



phase-out type solid-state contactor 3-phase 3RF2 AC 51 / 50 A / 40 °C 48-600 V / 230 V AC 3-phase controlled screw terminal blocking voltage 1200 V

product brand name	SIRIUS
product designation	solid-state contactor
design of the product	3-pole 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
surge voltage resistance of main circuit rated value	6 kV
protection class IP	IP20
protection class IP on the front according to IEC 60529	IP20
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 Dibutylbis(pentane-2,4-dionato-O,O')tin CAS-No. 22673-19-4
Net 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	
• at AC-1 at 400 V rated value	50 A
• at AC-51 rated value	50 A

<ul style="list-style-type: none"> at AC-51 according to IEC 60947-4-3 according to UL 508 rated value 	38 A 38 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	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 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 initial value for signal <1> detection 	40 V 180 V 180 V
control supply voltage frequency	
<ul style="list-style-type: none"> 1 rated value 2 rated value 	45 Hz 66 Hz
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
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 	screw-type terminals screw-type terminals
type of connectable conductor cross-sections	
<ul style="list-style-type: none"> for main contacts <ul style="list-style-type: none"> — solid — finely stranded with core end processing for AWG cables for main contacts 	2x (1.5 ... 2.5 mm ²), 2x (2.5 ... 6 mm ²) 2x (1 ... 2.5 mm ²), 2x (2.5 ... 6 mm ²), 1x 10 mm ² 2x (14 ... 10)
connectable conductor cross-section for main contacts	
<ul style="list-style-type: none"> solid or stranded finely stranded with core end processing 	1.5 ... 6 mm ² 1 ... 10 mm ²
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 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)
AWG number as coded connectable conductor cross section for main contacts	14 ... 10
tightening torque	
<ul style="list-style-type: none"> for main contacts with screw-type terminals 	2 ... 2.5 N·m

<ul style="list-style-type: none"> for auxiliary and control contacts with screw-type terminals 	0.5 ... 0.6 N·m
tightening torque [lbf·in]	
<ul style="list-style-type: none"> for main contacts with screw-type terminals 	18 ... 22 lbf·in
<ul style="list-style-type: none"> for auxiliary and control contacts with screw-type terminals 	7.5 ... 5.3 lbf·in
design of the thread of the connection screw	
<ul style="list-style-type: none"> for main contacts 	M4
<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 	7 mm

UL/CSA ratings

operational current according to UL 508 rated value	38 A
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Electrical Safety

touch protection on the front according to IEC 60529	finger-safe, for vertical contact from the front
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Ambient conditions

installation altitude at height above sea level maximum	1 000 m
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ambient temperature

<ul style="list-style-type: none"> during operation 	-25 ... +60 °C
<ul style="list-style-type: none"> during storage 	-55 ... +80 °C

Electromagnetic compatibility

conducted interference

<ul style="list-style-type: none"> due to burst according to IEC 61000-4-4 	2 kV / 5 kHz, behavior criterion 2
<ul style="list-style-type: none"> due to conductor-earth surge according to IEC 61000-4-5 	2 kV, behavior criterion 2
<ul style="list-style-type: none"> due to conductor-conductor surge according to IEC 61000-4-5 	1 kV, behavior criterion 2
<ul style="list-style-type: none"> due to high-frequency radiation according to IEC 61000-4-6 	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
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conducted HF interference emissions according to CISPR11	Class A for industrial environment
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field-bound HF interference emission according to CISPR11	Class A for industrial environment
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Short-circuit protection, design of the fuse link

<p>manufacturer's article number</p> <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 	<p>3NE1817-0</p> <p>5SE1350: Maximum operating voltage 400 V!</p> <p>3NE8018-1</p> <p>3NC1450</p> <p>3NC2280</p>
<p>manufacturer's article number of the gG fuse at NH design usable</p> <ul style="list-style-type: none"> up to 460 V 	<p>3NA3812: These fuses have a smaller rated current than the semiconductor relays</p>

Approvals Certificates

Environment	General Product Approval
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[Environmental Conformations](#)



EMV	Test Certificates	other
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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=3RF2450-1AC55>

Cax online generator

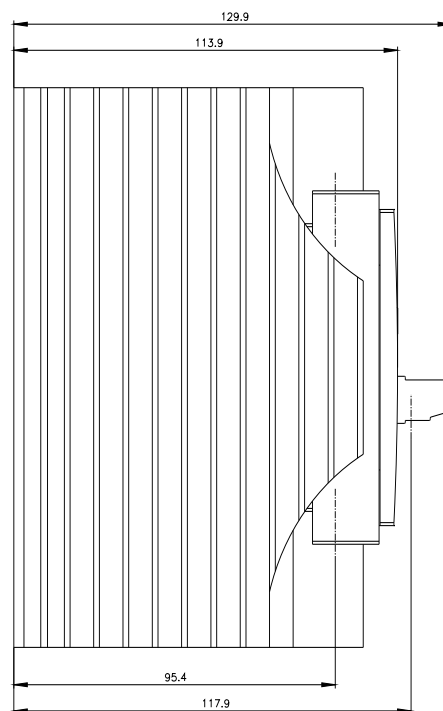
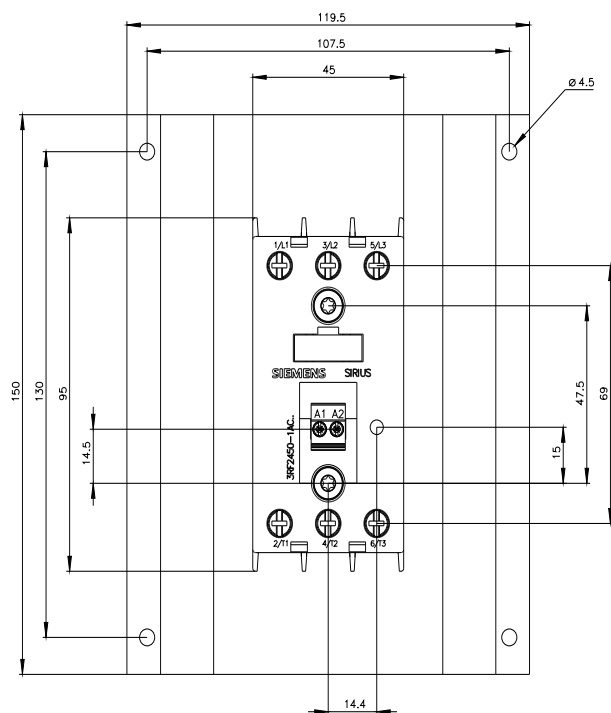
<https://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RF2450-1AC55>

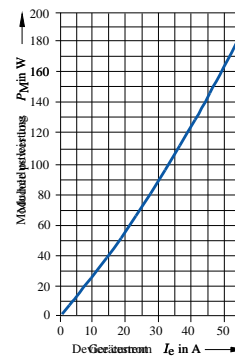
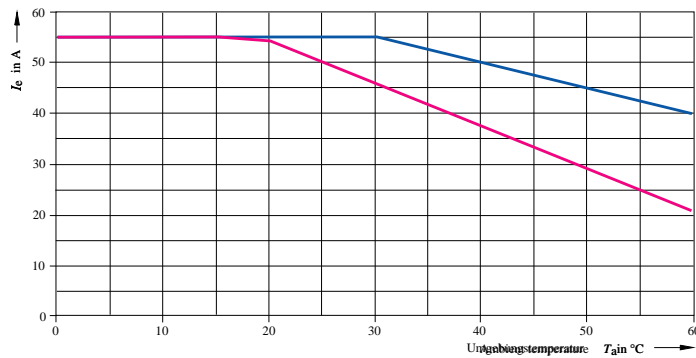
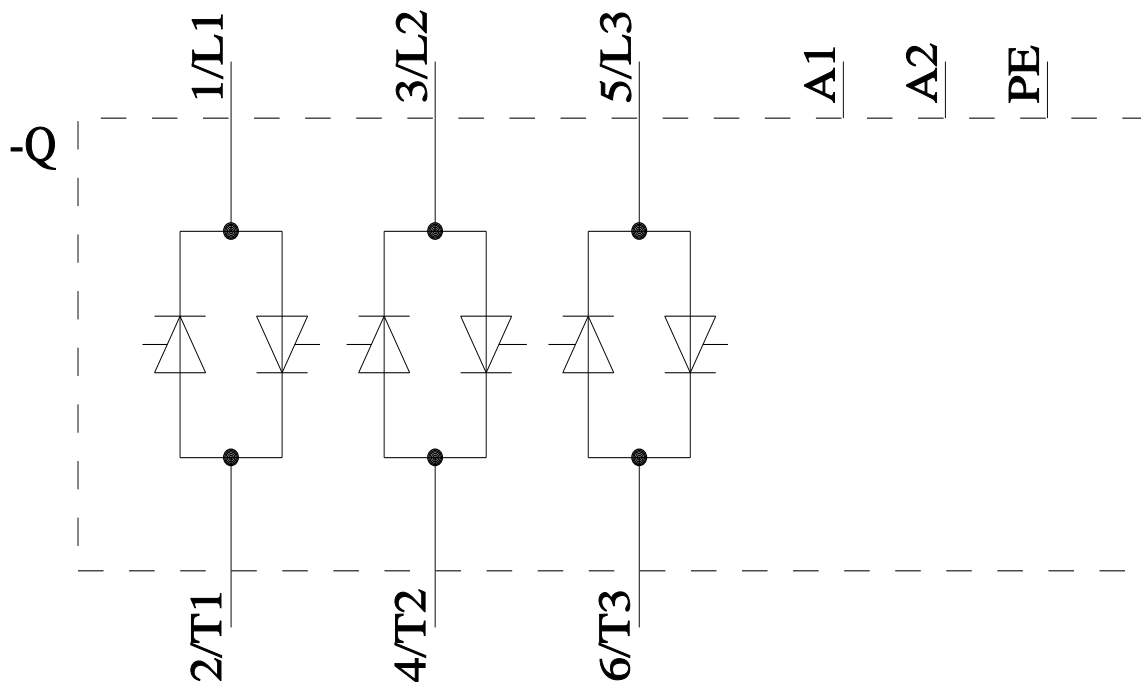
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

<https://support.industry.siemens.com/cs/ww/en/ps/3RF2450-1AC55>

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

https://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RF2450-1AC55&lang=en





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

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4/4/2026