



solid-state contactor 3-phase 3RF2 AC 51 / 22 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 contactor
design of the product	two-phase controlled
product type designation	3RF24
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	44 W
• per pole	14.67 W
power loss [W] for rated value of the current without load current share typical	0.9 W
insulation voltage rated value	600 V
degree of pollution	3
type of voltage of the control supply voltage	DC
surge voltage resistance of main circuit rated value	6 kV
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	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
operational current	
• at AC-51 rated value	22 A

• at AC-51 acc. to IEC 60947-4-3 • 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 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
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 • side-by-side mounting	screw and snap-on mounting onto 35 mm standard mounting rail 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 • 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 • connectable conductor cross-section for main contacts finely stranded with core end processing • connectable conductor cross-section for main contacts finely stranded without core end processing	0.5 ... 2.5 mm ² 0.5 ... 1.5 mm ² 0.5 ... 2.5 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	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 - of the auxiliary and control contacts	M4 M3
stripped length of the cable - for main contacts - for auxiliary and control contacts	7 mm 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

installation altitude at height above sea level maximum	1 000 m
- ambient temperature during operation - ambient temperature during storage	-25 ... +60 °C -55 ... +80 °C

Electromagnetic compatibility

conducted interference - due to burst acc. to IEC 61000-4-4 - due to conductor-earth surge acc. to IEC 61000-4-5 - due to conductor-conductor surge acc. to IEC 61000-4-5 - due to high-frequency radiation acc. to IEC 61000-4-6	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
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 - 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	3NE1814-0 5SE1320: Maximum operating voltage 400 V! 3NE8015-1 3NC1032 3NC1450 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
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[Miscellaneous](#)



Test Certificates	other
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Information- and Downloadcenter (Catalogs, Brochures,...)

Industry Mall (Online ordering system)

Cax online generator

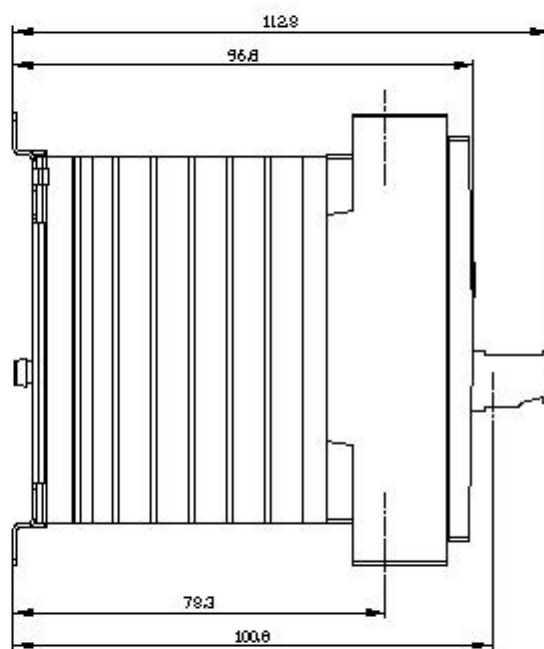
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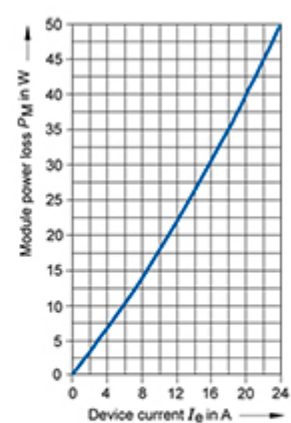
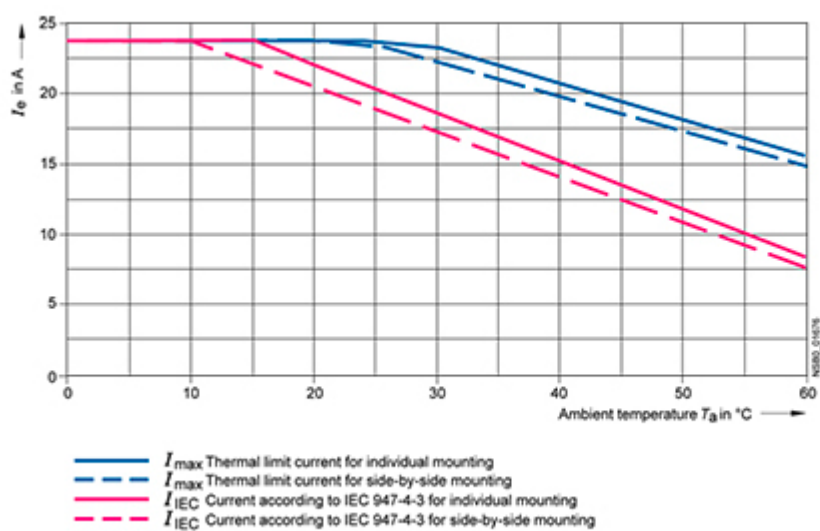
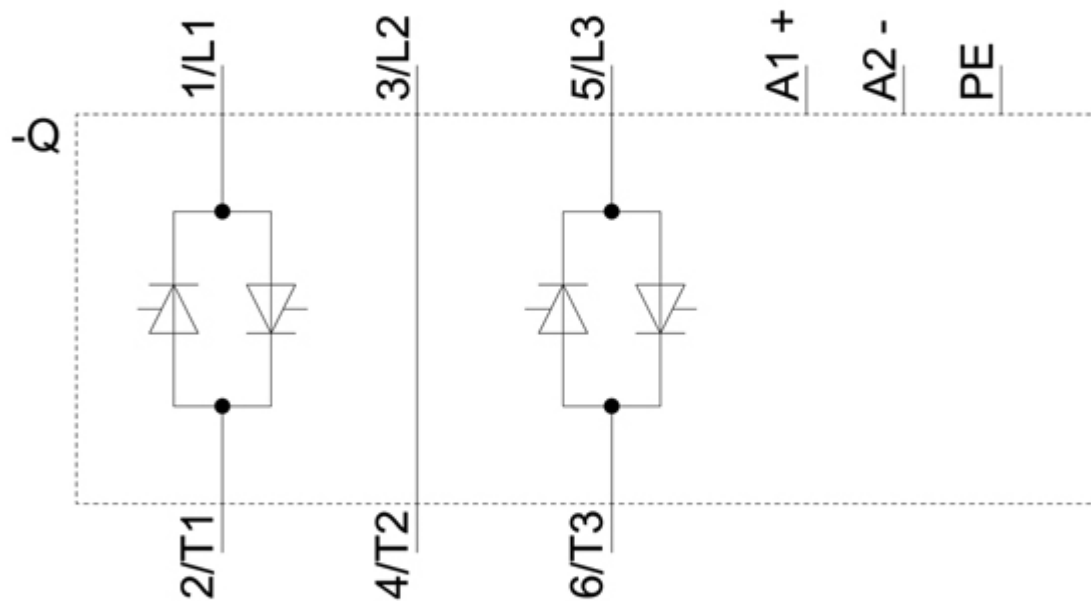
Service & Support (Manuals, Certificates, Characteristics, FAQs,...)

<https://support.industry.siemens.com/cs/ww/en/ps/3RF2420-1AB45>

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

http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RF2420-1AB45&lang=en





last modified:

3/11/2021