



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

product brand name
product designation
design of the product
product type designation
manufacturer's article number

- _2 of the accessories that can be ordered

product designation

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SIRIUS
 solid-state relay
 two-phase controlled
 3RF22
[3RF2900-0EA18](#)
 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 30 A
- according to UL 508 rated value 30 A

ampacity maximum 30 A

operational current minimum 500 mA

rate of voltage rise at the thyristor for main contacts 500 V/μs

maximum permissible

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
I ² t value maximum	450 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
• 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	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	1x (0.5 ... 2.5 mm ²), 2x (0.5 ... 1.0 mm ²)
• 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
• for auxiliary and control contacts with screw-type terminals	0.5 ... 0.6 N·m
tightening torque [lbf·in]	
• for main contacts with screw-type terminals	18 ... 22 lbf·in
• for auxiliary and control contacts with screw-type terminals	4.5 ... 5.3 lbf·in
design of the thread of the connection screw	
• for main contacts	M4
• of the auxiliary and control contacts	M3
stripped length of the cable	

- for main contacts
- for auxiliary and control contacts

7 mm
7 mm

Safety related data

protection class IP on the front according to IEC 60529

IP20

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
- during storage

-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

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

- of full range R fuse link for semiconductor protection at NH 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 10 x 38 mm 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

[3NE1814-0](#); These fuses have a smaller rated current than the semiconductor relays

[3NE8003-1](#)

[3NC1025](#); These fuses have a smaller rated current than the semiconductor relays

[3NC1430](#)

[3NC2232](#)

manufacturer's article number of the gG fuse at NH design usable

- up to 460 V
- up to 600 V

[3NA3803-6](#); These fuses have a smaller rated current than the semiconductor relays

[3NA3803-6](#); 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



[Type Test Certificates/Test Report](#)

[Confirmation](#)



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=3RF2230-1AB45>

Cax online generator

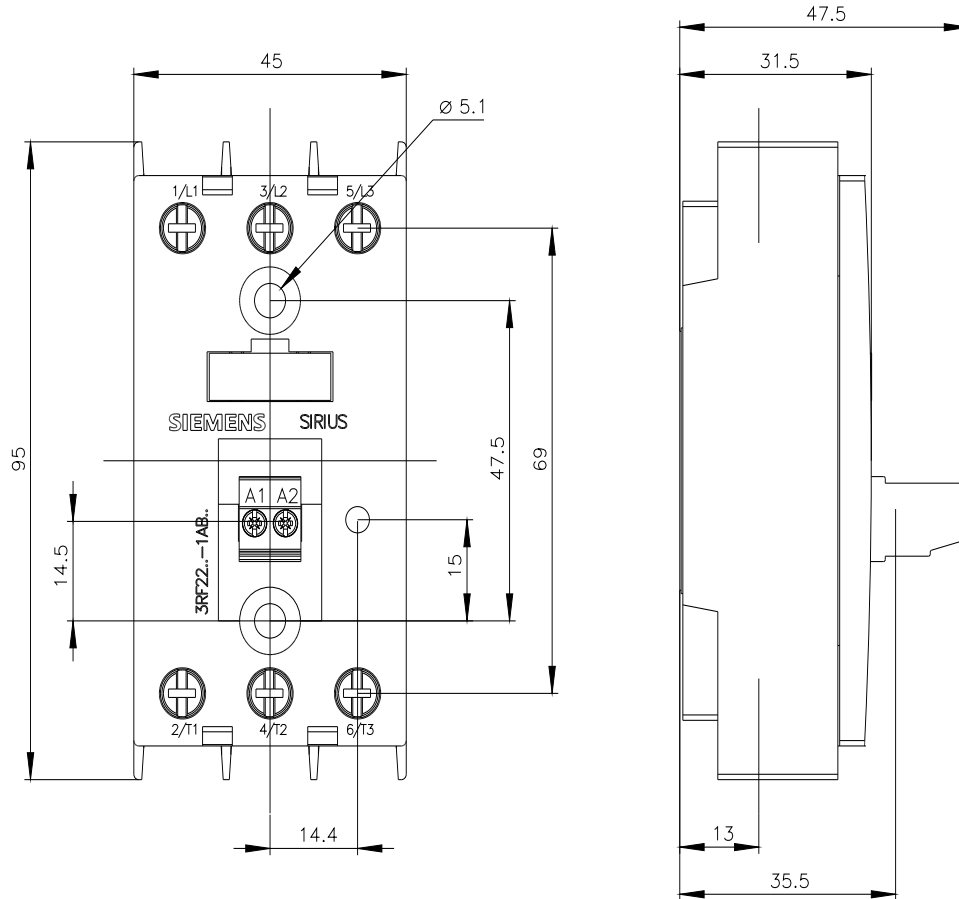
<http://support.automation.siemens.com/WW/CAxorder/default.aspx?lang=en&mlfb=3RF2230-1AB45>

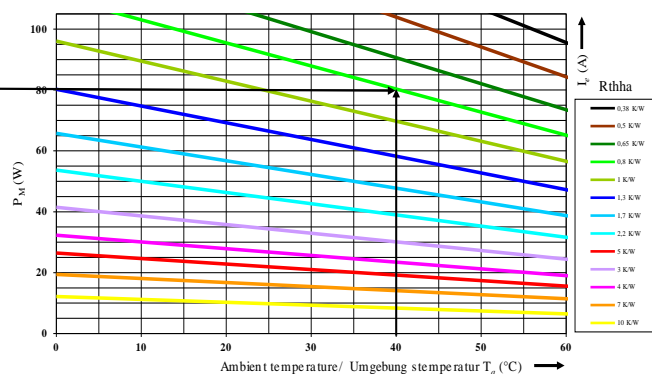
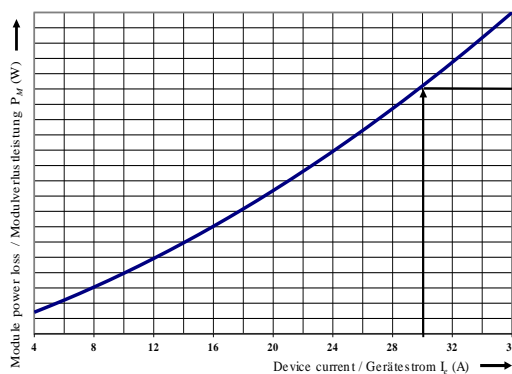
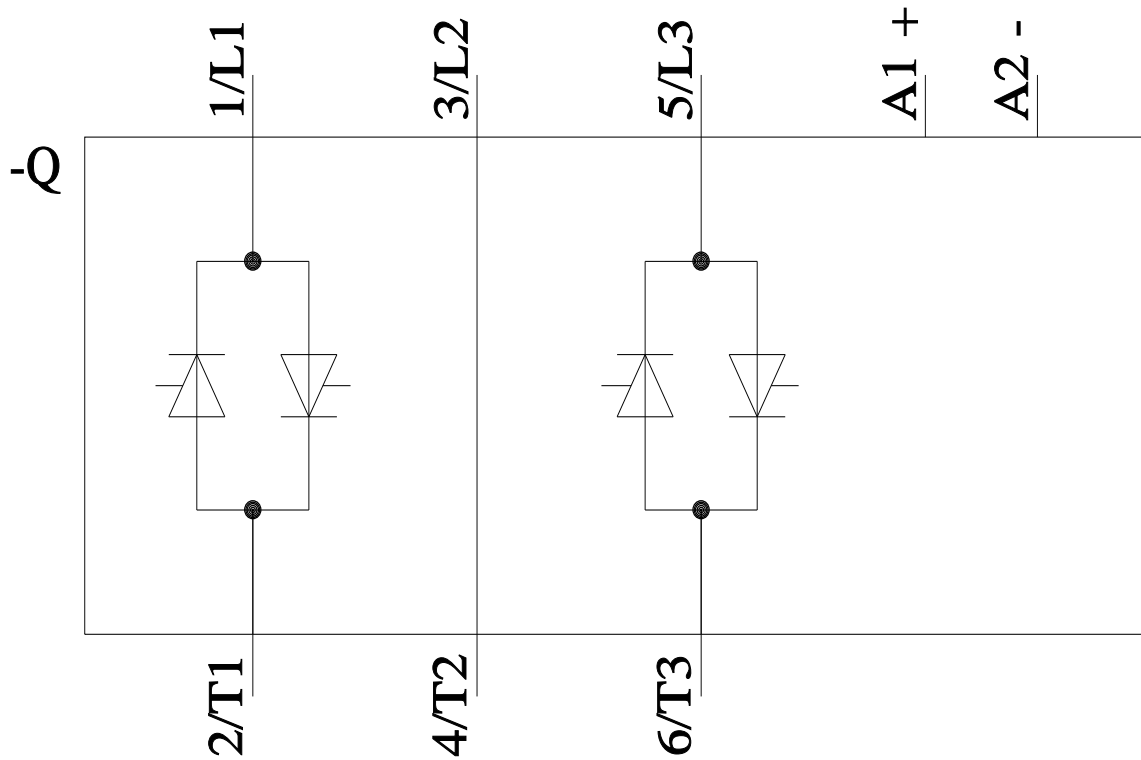
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

<https://support.industry.siemens.com/cs/ww/en/ps/3RF2230-1AB45>

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

http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RF2230-1AB45&lang=en





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