



Solid-state contactor 1-phase 3RF2 AC 51 / 50 A / 40 °C 48-460 V / 24 V
DC Ring cable connection

product brand name	SIRIUS
product designation	solid-state contactor
design of the product	single-phase
product type designation	3RF23
manufacturer's article number	
<ul style="list-style-type: none"> • _1 of the accessories that can be ordered • _3 of the accessories that can be ordered • _4 of the accessories that can be ordered 	3RF2900-3PA88 3RF2900-0EA18 3RF2950-0GA16
product designation	
<ul style="list-style-type: none"> • _1 of the accessories that can be ordered • _3 of the accessories that can be ordered • _4 of the accessories that can be ordered 	terminal cover converter load monitoring
General technical data	
product function	zero-point switching
power loss [W] for rated value of the current at AC in hot operating state	54 W
<ul style="list-style-type: none"> • per pole 	54 W
power loss [W] for rated value of the current without load current share typical	0.4 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	1
number of NO contacts for main contacts	1
number of NC contacts for main contacts	0
<ul style="list-style-type: none"> • operating voltage at AC <ul style="list-style-type: none"> — at 50 Hz rated value — at 60 Hz rated value 	48 ... 460 V 48 ... 460 V
operating frequency rated value	50 ... 60 Hz
operating range relative to the operating voltage at AC	
<ul style="list-style-type: none"> • at 50 Hz • at 60 Hz 	40 ... 506 V 40 ... 506 V
operational current	
<ul style="list-style-type: none"> • at AC-1 at 400 V rated value 	50 A

<ul style="list-style-type: none"> • at AC-51 rated value 	50 A
<ul style="list-style-type: none"> • acc. to UL 508 rated value 	45 A
operational current minimum	500 mA
rate of voltage rise at the thyristor for main contacts maximum permissible	1 000 V/ μ s
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	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	
<ul style="list-style-type: none"> • at DC rated value 	30 V
<ul style="list-style-type: none"> • at DC 	15 ... 24 V
control supply voltage	
<ul style="list-style-type: none"> • at DC initial value for signal <1> detection 	15 V
<ul style="list-style-type: none"> • at DC full-scale value for signal<0> recognition 	5 V
control current at minimum control supply voltage	
<ul style="list-style-type: none"> • at DC 	13 mA
control current at DC rated value	15 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
<ul style="list-style-type: none"> • side-by-side mounting 	Yes
height	100 mm
width	67.5 mm
depth	142 mm; 156.0 mm up to product revision E05
Connections/ Terminals	
type of electrical connection	
<ul style="list-style-type: none"> • for main current circuit 	Ring cable lug connection
<ul style="list-style-type: none"> • for auxiliary and control circuit 	ring cable connection
type of connectable conductor cross-sections	
<ul style="list-style-type: none"> • for main contacts for JIS cable lug 	JIS C 2805 R 2-5, 5,5-5, 8-5, 14-5
<ul style="list-style-type: none"> • 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	
<ul style="list-style-type: none"> • for auxiliary and control contacts 	
<ul style="list-style-type: none"> — solid 	1x (0.5 ... 2.5 mm ²), 2x (0.5 ... 1.0 mm ²)
<ul style="list-style-type: none"> — finely stranded with core end processing 	1x (0.5 ... 2.5 mm ²), 2x (0.5 ... 1.0 mm ²)
<ul style="list-style-type: none"> — finely stranded without core end processing 	1x (0.5 ... 2.5 mm ²), 2x (0.5 ... 1.0 mm ²)
<ul style="list-style-type: none"> • at AWG cables for auxiliary and control contacts 	1x (AWG 20 ... 12)
<ul style="list-style-type: none"> • tightening torque for main contacts with screw-type terminals 	2 ... 2.5 N·m
<ul style="list-style-type: none"> • tightening torque for auxiliary and control contacts with screw-type terminals 	0.5 ... 0.6 N·m
<ul style="list-style-type: none"> • tightening torque [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	
<ul style="list-style-type: none"> • for main contacts 	M5
<ul style="list-style-type: none"> • of the auxiliary and control contacts 	M3
stripped length of the cable	
<ul style="list-style-type: none"> • for main contacts 	10 mm

<ul style="list-style-type: none"> for auxiliary and control contacts 	10 mm
UL/CSA ratings	
Safety related data	
protection class IP on the front acc. to IEC 60529	IP00; IP20 with cover
touch protection on the front acc. to IEC 60529	finger-safe, for vertical contact from the front with cover
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
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 <ul style="list-style-type: none"> of gS fuse 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 5SE1363 3NE1817-0 3NC1450 3NC2280
manufacturer's article number <ul style="list-style-type: none"> of DIAZED fuse usable of NEOZED fuse usable 	5SB321 5SE2335; These fuses have a smaller rated current than the semiconductor relays

Certificates/ approvals		
General Product Approval	EMC	Declaration of Conformity



[Miscellaneous](#)

Test Certificates	other
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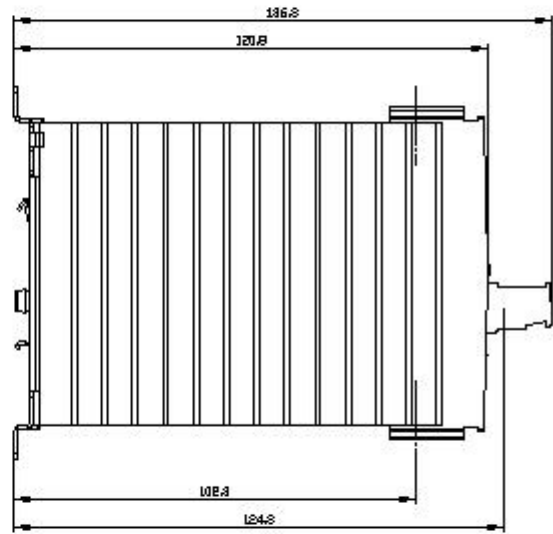
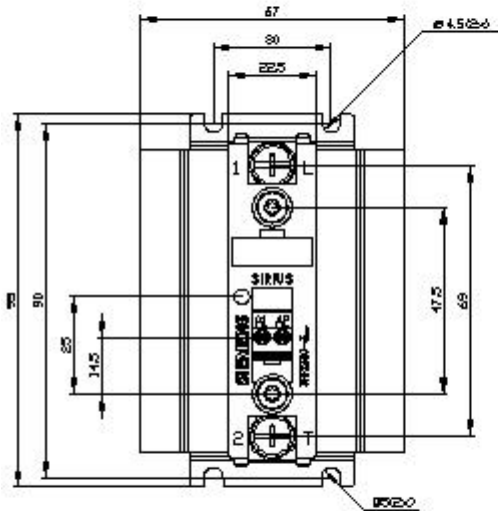
[Type Test Certificates/Test Report](#)

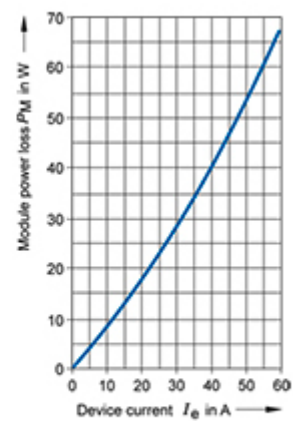
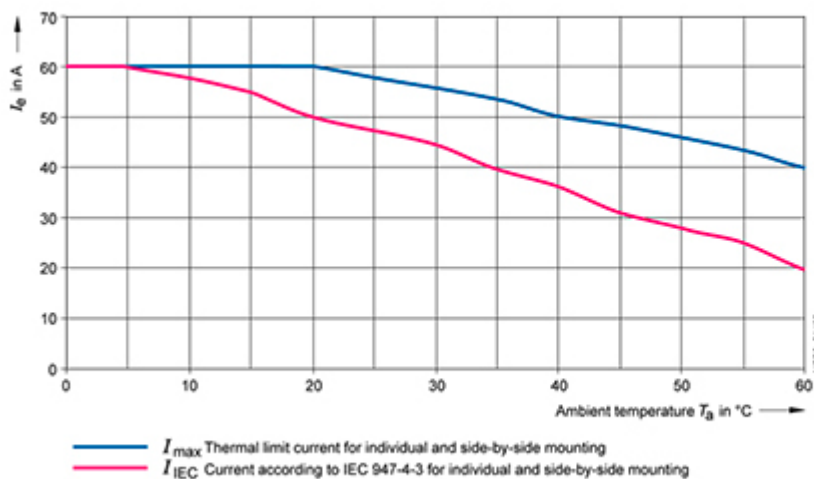
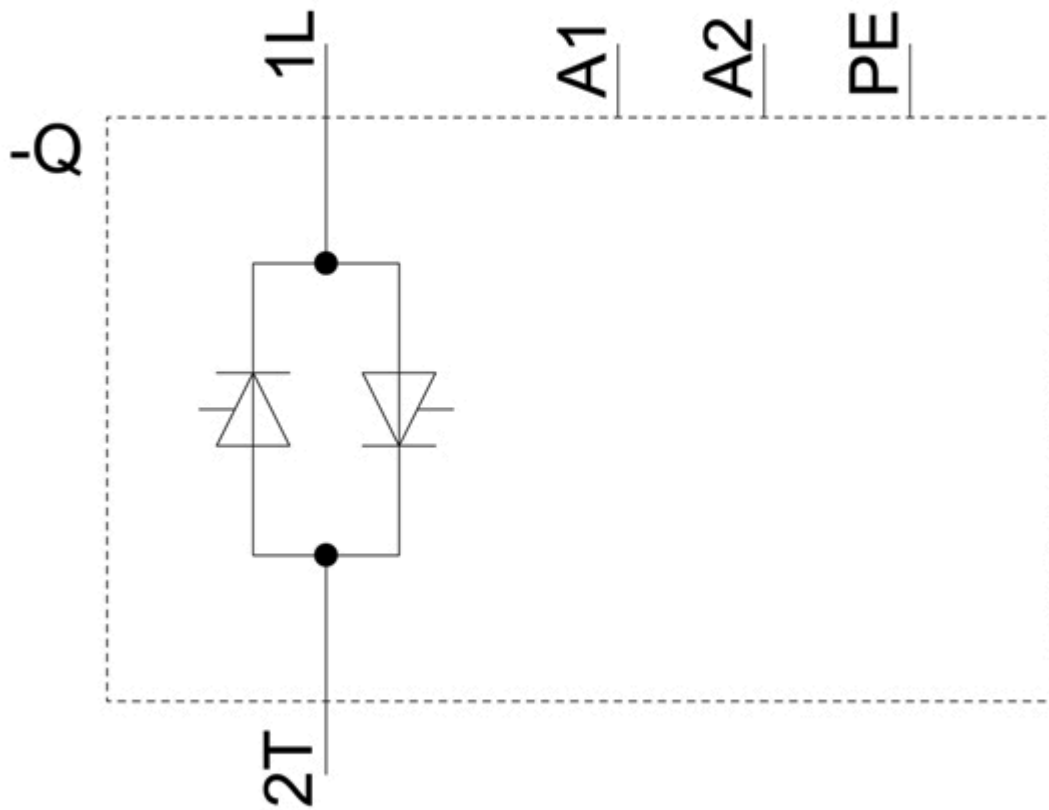
[Confirmation](#)



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?mfcb=3RF2350-3AA04>
 Cax online generator





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