



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

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 • _3 of the accessories that can be ordered • _4 of the accessories that can be ordered	3RF2900-3PA88 3RF2900-0EA18 3RF2950-0GA16
product designation	
• _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 • at AC in hot operating state per pole • without load current share typical	54 W 54 W 0.5 W
insulation voltage rated value	600 V
degree of pollution	3
type of voltage of the control supply voltage	AC/DC
surge voltage resistance of main circuit rated value	6 kV
shock resistance according to IEC 60068-2-27	15g / 11 ms
vibration resistance according to IEC 60068-2-6	2g
reference code according to IEC 81346-2	Q
Substance Prohibitance (Date)	05/28/2009
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 • 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	
• at 50 Hz • at 60 Hz	40 ... 506 V 40 ... 506 V
operational current	
• at AC-51 rated value • at AC-51 according to IEC 60947-4-3 • according to UL 508 rated value	50 A 36 A 45 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	AC/DC
control supply voltage 1 at AC	
• at 50 Hz	24 ... 24 V
• at 60 Hz	24 ... 24 V
control supply voltage frequency	
• 1 rated value	50 Hz
• 2 rated value	60 Hz
control supply voltage 1	
• at DC rated value	30 V
• at DC	15 ... 24 V
control supply voltage at AC	
• at 50 Hz full-scale value for signal<0> recognition	5 V
• at 60 Hz full-scale value for signal<0> recognition	5 V
control supply voltage	
• at AC initial value for signal <1> detection	14 V
• at DC initial value for signal <1> detection	15 V
• at DC full-scale value for signal<0> recognition	5 V
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
control current at DC rated value	20 mA
ON-delay time	1 ms; additionally max. one half-wave
OFF-delay time	15 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 and snap-on mounting on standard mounting rail 35 mm according to IEC 60715
• side-by-side mounting	Yes
design of the thread of the screw for securing the equipment	M4
height	100 mm
width	67 mm
depth	141 mm
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 mm ²), 2x (2.5 ... 6 mm ²)
— finely stranded with core end processing	2x (1 ... 2.5 mm ²), 2x (2.5 ... 6 mm ²), 1x 10 mm ²
• at AWG cables for main contacts	2x (14 ... 10)
connectable conductor cross-section for main contacts	
• solid or stranded	1.5 ... 6 mm ²
• finely stranded with core end processing	1 ... 10 mm ²
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 • at AWG cables for auxiliary and control contacts AWG number as coded connectable conductor cross section for main contacts tightening torque • for main contacts with screw-type terminals • for auxiliary and control contacts with screw-type terminals tightening torque [lbf·in] • for main contacts with screw-type terminals • for auxiliary and control contacts with screw-type terminals design of the thread of the connection screw • for main contacts • of the auxiliary and control contacts stripped length of the cable • for main contacts • for auxiliary and control contacts	1x (0.5 ... 2.5 mm²), 2x (0.5 ... 1.0 mm²) 1x (AWG 20 ... 12) 10 ... 14 2 ... 2.5 N·m 0.5 ... 0.6 N·m 18 ... 22 lbf·in 4.5 ... 5.3 lbf·in M4 M3 7 mm 7 mm	
Safety related data		
protection class IP on the front according to IEC 60529 touch protection on the front according to IEC 60529	IP20 finger-safe, for vertical contact from the front	
Ambient conditions		
installation altitude at height above sea level maximum ambient temperature • during operation • during storage	1 000 m -25 ... +60 °C -55 ... +80 °C	
Electromagnetic compatibility		
conducted interference • due to burst according to IEC 61000-4-4 • due to conductor-earth surge according to IEC 61000-4-5 • due to conductor-conductor surge according to IEC 61000-4-5 • due to high-frequency radiation according to IEC 61000-4-6 field-based interference according to IEC 61000-4-3 electrostatic discharge according to IEC 61000-4-2 conducted HF interference emissions according to CISPR11 field-bound HF interference emission according to CISPR11	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 80 MHz ... 1 GHz 10 V/m, behavior criterion 1 4 kV contact discharging / 8 kV air discharging, behavior criterion 2 Class A for industrial environment 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 • 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 manufacturer's article number • of NEOZED fuse usable	3NE1817-0 5SE1363 3NE1817-0 3NC1450 3NC2280 5SE2335; These fuses have a smaller rated current than the semiconductor relays	
Certificates/ approvals		
General Product Approval	EMC	Declaration of Conformity



[Confirmation](#)



Declaration of Conformity	Test Certificates	other	Railway
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[Special Test Certificate](#)

[Type Test Certificates/Test Report](#)

[Confirmation](#)



[Vibration and Shock](#)

Further information

Information on the packaging

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

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=3RF2350-1AA14>

Cax online generator

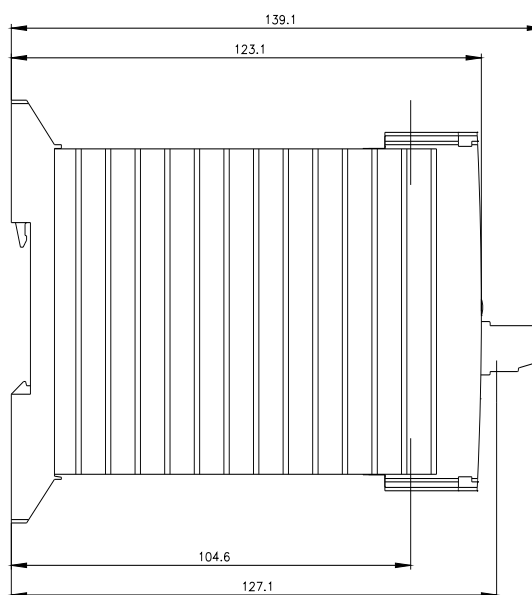
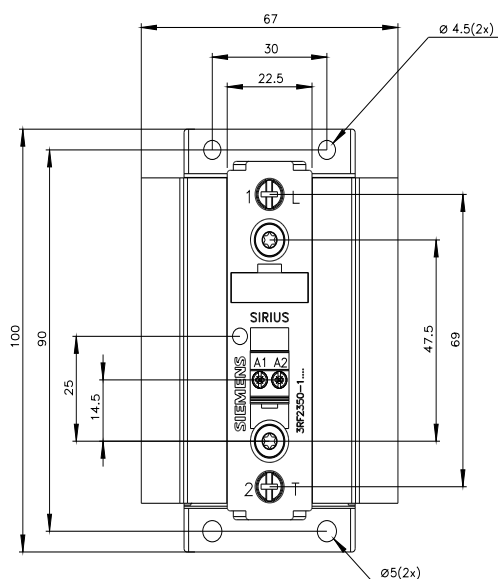
<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RF2350-1AA14>

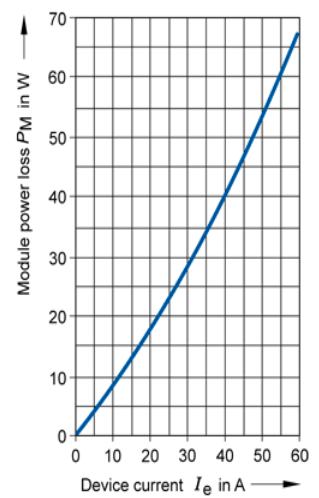
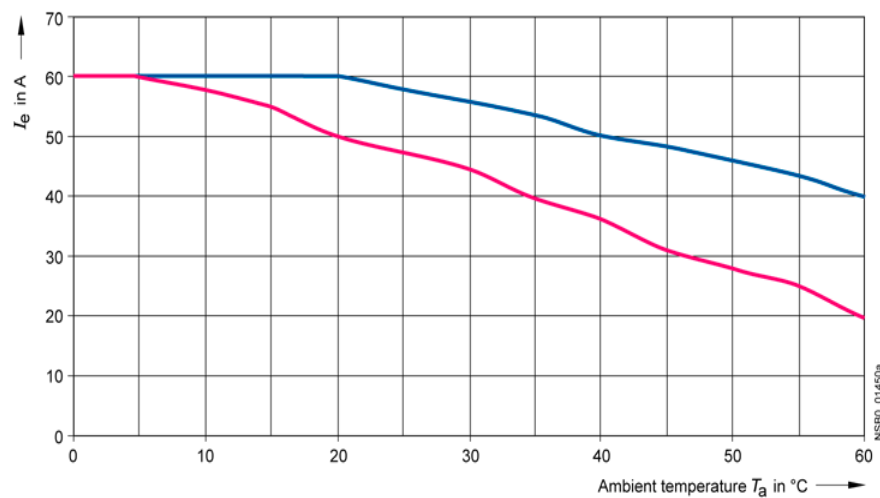
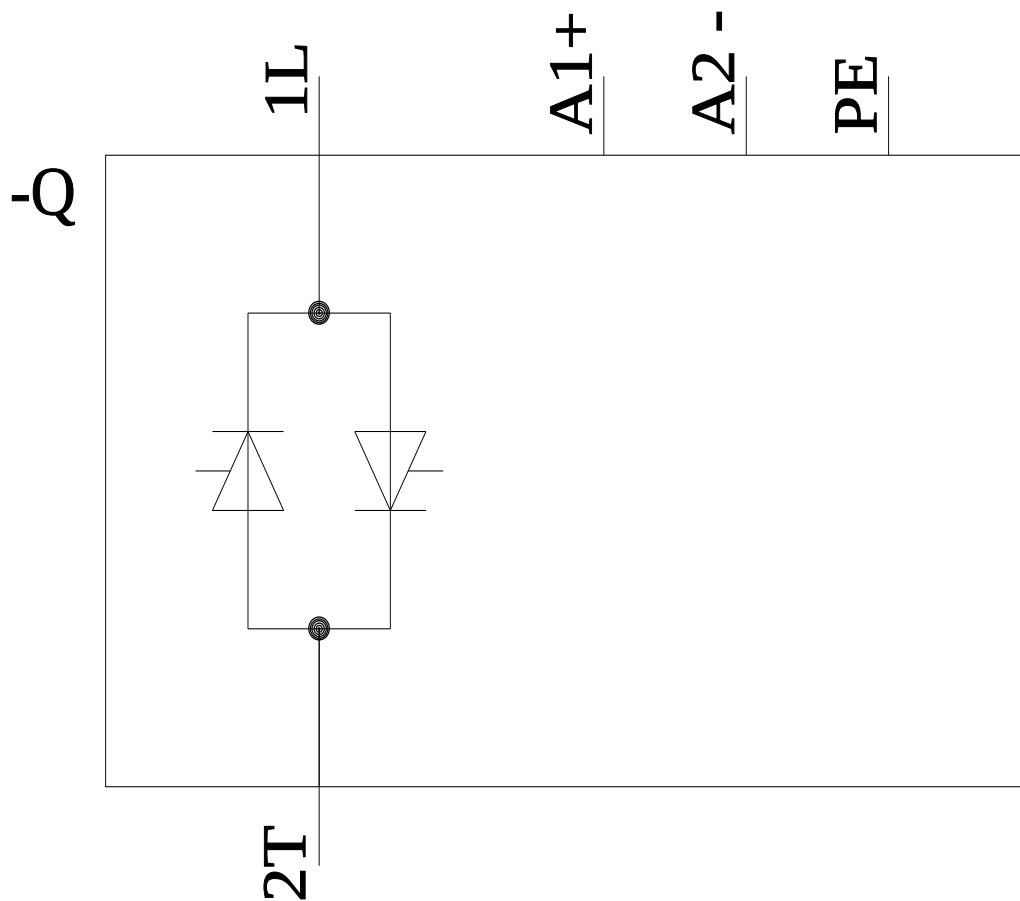
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

<https://support.industry.siemens.com/cs/ww/en/ps/3RF2350-1AA14>

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

http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RF2350-1AA14&lang=en





— I_{max} Thermal limit current for individual and side-by-side mounting
— I_{IEC} Current according to IEC 947-4-3 for individual and side-by-side mounting

last modified:

1/26/2022