SIEMENS

Data sheet 3RF2330-1AA45

Solid-state contactor 1-phase 3RF2 AC 51 / 30 A / 40 °C 48-600 V / 4-30 V DC screw terminal Blocking voltage 1200 V

product brand name	SIRIUS
product designation	solid-state contactor
design of the product	single-phase
product type designation	3RF23
manufacturer's article number	
• _1 of the accessories that can be ordered	3RF2900-3PA88
• _2 of the accessories that can be ordered	3RF2950-0HA16
• _3 of the accessories that can be ordered	3RF2900-0EA18
• _4 of the accessories that can be ordered	3RF2950-0GA16
• _5 of the accessories that can be ordered	3RF2920-0FA08
product designation	
• _1 of the accessories that can be ordered	terminal cover
• _2 of the accessories that can be ordered	power regulator
• _3 of the accessories that can be ordered	converter
• _4 of the accessories that can be ordered	load monitoring
• _5 of the accessories that can be ordered	load monitoring, basis

General technical data

• **product function**	zero-point switching

power loss [W] for rated value of the current	
• at AC in hot operating state	33 W
• at AC in hot operating state per pole	33 W
power loss [W] for rated value of the current without load current share typical	0.6 W
insulation voltage	
• rated value	600 V
degree of pollution	3
type of voltage	
• of the control supply voltage	DC
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 IEC 81346-2	Q

Main circuit	
number of poles for main current circuit	1
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	48 ... 600 V
— at 60 Hz rated value	48 ... 600 V
operating frequency rated value	50 ... 60 Hz
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	30 A
• operational current at AC-51 rated value	30 A
• operational current acc. to UL 508 rated value	27 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
control current at minimum control supply voltage	
• at DC	18 mA
control current at DC	
• rated value	20 mA
switch ON delay time	1 ms; additionally max. one half-wave
OFF 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
depth	139 mm; 157.0 mm up to product revision E05

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 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	1.5 ... 6 mm²
• finely stranded with core end processing	1 ... 10 mm²
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	10 ... 14
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	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
stripped length of the cable	
• for main contacts	7 mm
• for auxiliary and control contacts	7 mm

Ambient conditions

• installation altitude at height above sea level maximum	1 000 m
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
field-based interference acc. to IEC 61000-4-3	80 MHz ... 1 GHz 10 V/m, 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 B for the domestic, business and commercial environments

Short-circuit protection, design of the fuse link

manufacturer's article number	
• of gS fuse for semiconductor protection at NH design usable	3NE1803-0
• of full range R fuse link for semiconductor protection at cylindrical design usable	5SE1335
• of back-up R fuse link for semiconductor protection at NH design usable	3NE8003-1
• of back-up R fuse link for semiconductor protection at cylindrical design 10 x 38 mm usable	3NC1032
• of back-up R fuse link for semiconductor protection at cylindrical design 14 x 51 mm usable	3NC1450
• of back-up R fuse link for semiconductor protection at cylindrical design 22 x 58 mm usable	3NC2263
manufacturer's article number of the gG fuse	
• at NH design usable	3NA6807; These fuses have a smaller rated current than the semiconductor relays
• at cylindrical design 14 x 51 mm usable	3NW6105-1; These fuses have a smaller rated current than the semiconductor relays
• at cylindrical design 22 x 58 mm usable	3NW6205-1; These fuses have a smaller rated current than the semiconductor relays
manufacturer's article number	
• of DIAZED fuse usable	5SB311
• of NEOZED fuse usable	5SE2320; These fuses have a smaller rated current than the semiconductor relays

Certificates/ approvals

General Product Approval			EMC	Declaration of Conformity	
CSA	UL	EAC	RCM	EG-Konf.	Miscellaneous

Test Certificates		other		Railway
Type Test Certificates/Test Report	Special Test Certificate	Confirmation	VDE	Vibration and Shock

Further information

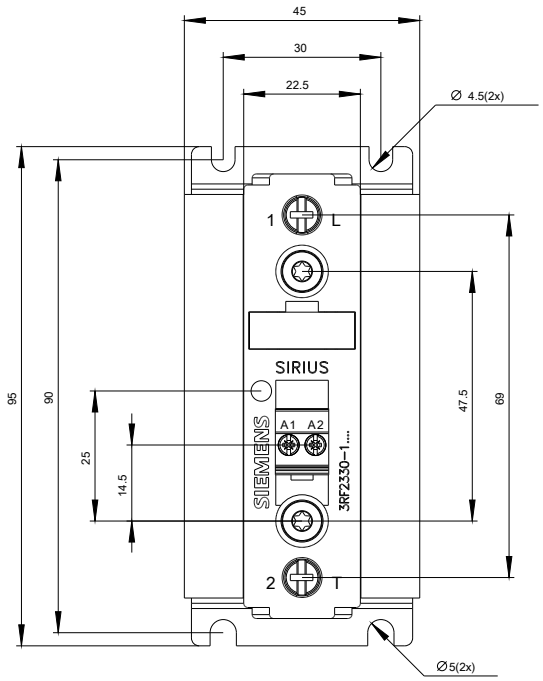
Information- and Downloadcenter (Catalogs, Brochures,…)
https://www.siemens.com/ic10

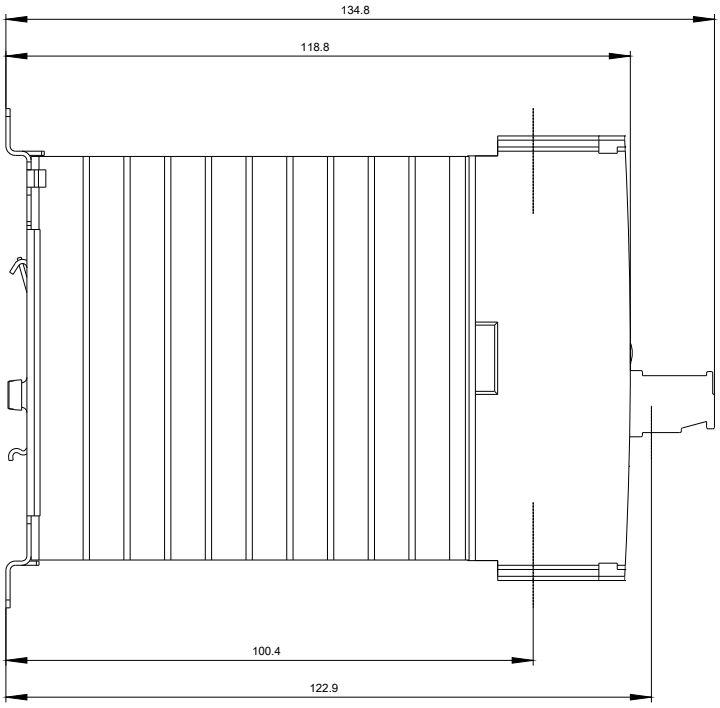
Industry Mall (Online ordering system)
https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RF2330-1AA45

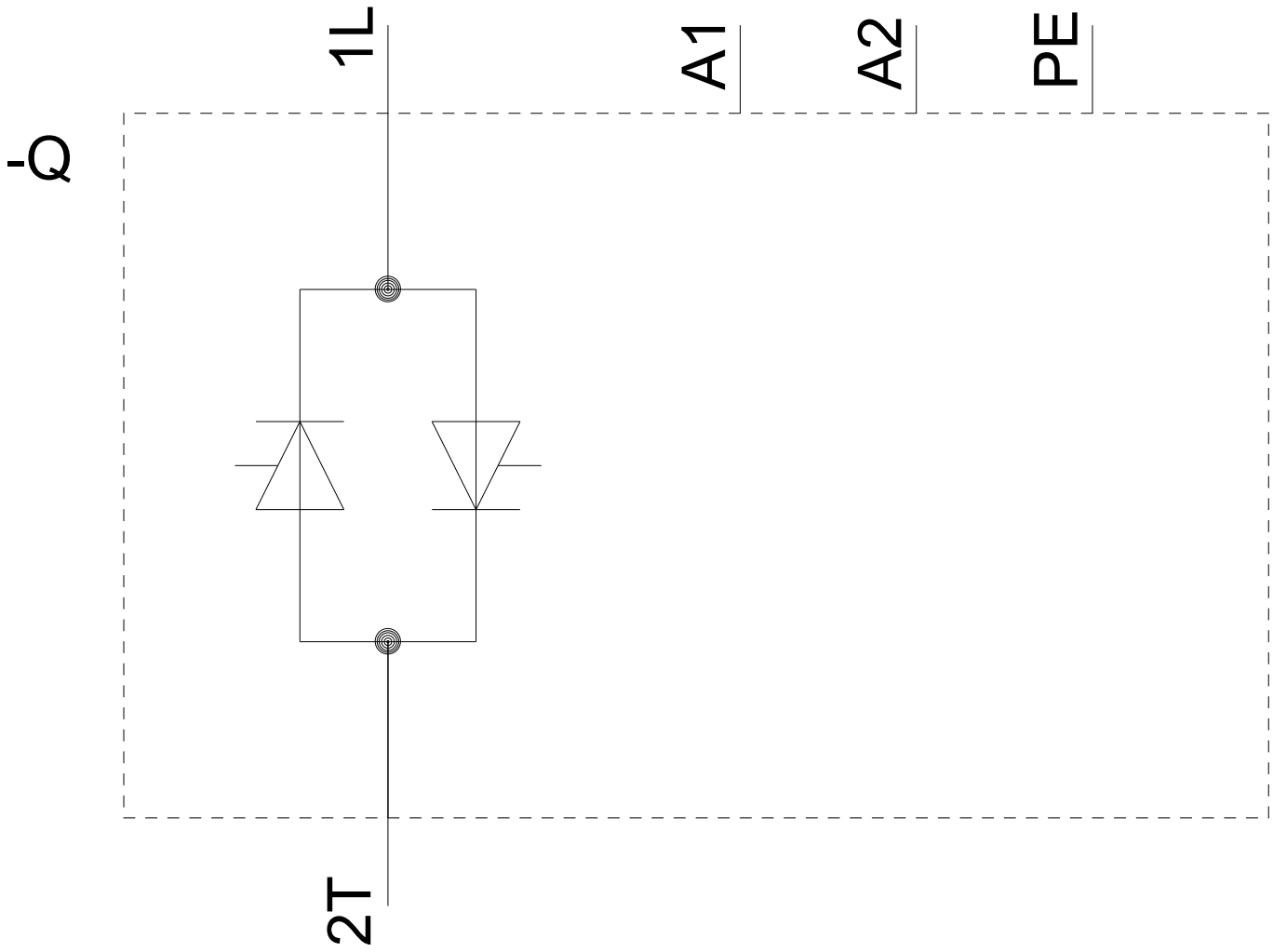
Cax online generator
http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RF2330-1AA45

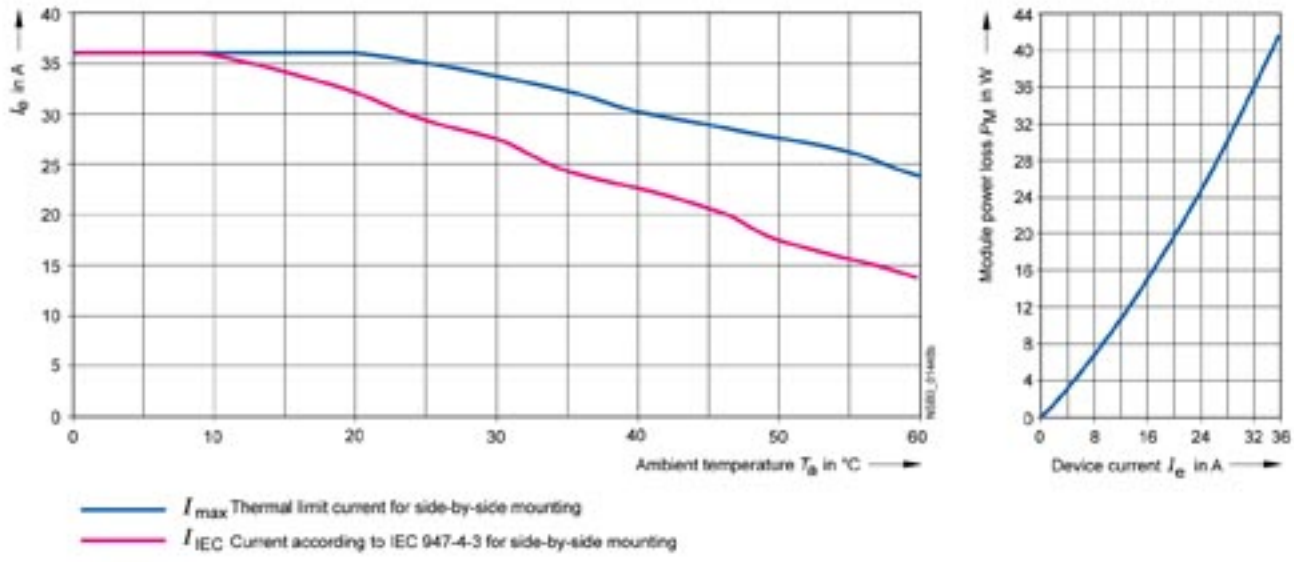
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)
https://support.industry.siemens.com/cs/ww/en/ps/3RF2330-1AA45

Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RF2330-1AA45&lang=en









last modified: 10/28/2020