SIEMENS

Data sheet 3RF2230-2AB45

Semiconductor relay, 3-phase 3RF2 30 A / 40 °C 48-600 V / 4-30 V DC 2-phase controlled Spring-type terminal Blocking voltage 1200 V

product brand name	SIRIUS
product designation	solid-state relay
design of the product	two-phase 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	81 W
● at AC in hot operating state per pole	81 W
● without load current share typical	0.9 W
insulation voltage rated value	600 V
type of voltage of the control supply voltage	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)	07/01/2006
Main circuit	
number of poles for main current circuit	3
number of NO contacts for main contacts	2
number of NC contacts for main contacts	0
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-51 rated value	20 A
● according to UL 508 rated value	20 A
ampacity maximum	30 A
operational current minimum	500 mA
rate of voltage rise at the thyristor for main contacts maximum permissible	500 V/µs
blocking voltage at the thyristor for main contacts	1 200 V

maximum permissible	
reverse current of the thyristor	10 mA
derating temperature	40 °C
surge current resistance rated value	300 A
I2t value maximum	450 A²·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
● at DC 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
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
● side-by-side mounting	Yes
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	
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 mm²)
— finely stranded with core end processing	2x (0.5 ... 1.5 mm²)
— finely stranded without core end processing	2x (0.5 ... 2.5 mm²)
● at AWG cables for main contacts	2x (18 ... 14)
connectable conductor cross-section for main contacts	
● solid or stranded	0.5 ... 2.5 mm²
● finely stranded with core end processing	0.5 ... 1.5 mm²
● finely stranded without core end processing	0.5 ... 2.5 mm²
type of connectable conductor cross-sections	
● for auxiliary and control contacts	
— solid	0.5 ... 1.5 mm²
— finely stranded with core end processing	0.5 ... 2.5 mm²
— finely stranded without core end processing	0.5 ... 2.5 mm²
● at AWG cables for auxiliary and control contacts	1x (AWG 20 ... 12)
AWG number as coded connectable conductor cross section for main contacts	10 ... 14
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
Safety related data	
protection class IP on the front according to IEC	IP20

60529	
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	3NE1814-0; These fuses have a smaller rated current than the semiconductor relays
● of back-up R fuse link for semiconductor protection at NH design usable	3NE8003-1
● of back-up R fuse link for semiconductor protection at cylindrical design 10 x 38 mm usable	3NC1025; These fuses have a smaller rated current than the semiconductor relays
● of back-up R fuse link for semiconductor protection at cylindrical design 14 x 51 mm usable	3NC1430
● of back-up R fuse link for semiconductor protection at cylindrical design 22 x 58 mm usable	3NC2232
manufacturer's article number of the gG fuse at NH design usable	
● up to 460 V	3NA3803-6; These fuses have a smaller rated current than the semiconductor relays
● up to 600 V	3NA3803-6; These fuses have a smaller rated current than the semiconductor relays

Certificates/ approvals

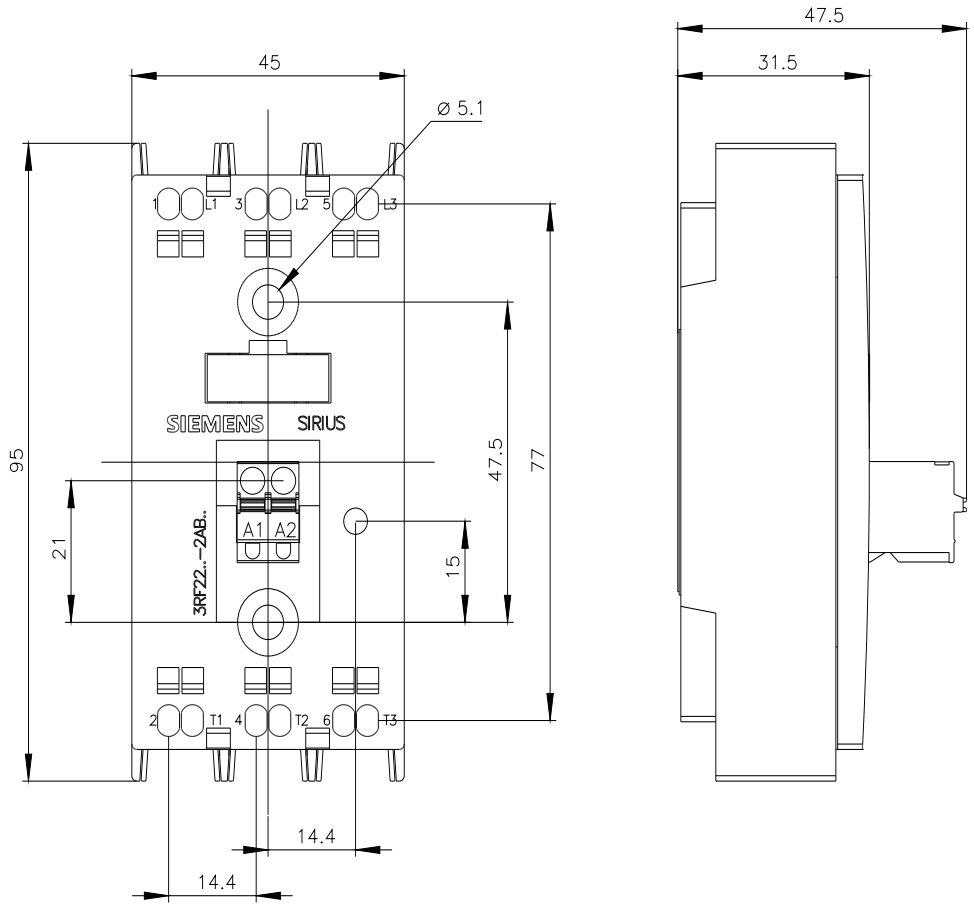
General Product Approval				EMC	Declaration of Conformity
CSA	Confirmation	UR	EAC	RCM	UKCA

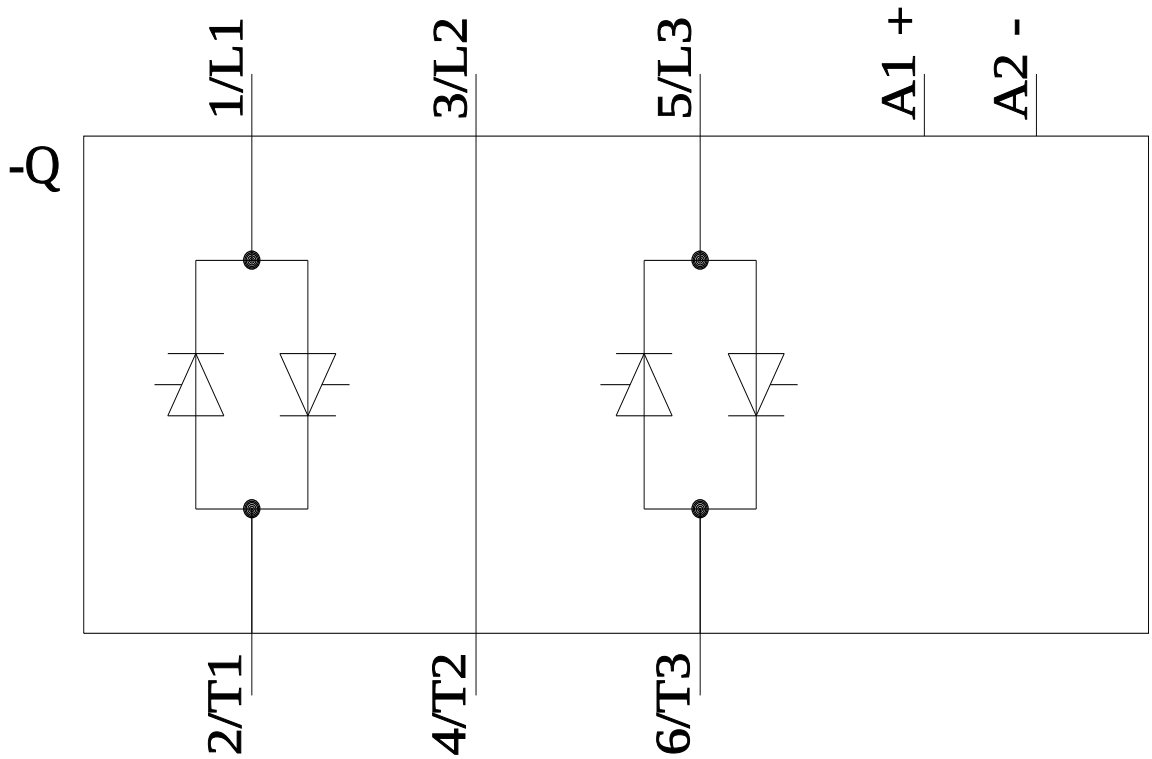
Declaration of Conformity	Test Certificates	other	
CE EG-Konf.	Type Test Certific-ates/Test Report	Confirmation	VDE

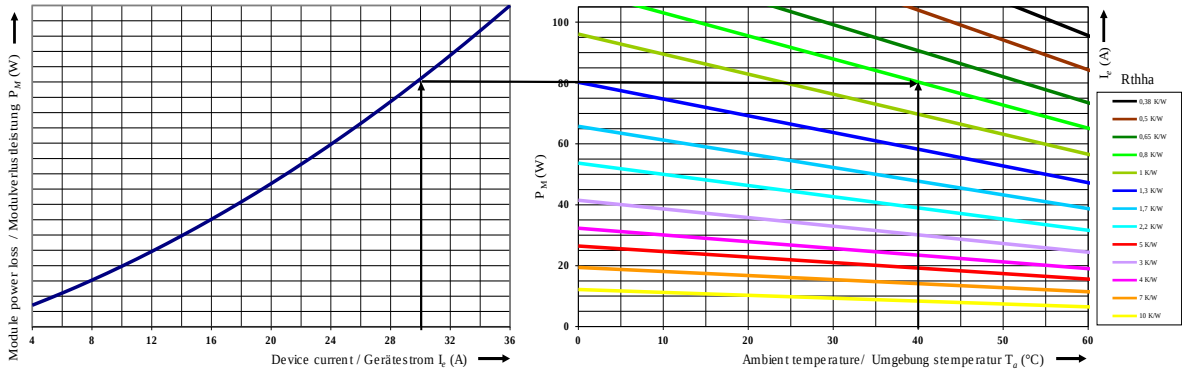
Further information

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=3RF2230-2AB45
Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RF2230-2AB45
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)
https://support.industry.siemens.com/cs/ww/en/ps/3RF2230-2AB45
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RF2230-2AB45&lang=en







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