



phase-out type semiconductor relay, 3-phase 3RF2 55 A / 40 °C 48-600 V / 4-30 V DC 3-phase controlled spring-loaded terminal blocking voltage 1200 V for mounting on available cooling surfaces

product brand name	SIRIUS
product designation	solid-state relay
design of the product	3-pole controlled
product type designation	3RF22
manufacturer's article number	
• _2 of the accessories that can be ordered	3RF2900-0EA18
product designation	
• _2 of the accessories that can be ordered	converter
General technical data	
product function	zero-point switching
power loss [W] for rated value of the current	
• at AC in hot operating state	226 W
• at AC in hot operating state per pole	226 W
• without load current share typical	0.5 W
insulation voltage rated value	600 V
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 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	0.133 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 rated value maximum	55 A
operational current	
• at AC-1 at 400 V rated value	55 A
• at AC-51 rated value	20 A
• according to UL 508 rated value	20 A
ampacity maximum	55 A
operational current minimum	500 mA
rate of voltage rise at the thyristor for main contacts maximum permissible	100 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	600 A
I²t value maximum	1 800 A ² ·s
Control circuit/ Control	
type of voltage of the control supply voltage	DC
control supply voltage 1 at DC	4 ... 30 V
control supply voltage at DC	
• initial value for signal <1> detection	4 V
• full-scale value for signal<0> recognition	1 V
control current at minimum control supply voltage	
• at DC	22 mA
control current at DC rated value	30 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
tightening torque of fixing screw maximum	1.5 N·m
tightening torque [lbf·in] of fixing screw maximum	13 lbf·in
height	95 mm
width	45 mm
depth	47 mm
Connections/ Terminals	
product component removable terminal for auxiliary and control circuit	Yes
type of electrical connection	
• for main current circuit	spring-loaded terminals
• for auxiliary and control circuit	spring-loaded terminals
type of connectable conductor cross-sections	
• for main contacts	
— solid	2x (0.5 ... 2.5 mm ²)
— finely stranded with core end processing	2x (0.5 ... 1.5 mm ²)
— finely stranded without core end processing	2x (0.5 ... 2.5 mm ²)
• for AWG cables for main contacts	2x (18 ... 14)
connectable conductor cross-section for main contacts	
• solid or stranded	0.5 ... 2.5 mm ²
• finely stranded with core end processing	0.5 ... 1.5 mm ²
• finely stranded without core end processing	0.5 ... 2.5 mm ²
type of connectable conductor cross-sections	
• for auxiliary and control contacts	
— solid	0.5 ... 1.5 mm ²
— finely stranded with core end processing	0.5 ... 2.5 mm ²
— finely stranded without core end processing	0.5 ... 2.5 mm ²
• for AWG cables for auxiliary and control contacts	1x (20 ... 12)
AWG number as coded connectable conductor cross	10 ... 14

section for main contacts			
tightening torque			
for main contacts with screw-type terminals	2 ... 2.5 N·m		
design of the thread of the connection screw			
for main contacts	M4		
stripped length of the cable			
for main contacts	10 mm		
for auxiliary and control contacts	10 mm		
UL/CSA ratings			
operational current according to UL 508 rated value	20 A		
Electrical Safety			
touch protection on the front according to IEC 60529	finger-safe, for vertical contact from the front		
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		
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			
of full range R fuse link for semiconductor protection at NH design usable	3NE1803-0; These fuses have a smaller rated current than the semiconductor relays		
of back-up R fuse link for semiconductor protection at NH design usable	3NE8018-1		
of back-up R fuse link for semiconductor protection at cylindrical design 14 x 51 mm usable	3NC1450; These fuses have a smaller rated current than the semiconductor relays		
of back-up R fuse link for semiconductor protection at cylindrical design 22 x 58 mm usable	3NC2250; These fuses have a smaller rated current than the semiconductor relays		
manufacturer's article number of the gG fuse at NH design usable			
up to 460 V	3NA3807-6; These fuses have a smaller rated current than the semiconductor relays		
up to 600 V	3NA3805-6; These fuses have a smaller rated current than the semiconductor relays		
Approvals Certificates			
Environment	General Product Approval		
Environmental Confirmations	    		
General Product Approval	EMV	Test Certificates	other
 	Type Test Certificates/Test Report	Confirmation	Miscellaneous
		Confirmation	
other			



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=3RF2255-2AC45>

Cax online generator

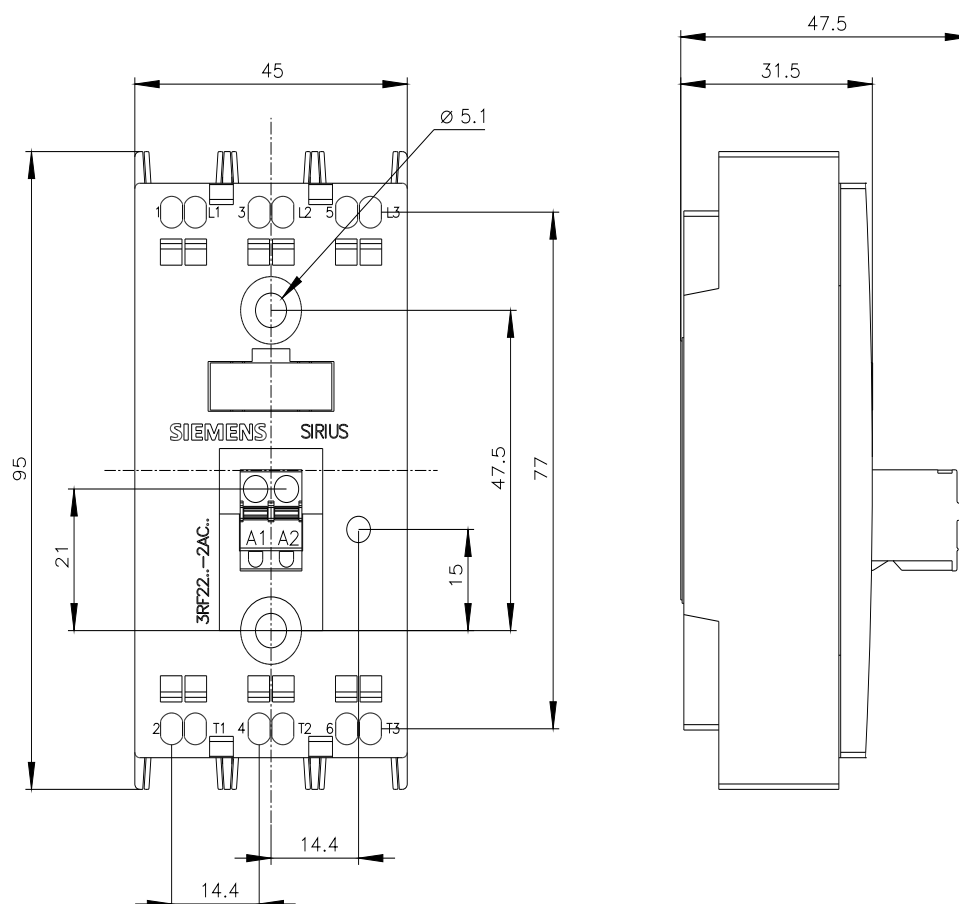
<https://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RF2255-2AC45>

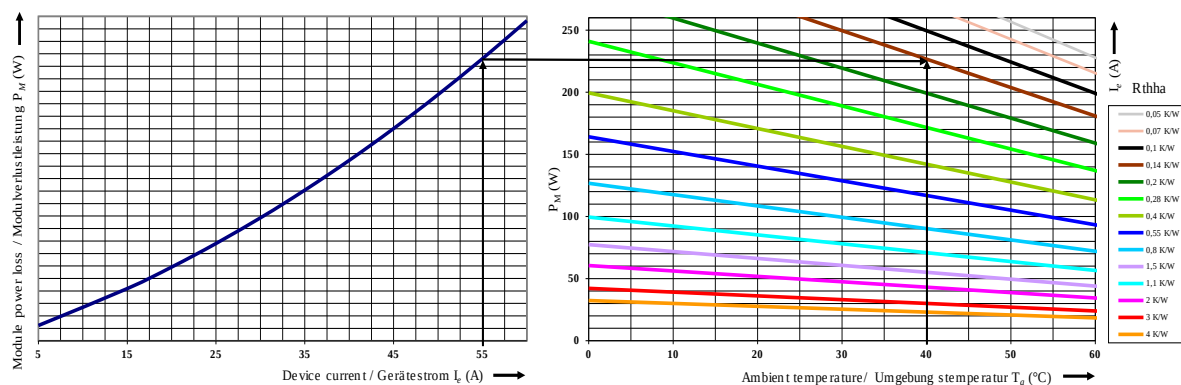
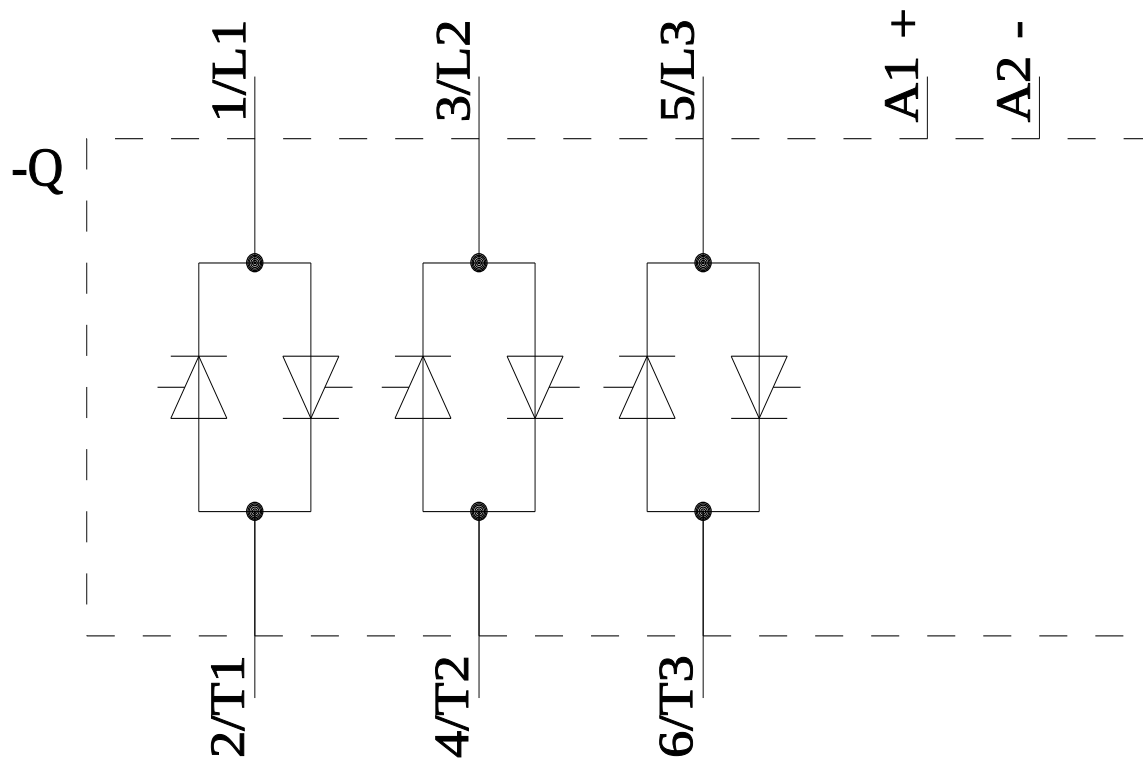
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

<https://support.industry.siemens.com/cs/ww/en/ps/3RF2255-2AC45>

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

https://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RF2255-2AC45&lang=en





last modified:

4/4/2026