SIEMENS

Data sheet 3RF2420-1AB45



solid-state contactor 3-phase 3RF2 AC 51 / 22 A / 40 $^{\circ}\text{C}$ 48-600 V / 4-30 V DC 2-phase controlled screw terminal blocking voltage 1200 V

product designation design of the product product type designation ### Special Company ###	product brand name	SIRIUS
design of the product product type designation 3RF24 ### STR24 #	product designation	solid-state contactor
manufacturer's article number • _2 of the accessories that can be ordered product designation • _2 of the accessories that can be ordered converter Coneral technical data product function power loss [W] for rated value of the current at AC in hot operating state • per pole power loss [W] for rated value of the current without load current share typical insulation voltage rated value degree of pollution 3 type of voltage of the control supply voltage surge voltage resistance of main circuit rated value shock resistance acc. to IEC 60068-2-7 15g /11 ms vibration resistance acc. to IEC 60068-2-2 greference code acc. to IEC 81346-2 Qu Substance Prohibitance (Date) Main circuit number of poles for main current circuit number of NC contacts for main contacts operating voltage at AC — at 50 Hz rated value eat 50 Hz • at 60 Hz		two-phase controlled
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degree of pollution type of voltage of the control supply voltage surge voltage resistance of main circuit rated value shock resistance acc. to IEC 60068-2-27 15g / 11 ms vibration resistance acc. to IEC 60068-2-6 2g reference code acc. to IEC 81346-2 Q Substance Prohibitance (Date) 01.07.2006 00:00:00 Main circuit number of poles for main current circuit 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 relative symmetrical tolerance of the operating frequency operating range relative to the operating voltage at AC at 50 Hz at 50 Hz at 50 Hz by Acc. at 50 Hz by Acc. at 50 Hz by Acc. by A		0.9 W
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surge voltage resistance of main circuit rated value shock resistance acc. to IEC 60068-2-27 vibration resistance acc. to IEC 60068-2-6 2g reference code acc. to IEC 81346-2 Q Substance Prohibitance (Date) Main circuit number of poles for main current circuit number of NO contacts for main contacts number of NC contacts for main contacts o operating voltage at AC — at 50 Hz rated value — at 60 Hz rated value relative symmetrical tolerance of the operating frequency operating range relative to the operating voltage at AC • at 50 Hz • at 60 Hz operational current or AD Hz 40 660 V operational current or AD Hz 40 660 V operational current	degree of pollution	3
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vibration resistance acc. to IEC 60068-2-6 reference code acc. to IEC 81346-2 Substance Prohibitance (Date) Main circuit number of poles for main current circuit number of NO contacts for main contacts number of NC contacts for main contacts o operating voltage at AC — at 50 Hz rated value — at 60 Hz rated value relative symmetrical tolerance of the operating frequency operating range relative to the operating voltage at AC • at 50 Hz • at 60 Hz operating range relative to the operating voltage at AC • at 50 Hz • at 60 Hz operating range relative to the operating voltage at AC • at 50 Hz • at 60 Hz operational current	surge voltage resistance of main circuit rated value	6 kV
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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 48 600 V — at 50 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 40 660 V • at 50 Hz 40 660 V operational current 40 660 V	reference code acc. to IEC 81346-2	Q
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number of NC contacts for main contacts • operating voltage at AC — at 50 Hz rated value — at 60 Hz rated value Operating frequency rated value relative symmetrical tolerance of the operating frequency operating range relative to the operating voltage at AC • at 50 Hz • at 60 Hz operational current	number of poles for main current circuit	3
operating voltage at AC — at 50 Hz rated value — at 60 Hz rated value operating frequency rated value operating frequency rated value relative symmetrical tolerance of the operating frequency operating range relative to the operating voltage at AC o at 50 Hz other in the operating voltage at AC other in the operating voltage	number of NO contacts for main contacts	2
- at 50 Hz rated value - at 60 Hz rated value 48 600 V operating frequency rated value 50 60 Hz relative symmetrical tolerance of the operating frequency operating range relative to the operating voltage at AC • at 50 Hz • at 60 Hz operational current	number of NC contacts for main contacts	0
— at 60 Hz rated value operating frequency rated value relative symmetrical tolerance of the operating frequency operating range relative to the operating voltage at AC o at 50 Hz at 60 Hz operational current 48 600 V 0 60 Hz	operating voltage at AC	
operating frequency rated value relative symmetrical tolerance of the operating frequency operating range relative to the operating voltage at AC • at 50 Hz • at 60 Hz operational current	— at 50 Hz rated value	48 600 V
relative symmetrical tolerance of the operating frequency operating range relative to the operating voltage at AC • at 50 Hz • at 60 Hz operational current	— at 60 Hz rated value	48 600 V
operating range relative to the operating voltage at AC • at 50 Hz • at 60 Hz operational current 40 660 V 40 660 V	operating frequency rated value	50 60 Hz
● at 50 Hz	· · · · · · · · · · · · · · · · · · ·	10 %
• at 60 Hz operational current 40 660 ∨	operating range relative to the operating voltage at AC	
operational current	● at 50 Hz	40 660 V
·	● at 60 Hz	40 660 V
• at AC-51 rated value 22 A	operational current	
	• at AC-51 rated value	22 A

 at AC-51 acc. to IEC 60947-4-3 	15 A
acc. to UL 508 rated value	15 A
operational current minimum	500 mA
rate of voltage rise at the thyristor for main contacts maximum permissible	1 000 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 rated value 	30 V
• 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
symmetrical line frequency tolerance	5 Hz
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
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	screw and snap-on mounting onto 35 mm standard mounting rail
side-by-side mounting	Yes
height	100 mm
width	45 mm; 67.5 mm product version E01
depth	112.8 mm; 112.5 mm product version E01
Connections/ Terminals	
type of electrical connection	
for main current circuit	screw-type terminals
for auxiliary and control circuit	screw-type terminals
type of connectable conductor cross-sections	one in type terminate
• 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 cables for main contacts	2x (14 10)
connectable conductor cross-section for main contacts solid or stranded	0.5 2.5 mm ²
connectable conductor cross-section for main	0.5 1.5 mm²
contacts finely stranded with core end processing connectable conductor cross-section for main contacts finely stranded without core and processing	0.5 2.5 mm²
contacts finely stranded without core end processing	
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 cables for auxiliary and control contacts	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	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
 tightening torque [lbf in] for auxiliary and control contacts with screw-type terminals 	7.5 5.3 lbf·in
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
UL/CSA ratings	
Safety related data	
protection class IP on the front acc. to IEC 60529	IP20
touch protection on the front acc. to IEC 60529	finger-safe, for vertical contact from the front
Ambient conditions	imger-sale, for vertical contact from the front
	4.000
installation altitude at height above sea level maximum	1 000 m
 ambient temperature during operation 	-25 +60 °C
ambient temperature 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
Short-circuit protection, design of the fuse link	
manufacturer's article number	
 of full range R fuse link for semiconductor protection at NH design usable 	3NE1814-0
 of full range R fuse link for semiconductor protection at cylindrical design usable 	5SE1320; Maximum operating voltage 400 V!
 of back-up R fuse link for semiconductor protection at NH design usable 	<u>3NE8015-1</u>
 of back-up R fuse link for semiconductor protection at cylindrical design 10 x 38 mm usable 	<u>3NC1032</u>
 of back-up R fuse link for semiconductor protection at cylindrical design 14 x 51 mm usable 	<u>3NC1450</u>
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 at NH design usable	
• up to 460 V	3NA3805; These fuses have a smaller rated current than the semiconductor relays
Certificates/ approvals	
General Product Approval	EMC Declaration of Conformity









Miscellaneous



Test Certificates

other

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=3RF2420-1AB45

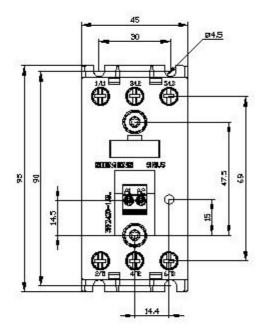
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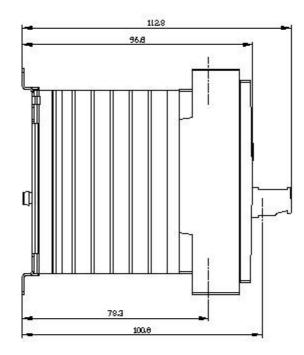
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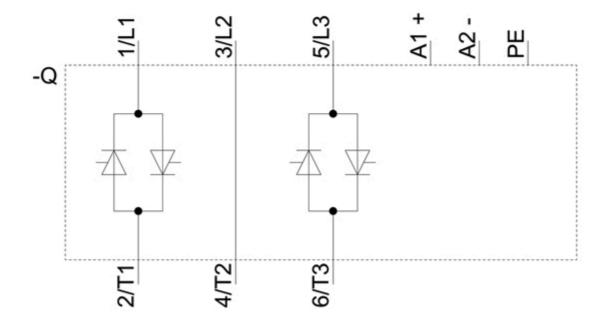
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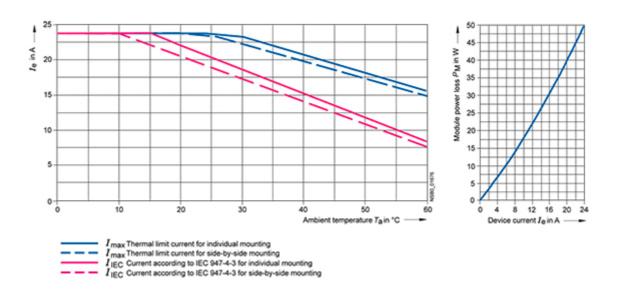
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Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...) http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RF2420-1AB45&lang=en









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