## **SIEMENS**

**Product data sheet** 

## THERM. OVERLOAD RELAY 1.1 - 1.6 A

Product brand name     ISINUS       Protection class IP / frontal/front side     IP20       Insulation voltage / with degree of pollution 3     IP20       · tand value     V     600       Altitude of installation site / at a height over sea level / maximum     Im     2,000       Anbient temperature     Im     2,000       · during transport     0°C     -55 80       · during the operating phase     0°C     -55 80       · during the operating phase     0°C     -60 70       Relative humidity     J     -70       · during the operating phase     0°C     89 /10 ms       registance against shock     89 /10 ms       Impulse voltage resistance / rated value     KV     6       Relatives power / total / typical     V     89 /10 ms       · according to DIN 40719 extendable after IEC 204-2 / according to DIN 40719 extendable after IEC 204-2 / according to DIN 40719 extendable after IEC 204-2 / according to DIN 40719 extendable after IEC 204-2 / according to DIN 40719 extendable after IEC 204-2 / according to DIN 40719 extendable after IEC 204-2 / according to DIN 40719 extendable after IEC 204-2 / according to DIN 40719 extendable after IEC 204-2 / according to DIN 40719 extendable after IEC 204-2 / according to DIN 40719 extendable after IEC 204-2 / according to DIN 40719 extendable after IEC 204-2 / according to DIN 40719 extendable after IEC 204-2 / according to DIN 40719 extendable after IEC 204-2 / according to DIN 40719 extendable after IEC 204-2 / according to DIN 40719 exten	General technical data:		
Insulation voltage / with degree of pollution 3         V         690           • rated value         V         690           Altitude of installation site / at a height over sea level / maximum         mm         2,000           Ambient temperature	Product brand name		SIRIUS
v rated valueV690Altitude of installation site / at a height over sea level / maximumm2.000Ambient temperature	Protection class IP / frontal/front side	-	IP20
Altitude of installation site / at a height over sea level / maximum         m         2.00           Altitude of installation site / at a height over sea level / maximum         m         2.00           Altitude of installation site / at a height over sea level / maximum         m         2.00           Ambient temperature         %         55 80           • during transport         %         -55 80           • during the operating phase         %         -40 70           Relative humidity         -         -           • during the operating phase         %         90           Resistance against shock         8g / 10 ms           Impulse voltage resistance / rated value         kV         6           Real loss power / total / typical         KV         6           • according to DIN 40719 extendable after IEC 204-2 / according to IEC 750         F         F           • according to DIN 40719 extendable after IEC 204-2 / according to IEC 750         F         S0           • according to DIN KIN 61346-2         F         S0           Trip class         S0         S0           Size of overload relay         S0         S0           Size of the contactor / can be combined • company-specific         S0         S0           Mumber of poles / for main curren	Insulation voltage / with degree of pollution 3	-	
maximumImage: set of the constraint of th	rated value	V	690
• during transport°C-55 80• during two operating phase°C-55 80• during the operating phase°C-40 70Relative humidity40 70• during the operating phase7/%8g/10 msResistance against shock8g/10 msImpulse voltage resistance / rated valueKV6Real loss power / total / typicalW3.9• according to DIN 40719 extendable after IEC 204-2 / according to DIN 40719 extendable after IEC 204-2 / according to DIN 40719 extendable after IEC 204-2 / according to DIN 40719 extendable after IEC 204-2 / according to DIN 40719 extendable after IEC 204-2 / according to DIN 40719 extendable after IEC 204-2 / according to DIN 40719 extendable after IEC 204-2 / according to DIN 40719 extendable after IEC 204-2 / according to DIN 40719 extendable after IEC 204-2 / according to DIN 40719 extendable after IEC 204-2 / according to DIN 40719 extendable after IEC 204-2 / according to DIN 40719 extendable after IEC 204-2 / according to DIN 40719 extendable after IEC 204-2 / according to DIN 40719 extendable after IEC 204-2 / according to DIN 40719 extendable after IEC 204-2 / according to DIN 40719 extendable after IEC 204-2 / according to DIN 40719 extendable after IEC 204-2 / according to DIN 40719 extendable after IEC 204-2 / according to DIN 40719 extendable after IEC 204-2 / according to DIN 40719 extendable after IEC 204-2 / according to DIN 40719 extendable after IEC 204-2 / according to DIN 40719 extendable after IEC 204-2 / according to DIN 40719 extendable after IEC 204-2 / according to DIN 40719 extendable after IEC 204-2 / according to DIN 40719 extendable after IEC 204-2 / according to DIN 40719 extendable after IEC 204-2 / according to DIN 40719 extendable after IEC 204-2 / according to DIN 40719 extendable after IEC 204-2 / according to DIN 40	-	m	2,000
Autions storage         Constrained         Constrained           • during storage         °C         -40 70           • during the operating phase         °C         -40 70           • during the operating phase         °C         90           • during the operating phase         //w         90           • during the operating phase         //w         8g / 10 ms           Impulse voltage resistance / rated value         kV         6           Real loss power / total / typical         W         3.9           Item designation         F         F           • according to DIN 40719 extendable after IEC 204-2 / according to DIN 40719 extendable after IEC 204-2 / according to DIN EN 61346-2         F           Trip class         CLASS 10         F           Size of overload relay         S00         S00           Size of overload relay         S00         S00           Mather of poles / for main current circuit         S00         S00           Mumber of poles / for main current circuit         S0         S00           Operating voltage / at 3 AC / rated value         V         S00           • maximum         V         S00         S00	Ambient temperature	-	
• during the operating phase°C-40 70Relative humidity90• during the operating phase/%90Resistance against shock8g / 10 msImpulse voltage resistance / rated valueKV6Real loss power / total / typicalW3.9tem designationFF• according to DIN 40719 extendable after IEC 204-2 / according to DIN 40719 extendable after IEC 204-2 / according to DIN 40719 extendable after IEC 204-2 / according to DIN 40719 extendable after IEC 204-2 / according to DIN 40719 extendable after IEC 204-2 / according to DIN 40719 extendable after IEC 204-2 / according to DIN 40719 extendable after IEC 204-2 / according to DIN 40719 extendable after IEC 204-2 / according to DIN 40719 extendable after IEC 204-2 / according to DIN 40719 extendable after IEC 204-2 / according to DIN 40719 extendable after IEC 204-2 / according to DIN 40719 extendable after IEC 204-2 / according to DIN 40719 extendable after IEC 204-2 / according to DIN 40719 extendable after IEC 204-2 / according to DIN 40719 extendable after IEC 204-2 / according to DIN 40719 extendable after IEC 204-2 / according to DIN 40719 extendable after IEC 204-2 / according to DIN 40719 extendable after IEC 204-2 / according to DIN 40719 extendable after IEC 204-2 / according to DIN 40719 extendable after IEC 204-2 / according to DIN 40719 extendable after IEC 204-2 / according to DIN 40719 extendable after IEC 204-2 / according to DIN 40719 extendable after IEC 204-2 / according to DIN 40719 extendable after IEC 204-2 / according to DIN 40719 extendable after IEC 204-2 / according to DIN 40719 extendable after IEC 204-2 / according to DIN 40719 extendable after IEC 204-2 / according to DIN 40719 extendable after IEC 204-2 / according to DIN 40719 extendable after IEC 204-2 / according to DIN 40719 extendable after IEC 204-2 / according to	during transport	°C	-55 80
Relative humidity     Interface of the operating phase     /%     90       Resistance against shock     8g / 10 ms       Impulse voltage resistance / rated value     KV     6       Real loss power / total / typical     W     3.9       tem designation     F     F       • according to DIN 40719 extendable after IEC 204-2 / according to DIN 40719 extendable after IEC 204-2 / according to DIN 40719 extendable after IEC 204-2 / according to EC 750     F       • according to DIN 40719 extendable after IEC 204-2 / according to EC 750     F     F       • according to DIN 40719 extendable after IEC 204-2 / according to EC 750     F     F       • according to DIN 40719 extendable after IEC 204-2 / according to EC 750     F     F       • according to DIN 40719 extendable after IEC 204-2 / according to EC 750     F     F       • according to DIN 40719 extendable after IEC 204-2 / according to EC 750     F     F       • according to DIN 40719 extendable after IEC 204-2 / according to EC 750     F     F       • according to DIN EN 61346-2     F     E     F       Type of assignement     2     S00     S00       Size of the contactor / can be combined     S00     S00       • company-specific     S00     S00       Mumber of poles / for main current circuit     G     G       • maximum     V     690	during storage	°C	-55 80
• during the operating phase/ %90Resistance against shock8g / 10 msImpulse voltage resistance / rated valueKV6Real loss power / total / typicalW3.9Item designationW• according to DIN 40719 extendable after IEC 204-2 / according to DIN 40719 extendable after IEC 204-2 / according to DIN EN 61346-2FTrip classCLASS 10Trip classCLASS 10Size of overload relayS00Size of overload relayS00Main circuit:S00Mumber of poles / for main current circuit3Operating voltage / at 3 AC / rated valueI• maximumQOperating current / at AC-3 / at 400 VA• rated valueA• rated valueA <td>during the operating phase</td> <td>°C</td> <td>-40 70</td>	during the operating phase	°C	-40 70
Resistance against shock8g/10 msImpulse voltage resistance / rated valuekV6Real loss power / total / typicalW3.9Item designationF• according to DIN 40719 extendable after IEC 204-2 / according to IEC 750F• according to DIN EN 61346-2FTrip classCLASS 10Type of assignement2Size of overload relayS00Size of overload relayS00Main circuit:S00Number of poles / for main current circuitGOperating voltage / at 3 AC / rated valueA• rated valueAIted valueA	Relative humidity		
Impulse voltage resistance / rated valuekV6Real loss power / total / typicalW3.9Item designation • according to DIN 40719 extendable after IEC 204-2 / according to IEC 750F• according to DIN EN 61346-2FTrip classCLASS 10Type of assignementS00Size of overload relayS00Size of the contactor / can be combined • company-specificS00Main circuit:Item circuitNumber of poles / for main current circuitItem circuitOperating voltage / at 3 AC / rated valueV• naximumVOperating current / at AC-3 / at 400 V • rated valueAItem circuitA	during the operating phase	/ %	90
Real loss power / total / typicalW3.9Real loss power / total / typicalW3.9Item designationItem designationItem designation• according to DIN 40719 extendable after IEC 204-2 / according to IEC 750F• according to DIN EN 61346-2FTrip classCLASS 10Type of assignement2Size of overload relayS00Size of the contactor / can be combined • company-specificS00Main circuit:S00Number of poles / for main current circuit3Operating voltage / at 3 AC / rated valueV690690operating current / at AC-3 / at 400 VA1 rated valueA1 rated valueA	Resistance against shock		8g / 10 ms
Item designationItem designation• according to DIN 40719 extendable after IEC 204-2 / according to IEC 750F• according to DIN EN 61346-2FTrip classCLASS 10Type of assignement2Size of overload relayS00Size of the contactor / can be combined • company-specificS00Main circuit:S00Number of poles / for main current circuitImage: S00Operating voltage / at 3 AC / rated value • maximumVOperating current / at AC-3 / at 400 V • rated valueAIted valueAIted valueAIted valueA	Impulse voltage resistance / rated value	kV	6
• according to DIN 40719 extendable after IEC 204-2 / according to IEC 750F• according to DIN EN 61346-2FTrip classCLASS 10Type of assignement2Size of overload relayS00Size of overload relayS00Size of the contactor / can be combined • company-specificS00Main circuit:S00Number of poles / for main current circuitIOperating voltage / at 3 AC / rated value • maximumS00Operating current / at AC-3 / at 400 V • rated valueAIAAI.6	Real loss power / total / typical	W	3.9
to IEC 750Image: state	Item designation		
Trip classCLASS 10Type of assignement2Size of overload relayS00Size of the contactor / can be combined • company-specificS00Vain circuit:S00Main circuit:Number of poles / for main current circuit3Operating voltage / at 3 AC / rated value • maximumV690Operating current / at AC-3 / at 400 V • rated valueA1.6			F
Type of assignement2Size of overload relayS00Size of the contactor / can be combinedS00• company-specificS00Main circuit:S00Number of poles / for main current circuitAOperating voltage / at 3 AC / rated valueS00• maximumVOperating current / at AC-3 / at 400 VA• rated valueA1.6	according to DIN EN 61346-2		F
Number of poles / for main current circuitSolutionOperating voltage / at 3 AC / rated value • maximumV690Operating current / at AC-3 / at 400 V • rated valueA1.6	Trip class		CLASS 10
Size of the contactor / can be combined       Image: Company-specific       S00         Main circuit:       S00         Number of poles / for main current circuit       Image: Company-specific         Operating voltage / at 3 AC / rated value       Image: Company-specific         • maximum       V       690         Operating current / at AC-3 / at 400 V       Image: Company-specific         • rated value       A       1.6	Type of assignement		2
• company-specificS00Main circuit:S00Number of poles / for main current circuit3Operating voltage / at 3 AC / rated value9• maximumVOperating current / at AC-3 / at 400 V90• rated valueA1.6	Size of overload relay		S00
Main circuit:     3       Number of poles / for main current circuit     3       Operating voltage / at 3 AC / rated value     -       • maximum     V     690       Operating current / at AC-3 / at 400 V     -       • rated value     A     1.6	Size of the contactor / can be combined		
Number of poles / for main current circuit3Operating voltage / at 3 AC / rated value690• maximumVOperating current / at AC-3 / at 400 VA• rated valueA	company-specific		S00
Operating voltage / at 3 AC / rated value     V     690       • maximum     V     690       Operating current / at AC-3 / at 400 V     A     1.6	Main circuit:		
• maximumV690Operating current / at AC-3 / at 400 VA1.6	Number of poles / for main current circuit		3
Operating current / at AC-3 / at 400 V     A       • rated value     A	Operating voltage / at 3 AC / rated value		
rated value     A     1.6	• maximum	V	690
	Operating current / at AC-3 / at 400 V		
	rated value	А	1.6
	Service power / at AC-3		
• at 400 V / rated value kW 0.55	• at 400 V / rated value	kW	0.55

• at 500 V / rated value	kW	0.75
• at 690 V / rated value	W	1,100
Adjustable response current		
<ul> <li>of the current-dependent overload release</li> </ul>	А	1.1 1.6
Operating current / of the fuse link / rated value	А	6

Contact reliability / of the auxiliary contacts		< 1 error per 100 million operating cycles
Contact remaining / Of the duxinary contacts		< renor per roo minion operating cycles
Number of NC contacts / for auxiliary contact		1
Number of NO contacts / for auxiliary contact		1
Number of change-over switches / for auxiliary contact		0
Operating current / of the auxiliary contacts		
• at AC-15		
• at 24 V	А	3
• at 110 V	А	3
• at 120 V	А	3
• at 125 V	А	3
• at 230 V	А	2
• at 400 V	А	1
• at DC-13		
• at 24 V	А	1
• at 110 V	А	0.22
• at 125 V	А	0.22
• at 220 V	А	0.11

## Short-circuit:

# Design of the fuse link / for short-circuit protection of the auxiliary switch / required fuse gG: 10 A

Installation/mounting/dimensions:		
built in orientation		vertical
Type of fixing/fixation		direct mounting
Width	mm	45
Height	mm	87
Depth	mm	73
distance, to be maintained, to the ranks assembly		
forwards	mm	0
backwards	mm	0
• upwards	mm	6
downwards	mm	6
• sidewards	mm	6

distance, to be maintained, to earthed partImmImm• forwardsmm0• backwardsmm0• upwardsmm6• downwardsmm6• sidewardsmm6• forwardsmm0• forwardsmm0• backwardsmm0• backwardsmm0• backwardsmm0• backwardsmm6• upwardsmm6• downwardsmm6		_	
• backwardsnmm0• upwardsnmm6• downwardsnmm6• sidewardsnmm6• forwardsnmm0• forwardsnmm0• backwardsnmm0• upwardsnmm6• upwardsnmm6• downwardsnmm6	distance, to be maintained, to earthed part		
•upwardsnmm6•downwardsnmm6•sidewardsnmm6•sidewardsnmm0•forwardsnmm0•backwardsnmm0•upwardsnmm6•downwardsnmm6	• forwards	mm	0
• downwardsmm6• sidewardsmm6distance, to be maintained, conductive elements-• forwardsmm0• backwardsmm0• upwardsmm6• downwardsmm6	backwards	mm	0
• sidewardsmm6distance, to be maintained, conductive elements• forwardsnmm0• backwardsnmm0• upwardsnmm6• downwardsnmm6	• upwards	mm	6
distance, to be maintained, conductive elementsmm0• forwardsmm0• backwardsmm0• upwardsmm6• downwardsmm6	• downwards	mm	6
• forwardsmm0• backwardsmm0• upwardsmm6• downwardsmm6	• sidewards	mm	6
• backwardsmm0• upwardsmm6• downwardsmm6	listance, to be maintained, conductive elements		
• upwardsmm6• downwardsmm6	forwards	mm	0
• downwards mm 6	backwards	mm	0
	• upwards	mm	6
• sidewards mm 6	downwards	mm	6
	• sidewards	mm	6

#### **Connections:**

design of the electrical connection		
for main current circuit		spring-loaded terminals
<ul> <li>for auxiliary and control current circuit</li> </ul>		spring-loaded terminals
Product function / removable terminal for auxiliary and control circuit	-	No
Type of the connectable conductor cross-section		
for main contacts		
• unifilar		2x (0.5 4 mm2)
stranded wire		2x (0.5 4 mm2)
stranded wire		
<ul> <li>with conductor end processing</li> </ul>		2 x (0.5 2.5 mm2)
<ul> <li>without conductor final cutting</li> </ul>		2x (0.5 2.5 mm2)
• at AWG-conductors / for main contacts		1x (20 12)
<ul> <li>for auxiliary contacts</li> </ul>		
• solid		2x (0.5 2.5 mm2)
finely stranded		
<ul> <li>with wire end processing</li> </ul>		2x (0.5 1.5 mm2)
<ul> <li>without conductor final cutting</li> </ul>		2 x (0.5 1.5 mm2)
<ul> <li>for AWG conductors / for auxiliary contacts</li> </ul>		2x (20 14)
Certificates/approvals:		
verification of suitability		CE / UL / CSA
• ATEX		No
Safety:		
Mean time to failure (MTTF) / with high demand rate		
according to SN 31920	а	2,280

Proportion of dangerous failures		
with low demand rate / according to SN 31920	%	50
<ul> <li>with high demand rate / according to SN 31920</li> </ul>	%	50
Failure rate (FIT value) / with low demand rate		
according to SN 31920	FIT	50
T1 value / for proof test interval or service life		
according to IEC 61508	а	20
Protection against electrical shock		finger-safe

### Further information:

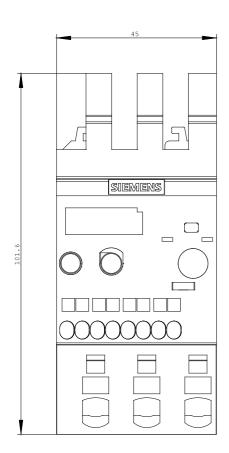
Information- and Downloadcenter (Catalogs, Brochures,...) http://www.siemens.com/industrial-controls/catalogs

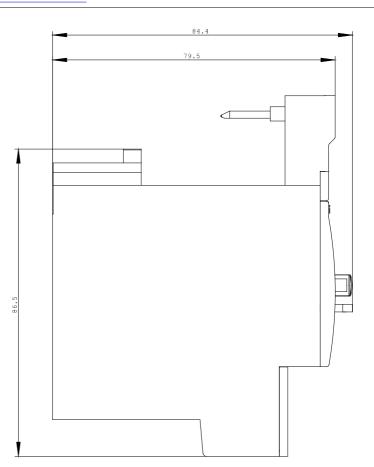
Global Industry Mall (Online ordering system)

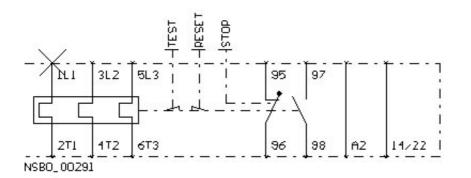
http://www.siemens.com/industrial-controls/mall

Service&Support (Manuals, Certificates, Characteristics, FAQs,...) http://support.automation.siemens.com/WW/view/en/3RU2116-1AC0/all

Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, ...) http://www.automation.siemens.com/bilddb/cax\_en.aspx?mlfb=3RU2116-1AC0







last change:

Apr 26, 2010