



Semiconductor relay, 1-phase 3RF2 Overall width 22.5 mm, 30 A 48-600 V / 4-30 V DC screw terminal Blocking voltage 1200 V

product brand name	SIRIUS
product designation	solid-state relay
design of the product	single-phase
product type designation	3RF21
manufacturer's article number	
• _1 of the accessories that can be ordered • _2 of the accessories that can be ordered • _3 of the accessories that can be ordered • _4 of the accessories that can be ordered • _5 of the accessories that can be ordered	3RF2900-3PA88 3RF2950-0HA16 3RF2900-0EA18 3RF2950-0GA16 3RF2920-0FA08
product designation	
• _1 of the accessories that can be ordered • _2 of the accessories that can be ordered • _3 of the accessories that can be ordered • _4 of the accessories that can be ordered • _5 of the accessories that can be ordered	terminal cover power regulator converter load monitoring load monitoring, basis
General technical data	
product function	zero-point switching
power loss [V·A] maximum	44.2 VA
power loss [W] for rated value of the current without load current share typical	0.5 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 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 Prohibition (Date)	05/28/2009
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
operating voltage at AC	
• at 50 Hz rated value • at 60 Hz rated value	48 ... 600 V 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	
• at 50 Hz • at 60 Hz	40 ... 660 V 40 ... 660 V
operational current	

• at AC-51 rated value • according to UL 508 rated value	30 A
ampacity maximum	30 A
operational current minimum	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
I²t value maximum	450 A ² ·s

Control circuit/ Control

type of voltage of the control supply voltage	DC
control supply voltage 1 • at DC rated value • at DC	30 V 4 ... 30 V
control supply voltage • at DC initial value for signal <1> detection • at DC full-scale value for signal<0> recognition	4 V 1 V
control current at minimum control supply voltage • at DC	13 mA
control current at DC rated value	15 mA
ON-delay time	1 ms; additionally max. one half-wave
OFF-delay time	1 ms; additionally max. one half-wave

Auxiliary circuit

number of NC contacts for auxiliary contacts	0
number of NO contacts for auxiliary contacts	0
number of CO contacts for auxiliary contacts	0

Installation/ mounting/ dimensions

fastening method • side-by-side mounting	screw fixing Yes
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

type of electrical connection • for main current circuit • for auxiliary and control circuit	screw-type terminals screw-type terminals
type of connectable conductor cross-sections • for main contacts — solid — finely stranded with core end processing • at AWG cables for main contacts	2x (1.5 ... 2.5 mm ²), 2x (2.5 ... 6 mm ²) 2x (1 ... 2.5 mm ²), 2x (2.5 ... 6 mm ²), 1x 10 mm ² 2x (14 ... 10)
connectable conductor cross-section for main contacts • solid or stranded • finely stranded with core end processing	1.5 ... 6 mm ² 1 ... 10 mm ²
type of connectable conductor cross-sections • for auxiliary and control contacts — solid — finely stranded with core end processing — finely stranded without core end processing • at AWG cables for auxiliary and control contacts	1x (0.5 ... 2.5 mm ²), 2x (0.5 ... 1.0 mm ²) 1x (0.5 ... 2.5 mm ²), 2x (0.5 ... 1.0 mm ²) 1x (0.5 ... 2.5 mm ²), 2x (0.5 ... 1.0 mm ²) 1x (AWG 20 ... 12)
AWG number as coded connectable conductor cross section for main contacts	14 ... 10
tightening torque • for main contacts with screw-type terminals • for auxiliary and control contacts with screw-type terminals	2 ... 2.5 N·m 0.5 ... 0.6 N·m
tightening torque [lbf·in] • for main contacts with screw-type terminals	7 ... 10.3 lbf·in

• for auxiliary and control contacts with screw-type terminals design of the thread of the connection screw • for main contacts • of the auxiliary and control contacts stripped length of the cable • for main contacts • for auxiliary and control contacts	4.5 ... 5.3 lbf·in M4 M3 7 mm 7 mm				
Safety related data					
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				
Ambient conditions					
installation altitude at height above sea level maximum	1 000 m				
ambient temperature • during operation • during storage	-25 ... +60 °C -55 ... +80 °C				
Electromagnetic compatibility					
conducted interference • due to burst according to IEC 61000-4-4 • due to conductor-earth surge according to IEC 61000-4-5 • due to conductor-conductor surge according to IEC 61000-4-5 • due to high-frequency radiation according to IEC 61000-4-6 field-based interference according to IEC 61000-4-3 electrostatic discharge according to IEC 61000-4-2 conducted HF interference emissions according to CISPR11 field-bound HF interference emission according to CISPR11	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 80 MHz ... 1 GHz 10 V/m, behavior criterion 1 4 kV contact discharging / 8 kV air discharging, behavior criterion 2 Class A for industrial environment Class B for the domestic, business and commercial environments				
Short-circuit protection, design of the fuse link					
manufacturer's article number • of gS fuse for semiconductor protection at NH design usable • of full range R fuse link for semiconductor protection at cylindrical design usable • of back-up R fuse link for semiconductor protection at NH design usable • of back-up R fuse link for semiconductor protection at cylindrical design 10 x 38 mm usable • of back-up R fuse link for semiconductor protection at cylindrical design 14 x 51 mm usable • of back-up R fuse link for semiconductor protection at cylindrical design 22 x 58 mm usable manufacturer's article number of the gG fuse • at NH design usable • at cylindrical design 14 x 51 mm usable manufacturer's article number • of NEOZED fuse usable	3NE1815-0: These fuses have a smaller rated current than the semiconductor relays 5SE1325: These fuses have a smaller rated current than the semiconductor relays 3NE1815-0 3NC1025: These fuses have a smaller rated current than the semiconductor relays 3NC1430 3NC2232 3NA6803: These fuses have a smaller rated current than the semiconductor relays 3NW6101-1: These fuses have a smaller rated current than the semiconductor relays 5SE2313-2A: These fuses have a smaller rated current than the semiconductor relays				
Certificates/ approvals					
General Product Approval	EMC	Declaration of Conformity			
	Confirmation				
Declaration of	Test Certificates	other	Railway		

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=3RF2130-1AA45>

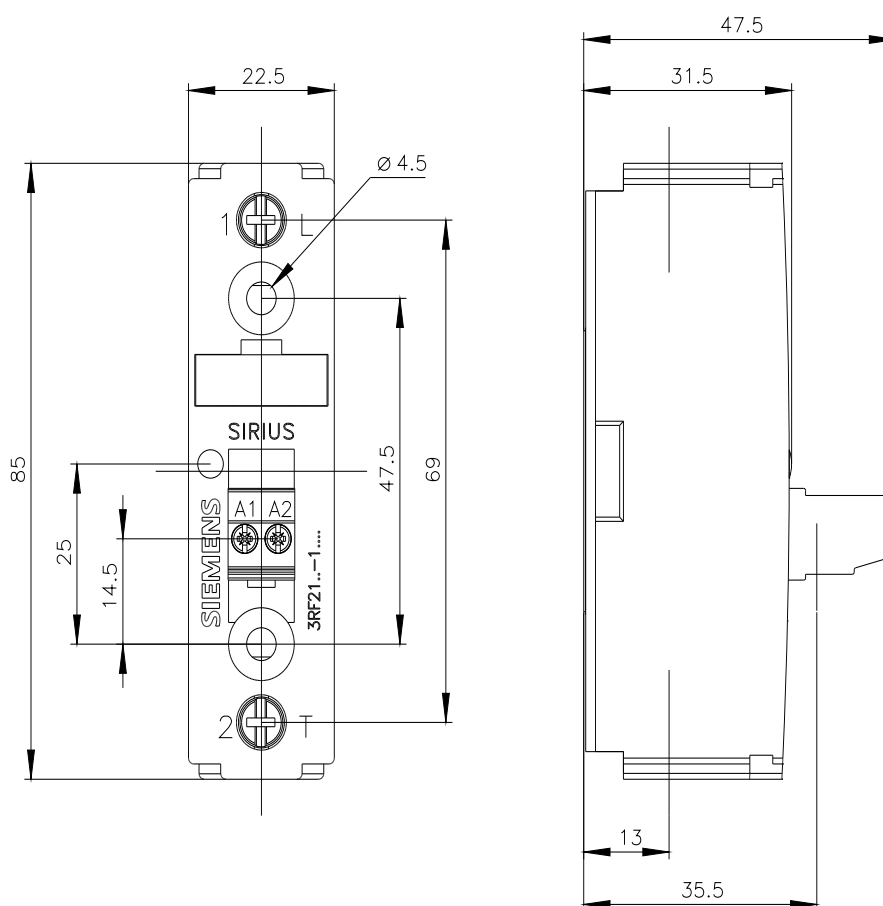
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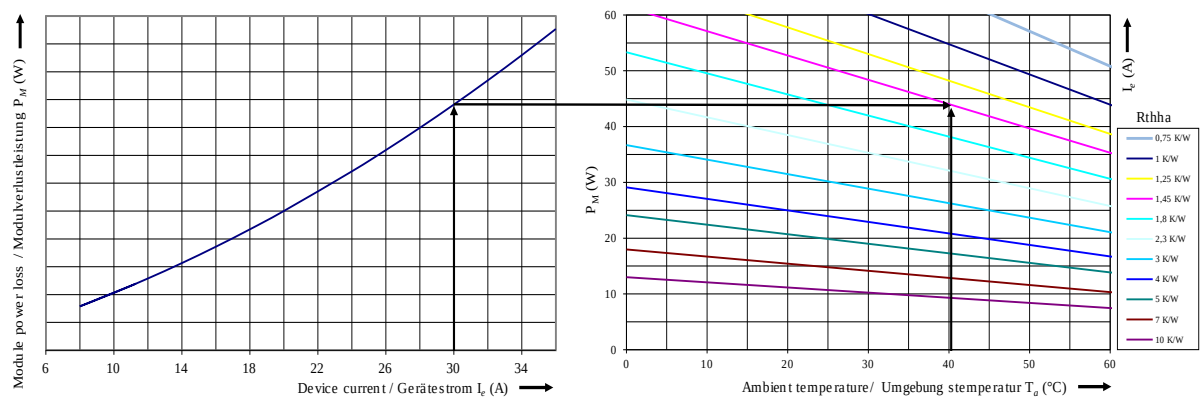
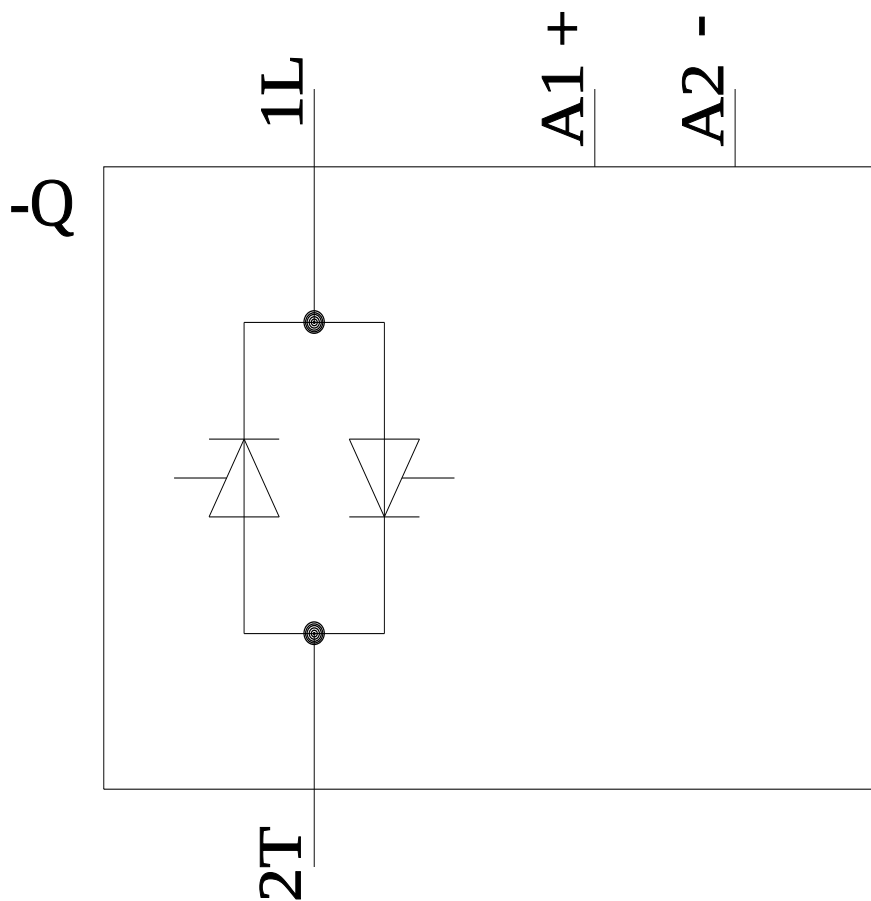
<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RF2130-1AA45>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RF2130-1AA45>

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

http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RF2130-1AA45&lang=en



last modified:

1/12/2022