



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

product brand name	SIRIUS
product designation	solid-state contactor
design of the product	three-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	160 W
• per pole	53.33 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
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
Main circuit	
number of poles for main current circuit	3
number of NO contacts for main contacts	3
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-1 at 400 V rated value	50 A
• at AC-51 rated value	50 A
• acc. 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 maximum permissible	1 600 V
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
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 fixing
• side-by-side mounting	Yes
height	150 mm; 180.0 mm product version E01
width	119.5 mm; 157.5 mm product version E01
depth	129.9 mm; 121.0 mm product version E01
Connections/ Terminals	
type of electrical connection	
• for main current circuit	Ring cable lug connection
• for auxiliary and control circuit	screw-type terminals
type of connectable conductor cross-sections	
• for main contacts for JIS cable lug	JIS C 2805 R 2-5, 5,5-5, 8-5, 14-5
• for DIN cable lug for main contacts	DIN 46234 -5-2,5, -5-6, -5-10, -5-16, -5-25
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)
• 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	M5
• 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	IP00
Ambient conditions	
installation altitude at height above sea level maximum	1 000 m
<ul style="list-style-type: none"> ambient temperature during operation ambient temperature during storage 	-25 ... +60 °C -55 ... +80 °C
Electromagnetic compatibility	
conducted interference	
<ul style="list-style-type: none"> 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 <ul style="list-style-type: none"> 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 <ul style="list-style-type: none"> 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
--------------------------	-----	---------------------------



[Miscellaneous](#)

Test Certificates	other
-------------------	-------

[Type Test
Certificates/Test
Report](#)

[Confirmation](#)



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=3RF2450-3AC45>

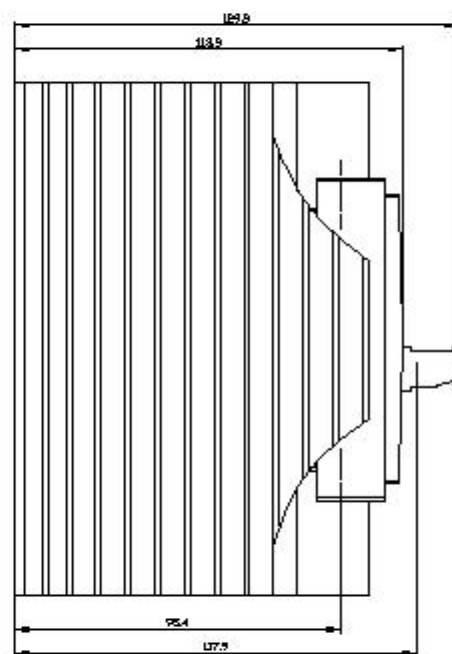
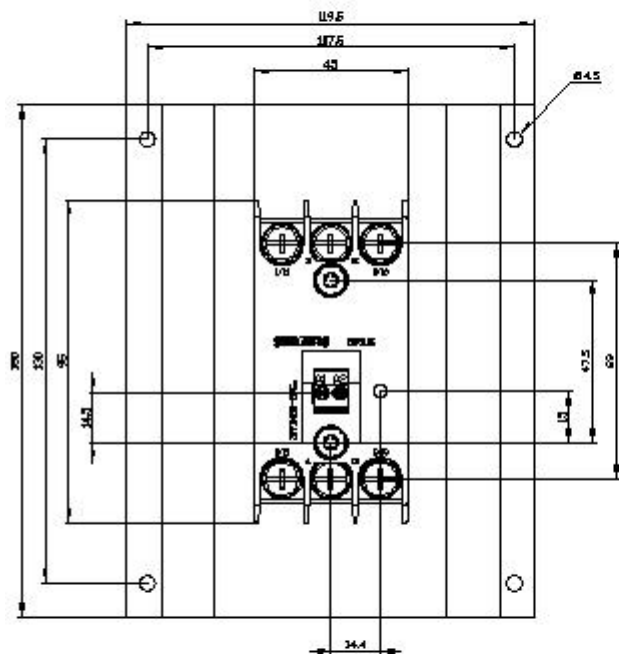
Cax online generator

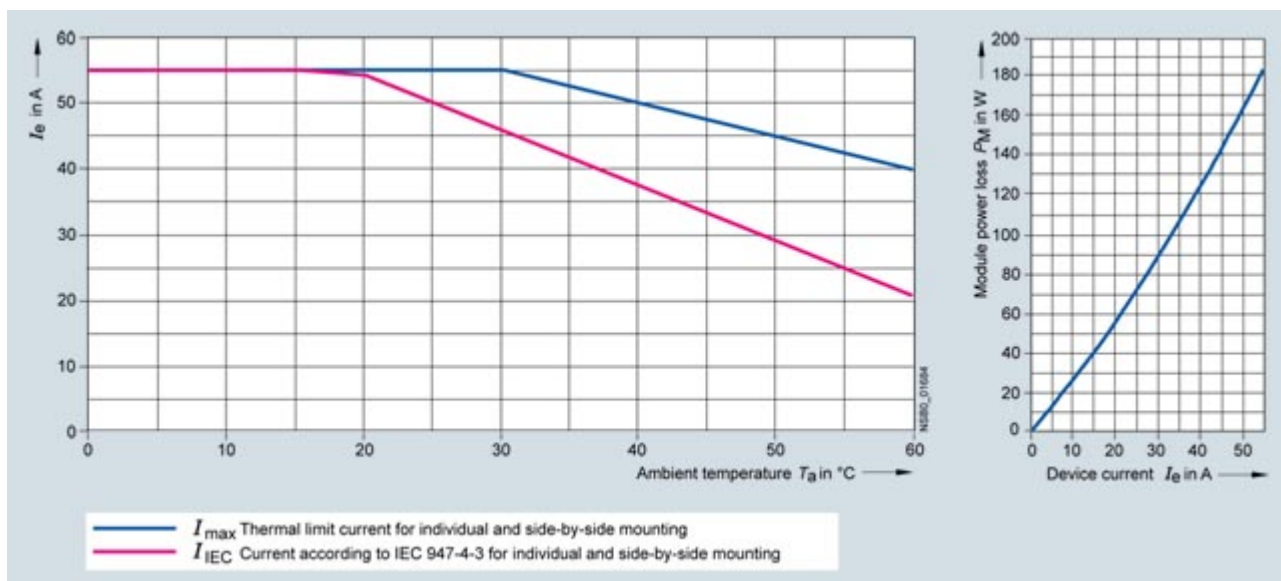
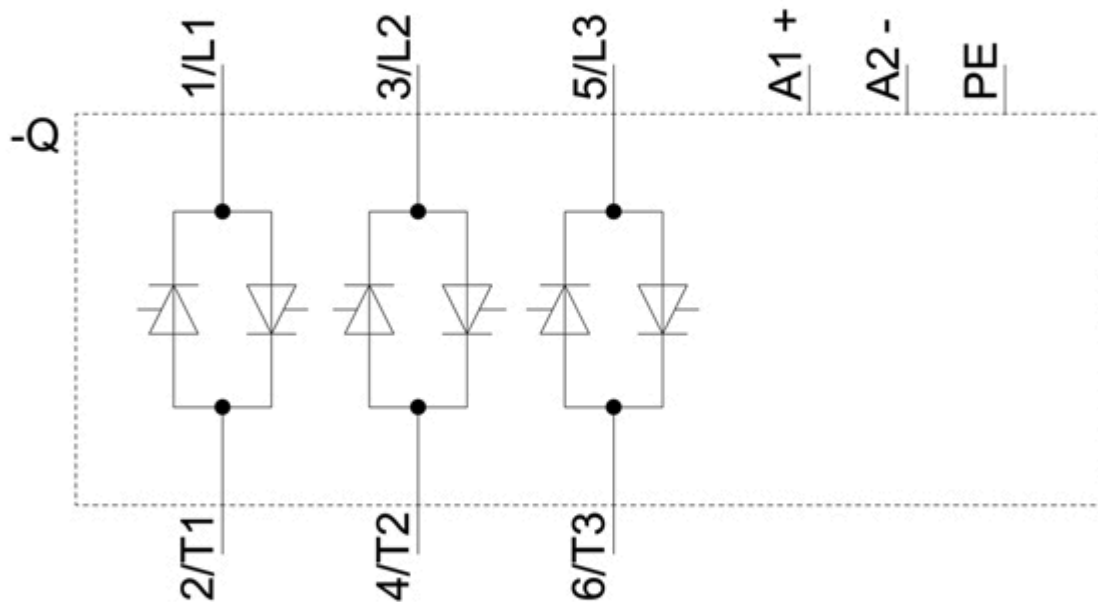
<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RF2450-3AC45>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RF2450-3AC45>

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





last modified:

12/21/2020