



Solid-state contactor 3-phase 3RF2 AC 51 / 50 A / 40 °C 48-600 V / 4-30 V
DC 2-phase controlled screw terminal Blocking voltage 1200 V

product brand name
product designation
design of the product
product type designation
manufacturer's article number
• _2 of the accessories that can be ordered
product designation
• _2 of the accessories that can be ordered

SIRIUS
solid-state contactor
two-phase controlled
3RF24

[3RF2900-0EA18](#)

converter

General technical data

product function zero-point switching
power loss [W] for rated value of the current
• at AC in hot operating state 107 W
• at AC in hot operating state per pole 35.67 W
• 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 according to IEC 60068-2-27 15g / 11 ms
vibration resistance according to IEC 60068-2-6 2g
reference code according to IEC 81346-2 Q
Substance Prohibitance (Date) 07/01/2006

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 50 A
• at AC-51 according to IEC 60947-4-3 38 A
• according to UL 508 rated value 38 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	1 200 V
maximum permissible reverse current of the thyristor	10 mA
derating temperature	40 °C
surge current resistance rated value	1 150 A
I²t value maximum	6 600 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	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
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 fixing
• side-by-side mounting	Yes
design of the thread of the screw for securing the equipment	M4
height	95 mm
width	119.5 mm
depth	130 mm
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	
• for main contacts	
— solid	2x (1.5 ... 2.5 mm ²), 2x (2.5 ... 6 mm ²)
— finely stranded with core end processing	2x (1 ... 2.5 mm ²), 2x (2.5 ... 6 mm ²), 1x 10 mm ²
• at AWG cables for main contacts	2x (14 ... 10)
connectable conductor cross-section for main contacts	
• solid or stranded	1.5 ... 6 mm ²
• finely stranded with core end processing	1 ... 10 mm ²
type of connectable conductor cross-sections	
• for auxiliary and control contacts	
— solid	1x (0.5 ... 2.5 mm ²), 2x (0.5 ... 1.0 mm ²)
— finely stranded with core end processing	1x (0.5 ... 2.5 mm ²), 2x (0.5 ... 1.0 mm ²)
— finely stranded without core end processing	1x (0.5 ... 2.5 mm ²), 2x (0.5 ... 1.0 mm ²)
• 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
• 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	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
- for auxiliary and control contacts

7 mm
7 mm

Safety related data

protection class IP on the front according to IEC 60529
touch protection on the front according to IEC 60529

IP20
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
- during storage

-25 ... +60 °C
-55 ... +80 °C

Electromagnetic compatibility

conducted interference

- due to burst according to IEC 61000-4-4
- due to conductor-earth surge according to IEC 61000-4-5
- due to conductor-conductor surge according to IEC 61000-4-5
- due to high-frequency radiation according 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 according to IEC 61000-4-2
conducted HF interference emissions according to CISPR11

4 kV contact discharging / 8 kV air discharging, behavior criterion 2
Class A for industrial environment

field-bound HF interference emission according 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 14 x 51 mm usable
- of back-up R fuse link for semiconductor protection at cylindrical design 22 x 58 mm usable

[3NE1817-0](#)

[5SE1350](#); Maximum operating voltage 400 V!

[3NE8018-1](#)

[3NC1450](#)

[3NC2280](#)

manufacturer's article number of the gG fuse at NH design usable

- up to 460 V

[3NA3812](#); These fuses have a smaller rated current than the semiconductor relays

Certificates/ approvals

General Product Approval

EMC

Declaration of
Conformity



[Confirmation](#)



Declaration of
Conformity

Test Certificates

other



[Type Test Certificates/Test Report](#)

[Confirmation](#)



Further information

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=3RF2450-1AB45>

Cax online generator

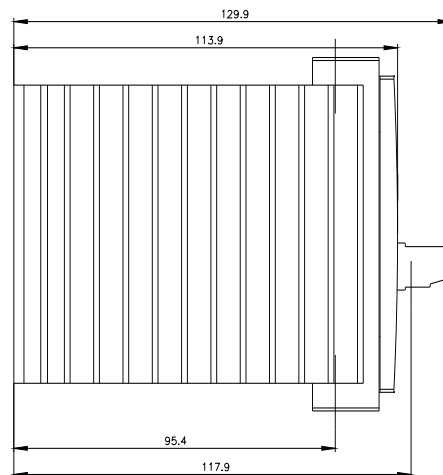
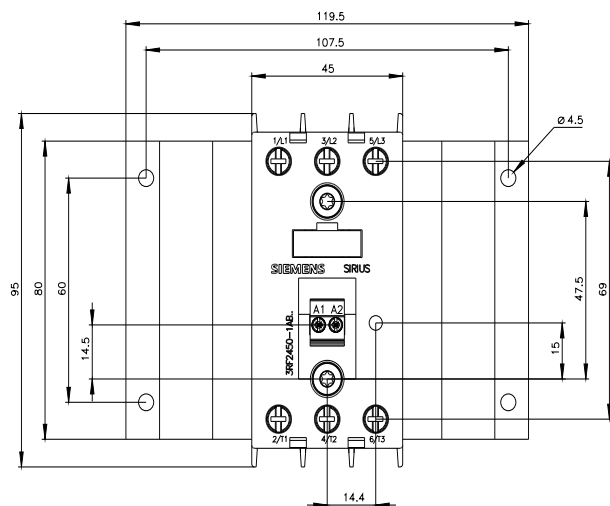
<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RF2450-1AB45>

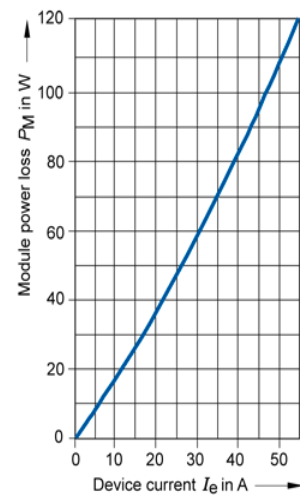
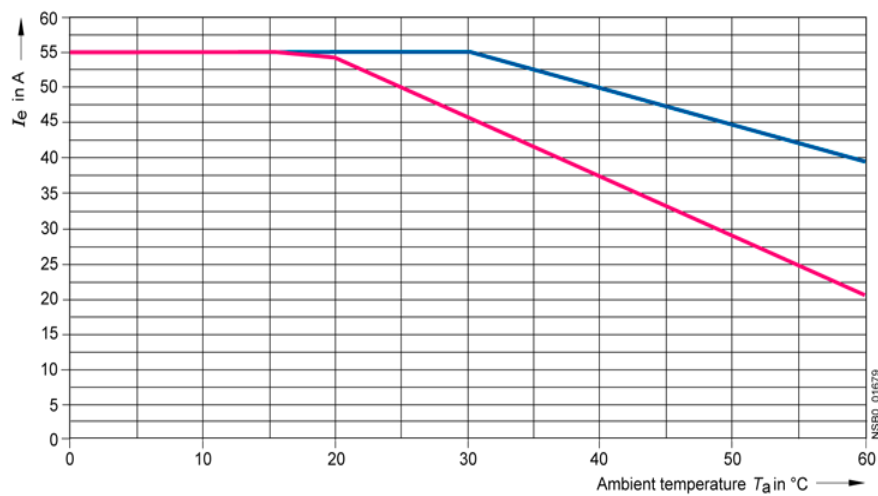
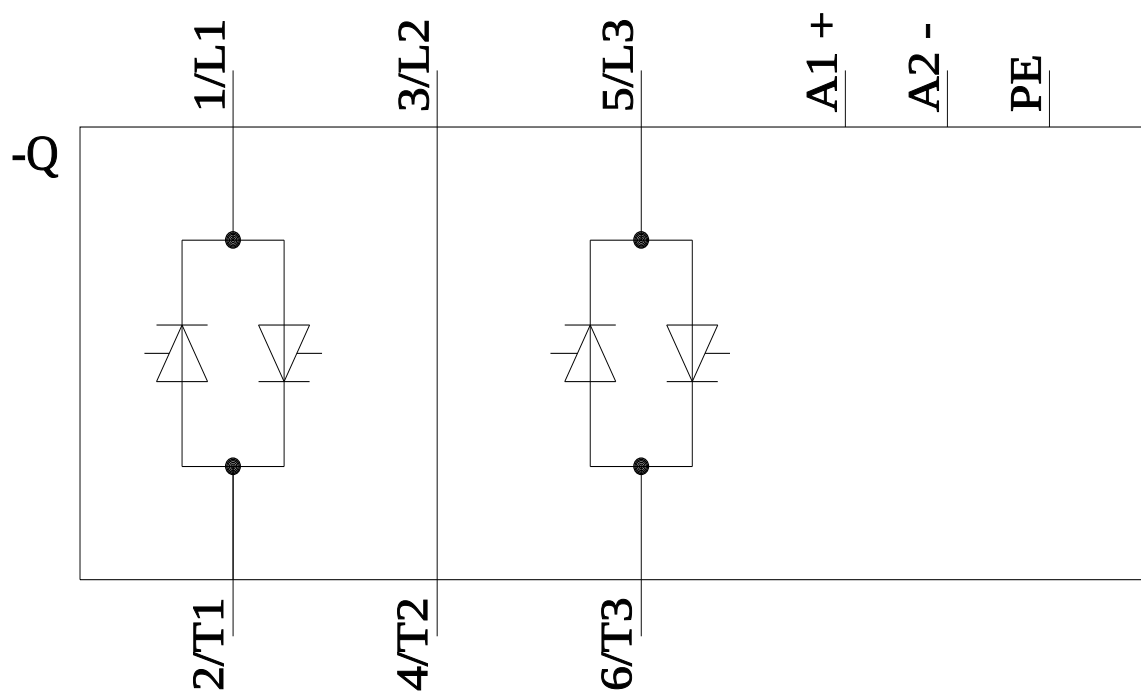
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

<https://support.industry.siemens.com/cs/ww/en/ps/3RF2450-1AB45>

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

http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RF2450-1AB45&lang=en





— I_{max} Thermal limit current for individual and side-by-side mounting
— I_{IEC} Current according to IEC 947-4-3 for individual and side-by-side mounting

last modified:

6/3/2021