## **SIEMENS**

Data sheet 3RU2116-1AC0



Overload relay 1.1...1.6 A Thermal For motor protection Size S00, Class 10 Contactor mounting Main circuit: Spring-type terminal Auxiliary circuit: spring-type terminal 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	5.7 W
• per pole	1.9 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	
<ul> <li>in networks with ungrounded star point between auxiliary and auxiliary circuit</li> </ul>	440 V
<ul> <li>in networks with grounded star point between auxiliary and auxiliary circuit</li> </ul>	440 V
<ul> <li>in networks with ungrounded star point between main and auxiliary circuit</li> </ul>	440 V
<ul> <li>in networks with grounded star point between main and auxiliary circuit</li> </ul>	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	0.152 kg
Ambient conditions	
installation altitude at height above sea level maximum	2 000 m
ambient temperature	
<ul> <li>during operation</li> </ul>	-40 +70 °C
<ul> <li>during storage</li> </ul>	-55 +80 °C
during transport	-55 +80 °C
temperature compensation	-40 +60 °C
relative humidity during operation	10 95 %
Environmental footprint	
Global Warming Potential [CO2 eq] total	40 kg
Global Warming Potential [CO2 eq] during manufacturing	1.01 kg
global warming potential [CO2 eq] during sales	0.044 kg
Global Warming Potential [CO2 eq] during operation	39 kg
Global Warming Potential [CO2 eq] after end of life	0.022 kg
Main circuit	
number of poles for main current circuit	3
adjustable current response value current of the current-	1.1 1.6 A

dependent overload release   erated value   680 V		
earl AC-3e rated value maximum	dependent overload release	
operating frequency rated value         50 60 Hz           operational current rated value         1.6 A           operational power         4.6 A           a can ACOS         4.6 A           - at 400 V rated value         0.55 kW           - at 400 V rated value         0.75 kW           - at 4600 V rated value         0.75 kW           - at 400 V rated value         0.75 kW           - at 4500 V rated value         0.75 kW           - at 500 V rated value         0.75 kW           - at 600 V rated value         0.75 kW           - at 600 V rated value         1.1 kW           - auxiliary contacts of auxiliary contacts         1           - note         for contacts for auxiliary contacts         1           - note         for contacts for auxiliary contacts at AC-15         1           - at 120 V         3.A         3.A           - at 120 V         3.A         3.A           - at 120 V         3.A         3.A	rated value	
Septembroal current at a value   1.6 A   2.6	at AC-3e rated value maximum	690 V
Operating power	operating frequency rated value	50 60 Hz
Separating power	operational current rated value	1.6 A
	operational current at AC-3e at 400 V rated value	1.6 A
	operating power	
at 590 V rated value	• at AC-3	
at 890 V rated value 1.1 kW at AC-3e at 1400 V rated value 0.55 kW at 500 V rated value 0.75 kW at 500 V rated value 1.1 kW value v	— at 400 V rated value	0.55 kW
	— at 500 V rated value	0.75 kW
at 900 V rated value	— at 690 V rated value	1.1 kW
at 500 V rated value	• at AC-3e	
— at 690 V rated value	— at 400 V rated value	0.55 kW
design of the auxiliary switch   integrated	— at 500 V rated value	0.75 kW
design of the auxiliary switch number of NC contacts for auxiliary contacts o note number of NO contacts for auxiliary contacts inote number of CO contacts for auxiliary contacts onote number of CO contacts for auxiliary contacts operational current of auxiliary contacts at AC-15 object of CO contacts for auxiliary contacts at AC-15 object of CO contacts for auxiliary contacts at AC-15 object of CO contacts for auxiliary contacts at AC-15 object of CO contacts for auxiliary contacts at AC-15 object of CO contacts for auxiliary contacts at AC-15 object of CO contacts for auxiliary contacts at AC-15 object of CO contacts for auxiliary contacts at AC-15 object of CO contacts for auxiliary contacts at AC-15 object of CO contacts for auxiliary contacts at AC-15 object of CO contacts for auxiliary contacts at AC-15 object of CO contact for auxiliary contacts at AC-15 object of CO contact for auxiliary contacts at AC-13 object of CO contact for auxiliary contacts at AC-13 object of CO contact for auxiliary contacts at AC-13 object of CO contact for auxiliary contacts according to UL object of CO contact for auxiliary contacts according to UL object of CO contact for auxiliary contacts according to UL object of CO contact for auxiliary contacts according to UL object of CO contact for auxiliary contacts according to UL object of CO contact for auxiliary contacts according to UL object of CO contact for auxiliary contacts according to UL object of CO contact for auxiliary contacts according to UL object of CO contact for auxiliary contacts according to UL object of CO contact for auxiliary contacts according to UL object of CO contact for auxiliary contacts for auxiliary switch required object of CO contact for auxiliary contacts for auxiliary switch required object of CO contact for auxiliary contacts for auxiliary switch required object of CO contact for auxiliary contacts at AC-15 object of CO contact for auxiliary contacts at AC-15 object of CO contact for auxiliary contacts at AC-15 object of CO contact for auxilia	— at 690 V rated value	1.1 kW
number of NC contacts for auxiliary contacts	Auxiliary circuit	
● note   for contacts for auxiliary contacts   1	design of the auxiliary switch	integrated
● note         for contactor disconnection           number of NO contacts for auxiliary contacts         1           e note         for message "Tripped"           number of CO contacts for auxiliary contacts         0           operational current of auxiliary contacts at AC-15         3 A           • at 24 V         3 A           • at 120 V         3 A           • at 1230 V         2 A           • at 230 V         2 A           • at 600 V         0.75 A           operational current of auxiliary contacts at DC-13         2 A           • at 80 V         0.3 A           • at 110 V         0.22 A           • at 125 V         0.22 A           • at 220 V         0.11 A           contact rating of auxiliary contacts according to UL         8600 / R300           Protective and monitoring functions         1           trip class         CLASS 10           design of the overload release         thermal           UL/CSA ratings         Full-load current (FLA) for 3-phase AC motor         6           • at 480 V rated value         1.6 A         6           • at 600 V rated value         1.6 A         6           • at 600 V rated value         1.6 A         6           •		
■ note   for message "Tripped"	-	for contactor disconnection
■ note   for message "Tripped"	number of NO contacts for auxiliary contacts	1.
e at 24 V 3 A 3 A 3 A 3 A 3 A 3 A 3 A 3 A 3 A 3	• note	for message "Tripped"
at 24 V	number of CO contacts for auxiliary contacts	· · · · · · · · · · · · · · · · · · ·
	·	
	• at 24 V	3 A
e at 125 V e at 230 V e at 400 V e at 690 V  operational current of auxiliary contacts at DC-13  e at 24 V e at 60 V e at 110 V e at 125 V e at 1220 V e at 1220 V Contact rating of auxiliary contacts according to UL e B600 / R300  Protective and monitoring functions  trip class CLASS 10 design of the overload release UL/CSA ratings  full-load current (FLA) for 3-phase AC motor e at 480 V rated value e at 600 V rated value e at 600 V rated value e at 600 V rated value fusion of the fuse link e for short-circuit protection of the auxiliary switch required fuse gG: 6 A, quick: 10 A  Installation/ mounting/ dimensions  mounting position fastening method contactor mounting height width 45 mm  depth 70 mm	• at 110 V	3 A
e at 230 V e at 400 V e at 690 V  operational current of auxiliary contacts at DC-13  e at 24 V e at 60 V e at 110 V e at 125 V e at 220 V e 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 UL/CSA ratings  full-load current (FLA) for 3-phase AC motor e at 480 V rated value 1.6 A e at 600 V rated value 1.6 A Short-circuit protection  design of the fuse link e for short-circuit protection of the auxiliary switch required fuse gG: 6 A, quick: 10 A Installation/ mounting/ dimensions  mounting position fastening method height eight width depth 7 0 mm	• at 120 V	3 A
	• at 125 V	3 A
● at 690 V   0.75 A	• at 230 V	2 A
operational current of auxiliary contacts at DC-13  • at 24 V • at 60 V • at 110 V • at 1125 V • at 220 V • at 220 V  contact rating of auxiliary contacts according to UL  B600 / R300  Protective and monitoring functions  trip class  class  class CLASS 10  design of the overload release  UL/CSA ratings  full-load current (FLA) for 3-phase AC motor • at 480 V rated value • at 600 V rated	● at 400 V	1 A
	● at 690 V	0.75 A
at 110 V at 125 V at 125 V at 220 V at	operational current of auxiliary contacts at DC-13	
at 110 V at 125 V at 125 V at 220 V at		2 A
<ul> <li>at 125 V</li> <li>at 220 V</li> <li>0.11 A</li> <li>contact rating of auxiliary contacts according to UL</li> <li>B600 / R300</li> <li>Protective and monitoring functions</li> <li>trip class</li> <li>CLASS 10</li> <li>design of the overload release</li> <li>thermal</li> <li>UL/CSA ratings</li> <li>full-load current (FLA) for 3-phase AC motor <ul> <li>at 480 V rated value</li> <li>at 600 V rated value</li> <li>1.6 A</li> </ul> </li> <li>Short-circuit protection</li> <li>design of the fuse link <ul> <li>for short-circuit protection of the auxiliary switch required</li> <li>fuse gG: 6 A, quick: 10 A</li> </ul> </li> <li>Installation/ mounting/ dimensions <ul> <li>mounting position</li> <li>any</li> <li>fastening method</li> <li>Contactor mounting</li> <li>height</li> <li>87 mm</li> <li>width</li> <li>45 mm</li> <li>depth</li> <li>70 mm</li> </ul> </li> </ul>	● at 60 V	0.3 A
<ul> <li>at 125 V</li> <li>at 220 V</li> <li>0.11 A</li> <li>contact rating of auxiliary contacts according to UL</li> <li>B600 / R300</li> <li>Protective and monitoring functions</li> <li>trip class</li> <li>CLASS 10</li> <li>design of the overload release</li> <li>thermal</li> <li>UL/CSA ratings</li> <li>full-load current (FLA) for 3-phase AC motor <ul> <li>at 480 V rated value</li> <li>at 600 V rated value</li> <li>1.6 A</li> </ul> </li> <li>Short-circuit protection</li> <li>design of the fuse link <ul> <li>for short-circuit protection of the auxiliary switch required</li> <li>fuse gG: 6 A, quick: 10 A</li> </ul> </li> <li>Installation/ mounting/ dimensions <ul> <li>mounting position</li> <li>any</li> <li>fastening method</li> <li>Contactor mounting</li> <li>height</li> <li>87 mm</li> <li>width</li> <li>45 mm</li> <li>depth</li> <li>70 mm</li> </ul> </li> </ul>	• at 110 V	
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 at 600 V rated value 1.6 A Short-circuit protection  design of the fuse link a for short-circuit protection of the auxiliary switch required fuse gG: 6 A, quick: 10 A  Installation/ mounting/ dimensions mounting position fastening method height width 45 mm depth  70 mm	● at 125 V	0.22 A
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 • at 600 V rated value • at 600 V rated value  • at 600 V rated value  fuse gG: 6 A, quick: 10 A  Installation/ mounting/ dimensions  mounting position fastening method height width 45 mm  depth 70 mm		
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 1.6 A  • at 600 V rated value 1.6 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  Installation/ mounting/ dimensions  mounting position any fastening method Contactor mounting height 87 mm  width 45 mm  depth 70 mm		
trip class  design of the overload release  thermal  UL/CSA ratings  full-load current (FLA) for 3-phase AC motor  • at 480 V rated value • at 600 V rated value 1.6 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  Installation/ mounting/ dimensions  mounting position fastening method Contactor mounting height 87 mm  width 45 mm  depth 70 mm		
design of the overload release  UL/CSA ratings  full-load current (FLA) for 3-phase AC motor  • at 480 V rated value • at 600 V rated value 1.6 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  Installation/ mounting/ dimensions  mounting position fastening method Contactor mounting height 87 mm  width 45 mm  depth 70 mm		CLASS 10
full-load current (FLA) for 3-phase AC motor  • at 480 V rated value • at 600 V rated value 1.6 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  Installation/ mounting/ dimensions  mounting position any fastening method Contactor mounting height width 45 mm  depth 70 mm	· ·	
full-load current (FLA) for 3-phase AC motor  • at 480 V rated value 1.6 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  Installation/ mounting/ dimensions  mounting position fastening method height width 45 mm  depth 70 mm		
<ul> <li>at 480 V rated value</li> <li>at 600 V rated value</li> <li>1.6 A</li> </ul> Short-circuit protection design of the fuse link <ul> <li>for short-circuit protection of the auxiliary switch required</li> <li>fuse gG: 6 A, quick: 10 A</li> </ul> Installation/ mounting/ dimensions mounting position <ul> <li>fastening method</li> <li>height</li> <li>87 mm</li> </ul> width <ul> <li>45 mm</li> </ul> depth <ul> <li>70 mm</li> </ul>		
● at 600 V rated value  Short-circuit protection  design of the fuse link  ● for short-circuit protection of the auxiliary switch required fuse gG: 6 A, quick: 10 A  Installation/ mounting/ dimensions  mounting position any fastening method Contactor mounting height 87 mm  width 45 mm  depth 70 mm		16 A
Short-circuit protection  design of the fuse link		
design of the fuse link		
● for short-circuit protection of the auxiliary switch required fuse gG: 6 A, quick: 10 A  Installation/ mounting/ dimensions  mounting position any fastening method Contactor mounting height 87 mm width 45 mm depth 70 mm		
Installation/ mounting/ dimensions  mounting position any fastening method Contactor mounting height 87 mm width 45 mm depth 70 mm		fuse aG: 6 A quick: 10 A
mounting positionanyfastening methodContactor mountingheight87 mmwidth45 mmdepth70 mm	· · · · · · · · · · · · · · · · · · ·	1000 go. o A, quion. 10 A
fastening methodContactor mountingheight87 mmwidth45 mmdepth70 mm		any
height         87 mm           width         45 mm           depth         70 mm		·
width45 mmdepth70 mm	•	
depth 70 mm	<del></del>	
·		
Connections/ Terminals	·	70 11111
		N-
product component removable terminal for auxiliary and control circuit	control circuit	NO
type of electrical connection	type of electrical connection	
• for main current circuit spring-loaded terminals	for main current circuit	spring-loaded terminals
• for auxiliary and control circuit spring-loaded terminals		
arrangement of electrical connectors for main current  Top and bottom	arrangement of electrical connectors for main current	Top and bottom

circuit	
type of connectable conductor cross-sections	
• for main contacts	
— solid or stranded	1x (0,5 4 mm²)
<ul> <li>finely stranded with core end processing</li> </ul>	1x (0.5 2.5 mm²)
<ul> <li>finely stranded without core end processing</li> </ul>	1x (0.5 2.5 mm²)
<ul> <li>for AWG cables for main contacts</li> </ul>	1x (20 12)
type of connectable conductor cross-sections	
<ul> <li>for auxiliary contacts</li> </ul>	
<ul> <li>solid or stranded</li> </ul>	2x (0.5 2.5 mm²)
<ul> <li>finely stranded with core end processing</li> </ul>	2x (0.5 1.5 mm²), 2x (0.75 2.5 mm²)
<ul> <li>finely stranded without core end processing</li> </ul>	2x (0.5 1.5 mm²)
<ul> <li>for AWG cables for auxiliary contacts</li> </ul>	2x (20 14)
design of screwdriver shaft	Diameter 3 mm
size of the screwdriver tip	3,0 x 0,5 mm
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> <li>for proof test interval or service life according to IEC 61508</li> </ul>	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	







Confirmation





For use in hazardous locations Test Certificates Marine / Shipping





Miscellaneous

Type Test Certificates/Test Report

Special Test Certificate



## Marine / Shipping















other Railway Environment

<u>Miscellaneous</u>

Confirmation

Special Test Certificate



Environmental Confirmations

## Further information

Information on the packaging

https://support.industry.siemens.com/cs/ww/en/view/109813875

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=3RU2116-1AC0

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RU2116-1AC0

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

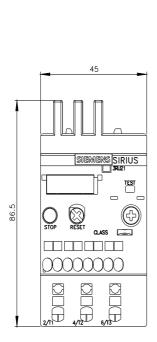
https://support.industry.siemens.com/cs/ww/en/ps/3RU2116-1AC0

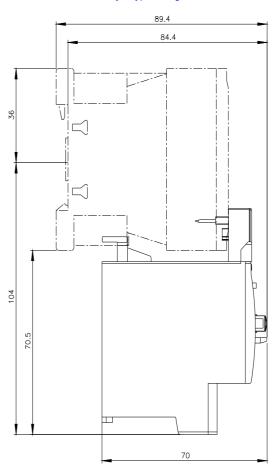
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...) <a href="http://www.automation.siemens.com/bilddb/cax\_de.aspx?mlfb=3RU2116-1AC0&lang=en">http://www.automation.siemens.com/bilddb/cax\_de.aspx?mlfb=3RU2116-1AC0&lang=en</a>

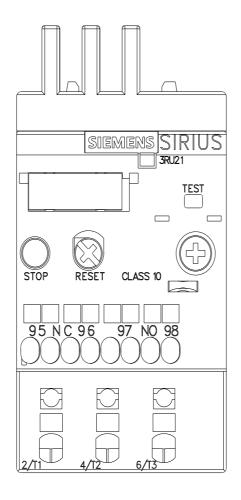
Characteristic: Tripping characteristics, I²t, Let-through current

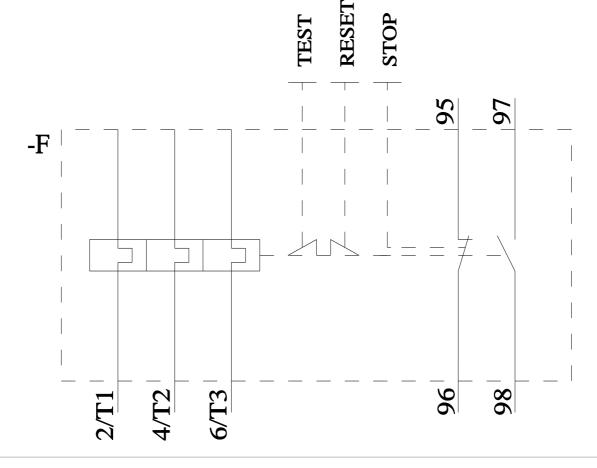
https://support.industry.siemens.com/cs/ww/en/ps/3RU2116-1AC0/char

Further characteristics (e.g. electrical endurance, switching frequency)
http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RU2116-1AC0&objecttype=14&gridview=view1









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