

phase-out type solid-state contactor 1-phase 3RF2 AC 51 / 88 A / 40 °C 48-600 V / 4-30 V DC ring cable terminal blocking voltage 1200 V phased-out product, no successor available!

product brand name	SIRIUS
product designation	solid-state contactor
product type designation	3RF23
manufacturer's article number	
• _1 of the accessories that can be ordered	3RF2900-3PA88
• _3 of the accessories that can be ordered	3RF2900-0EA18
• _4 of the accessories that can be ordered	3RF2990-0GA16
product designation	
• _1 of the accessories that can be ordered	terminal cover
• _3 of the accessories that can be ordered	converter
• _4 of the accessories that can be ordered	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	117 W
• at AC in hot operating state per pole	117 W
• without load current share typical	0.6 W
insulation voltage rated value	600 V
degree of pollution	3
surge voltage resistance of main circuit rated value	6 kV
protection class IP	IP00
protection class IP on the front according to IEC 60529	IP00
shock resistance according to IEC 60068-2-27	15 g / 11 ms
vibration resistance according to IEC 60068-2-6	2 g
reference code according to IEC 81346-2	Q
Substance Prohibitance (day/month/year)	07/01/2006
SVHC substance name	Lead CAS-No. 7439-92-1 Lead monoxide (lead oxide) CAS-No. 1317-36-8 2-methyl-1-(4-methylthiophenyl)-2-morpholinopropan-1-one CAS-No. 71868-10-5 Melamine CAS-No. 108-78-1
Net Weight	3.165 kg

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
type of voltage of the operating voltage	AC
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	88 A
• at AC-51 rated value	88 A
• at AC-51 according to IEC 60947-4-3	88 A
• according to UL 508 rated value	80 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	1 150 A
I ² t 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 maximum permissible	30 V
control supply voltage 1 at DC	4 ... 30 V
control supply voltage at DC - initial value for signal <1> detection - full-scale value for signal<0> recognition	4 V 1 V
control current at minimum control supply voltage at DC	18 mA
control current at DC rated value	20 mA
ON-delay time	1 ms; additionally max. one half-wave
OFF-delay time	1 ms; additionally max. one half-wave
Installation/ mounting/ dimensions	
fastening method side-by-side mounting	Yes
fastening method	screw fixing
design of the thread of the screw for securing the equipment	M4
height	200 mm
width	180 mm
depth	163 mm
Connections/ Terminals	
product component removable terminal for auxiliary and control circuit	Yes
type of electrical connection - for main current circuit - for auxiliary and control circuit	Ring cable lug connection ring terminal lug connection
type of connectable conductor cross-sections - for main contacts for JIS cable lug - for DIN cable lug for main contacts	JIS C 2805 R 2-5, 5,5-5, 8-5, 14-5 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 - finely stranded with core end processing - finely stranded without core end processing - for AWG cables for auxiliary and control contacts	1x (0.5 ... 2.5 mm ²), 2x (0.5 ... 1 mm ²) 1x (0.5 ... 2.5 mm ²), 2x (0.5 ... 1 mm ²) 1x (0.5 ... 2.5 mm ²), 2x (0.5 ... 1 mm ²) 1x (20 ... 12)
tightening torque - for main contacts with screw-type terminals - for auxiliary and control contacts with screw-type terminals	2 ... 2.5 N·m 0.5 ... 0.6 N·m
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 - for main contacts - of the auxiliary and control contacts	M5 M3
stripped length of the cable - for main contacts - for auxiliary and control contacts	10 mm 7 mm
UL/CSA ratings	
operational current according to UL 508 rated value	80 A
Electrical Safety	

touch protection on the front according 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
ambient temperature		
• during operation		-25 ... +60 °C
• during storage		-55 ... +80 °C
Electromagnetic compatibility		
conducted interference		
• due to burst according to IEC 61000-4-4		2 kV / 5 kHz, behavior criterion 2
• due to conductor-earth surge according to IEC 61000-4-5		2 kV, behavior criterion 2
• due to conductor-conductor surge according to IEC 61000-4-5		1 kV, behavior criterion 2
• due to high-frequency radiation according to IEC 61000-4-6		140 dBuV in the frequency range 0.15 ... 80 MHz, behavior criterion 1
field-based interference according to IEC 61000-4-3		80 MHz ... 1 GHz 10 V/m, behavior criterion 1
electrostatic discharge according to IEC 61000-4-2		4 kV contact discharging / 8 kV air discharging, behavior criterion 2
conducted HF interference emissions according to CISPR11		Class A for industrial environment
field-bound HF interference emission according to CISPR11		Class B for the domestic, business and commercial environments
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		3NE1021-2
• of back-up R fuse link for semiconductor protection at NH design usable		3NE8021-1
• of back-up R fuse link for semiconductor protection at cylindrical design 22 x 58 mm usable		3NC2280: These fuses have a smaller rated current than the semiconductor relays
manufacturer's article number		
• of NEOZED fuse usable		5SE2335: These fuses have a smaller rated current than the semiconductor relays
Approvals Certificates		
Environment		General Product Approval
Environmental Conformations     		
EMV	Test Certificates	other
	Type Test Certificates/Test Report	Confirmation Miscellaneous Confirmation 

Further information

Information on the packaging

<https://support.industry.siemens.com/cs/ww/en/view/109813875>

Information for data generation and storage

<https://support.industry.siemens.com/cs/ww/en/view/109995012>

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=3RF2390-3AA45>

Cax online generator

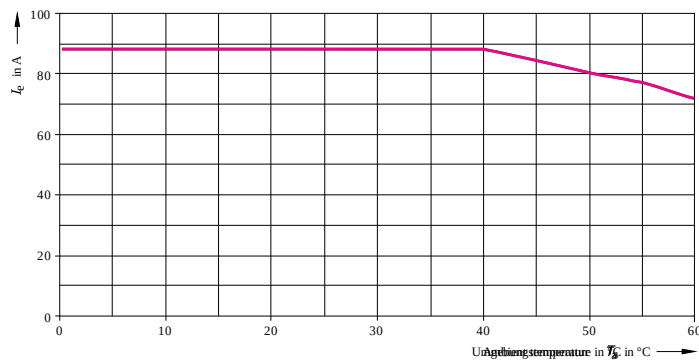
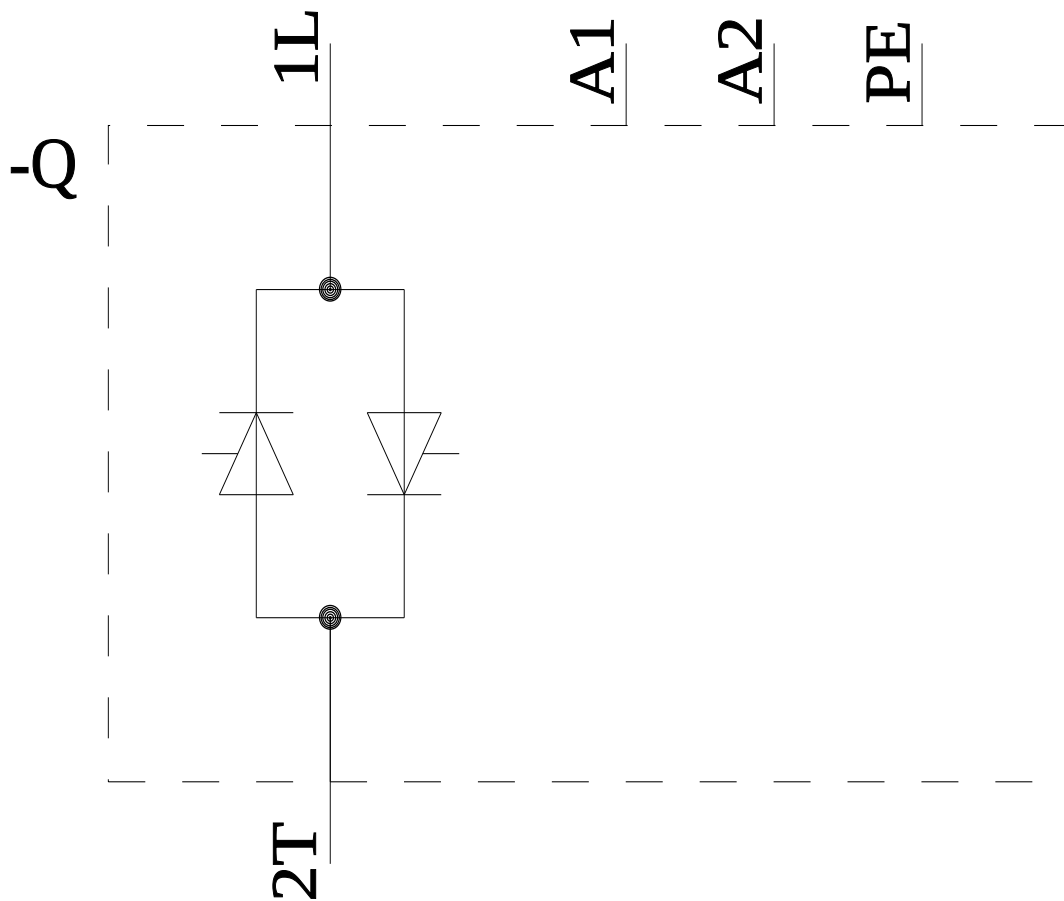
<https://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RF2390-3AA45>

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

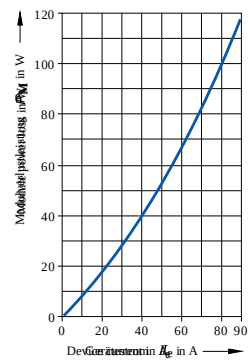
<https://support.industry.siemens.com/cs/ww/en/ps/3RF2390-3AA45>

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

https://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RF2390-3AA45&lang=en



— I_{IEC} Strom nach IEC 947-4-3 bei Einzelaufstellung und Dicht-an-Dicht-Montage



last modified:

4/4/2026