SIEMENS

Data sheet

3RF2130-1AA04



Semiconductor relay, 1-phase 3RF2 Overall width 22.5 mm, 30 A 48-460 V / 24 V DC screw terminal

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 	<u>3RF2900-3PA88</u>
 _2 of the accessories that can be ordered 	<u>3RF2950-0HA16</u>
 _3 of the accessories that can be ordered 	<u>3RF2900-0EA18</u>
 _4 of the accessories that can be ordered 	<u>3RF2950-0GA16</u>
 _5 of the accessories that can be ordered 	<u>3RF2920-0FA08</u>
product designation	
 _1 of the accessories that can be ordered 	terminal cover
 _2 of the accessories that can be ordered 	power regulator
 _3 of the accessories that can be ordered 	converter
 _4 of the accessories that can be ordered 	load monitoring
 _5 of the accessories that can be ordered 	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	
 at AC in hot operating state 	44.2 W
 at AC in hot operating state per pole 	44.2 W
 without load current share typical 	0.4 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 EN 61346-2	Q
reference code according to IEC 81346-2	Q
Substance Prohibitance (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	48 460 V
• at 60 Hz rated value	48 460 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	40 506 V
• at 60 Hz	40 506 V
operational current	
 at AC-51 rated value 	30 A
 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	500 V/us
maximum permissible	500 V/µ3
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	30 V
• at DC	15 24 V
control supply voltage	
• at DC initial value for signal <1> detection	15 \/
• at DC full apple value for signal <1> detection	10 V
	5 V
control current at minimum control supply voltage	
	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
number of CO contacts for auxiliary contacts Installation/ mounting/ dimensions	0
number of CO contacts for auxiliary contacts Installation/ mounting/ dimensions fastening method	0 screw fixing
number of CO contacts for auxiliary contacts Installation/ mounting/ dimensions fastening method • side-by-side mounting	0 screw fixing Yes
number of CO contacts for auxiliary contacts Installation/ mounting/ dimensions fastening method • side-by-side mounting design of the thread of the screw for securing the equipment	0 screw fixing Yes M4
number of CO contacts for auxiliary contacts Installation/ mounting/ dimensions fastening method • side-by-side mounting design of the thread of the screw for securing the equipment tightening torque of fixing screw maximum	0 screw fixing Yes M4 1.5 N·m
number of CO contacts for auxiliary contacts Installation/ mounting/ dimensions fastening method • side-by-side mounting design of the thread of the screw for securing the equipment tightening torque of fixing screw maximum tightening torque [lbf-in] of fixing screw maximum	0 screw fixing Yes M4 1.5 N·m 13 lbf·in
number of CO contacts for auxiliary contacts Installation/ mounting/ dimensions fastening method • side-by-side mounting design of the thread of the screw for securing the equipment tightening torque of fixing screw maximum tightening torque [lbf-in] of fixing screw maximum height	0 screw fixing Yes M4 1.5 N·m 13 lbf·in 85 mm
number of CO contacts for auxiliary contacts Installation/ mounting/ dimensions fastening method • side-by-side mounting design of the thread of the screw for securing the equipment tightening torque of fixing screw maximum tightening torque [Ibf-in] of fixing screw maximum height width	0 screw fixing Yes M4 1.5 N·m 13 lbf·in 85 mm 22.5 mm
number of CO contacts for auxiliary contacts Installation/ mounting/ dimensions fastening method • side-by-side mounting design of the thread of the screw for securing the equipment tightening torque of fixing screw maximum tightening torque [lbf-in] of fixing screw maximum height width depth	0 screw fixing Yes M4 1.5 N·m 13 lbf·in 85 mm 22.5 mm 48 mm
number of CO contacts for auxiliary contacts Installation/ mounting/ dimensions fastening method • side-by-side mounting design of the thread of the screw for securing the equipment tightening torque of fixing screw maximum tightening torque [lbf-in] of fixing screw maximum height width depth Connections/ Terminals	0 screw fixing Yes M4 1.5 N·m 13 lbf·in 85 mm 22.5 mm 48 mm
number of CO contacts for auxiliary contacts Installation/ mounting/ dimensions fastening method • side-by-side mounting design of the thread of the screw for securing the equipment tightening torque of fixing screw maximum tightening torque [lbf-in] of fixing screw maximum height width depth Connections/ Terminals type of electrical connection	0 screw fixing Yes M4 1.5 N·m 13 lbf·in 85 mm 22.5 mm 48 mm
number of CO contacts for auxiliary contacts Installation/ mounting/ dimensions fastening method • side-by-side mounting design of the thread of the screw for securing the equipment tightening torque of fixing screw maximum height width depth Connections/ Terminals type of electrical connection • for main current circuit	0 screw fixing Yes M4 1.5 N·m 13 lbf·in 85 mm 22.5 mm 48 mm
number of CO contacts for auxiliary contacts Installation/ mounting/ dimensions fastening method • side-by-side mounting design of the thread of the screw for securing the equipment tightening torque of fixing screw maximum height width depth Connections/ Terminals type of electrical connection • for main current circuit • for auxiliary and control circuit	0 screw fixing Yes M4 1.5 N·m 13 lbf·in 85 mm 22.5 mm 48 mm screw-type terminals screw-type terminals
number of CO contacts for auxiliary contacts Installation/ mounting/ dimensions fastening method • side-by-side mounting design of the thread of the screw for securing the equipment tightening torque of fixing screw maximum tightening torque [lbf-in] of fixing screw maximum height width depth Connections/ Terminals type of electrical connection • for main current circuit • for auxiliary and control circuit type of connectable conductor cross-sections	0 screw fixing Yes M4 1.5 N·m 13 lbf·in 85 mm 22.5 mm 48 mm screw-type terminals screw-type terminals
number of CO contacts for auxiliary contacts Installation/ mounting/ dimensions fastening method • side-by-side mounting design of the thread of the screw for securing the equipment tightening torque of fixing screw maximum tightening torque [lbf-in] of fixing screw maximum height width depth Connections/ Terminals type of electrical connection • for main current circuit • for auxiliary and control circuit type of connectable conductor cross-sections • for main contacts	0 screw fixing Yes M4 1.5 N·m 13 lbf·in 85 mm 22.5 mm 48 mm screw-type terminals screw-type terminals
number of CO contacts for auxiliary contacts Installation/ mounting/ dimensions fastening method • side-by-side mounting design of the thread of the screw for securing the equipment tightening torque of fixing screw maximum tightening torque [lbf-in] of fixing screw maximum height width depth Connections/ Terminals type of electrical connection • for main current circuit • for auxiliary and control circuit type of connectable conductor cross-sections • for main contacts - solid	0 screw fixing Yes M4 1.5 N·m 13 lbf·in 85 mm 22.5 mm 48 mm screw-type terminals screw-type terminals 2x (1.5 2.5 mm ²), 2x (2.5 6 mm ²)
number of CO contacts for auxiliary contacts Installation/ mounting/ dimensions fastening method • side-by-side mounting design of the thread of the screw for securing the equipment tightening torque of fixing screw maximum tightening torque [lbf-in] of fixing screw maximum height width depth Connections/ Terminals type of electrical connection • for main current circuit • for auxiliary and control circuit type of connectable conductor cross-sections • for main contacts - solid - finely stranded with core end processing	0 screw fixing Yes M4 1.5 N·m 13 lbf·in 85 mm 22.5 mm 48 mm screw-type terminals screw-type terminals 2x (1.5 2.5 mm ²), 2x (2.5 6 mm ²), 1x 10 mm ²
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number of CO contacts for auxiliary contacts Installation/ mounting/ dimensions fastening method • side-by-side mounting design of the thread of the screw for securing the equipment tightening torque of fixing screw maximum tightening torque [lbf-in] of fixing screw maximum height width depth Connections/ Terminals type of electrical connection • for main current circuit • for auxiliary and control circuit type of connectable conductor cross-sections • for main contacts - solid - finely stranded with core end processing • for AWG cables for main contacts connectable conductor cross-section for main contacts	0 screw fixing Yes M4 1.5 N·m 13 lbf·in 85 mm 22.5 mm 48 mm screw-type terminals screw-type terminals 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)
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number of CO contacts for auxiliary contacts Installation/ mounting/ dimensions fastening method • side-by-side mounting design of the thread of the screw for securing the equipment tightening torque of fixing screw maximum tightening torque [lbf-in] of fixing screw maximum height width depth Connections/ Terminals type of electrical connection • for main current circuit • for auxiliary and control circuit type of connectable conductor cross-sections • for main contacts - solid - finely stranded with core end processing • for AWG cables for main contacts • solid or stranded • finely stranded with core end processing type of connectable conductor cross-sections	0 screw fixing Yes M4 1.5 N·m 13 lbf·in 85 mm 22.5 mm 48 mm screw-type terminals screw-type terminals $2x (1.5 2.5 mm^2), 2x (2.5 6 mm^2)$ $2x (1 2.5 mm^2), 2x (2.5 6 mm^2), 1x 10 mm^2$ 2x (14 10) 1.5 6 mm ² $1 10 mm^2$
number of CO contacts for auxiliary contacts Installation/ mounting/ dimensions fastening method • side-by-side mounting design of the thread of the screw for securing the equipment tightening torque of fixing screw maximum tightening torque [lbf-in] of fixing screw maximum height width depth Connections/ Terminals type of electrical connection • for main current circuit • for auxiliary and control circuit type of connectable conductor cross-sections • for MG cables for main contacts • solid - finely stranded with core end processing • for AWG cables for main contacts • solid or stranded • finely stranded with core end processing type of connectable conductor cross-sections • for main contacts • solid or stranded • finely stranded with core end processing type of connectable conductor cross-sections • for main contacts • solid or stranded • finely stranded with core end processing • for auxiliary and control contacts • solid or stranded • finely stranded with core end processing • for auxiliary and control contacts • solid or stranded • finely stranded with core end processing • for auxiliary and control contacts • solid or stranded • finely stranded with core end processing • for auxiliary and control contacts • solid or stranded • finely stranded with core end processing • for auxiliary and control contacts	0 screw fixing Yes M4 1.5 N·m 13 lbf in 85 mm 22.5 mm 48 mm screw-type terminals $2x (1.5 2.5 mm^2), 2x (2.5 6 mm^2)$ $2x (1 2.5 mm^2), 2x (2.5 6 mm^2), 1x 10 mm^2$ 2x (14 10) 1.5 6 mm ² 1 10 mm ²
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AWG number as coded connectable conductor cross section for main contacts	14 10			
tightoning torque				
e for main contacts with corow type terminals	0 0 E N m			
for main contacts with screw-type terminals	2 2.5 N°III			
• 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 	7 10.3 lbf·in			
 for auxiliary and control contacts with screw-type 	4.5 5.3 lbf·in			
terminals				
design of the thread of the connection screw				
• for main contacts	M4			
of the auxiliary and control contacts	M3			
stripped length of the cable	_			
• for main contacts	7 mm			
• for auxiliary and control contacts	7 mm			
Satety related data	1000			
protection class IP on the front according to IEC 60529	IP20			
touch protection on the front according to IEC 60529	tinger-sate, for vertical contact i	from the front		
Ambient conditions				
installation altitude at height above sea level maximum	1 000 m			
ambient temperature				
during operation	-25 +60 °C			
during storage	-55 +80 °C			
Electromagnetic compatibility				
conducted interference				
 due to burst according to IEC 61000-4-4 	2 kV / 5 kHz behavior criterion 2	2		
 due to conductor-earth surge according to IEC 61000-4-5 	2 kV behavior criterion 2			
 due to conductor-conductor surge according to IEC 61000-4-5 	1 kV behavior criterion 2			
 due to high-frequency radiation according to IEC 61000- 4-6 	140 dBuV in the frequency rang	ge 0.15 80 MHz, behav	ior criterion 1	
field-based interference according to IEC 61000-4-3	80 MHz 1 GHz 10 V/m, beha	vior 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, busin	ess and commercial envi	ronments	
Short-circuit protection, design of the fuse link				
manufacturer's article number				
 of gS fuse for semiconductor protection at NH design usable 	<u>3NE1815-0; These fuses have</u> relays	a smaller rated current th	an the semiconductor	
 of full range R fuse link for semiconductor protection at cylindrical design usable 	<u>5SE1325: These fuses have a s</u> relays	smaller rated current than	the semiconductor	
 of back-up R fuse link for semiconductor protection at NH design usable 	<u>3NE1815-0</u>			
 of back-up R fuse link for semiconductor protection at cylindrical design 10 x 38 mm usable 	3NC1025: These fuses have a smaller rated current than the semiconductor relays			
 of back-up R fuse link for semiconductor protection at cylindrical design 14 x 51 mm usable 	<u>3NC1430</u>			
 of back-up R fuse link for semiconductor protection at cylindrical design 22 x 58 mm usable 	<u>3NC2232</u>			
manufacturer's article number of the gG fuse				
• at NH design usable	3NA6803: These fuses have a	smaller rated current than	the semiconductor	
	<u>relays</u>			
 at cylindrical design 14 x 51 mm usable 	<u>3NW6101-1: These fuses have</u> relays	a smaller rated current th	nan the semiconductor	
manufacturer's article number				
of DIAZED fuse usable	5SB251: These fuses have a smaller rated current than the semiconductor			
of NEOZED fuse usable	5SE2313-2A: These fuses have	e a smaller rated current t	han the semiconductor	
	relays			
Certificates/ approvals				
General Product Approval		EMC	Declaration of Con- formity	

(SP) Em	<u>Confirmation</u>	GAU® UR	EHC	RCM	CE EG-Konf.
Declaration of Con- formity	Test Certificates		other		Railway
UK CA	Type Test Certific- ates/Test Report	<u>Special Test Certific-</u> <u>ate</u>	<u>Confirmation</u>		Vibration and Shock

Siemens has decided to exit the Russian market (see here).

https://press.siemens.com/global/en/pressrelease/siemens-wind-down-russian-business

Siemens is working on the renewal of the current EAC certificates.

Please contact your local Siemens office on the status of validity of the EAC certification if you intend to import or offer to supply these products to an EAC relevant market (other than the sanctioned EAEU member states Russia or Belarus).

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=3RF2130-1AA04

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RF2130-1AA04

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

https://support.industry.siemens.com/cs/ww/en/ps/3RF2130-1AA04

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

http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RF2130-1AA04&lang=en







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