand rate 2 280 a IEC 61508 T1 value of or proof test interval or service life according to IEC 61508 Electrical Safety protection class IP on the front according to IEC 60529 touch protection on the front according to IEC 60529 Display	 for auxiliary contacts with screw-type terminals 	0.8 1.2 N·m
design of the thread of the connection screw • for main contacts • of the auxiliary and control contacts M3 Safety related data failure rate [FIT] with low demand rate according to SN 31920 MTTF with high demand rate 2 280 a IEC 61508 T1 value • for proof test interval or service life according to IEC 61508 Electrical Safety protection class IP on the front according to IEC 60529 touch protection on the front according to IEC 60529 Display	design of screwdriver shaft	Diameter 5 6 mm
• for main contacts • of the auxiliary and control contacts Safety related data failure rate [FIT] with low demand rate according to SN 31920 MTTF with high demand rate 1EC 61508 T1 value • for proof test interval or service life according to IEC 61508 Electrical Safety protection class IP on the front according to IEC 60529 touch protection on the front according to IEC 60529 Display M3 S0 FIT 2 280 a 1P20 1P20 IP20 Inger-safe, for vertical contact from the front Image: Safety of the front front front front front front front front Display	size of the screwdriver tip	Pozidriv PZ 2
of the auxiliary and control contacts Safety related data failure rate [FIT] with low demand rate according to SN 31920 MTTF with high demand rate 1EC 61508 T1 value of propoof test interval or service life according to IEC 61508 Electrical Safety protection class IP on the front according to IEC 60529 touch protection on the front according to IEC 60529 finger-safe, for vertical contact from the front Display M3 So FIT 2 280 a 1P20 1P20 finger-safe, for vertical contact from the front Display	design of the thread of the connection screw	
failure rate [FIT] with low demand rate according to SN 31920 MTTF with high demand rate 2 280 a IEC 61508 T1 value • for proof test interval or service life according to IEC 61508 Electrical Safety protection class IP on the front according to IEC 60529 touch protection on the front according to IEC 60529 finger-safe, for vertical contact from the front Display	• for main contacts	M3
failure rate [FIT] with low demand rate according to SN 31920 MTTF with high demand rate 2 280 a IEC 61508 T1 value • for proof test interval or service life according to IEC 61508 Electrical Safety protection class IP on the front according to IEC 60529 touch protection on the front according to IEC 60529 Display	 of the auxiliary and control contacts 	M3
MTTF with high demand rate IEC 61508 T1 value • for proof test interval or service life according to IEC 61508 Electrical Safety protection class IP on the front according to IEC 60529 touch protection on the front according to IEC 60529 Display Display	Safety related data	
IEC 61508 T1 value		50 FIT
T1 value ● for proof test interval or service life according to IEC 61508 Electrical Safety protection class IP on the front according to IEC 60529 touch protection on the front according to IEC 60529 Display Electrical Safety IP20 finger-safe, for vertical contact from the front Display	MTTF with high demand rate	2 280 a
for proof test interval or service life according to IEC 61508 Electrical Safety protection class IP on the front according to IEC 60529 touch protection on the front according to IEC 60529 Display 20 a IP20 IP20 finger-safe, for vertical contact from the front Display	IEC 61508	
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	T1 value	
protection class IP on the front according to IEC 60529 touch protection on the front according to IEC 60529 Display IP20 finger-safe, for vertical contact from the front Display		20 a
touch protection on the front according to IEC 60529 finger-safe, for vertical contact from the front Display	Electrical Safety	
Display	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 version for switching status Slide switch	Display	
	display version for switching status	Slide switch
Approvals Certificates	Approvals Certificates	



General Product Approval











For use in hazard-

ous locations

For use in hazardous locations

Test Certificates

Maritime application



Miscellaneous

Special Test Certificate

Type Test Certificates/Test Report





Maritime application











Miscellaneous

other

other Railway Environment





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=3RU2116-1HB0

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RU2116-1HB0

Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

https://support.industry.siemens.com/cs/ww/en/ps/3RU2116-1HBC

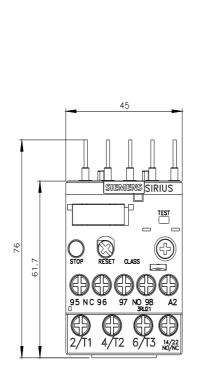
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...) http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RU2116-1HB0&lang=en

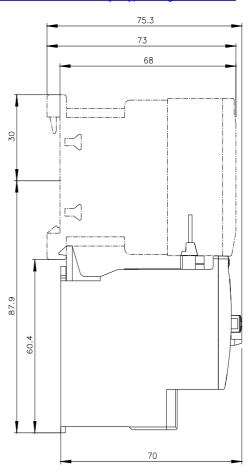
Characteristic: Tripping characteristics, I2t, Let-through current

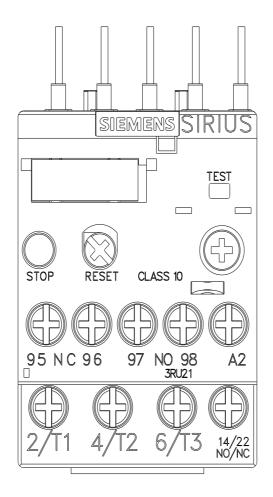
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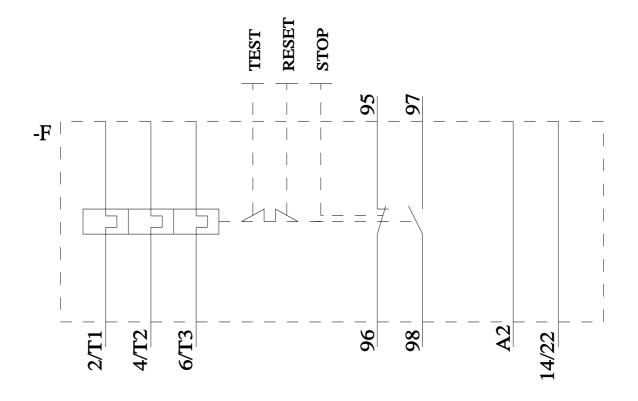
Further characteristics (e.g. electrical endurance, switching frequency)

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