



Solid-state contactor 3-phase 3RF2 AC 51 / 50 A / 40 °C 48-600 V / 230 V AC 3-phase controlled Ring cable connection Blocking voltage 1200 V

product brand name	SIRIUS
product designation	solid-state contactor
design of the product	three-phase controlled
product type designation	3RF24
General technical data	
product function	zero-point switching
power loss [W] for rated value of the current	
• at AC in hot operating state	160 W
• at AC in hot operating state per pole	53.33 W
• without load current share typical	3.5 W
insulation voltage rated value	600 V
degree of pollution	3
type of voltage	
• of the operating voltage	AC
• of the control supply voltage	AC
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	15g / 11 ms
vibration resistance according to IEC 60068-2-6	2g
reference code according to IEC 81346-2	Q
Substance Prohibitance (Date)	07/01/2006
SVHC substance name	Lead - 7439-92-1 Lead monoxide (lead oxide) - 1317-36-8 Dibutylbis(pentane-2,4-dionato-O,O')tin - 22673-19-4
Weight	1.213 kg
Main circuit	
number of poles for main current circuit	3
number of NO contacts for main contacts	3
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
relative symmetrical tolerance of the operating frequency	10 %
operating range relative to the operating voltage at AC	
• at 50 Hz	40 ... 660 V
• at 60 Hz	40 ... 660 V
operational current	

<ul style="list-style-type: none"> • at AC-51 rated value • at AC-51 according to IEC 60947-4-3 • according to UL 508 rated value 	50 A 38 A 38 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
I²t 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 <ul style="list-style-type: none"> • at 50 Hz • at 60 Hz 	180 ... 230 V 180 ... 230 V
control supply voltage frequency <ul style="list-style-type: none"> • 1 rated value • 2 rated value 	45 Hz 66 Hz
control supply voltage at AC <ul style="list-style-type: none"> • at 50 Hz full-scale value for signal<0> recognition • at 60 Hz full-scale value for signal<0> recognition 	40 V 180 V
control supply voltage <ul style="list-style-type: none"> • at AC initial value for signal <1> detection 	180 V
symmetrical line frequency tolerance	5 Hz
control current at minimum control supply voltage <ul style="list-style-type: none"> • at AC 	2 mA
control current at AC rated value	15 mA
ON-delay time	40 ms; additionally max. one half-wave
Auxiliary circuit	
type of switching contact	normally open contact (NO)
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 side-by-side mounting	Yes
fastening method	screw fixing
design of the thread of the screw for securing the equipment	M4
height	150 mm
width	119.5 mm
depth	130 mm
Connections/ Terminals	
product component removable terminal for auxiliary and control circuit	Yes
type of electrical connection <ul style="list-style-type: none"> • for main current circuit • for auxiliary and control circuit 	Ring cable lug connection screw-type terminals
type of connectable conductor cross-sections <ul style="list-style-type: none"> • 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 <ul style="list-style-type: none"> • for auxiliary and control contacts <ul style="list-style-type: none"> — 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 ... 1.0 mm ²) 1x (0.5 ... 2.5 mm ²), 2x (0.5 ... 1.0 mm ²) 1x (0.5 ... 2.5 mm ²), 2x (0.5 ... 1.0 mm ²) 1x (AWG 20 ... 12)
tightening torque <ul style="list-style-type: none"> • 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]	
<ul style="list-style-type: none"> for main contacts with screw-type terminals for auxiliary and control contacts with screw-type terminals 	18 ... 22 lbf-in 7.5 ... 5.3 lbf-in
design of the thread of the connection screw	
<ul style="list-style-type: none"> for main contacts of the auxiliary and control contacts 	M5 M3
stripped length of the cable	
<ul style="list-style-type: none"> for main contacts for auxiliary and control contacts 	7 mm 7 mm
Electrical Safety	
protection class IP on the front according to IEC 60529	IP00
Ambient conditions	
installation altitude at height above sea level maximum	1 000 m
ambient temperature	
<ul style="list-style-type: none"> during operation during storage 	-25 ... +60 °C -55 ... +80 °C
Electromagnetic compatibility	
conducted interference	
<ul style="list-style-type: none"> 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 	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
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 A for industrial environment
Short-circuit protection, design of the fuse link	
manufacturer's article number <ul style="list-style-type: none"> of full range R fuse link 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 5SE1350: Maximum operating voltage 400 V! 3NE8018-1 3NC1450 3NC2280
manufacturer's article number of the gG fuse at NH design usable <ul style="list-style-type: none"> up to 460 V 	3NA3812: These fuses have a smaller rated current than the semiconductor relays

Approvals Certificates

General Product Approval	EMV
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Test Certificates	other	Environment
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[Type Test Certificates/Test Report](#)

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[Environmental Conformations](#)

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=3RF2450-3AC55>

Cax online generator

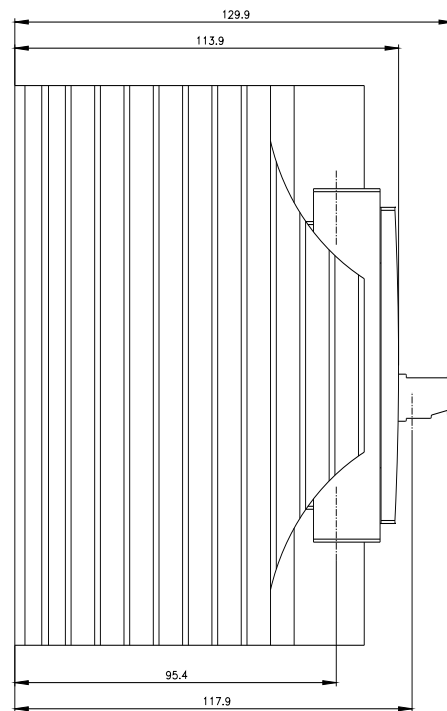
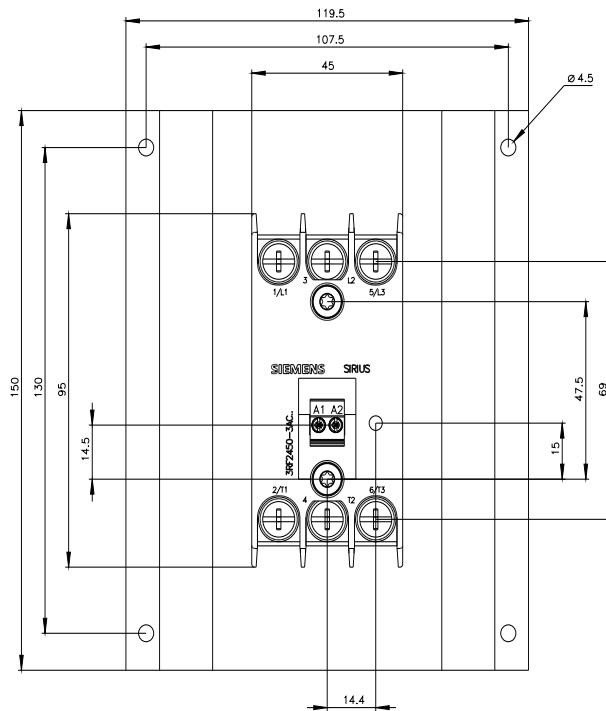
<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RF2450-3AC55>

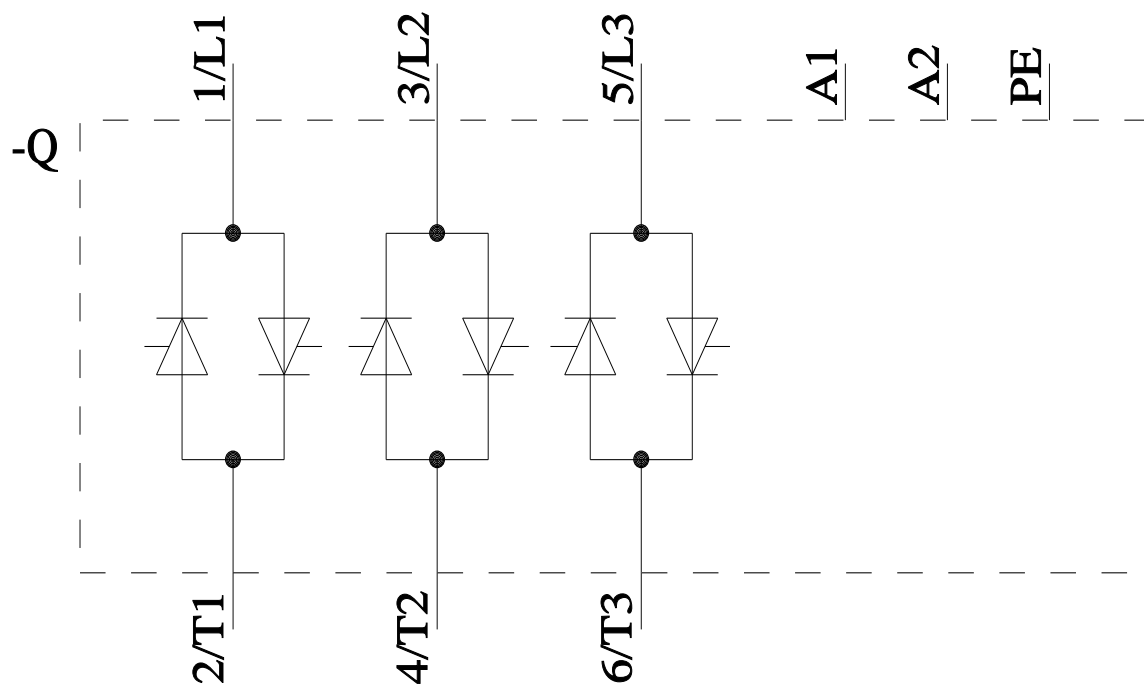
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

<https://support.industry.siemens.com/cs/ww/en/ps/3RF2450-3AC55>

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

http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RF2450-3AC55&lang=en





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