



Semiconductor relay, 3-phase 3RF2 30 A / 40 °C 48-600 V / 4-30 V DC 3-phase controlled screw terminal Blocking voltage 1200 V

<b>product brand name</b>	SIRIUS
<b>product designation</b>	solid-state relay
<b>design of the product</b>	three-phase controlled
<b>product type designation</b>	3RF22
<b>manufacturer's article number</b>	
• _2 of the accessories that can be ordered	<a href="#">3RF2900-0EA18</a>
<b>product designation</b>	
• _2 of the accessories that can be ordered	converter
<b>General technical data</b>	
<b>product function</b>	zero-point switching
power loss [W] for rated value of the current at AC in hot operating state	122 W
• per pole	122 W
<b>power loss [W] for rated value of the current without load current share typical</b>	0.9 W
insulation voltage rated value	600 V
type of voltage of the control supply voltage	DC
surge voltage resistance of main circuit rated value	6 kV
shock resistance acc. to IEC 60068-2-27	15g / 11 ms
vibration resistance acc. to IEC 60068-2-6	2g
<b>reference code acc. to IEC 81346-2</b>	Q
Substance Prohibitance (Date)	01.07.2006
<b>Main circuit</b>	
<b>number of poles for main current circuit</b>	3
<b>number of NO contacts for main contacts</b>	3
<b>number of NC contacts for main contacts</b>	0
operating voltage at AC	
• at 50 Hz rated value	48 ... 600 V
• at 60 Hz rated value	48 ... 600 V
<b>operating frequency rated value</b>	50 ... 60 Hz
<b>relative symmetrical tolerance of the operating frequency</b>	10 %
<b>operating range relative to the operating voltage at AC</b>	
• at 50 Hz	40 ... 660 V
• at 60 Hz	40 ... 660 V
<b>operational current</b>	
• at AC-51 rated value	30 A
• acc. to UL 508 rated value	30 A
<b>ampacity maximum</b>	30 A
<b>operational current minimum</b>	500 mA

rate of voltage rise at the thyristor for main contacts maximum permissible	500 V/μs
blocking voltage at the thyristor for main contacts maximum permissible	1 200 V
reverse current of the thyristor	10 mA
derating temperature	40 °C
surge current resistance rated value	300 A
I <sup>2</sup> t value maximum	450 A <sup>2</sup> ·s
<b>Control circuit/ Control</b>	
type of voltage of the control supply voltage	DC
control supply voltage 1	
• at DC	4 ... 30 V
control supply voltage	
• at DC initial value for signal <1> detection	4 V
• at DC full-scale value for signal<0> recognition	1 V
control current at minimum control supply voltage	
• at DC	22 mA
control current at DC rated value	30 mA
ON-delay time	1 ms; additionally max. one half-wave
OFF-delay time	1 ms; additionally max. one half-wave
<b>Auxiliary circuit</b>	
number of NC contacts for auxiliary contacts	0
number of NO contacts for auxiliary contacts	0
number of CO contacts for auxiliary contacts	0
<b>Installation/ mounting/ dimensions</b>	
fastening method	screw fixing
• side-by-side mounting	Yes
tightening torque of fixing screw maximum	1.5 N·m
tightening torque [lbf·in] of fixing screw maximum	13 lbf·in
height	95 mm
width	45 mm
depth	47 mm
<b>Connections/ Terminals</b>	
type of electrical connection	
• for main current circuit	screw-type terminals
• for auxiliary and control circuit	screw-type terminals
type of connectable conductor cross-sections	
• for main contacts	
— solid	2x (1.5 ... 2.5 mm <sup>2</sup> ), 2x (2.5 ... 6 mm <sup>2</sup> )
— finely stranded with core end processing	2x (1 ... 2.5 mm <sup>2</sup> ), 2x (2.5 ... 6 mm <sup>2</sup> ), 1x 10 mm <sup>2</sup>
• at AWG cables for main contacts	2x (14 ... 10)
connectable conductor cross-section for main contacts	
• solid or stranded	1.5 ... 6 mm <sup>2</sup>
• finely stranded with core end processing	1 ... 10 mm <sup>2</sup>
type of connectable conductor cross-sections	
• for auxiliary and control contacts	
— solid	1x (0.5 ... 2.5 mm <sup>2</sup> ), 2x (0.5 ... 1.0 mm <sup>2</sup> )
— finely stranded with core end processing	1x (0.5 ... 2.5 mm <sup>2</sup> ), 2x (0.5 ... 1.0 mm <sup>2</sup> )
— finely stranded without core end processing	1x (0.5 ... 2.5 mm <sup>2</sup> ), 2x (0.5 ... 1.0 mm <sup>2</sup> )
• at AWG cables for auxiliary and control contacts	1x (AWG 20 ... 12)
AWG number as coded connectable conductor cross section for main contacts	10 ... 14
tightening torque	
• for main contacts with screw-type terminals	2 ... 2.5 N·m
• for auxiliary and control contacts with screw-type terminals	0.5 ... 0.6 N·m
tightening torque [lbf·in]	
• for main contacts with screw-type terminals	18 ... 22 lbf·in
• for auxiliary and control contacts with screw-type terminals	4.5 ... 5.3 lbf·in

<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>	M4 M3
<b>stripped length of the cable</b>	
<ul style="list-style-type: none"> <li>• for main contacts</li> <li>• for auxiliary and control contacts</li> </ul>	7 mm 7 mm

#### Safety related data

<b>protection class IP on the front acc. to IEC 60529</b>	IP20
<b>touch protection on the front acc. to IEC 60529</b>	finger-safe, for vertical contact from the front

#### Ambient conditions

installation altitude at height above sea level maximum	1 000 m
<b>ambient temperature</b>	
<ul style="list-style-type: none"> <li>• during operation</li> <li>• during storage</li> </ul>	-25 ... +60 °C -55 ... +80 °C

#### Electromagnetic compatibility

<b>conducted interference</b>	
<ul style="list-style-type: none"> <li>• due to burst acc. to IEC 61000-4-4</li> <li>• due to conductor-earth surge acc. to IEC 61000-4-5</li> <li>• due to conductor-conductor surge acc. to IEC 61000-4-5</li> <li>• due to high-frequency radiation acc. to IEC 61000-4-6</li> </ul>	2 kV / 5 kHz behavior criterion 2 2 kV behavior criterion 2 1 kV behavior criterion 2  140 dBuV in the frequency range 0.15 ... 80 MHz, behavior criterion 1
<b>electrostatic discharge acc. to IEC 61000-4-2</b>	4 kV contact discharging / 8 kV air discharging, behavior criterion 2
<b>conducted HF interference emissions acc. to CISPR11</b>	Class A for industrial environment
<b>field-bound HF interference emission acc. to CISPR11</b>	Class A for industrial environment

#### Short-circuit protection, design of the fuse link

<p>manufacturer's article number</p> <ul style="list-style-type: none"> <li>• of full range R fuse link for semiconductor protection at NH design usable</li> <li>• of back-up R fuse link for semiconductor protection at NH design usable</li> <li>• of back-up R fuse link for semiconductor protection at cylindrical design 10 x 38 mm usable</li> <li>• of back-up R fuse link for semiconductor protection at cylindrical design 14 x 51 mm usable</li> <li>• of back-up R fuse link for semiconductor protection at cylindrical design 22 x 58 mm usable</li> </ul>	<a href="#">3NE1814-0: These fuses have a smaller rated current than the semiconductor relays</a> <a href="#">3NE8003-1</a>  <a href="#">3NC1025: These fuses have a smaller rated current than the semiconductor relays</a> <a href="#">3NC1430</a>  <a href="#">3NC2232</a>
<p>manufacturer's article number of the gG fuse at NH design usable</p> <ul style="list-style-type: none"> <li>• up to 460 V</li> <li>• up to 600 V</li> </ul>	<a href="#">3NA3803-6: These fuses have a smaller rated current than the semiconductor relays</a> <a href="#">3NA3803-6: These fuses have a smaller rated current than the semiconductor relays</a>

#### Certificates/ approvals

General Product Approval	EMC	Declaration of Conformity	Test Certificates
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[Type Test Certificates/Test Report](#)

#### other

[Confirmation](#)



#### Further information

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=3RF2230-1AC45>

Cax online generator

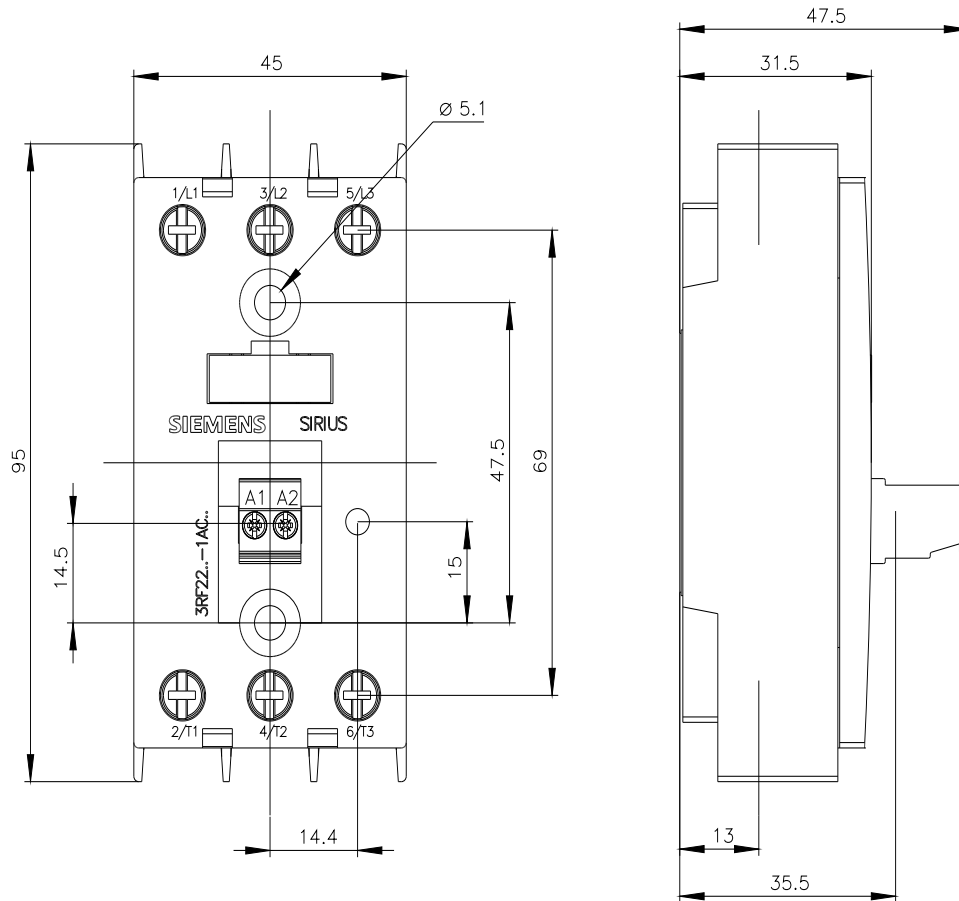
<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RF2230-1AC45>

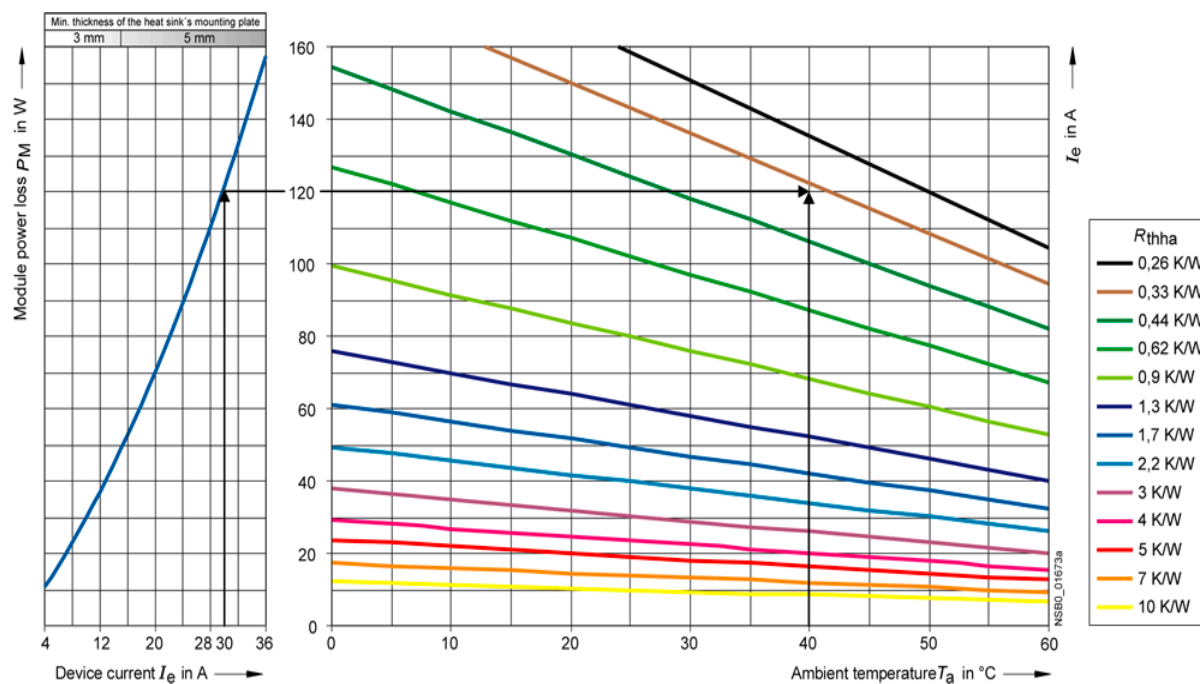
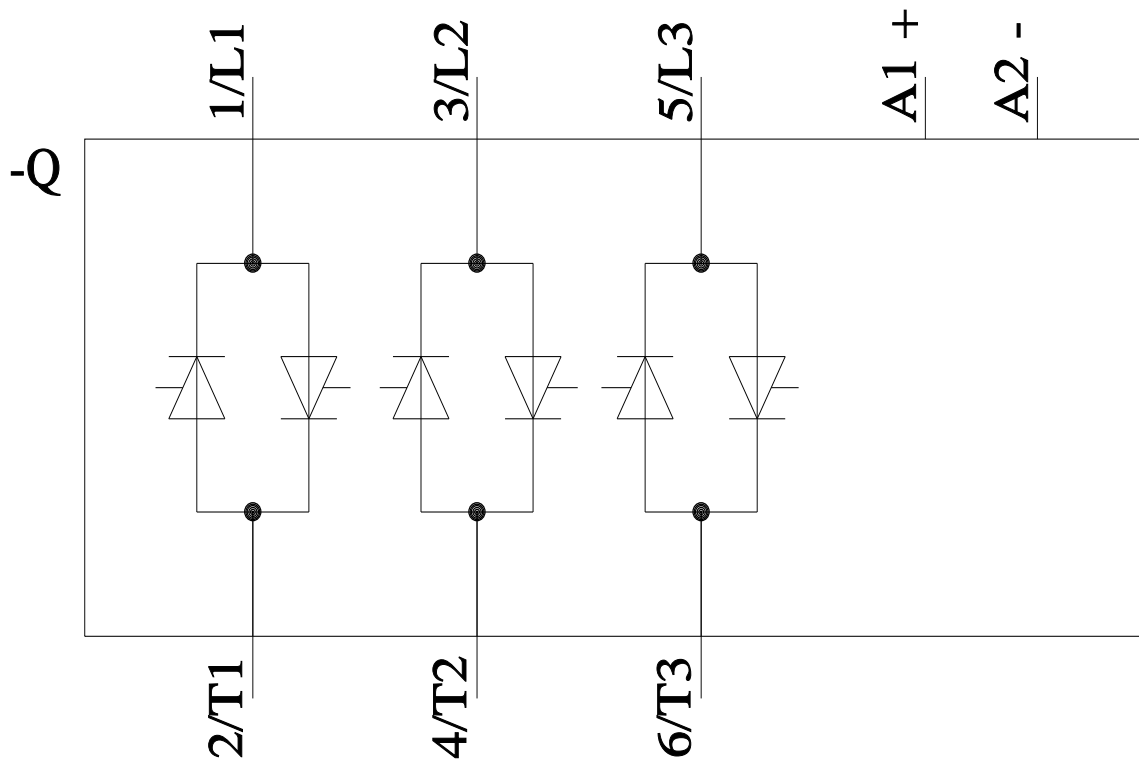
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

<https://support.industry.siemens.com/cs/ww/en/ps/3RF2230-1AC45>

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

[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RF2230-1AC45&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RF2230-1AC45&lang=en)





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