









Overload relay 70...90 A Thermal For motor protection Size S3, Class 10 Contactor mounting Main circuit: Screw Auxiliary circuit: Screw Manual-Automatic-Reset

<b>product brand name</b>	SIRIUS
<b>product designation</b>	thermal overload relay
<b>product type designation</b>	3RU2
<b>General technical data</b>	
<b>size of overload relay</b>	S3
<b>size of contactor can be combined company-specific</b>	S3
power loss [W] for rated value of the current at AC in hot operating state	21 W
• per pole	7 W
insulation voltage with degree of pollution 3 at AC rated value	1 000 V
<b>surge voltage resistance rated value</b>	8 kV
<b>maximum permissible voltage for protective separation</b>	
• 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
<b>shock resistance according to IEC 60068-2-27</b>	8g / 11 ms
<b>recovery time after overload trip</b>	
• with automatic reset typical	10 min
• with remote-reset	10 min
• with manual reset	10 min
<b>reference code according to IEC 81346-2</b>	F
<b>Substance Prohibitance (Date)</b>	03/01/2017
<b>SVHC substance name</b>	Lead - 7439-92-1
<b>Net Weight</b>	0.585 kg
<b>Ambient conditions</b>	
installation altitude at height above sea level maximum	2 000 m
<b>ambient temperature</b>	
• during operation	-40 ... +70 °C
• during storage	-55 ... +80 °C
• during transport	-55 ... +80 °C
<b>temperature compensation</b>	-40 ... +60 °C
relative humidity during operation	10 ... 95 %
<b>Environmental footprint</b>	
Environmental Product Declaration (EPD)	Yes
global warming potential [CO <sub>2</sub> eq] total	120 kg

global warming potential [CO2 eq] during manufacturing	3.09 kg
global warming potential [CO2 eq] during sales	0.146 kg
global warming potential [CO2 eq] during operation	118 kg
global warming potential [CO2 eq] after end of life	-0.187 kg
<b>Main circuit</b>	
<b>number of poles for main current circuit</b>	3
<b>adjustable current response value current of the current-dependent overload release</b>	70 ... 90 A
<b>operating voltage</b>	
• rated value	1 000 V
• at AC-3e rated value maximum	1 000 V
<b>operating frequency rated value</b>	50 ... 60 Hz
<b>operational current rated value</b>	90 A
operational current at AC-3e at 400 V rated value	90 A
<b>operating power</b>	
• 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
<b>Auxiliary circuit</b>	
<b>design of the auxiliary switch</b>	integrated
<b>number of NC contacts for auxiliary contacts</b>	1
• note	for contactor disconnection
<b>number of NO contacts for auxiliary contacts</b>	1
• note	for message "Tripped"
number of CO contacts for auxiliary contacts	0
<b>operational current of auxiliary contacts at AC-15</b>	
• 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
<b>operational current of auxiliary contacts at DC-13</b>	
• 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)
<b>contact rating of auxiliary contacts according to UL</b>	B600 / R300
<b>Protective and monitoring functions</b>	
<b>trip class</b>	CLASS 10
<b>design of the overload release</b>	thermal
<b>UL/CSA ratings</b>	
<b>full-load current (FLA) for 3-phase AC motor</b>	
• at 480 V rated value	77 A
• at 600 V rated value	77 A
<b>Short-circuit protection</b>	
<b>design of the fuse link</b>	
• 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

<ul style="list-style-type: none"> <li>for short-circuit protection of the auxiliary switch required</li> </ul>	fuse gG: 6 A, quick: 10 A	
<b>Installation/ mounting/ dimensions</b>		
<b>mounting position</b>	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	
<b>fastening method</b>	Contactor mounting	
<b>height</b>	105 mm	
<b>width</b>	70 mm	
<b>depth</b>	125 mm	
<b>Connections/ Terminals</b>		
<b>product component removable terminal for auxiliary and control circuit</b>	No	
<b>type of electrical connection</b>		
<ul style="list-style-type: none"> <li>for main current circuit</li> <li>for auxiliary and control circuit</li> </ul>	screw-type terminals screw-type terminals	
<b>arrangement of electrical connectors for main current circuit</b>	Top and bottom	
<b>type of connectable conductor cross-sections</b>		
<ul style="list-style-type: none"> <li>for main contacts               <ul style="list-style-type: none"> <li>— solid</li> <li>— stranded</li> <li>— solid or stranded</li> <li>— finely stranded with core end processing</li> </ul> </li> <li>for AWG cables for main contacts</li> </ul>	2x (2.5 ... 16 mm <sup>2</sup> ) 2x (6 ... 16 mm <sup>2</sup> ), 2x (10 ... 50 mm <sup>2</sup> ), 1x (10 ... 70 mm <sup>2</sup> ) 2x (2,5 ... 50 mm <sup>2</sup> ), 1x (10 ... 70 mm <sup>2</sup> ) 2x (2.5 ... 35 mm <sup>2</sup> ), 1x (2.5 ... 50 mm <sup>2</sup> ) 2x (10 ... 1/0), 1x (10 ... 2/0)	
<b>type of connectable conductor cross-sections</b>		
<ul style="list-style-type: none"> <li>for auxiliary contacts               <ul style="list-style-type: none"> <li>— solid or stranded</li> <li>— finely stranded with core end processing</li> </ul> </li> <li>for AWG cables for auxiliary contacts</li> </ul>	2x (0.5 ... 1.5 mm <sup>2</sup> ), 2x (0.75 ... 2.5 mm <sup>2</sup> ) 2x (0.5 ... 1.5 mm <sup>2</sup> ), 2x (0.75 ... 2.5 mm <sup>2</sup> ) 2x (20 ... 16), 2x (18 ... 14)	
<b>tightening torque</b>		
<ul style="list-style-type: none"> <li>for main contacts for ring cable lug</li> </ul>	4.5 ... 6 N·m	
<b>outer diameter of the usable ring cable lug maximum</b>	19 mm	
<b>tightening torque</b>		
<ul style="list-style-type: none"> <li>for main contacts with screw-type terminals</li> <li>for auxiliary contacts with screw-type terminals</li> </ul>	4.5 ... 6 N·m 0.8 ... 1.2 N·m	
<b>design of screwdriver shaft</b>	Hexagonal socket	
<b>size of the screwdriver tip</b>	4 mm hexagon socket	
<b>design of the thread of the connection screw</b>		
<ul style="list-style-type: none"> <li>for main contacts</li> <li>of the auxiliary and control contacts</li> </ul>	M8 M3	
IEC 61508		
<b>T1 value</b>		
<ul style="list-style-type: none"> <li>for proof test interval or service life according to IEC 61508</li> </ul>	20 a	
Electrical Safety		
<b>protection class IP on the front according to IEC 60529</b>	IP20	
<b>touch protection on the front according to IEC 60529</b>	finger-safe, for vertical contact from the front	
<b>Display</b>		
display version for switching status	Slide switch	
<b>Approvals Certificates</b>		
<b>General Product Approval</b>	For use in hazardous locations	
     		
For use in hazardous locations	Test Certificates	Maritime application



[Type Test Certificates/Test Report](#)

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Maritime application      other      Railway



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Environment



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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=3RU2146-4LB0>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RU2146-4LB0>

Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)

[https://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RU2146-4LB0&lang=en](https://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RU2146-4LB0&lang=en)

Cax online generator

<https://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RU2146-4LB0>

Characteristic curves

[https://curves.simaris.siemens.com/curves/<mmp\\_prod\\_noCOMP="HAUPT"></mmp\\_prod\\_no>](https://curves.simaris.siemens.com/curves/<mmp_prod_noCOMP=)

