

phase-out type solid-state contactor 1-phase 3RF2 AC 51 / 88 A / 40 °C 24-230 V / 110-230 V AC ring cable terminal 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
• _4 of the accessories that can be ordered	3RF2990-0GA33
product designation	
• _1 of the accessories that can be ordered	terminal cover
• _4 of the accessories that can be ordered	load monitoring

General technical data

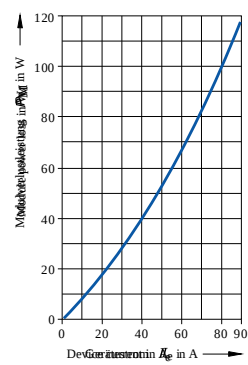
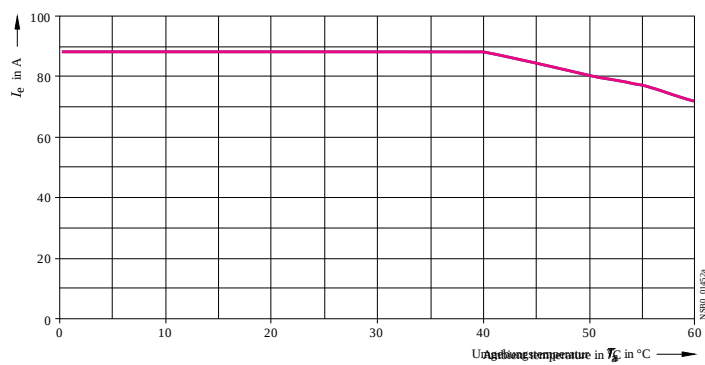
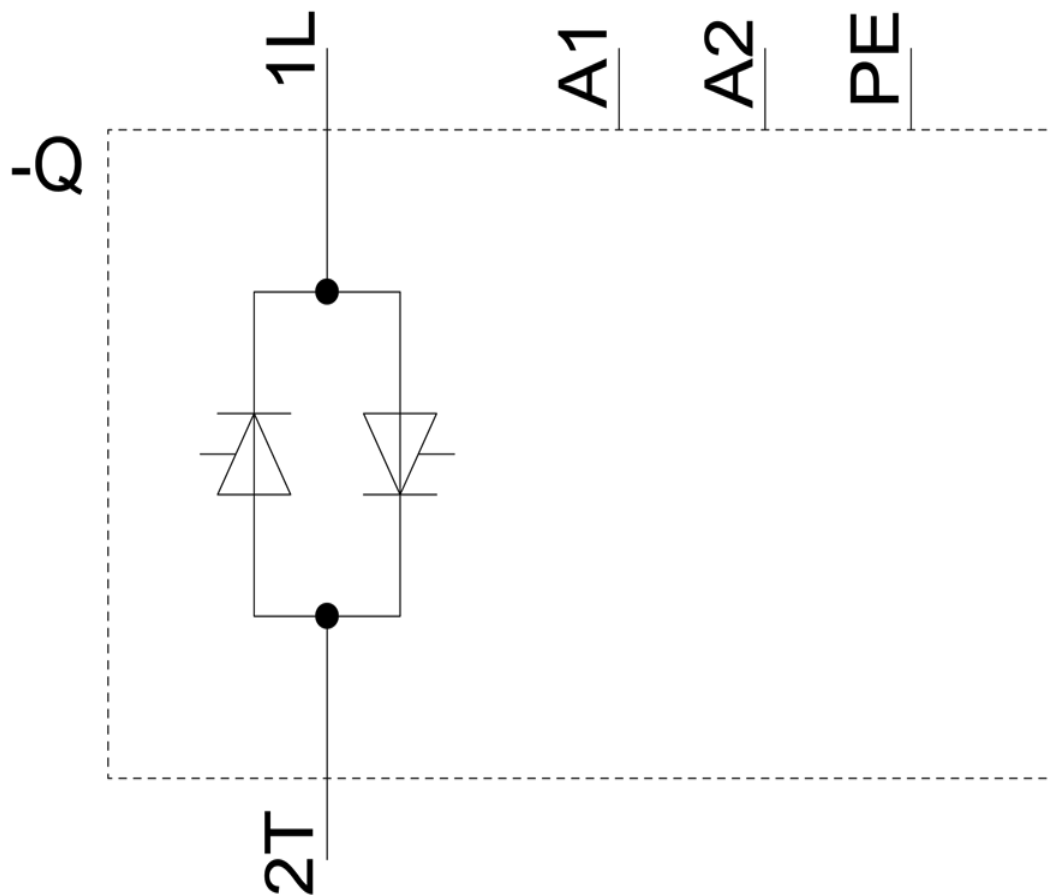
product function	zero-point switching
power loss [W] for rated value of the current	
• at AC in hot operating state	117 W
• at AC in hot operating state per pole	117 W
• without load current share typical	3.5 W
insulation voltage rated value	600 V
degree of pollution	3
surge voltage resistance of main 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	3.155 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	24 ... 230 V
— at 60 Hz rated value	24 ... 230 V
operating frequency rated value	50 ... 60 Hz
operating range relative to the operating voltage at AC	
• at 50 Hz	20 ... 253 V
• at 60 Hz	20 ... 253 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	1 000 V/μs

maximum permissible	
blocking voltage at the thyristor for main contacts maximum permissible	800 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	AC
control supply voltage 1 at AC	
• at 50 Hz	110 ... 230 V
• at 60 Hz	110 ... 230 V
control supply voltage at AC	
• at 50 Hz full-scale value for signal<0> recognition	40 V
• at 60 Hz full-scale value for signal<0> recognition	40 V
• initial value for signal <1> detection	90 V
control supply voltage frequency	
• 1 rated value	50 Hz
• 2 rated value	60 Hz
symmetrical line frequency tolerance	5 Hz
control current at minimum control supply voltage	
• at AC	2 mA
control current at AC rated value	15 mA
ON-delay time	40 ms; additionally max. one half-wave
OFF-delay time	40 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	Ring cable lug connection
• for auxiliary and control circuit	ring terminal lug connection
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 mm ²)
— finely stranded with core end processing	1x (0.5 ... 2.5 mm ²), 2x (0.5 ... 1 mm ²)
— finely stranded without core end processing	1x (0.5 ... 2.5 mm ²), 2x (0.5 ... 1 mm ²)
• for AWG cables for auxiliary and control contacts	1x (20 ... 12)
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 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	M5
• of the auxiliary and control contacts	M3
stripped length of the cable	
• for main contacts	10 mm

• for auxiliary and control contacts	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	3NC2200
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 Confirmations	    
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=3RF2390-3AA22 Cax online generator https://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RF2390-3AA22 Service&Support (Manuals, Certificates, Characteristics, FAQs,...) https://support.industry.siemens.com/cs/ww/en/ps/3RF2390-3AA22 Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...) https://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RF2390-3AA22&lang=en	



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

last modified:

4/4/2026