## **SIEMENS**

Data sheet 3RF22 30-1AC45



SOLID STATE RELAY 3-PHASE 3RF2 30 A 40 DEG. C 48-600 V / 4-30 V DC 3PH.-CONTROLLED SCREW TERMINAL BLOCKING VOLTAGE 1200 V

General technical data:			
product brand name		SIRIUS	
Product designation		solid-state relay	
Product function		zero-point switching	
Number of poles for main current circuit		3	
Protection class IP		IP20	
Product designation _2 of the accessories that can be ordered		converter	
Manufacturer article number _2 of the accessories that can be ordered		3RF2900-0EA18	
Ambient temperature			
<ul><li>during operation</li></ul>	°C	-25 <b>+</b> 60	
during storage	°C	-55 <b>+</b> 80	
Installation altitude at height above sea level maximum	m	1 000	
Vibration resistance acc. to IEC 60068-2-6		2g	
Shock resistance acc. to IEC 60068-2-27		15g / 11 ms	
Equipment marking acc. to DIN 40719 extended according to IEC 204-2 acc. to IEC 750		К	
Equipment marking acc. to DIN EN 61346-2		Q	

Number of NC contacts for main contacts         3           Number of NC contacts for main contacts         0           Operating current         0           • Rated value maximum         A         30           • at AC-51 Rated value         A         30           • minimum         mA         500           Derating temperature         °C         40           Surge current resistance Rated value         A         300             2t value maximum         A*s         450           Operating voltage at AC         • at 50 Hz Rated value         V         48 600           • at 50 Hz Rated value         V         48 600           Operating range relative to the operating voltage at AC         * at 50 Hz         V         40 660           • at 50 Hz         V         40 660         * at 50 Hz         * at 60 Hz         * at 60 Hz           Operating frequency Rated value         Hz         50 60         * at 60 Hz	Number of NC contacts for auxiliary contacts		0
Number of NO contacts for main contacts  Number of NC contacts for main contacts  Operating current  Rated value maximum  at AC-51 Rated value  minimum  A 30  Derating temperature  Surge current resistance Rated value  at 60 Hz Rated value  at 60 Hz Rated value  V 48 600  Operating range relative to the operating voltage at AC  at 50 Hz Rated value  V 48 600  Operating range relative to the operating voltage at AC  at 50 Hz Rated value  V 40 660  Operating range relative to the operating voltage at AC  at 50 Hz  at 60 Hz  Operating frequency Rated value  V 40 660  Operating frequency Rated value  V 40 660  Operating frequency Rated value  December of Voltage fise at the thyristor for main contacts waximum permissible  Blocking voltage at the thyristor for main contacts maximum permissible  Blocking voltage at the thyristor for main contacts maximum permissible  Blocking voltage at the thyristor for main contacts maximum permissible  Blocking voltage at the thyristor for main contacts maximum permissible  Blocking voltage at the thyristor for main contacts maximum permissible  Blocking voltage at the thyristor  Control current at minimum control supply voltage  at DC  Short-clicuit // Control:  Type of voltage of the control supply voltage  at DC  Control supply voltage  at DC Full-scale value for signal<0> recognition  V 1  Type of voltage of the control supply voltage  at DC Full-scale value for signal<0> recognition  A 15	Number of NO contacts for auxiliary contacts		0
Number of NO contacts for main contacts         3           Number of NC contacts for main contacts         0           Operating current         • Rated value maximum         A         30           • at AC-51 Rated value         A         30           • minimum         mA         500           Derating temperature         °C         40           Surge current resistance Rated value         A         300           12 value maximum         A*-s         450           Operating voltage at AC         • at 50 Hz Rated value         V         48 600           • at 50 Hz Rated value         V         48 600           Operating range relative to the operating voltage at AC         V         40 660           • at 50 Hz         V         40 660           Operating frequency Rated value         Hz         50 60           Relative symmetrical tolerance of the operating frequency         %         10           Insulation voltage Rated value         V         600           Rate of voltage rise at the thyristor for main contacts maximum permissible         V         1 200           Reverse current of the thyristor for main contacts maximum permissible         mA         10           Reverse current of the thyristor for main contacts at at DC	Number of CO contacts for auxiliary contacts		0
Number of NC contacts for main contacts   0	Main circuit:		
Perating current  • Rated value maximum  • at AC-51 Rated value • minimum  Derating temperature  or C  Surge current resistance Rated value  • at 50 Hz Rated value • at 50 Hz Rated value  • at 50 Hz Rated value  • at 50 Hz Rated value  V  48 600  Operating range relative to the operating voltage at AC  • at 50 Hz • at 50 Hz  • at 60 Hz  V  40 660  Operating range relative to the operating voltage at AC  • at 50 Hz  • at 60 Hz  • at 60 Hz  V  40 660  Operating frequency Rated value  V  40 600  Operating frequency Rated value  V  40 660  Operating frequency  Insulation voltage Rated value  V  600  Rate of voltage rate at the thyristor for main contacts maximum permissible  Blocking voltage at the thyristor for main contacts maximum permissible  Reverse current of the thyristor  Type of voltage of the control supply voltage  • at DC  Control current at minimum control supply voltage  • at DC  Control supply voltage  • at DC  Control supply voltage  • at DC Full-scale value for signal<0> recognition  V  1  N  15  National Control current  • at DC Rated value  mA  15	Number of NO contacts for main contacts		3
	Number of NC contacts for main contacts		0
	Operating current		
• minimum           mA	Rated value maximum	Α	30
Derating temperature   C	• at AC-51 Rated value	Α	30
Surge current resistance Rated value	• minimum	mA	500
Izt value maximum	Derating temperature	°C	40
Operating voltage at AC  • at 50 Hz Rated value  • at 60 Hz Rated value  Operating range relative to the operating voltage at AC  • at 50 Hz  • at 60 Hz  Operating frequency Rated value  Relative symmetrical tolerance of the operating frequency Insulation voltage Rated value  Rate of voltage rise at the thyristor for main contacts maximum permissible  Blocking voltage at the thyristor for main contacts maximum permissible  Reverse current of the thyristor  Control current at minimum control supply voltage  • at DC  Short-circuit/ Control:  Type of voltage of the control supply voltage  • at DC  Control supply voltage  • at DC V 4 30  Control supply voltage  • at DC Full-scale value for signal<0> recognition  V 1  Control current  • at DC Rated value  mA 15	Surge current resistance Rated value	Α	300
• at 50 Hz Rated value     • at 60 Hz Rated value     V	I2t value maximum	A²·s	450
• at 60 Hz Rated value  Operating range relative to the operating voltage at AC      • at 50 Hz     • at 60 Hz     • at 6	Operating voltage at AC		
Operating range relative to the operating voltage at AC  • at 50 Hz • at 60 Hz  Operating frequency Rated value Relative symmetrical tolerance of the operating frequency Insulation voltage Rated value Rate of voltage rise at the thyristor for main contacts maximum permissible Blocking voltage at the thyristor for main contacts maximum permissible Reverse current of the thyristor Control current at minimum control supply voltage • at DC Short-circuit protection, design of the fuse link  Control supply voltage 1 • at DC Control current 4 • at DC Rated value  mA  15  Insulation / mounting/ dimensions:	● at 50 Hz Rated value	V	48 600
AC  • at 50 Hz  • at 60 Hz  Operating frequency Rated value Relative symmetrical tolerance of the operating frequency Insulation voltage Rated value Rate of voltage rise at the thyristor for main contacts maximum permissible Blocking voltage at the thyristor for main contacts maximum permissible Reverse current of the thyristor Control current at minimum control supply voltage • at DC Short-circuit protection, design of the fuse link  Control supply voltage 1  • at DC V 4 30  Control current	● at 60 Hz Rated value	V	48 600
• at 60 Hz  Operating frequency Rated value Relative symmetrical tolerance of the operating frequency Insulation voltage Rated value Rate of voltage rise at the thyristor for main contacts maximum permissible Blocking voltage at the thyristor for main contacts maximum permissible Reverse current of the thyristor  Control current at minimum control supply voltage • at DC Short-circuit protection, design of the fuse link  Control circuit/ Control:  Type of voltage of the control supply voltage • at DC  Control supply voltage • at DC  V 4 30  Control supply voltage • at DC Full-scale value for signal<0> recognition  MA 15  Installation/ mounting/ dimensions:			
Operating frequency Rated value Relative symmetrical tolerance of the operating frequency Insulation voltage Rated value V 600 Rate of voltage rise at the thyristor for main contacts maximum permissible Blocking voltage at the thyristor for main contacts maximum permissible Reverse current of the thyristor Control current at minimum control supply voltage • at DC Short-circuit protection, design of the fuse link  Control circuit/ Control: Type of voltage of the control supply voltage • at DC Full-scale value for signal<0> recognition V 1  Control current • at DC Rated value  mA 15	● at 50 Hz	V	40 660
Relative symmetrical tolerance of the operating frequency  Insulation voltage Rated value  Rate of voltage rise at the thyristor for main contacts maximum permissible  Blocking voltage at the thyristor for main contacts maximum permissible  Reverse current of the thyristor  Control current at minimum control supply voltage  at DC  Short-circuit protection, design of the fuse link  Control circuit/ Control:  Type of voltage of the control supply voltage  at DC  Control supply voltage 1  at DC  Control supply voltage  at DC Full-scale value for signal<0> recognition  Tontrol current  at DC Rated value  mA  10  Control current  mA  10  Control circuit/ Control:  Type of voltage of the control supply voltage  Control supply voltage  at DC Full-scale value for signal<0> recognition  Tontrol current  at DC Rated value  mA  15	● at 60 Hz	V	40 660
frequency Insulation voltage Rated value  Rate of voltage rise at the thyristor for main contacts maximum permissible  Blocking voltage at the thyristor for main contacts maximum permissible  Reverse current of the thyristor  Reverse current of the thyristor  Control current at minimum control supply voltage  at DC  Short-circuit protection, design of the fuse link  Control circuit/ Control:  Type of voltage of the control supply voltage  at DC  Control supply voltage 1  at DC  Control supply voltage  at DC Full-scale value for signal<0> recognition  Tontrol current  at DC Rated value  mA  15  Installation/ mounting/ dimensions:	Operating frequency Rated value	Hz	50 60
Insulation voltage Rated value  Rate of voltage rise at the thyristor for main contacts maximum permissible  Blocking voltage at the thyristor for main contacts maximum permissible  Reverse current of the thyristor  Control current at minimum control supply voltage  • at DC  Short-circuit protection, design of the fuse link  Control circuit/ Control:  Type of voltage of the control supply voltage  • at DC  Control supply voltage 1  • at DC  Control supply voltage  • at DC Full-scale value for signal<0> recognition  V 1  Control current • at DC Rated value  mA 15  mstallation/ mounting/ dimensions:	Relative symmetrical tolerance of the operating	%	10
Rate of voltage rise at the thyristor for main contacts maximum permissible  Blocking voltage at the thyristor for main contacts maximum permissible  Reverse current of the thyristor  Control current at minimum control supply voltage  • at DC  Short-circuit protection, design of the fuse link  Control circuit/ Control:  Type of voltage of the control supply voltage  • at DC  Control supply voltage 1  • at DC  Control supply voltage  • at DC Full-scale value for signal<0> recognition  • at DC Rated value  mA  15  Installation/ mounting/ dimensions:	frequency		
maximum permissible  Blocking voltage at the thyristor for main contacts maximum permissible  Reverse current of the thyristor  Reverse current at minimum control supply voltage • at DC  Short-circuit protection, design of the fuse link  Control circuit/ Control:  Type of voltage of the control supply voltage  • at DC  Control supply voltage 1 • at DC  Control supply voltage • at DC Full-scale value for signal<0> recognition  • at DC Rated value  mA  15  I 200  100  100  100  100  100  100  100	Insulation voltage Rated value	V	600
maximum permissible  Reverse current of the thyristor  Control current at minimum control supply voltage  • at DC  Short-circuit protection, design of the fuse link  Control circuit/ Control:  Type of voltage of the control supply voltage  Control supply voltage 1  • at DC  V 4 30  Control supply voltage  • at DC Full-scale value for signal<0> recognition  V 1  Control current  • at DC Rated value  mA 15		V/µs	500
Reverse current of the thyristor  Control current at minimum control supply voltage  • at DC  Short-circuit protection, design of the fuse link  Control circuit/ Control:  Type of voltage of the control supply voltage  Control supply voltage 1  • at DC  V 4 30  Control supply voltage  • at DC Full-scale value for signal<0> recognition  V 1  Control current  • at DC Rated value  mA 15	·	V	1 200
Control current at minimum control supply voltage  • at DC  Short-circuit protection, design of the fuse link  Control circuit/ Control:  Type of voltage of the control supply voltage  Control supply voltage 1  • at DC  Control supply voltage  • at DC Full-scale value for signal<0> recognition  Control current  • at DC Rated value  mA  15			40
• at DC  Short-circuit protection, design of the fuse link  Control circuit/ Control:  Type of voltage of the control supply voltage  Control supply voltage 1  • at DC  Control supply voltage  • at DC Full-scale value for signal<0> recognition  Control current  • at DC Rated value  mA  15	<u> </u>	mA -	10
Short-circuit protection, design of the fuse link  Control circuit/ Control:  Type of voltage of the control supply voltage  Control supply voltage 1  • at DC  Control supply voltage  • at DC Full-scale value for signal<0> recognition  Control current  • at DC Rated value  mA  15		A	2
Control circuit/ Control:  Type of voltage of the control supply voltage  Control supply voltage 1  • at DC  Control supply voltage  • at DC Full-scale value for signal<0> recognition  Control current  • at DC Rated value  mA  15		IIIA -	Z
Type of voltage of the control supply voltage  Control supply voltage 1  • at DC  Control supply voltage  • at DC Full-scale value for signal<0> recognition  Control current  • at DC Rated value  mA  15	Short-circuit protection, design of the fuse link		
Control supply voltage 1  • at DC  V 4 30  Control supply voltage  • at DC Full-scale value for signal<0> recognition  Control current  • at DC Rated value  mA 15  Installation/ mounting/ dimensions:	Control circuit/ Control:		
• at DC  Control supply voltage  • at DC Full-scale value for signal<0> recognition  V  1  Control current  • at DC Rated value  mA  15  Installation/ mounting/ dimensions:			DC
Control supply voltage  • at DC Full-scale value for signal<0> recognition  Control current  • at DC Rated value  mA  15  nstallation/ mounting/ dimensions:	Control supply voltage 1		
at DC Full-scale value for signal<0> recognition  Control current     at DC Rated value  mA  15  Installation/ mounting/ dimensions:		V	4 30
Control current	Control supply voltage		
• at DC Rated value mA 15  Installation/ mounting/ dimensions:	• at DC Full-scale value for signal<0> recognition	V	1
nstallation/ mounting/ dimensions:	Control current		
	• at DC Rated value	mA	15
Mounting type screw fixing	Installation/ mounting/ dimensions:		
	Mounting type		screw fixing

Mounting type Side-by-side mounting		Yes
Design of the thread of the screw for securing the equipment		M4
Tightening torque of the screw for securing the equipment	N·m	1.5
Width	mm	45
Height	mm	95
Depth	mm	47

O			
Connections/ Terminals:		agray type terminals	
Type of electrical connection for main current circuit		screw-type terminals M4	
Design of the thread of the connection screw for main contacts			
Tightening torque for main contacts with screw-type terminals	N·m	2 2.5	
Tightening torque [lbf·in] for main contacts with screw-type terminals	lbf∙in	7 10.3	
Type of connectable conductor cross-section			
• for main contacts			
— solid		2x (1.5 2.5 mm²), 2x (2.5 6 mm²)	
— finely stranded			
<ul> <li>— with core end processing</li> </ul>		2x (1 2.5 mm²), 2x (2.5 6 mm²), 1x 10 mm²	
• for AWG conductors			
— for main contacts		2x (14 10)	
<ul> <li>for auxiliary and control contacts</li> </ul>		1x (AWG 20 12)	
<ul> <li>for auxiliary and control contacts</li> </ul>			
— solid		1x (0.5 2.5 mm²), 2x (0.5 1.0 mm²)	
— finely stranded			
<ul> <li>— with core end processing</li> </ul>		1x (0.5 2.5 mm²), 2x (0.5 1.0 mm²)	
<ul> <li>— without core end processing</li> </ul>		1x (0.5 2.5 mm²), 2x (0.5 1.0 mm²)	
Connectable conductor cross-section			
• for main contacts			
<ul><li>— single or multi-stranded</li></ul>	mm²	1.5 6	
— finely stranded			
<ul> <li>— with core end processing</li> </ul>	mm²	1 10	
<ul> <li>for auxiliary and control contacts</li> </ul>			
— solid	mm²	0.5 2.5	
— finely stranded			
<ul> <li>— with core end processing</li> </ul>	mm²	0.5 2.5	
<ul> <li>— without core end processing</li> </ul>	mm²	0.5 2.5	
AWG number as coded connectable conductor cross section			
• for main contacts		10 14	
• for auxiliary and control contacts		20 12	

Type of electrical connection for auxiliary and control current circuit		screw-type terminals
Design of the thread of the connection screw of the auxiliary and control contacts		M3
Wire stripping length of the cable		
• for main contacts	mm	7
<ul> <li>for auxiliary and control contacts</li> </ul>	mm	7
Tightening torque for auxiliary and control contacts with screw-type terminals	N·m	0.5 0.6
Tightening torque [lbf·in] for auxiliary and control contacts with screw-type terminals	lbf∙in	4.5 5.3

## Certificates/ approvals:

General Prod	duct Approval		EMC	Declaration of	Test
				Conformity	Certificates
(SA)	<b>SU</b> °	EAC	C-TICK	EG-Konf.	Typprüfbescheinigu ng/Werkszeugnis

## other

Umweltbestätigung

## Further information

Short-circuit protection, design of the fuse link

https://www.automation.siemens.com/cd-static/material/info/3RF22\_eng.pdf

Information- and Downloadcenter (Catalogs, Brochures,...)

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

Industry Mall (Online ordering system)

http://www.siemens.com/industrymall

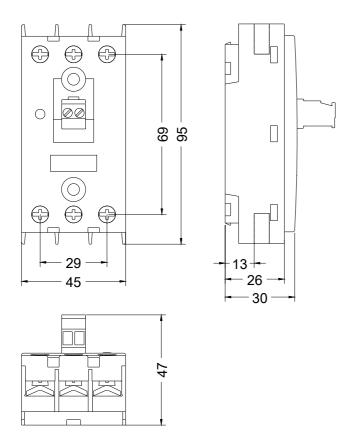
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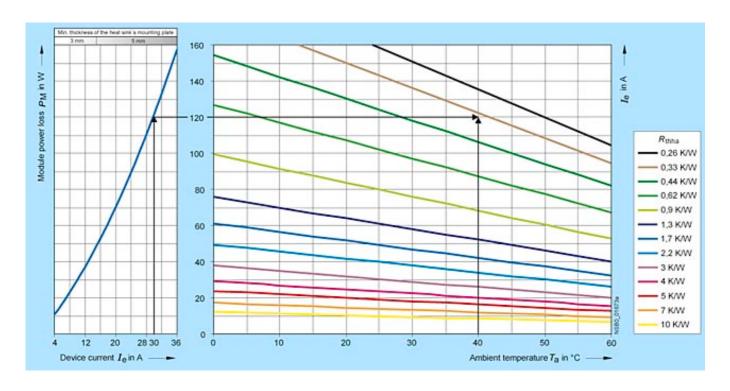
 $\underline{ http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en\&mlfb=3RF22301AC45} \\$ 

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

https://support.industry.siemens.com/cs/ww/en/ps/3RF22301AC45

Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...) http://www.automation.siemens.com/bilddb/cax\_de.aspx?mlfb=3RF22301AC45&lang=en





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