SIEMENS

Data sheet 3RF2255-1AB45

Semiconductor relay, 3-phase 3RF2 55 A / 40 °C 48-600 V / 4-30 V DC 2-phase controlled screw terminal Blocking voltage 1200 V

Product brand name	SIRIUS
Product designation	solid-state relay
Product type designation	3RF22
Manufacturer's article number	
• _2 / of the accessories that can be ordered	3RF2900-0EA18
Product designation	
• _2 / of the accessories that can be ordered	converter

General technical data	
Product function	zero-point switching
Power loss [W] / for rated value of the current / at AC / in hot operating state	151 W
Insulation voltage	
• rated value	600 V
Protection class IP	IP20
Shock resistance / acc. to IEC 60068-2-27	15g / 11 ms
Vibration resistance / acc. to IEC 60068-2-6	2g
Reference code / acc. to DIN 40719 extended according to IEC 204-2 / acc. to IEC 750	K
Reference code / acc. to DIN EN 81346-2	Q

Reference code / acc. to DIN EN 61346-2	Q

Main circuit	
Number of poles / for main current circuit	3
Number of NO contacts / for main contacts	2
Number of NC contacts / for main contacts	0
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	
• at 50 Hz	40 ... 660 V
• at 60 Hz	40 ... 660 V
Operating current / minimum	500 mA
Operating current	
• at AC-1 / at 400 V / rated value	55 A
• at AC-51 / rated value	50 A
Rate of voltage rise / at the thyristor / for main contacts / maximum permissible	100 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	600 A
I2t value / maximum	1 800 A²·s

Control circuit/ Control	
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
Switch-on delay time	1 ms; additionally max. one half-wave
Off-delay time	1 ms; additionally max. one half-wave
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	
Mounting type	screw fixing
• Side-by-side mounting	Yes
Height	95 mm
Width	45 mm
Depth	47 mm
Installation altitude / at height above sea level / maximum	1 000 m

Connections/ Terminals	
Type of connectable conductor cross-sections	
• for main contacts	
— solid	2x (1.5 ... 2.5 mm²), 2x (2.5 ... 6 mm²)
— finely stranded / with core end processing	2x (1 ... 2.5 mm²), 2x (2.5 ... 6 mm²), 1x 10 mm²
• at AWG conductors / for main contacts	2x (14 ... 10)
Type of connectable conductor cross-sections	
• for auxiliary and control contacts	
— solid	1x (0.5 ... 2.5 mm²), 2x (0.5 ... 1.0 mm²)
— finely stranded / with core end processing	1x (0.5 ... 2.5 mm²), 2x (0.5 ... 1.0 mm²)
— finely stranded / without core end processing	1x (0.5 ... 2.5 mm²), 2x (0.5 ... 1.0 mm²)
• at AWG conductors / for auxiliary and control contacts	1x (AWG 20 ... 12)
Tightening torque / for main contacts / with screw-type terminals	2 ... 2.5 N·m
Tightening torque / 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
Design of the thread / of the connection screw	
• for main contacts	M4
• of the auxiliary and control contacts	M3
Wire stripping length / of the cable	
• for main contacts	7 mm
• for auxiliary and control contacts	7 mm

Ambient conditions	
Ambient temperature	
• during operation	-25 ... +60 °C
• during storage	-55 ... +80 °C

Electromagnetic compatibility

Conducted interference	
• due to burst / acc. to IEC 61000-4-4	2 kV / 5 kHz behavior criterion 2
• due to conductor-earth surge / acc. to IEC 61000-4-5	2 kV behavior criterion 2
• due to conductor-conductor surge / acc. to IEC 61000-4-5	1 kV behavior criterion 2
• due to high-frequency radiation / acc. to IEC 61000-4-6	140 dBuV in the frequency range 0.15 ... 80 MHz, behavior criterion 1
Electrostatic discharge / acc. to IEC 61000-4-2	4 kV contact discharging / 8 kV air discharging, behavior criterion 2
Conducted HF-interference emissions / acc. to CISPR11	Class A for industrial environment
Field-bound HF-interference emission / acc. to CISPR11	Class A for industrial environment

Further information

Information- and Downloadcenter (Catalogs, Brochures,…)
www.siemens.com/sirius/catalogs

Industry Mall (Online ordering system)
https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RF2255-1AB45

Cax online generator
http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RF2255-1AB45

Service&Support (Manuals, Certificates, Characteristics, FAQs,...)
https://support.industry.siemens.com/cs/ww/en/ps/3RF2255-1AB45

Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RF2255-1AB45&lang=en

Short-circuit protection, design of the fuse link
https://www.automation.siemens.com/cd-static/material/info/3RF20_eng.pdf

Short-circuit protection, design of the fuse link
https://www.automation.siemens.com/cd-static/material/info/3RF21_eng.pdf

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