







semiconductor relay, 1-phase 3RF2 width 22.5 mm, 50 A 48-600 V / 110-230 V AC
ring cable terminal for mounting on available cooling surfaces

product brand name	SIRIUS
product designation	solid-state relay
design of the product	1-pole
product type designation	3RF21
manufacturer's article number	
• _1 of the accessories that can be ordered	3RF2900-3PA88
• _4 of the accessories that can be ordered	3RF2950-0GA36
product designation	
• _1 of the accessories that can be ordered	terminal cover
• _4 of the accessories that can be ordered	load monitoring
General technical data	
product function	zero-point switching
power loss [W] for rated value of the current	
• at AC in hot operating state	66 W
• at AC in hot operating state per pole	66 W
• without load current share typical	3.5 W
insulation voltage rated value	600 V
surge voltage resistance of main circuit rated value	6 kV
protection class IP	IP00
protection class IP on the front according to IEC 60529	IP00
shock resistance according to IEC 60068-2-27	15g / 11 ms
vibration resistance according to IEC 60068-2-6	2g
reference code according to IEC 81346-2	Q
Substance Prohibitance (Date)	05/28/2009
SVHC substance name	Lead - 7439-92-1 Lead monoxide (lead oxide) - 1317-36-8
Net Weight	0.07 kg
Main circuit	
number of poles for main current circuit	1
number of NO contacts for main contacts	1
number of NC contacts for main contacts	0
type of voltage of the operating voltage	AC
operating voltage	
• at AC	
— at 50 Hz rated value	48 ... 600 V
— at 60 Hz rated value	48 ... 600 V
operating frequency rated value	50 ... 60 Hz
relative symmetrical tolerance of the operating frequency	10 %
operating range relative to the operating voltage at AC	

<ul style="list-style-type: none"> • at 50 Hz • at 60 Hz 	40 ... 660 V
operational current rated value maximum	40 ... 660 V
operational current	50 A
<ul style="list-style-type: none"> • at AC-1 at 400 V rated value • at AC-51 rated value • according to UL 508 rated value 	50 A
rate of voltage rise at the thyristor for main contacts maximum permissible	50 A
blocking voltage at the thyristor for main contacts maximum permissible	50 A
reverse current of the thyristor	50 A
derating temperature	1 000 V/μs
surge current resistance rated value	1 600 V
I²t value maximum	10 mA
Control circuit/ Control	40 °C
type of voltage of the control supply voltage	600 A
control supply voltage 1 at AC	1 800 A ² ·s
<ul style="list-style-type: none"> • at 50 Hz • at 60 Hz 	AC
control supply voltage frequency	110 ... 230 V
<ul style="list-style-type: none"> • 1 rated value • 2 rated value 	110 ... 230 V
control supply voltage at AC	50 Hz
<ul style="list-style-type: none"> • at 50 Hz full-scale value for signal<0> recognition • at 60 Hz full-scale value for signal<0> recognition 	60 Hz
control supply voltage	40 V
<ul style="list-style-type: none"> • at AC initial value for signal <1> detection 	40 V
symmetrical line frequency tolerance	90 V
control current at minimum control supply voltage	5 Hz
<ul style="list-style-type: none"> • at AC 	2 mA
control current at AC rated value	15 mA
ON-delay time	40 ms; additionally max. one half-wave
OFF-delay time	40 ms; additionally max. one half-wave
Auxiliary circuit	
number of CO contacts for auxiliary contacts	0
Installation/ mounting/ dimensions	
fastening method side-by-side mounting	Yes
fastening method	screw fixing
design of the thread of the screw for securing the equipment	M4
tightening torque of fixing screw maximum	1.5 N·m
tightening torque [lbf·in] of fixing screw maximum	13 lbf·in
height	85 mm
width	22.5 mm
depth	48 mm
Connections/ Terminals	
product component removable terminal for auxiliary and control circuit	Yes
type of electrical connection	
<ul style="list-style-type: none"> • for main current circuit • for auxiliary and control circuit 	Ring cable lug connection ring terminal lug connection
type of connectable conductor cross-sections	
<ul style="list-style-type: none"> • for main contacts for JIS cable lug • for DIN cable lug for main contacts 	JIS C 2805 R 2-5, 5,5-5, 8-5, 14-5 DIN 46234 -5-2,5, -5-6, -5-10, -5-16, -5-25
type of connectable conductor cross-sections	
<ul style="list-style-type: none"> • for auxiliary and control contacts 	
— solid	1x (0.5 ... 2.5 mm ²), 2x (0.5 ... 1 mm ²)
— finely stranded with core end processing	1x (0.5 ... 2.5 mm ²), 2x (0.5 ... 1 mm ²)
— finely stranded without core end processing	1x (0.5 ... 2.5 mm ²), 2x (0.5 ... 1 mm ²)

<ul style="list-style-type: none"> • for AWG cables for auxiliary and control contacts 	1x (20 ... 12)
tightening torque	
<ul style="list-style-type: none"> • for main contacts with screw-type terminals 	2 ... 2.5 N·m
<ul style="list-style-type: none"> • for auxiliary and control contacts with screw-type terminals 	0.5 ... 0.6 N·m
tightening torque [lbf·in]	
<ul style="list-style-type: none"> • for main contacts with screw-type terminals 	7 ... 10.3 lbf·in
<ul style="list-style-type: none"> • for auxiliary and control contacts with screw-type terminals 	4.5 ... 5.3 lbf·in
design of the thread of the connection screw	
<ul style="list-style-type: none"> • for main contacts 	M5
<ul style="list-style-type: none"> • of the auxiliary and control contacts 	M3
stripped length of the cable	
<ul style="list-style-type: none"> • for main contacts 	10 mm
<ul style="list-style-type: none"> • for auxiliary and control contacts 	7 mm
Electrical Safety	
protection class IP on the front according to IEC 60529	IP00; IP20 with cover
touch protection on the front according to IEC 60529	finger-safe, for vertical contact from the front with cover
Ambient conditions	
installation altitude at height above sea level maximum	1 000 m
ambient temperature	
<ul style="list-style-type: none"> • during operation 	-25 ... +60 °C
<ul style="list-style-type: none"> • during storage 	-55 ... +80 °C
Electromagnetic compatibility	
conducted interference	
<ul style="list-style-type: none"> • due to burst according to IEC 61000-4-4 	2 kV / 5 kHz behavior criterion 2
<ul style="list-style-type: none"> • due to conductor-earth surge according to IEC 61000-4-5 	2 kV behavior criterion 2
<ul style="list-style-type: none"> • due to conductor-conductor surge according to IEC 61000-4-5 	1 kV behavior criterion 2
<ul style="list-style-type: none"> • due to high-frequency radiation according to IEC 61000-4-6 	140 dBuV in the frequency range 0.15 ... 80 MHz, behavior criterion 1
field-based interference according to IEC 61000-4-3	80 MHz ... 1 GHz 10 V/m, behavior criterion 1
electrostatic discharge according to IEC 61000-4-2	4 kV contact discharging / 8 kV air discharging, behavior criterion 2
conducted HF interference emissions according to CISPR11	Class A for industrial environment
field-bound HF interference emission according to CISPR11	Class B for the domestic, business and commercial environments
Short-circuit protection, design of the fuse link	
manufacturer's article number	
<ul style="list-style-type: none"> • of gS fuse for semiconductor protection at NH design usable 	3NE1803-0
<ul style="list-style-type: none"> • of back-up R fuse link for semiconductor protection at NH design usable 	3NE8017-1
<ul style="list-style-type: none"> • of back-up R fuse link for semiconductor protection at cylindrical design 14 x 51 mm usable 	3NC1450
<ul style="list-style-type: none"> • of back-up R fuse link for semiconductor protection at cylindrical design 22 x 58 mm usable 	3NC2250
manufacturer's article number of the gG fuse	
<ul style="list-style-type: none"> • at NH design usable 	3NA6807-6; These fuses have a smaller rated current than the semiconductor relays
Approvals Certificates	
General Product Approval	
EMV	
Test Certificates	
     Type Test Certificates/Test Report	
other	Environment



[Confirmation](#)



[Environmental Confirmations](#)

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=3RF2150-3AA26>

Cax online generator

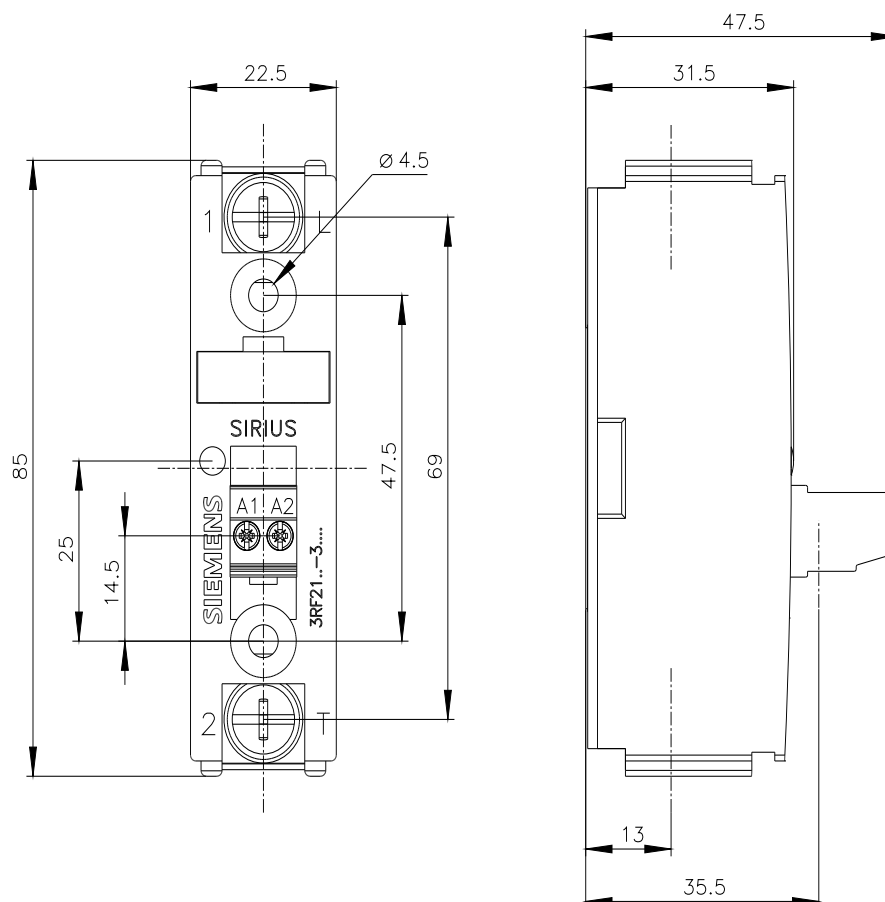
<https://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RF2150-3AA26>

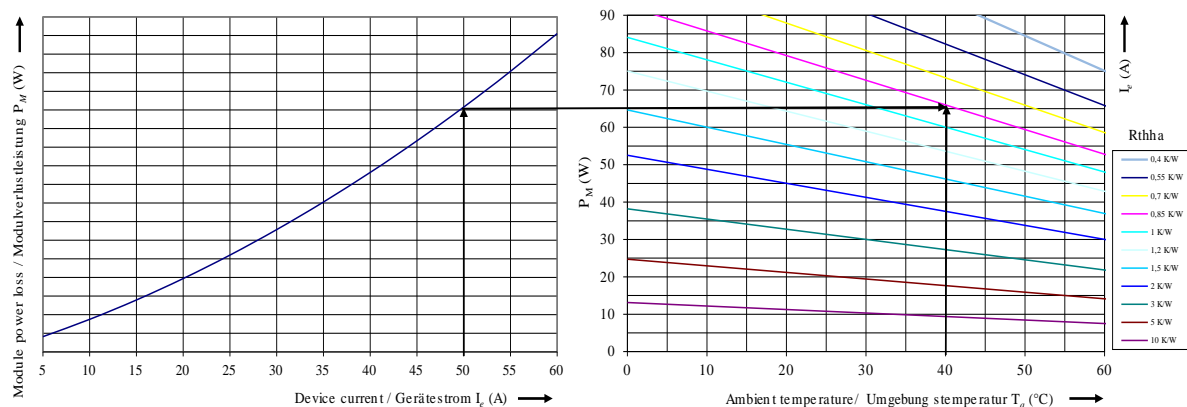
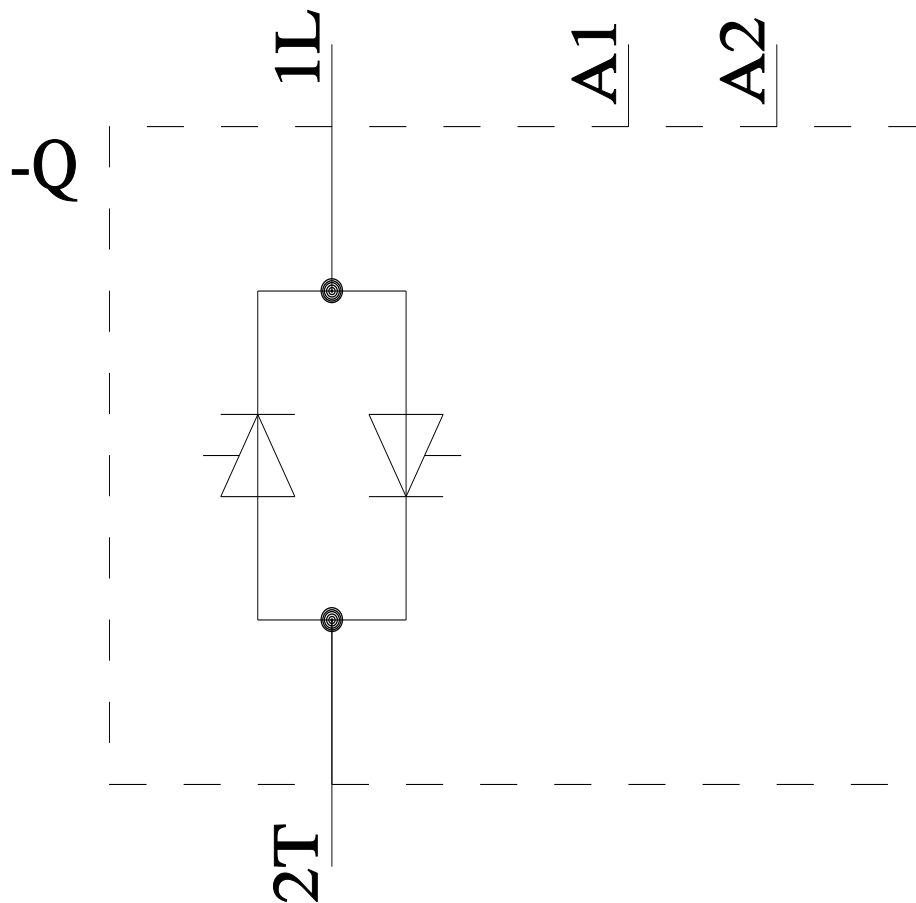
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

<https://support.industry.siemens.com/cs/ww/en/ps/3RF2150-3AA26>

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

https://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RF2150-3AA26&lang=en





last modified:

8/4/2025