



semiconductor relay, 1-pole 3RF3 for use with heat sinks width 45 mm, 25 A 24-230 V / 110-230 V AC screw terminal

product brand name	SIRIUS
product designation	solid-state relay
product type designation	3RF30
manufacturer's article number	
• _1 of the accessories that can be ordered	3RF3900-0WA88
product designation	
• _1 of the accessories that can be ordered	heat conducting foil
General technical data	
product function	zero-point switching
power loss [V·A] maximum	30 VA
power loss [W] for rated value of the current	
• at AC in hot operating state	30 W
• at AC in hot operating state per pole	30 W
• without load current share typical	3.5 W
type of calculation of power loss current-dependent	linear
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)	01/15/2024
SVHC substance name	Lead CAS-No. 7439-92-1 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	0.077 kg
Main circuit	
number of poles for main current circuit	1
number of NO contacts for main contacts	1
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	24 ... 230 V

— at 60 Hz rated value	24 ... 230 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	20 ... 253 V
• at 60 Hz	20 ... 253 V
operational current rated value maximum	25 A
operational current	
• at AC-1 at 400 V rated value	25 A
• at AC-51 rated value	25 A
• at AC-51 according to IEC 60947-4-3	25 A
• according to UL 508 rated value	25 A
ampacity maximum	25 A
operational current minimum	100 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	800 V
reverse current of the thyristor	10 mA
derating temperature	40 °C
surge current resistance rated value	260 A
I²t value maximum	360 A ² ·s
Control circuit/ Control	
type of voltage of the control supply voltage	AC
control supply voltage at AC	
• at 50 Hz	110 ... 230 V
• at 60 Hz	110 ... 230 V
control supply voltage 1 at AC	
• at 50 Hz	110 ... 230 V
• at 60 Hz	110 ... 230 V
control supply voltage at AC	
• at 50 Hz full-scale value for signal<0> recognition	40 V
• at 60 Hz full-scale value for signal<0> recognition	40 V
• initial value for signal <1> detection	90 V
control supply voltage frequency	
• 1 rated value	50 Hz
• 2 rated value	60 Hz
symmetrical line frequency tolerance	5 Hz
operating range factor control supply voltage rated value at AC at 50 Hz	
• initial value	0.82
operating range factor control supply voltage rated value at AC at 60 Hz	
• initial value	0.82
control current at minimum control supply voltage	
• at AC	2 mA
control current at AC rated value	15 mA
ON-delay time	40 ms; additionally max. one half-wave
OFF-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
tightening torque of fixing screw maximum	1.5 N·m
tightening torque [lbf·in] of fixing screw maximum	13 lbf·in
height	58 mm
width	45 mm
depth	48 mm
Connections/ Terminals	

product component removable terminal for auxiliary and control circuit	Yes
type of electrical connection • for main current circuit • for auxiliary and control circuit	screw-type terminals screw-type terminals
type of connectable conductor cross-sections • for main contacts — solid — finely stranded with core end processing • for AWG cables for main contacts	2x (1 ... 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), 1x 8
connectable conductor cross-section for main contacts • solid or stranded • finely stranded with core end processing	1.5 ... 6 mm ² 1 ... 10 mm ²
type of connectable conductor cross-sections • for auxiliary and control contacts — 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 ... 8
tightening torque • 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] • for main contacts with screw-type terminals • for auxiliary and control contacts with screw-type terminals	18 ... 22 lbf·in 4.5 ... 5.3 lbf·in
design of the thread of the connection screw • for main contacts • of the auxiliary and control contacts	M4 M3
stripped length of the cable • for main contacts • for auxiliary and control contacts	10 mm 7 mm
UL/CSA ratings	
operational current according to UL 508 rated value	25 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 • 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
field-based interference according to IEC 61000-4-3	80 MHz ... 1 GHz 10 V/m, 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 B for the domestic, business and commercial environments
Short-circuit protection, design of the fuse link	
manufacturer's article number • of gS fuse for semiconductor protection at NH design usable	3NE1815-0

- 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 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

[5SE1325](#)

[3NE8015-1](#)

[3NC1020](#): These fuses have a smaller rated current than the semiconductor relays

[3NC1430](#)

[3NC2225](#)

manufacturer's article number of the gG fuse

- at NH design usable
- at NH design usable note
- at cylindrical design 10 x 38 mm usable
- at cylindrical design 10 x 38 mm usable note
- at cylindrical design 14 x 51 mm usable
- at cylindrical design 14 x 51 mm usable note
- at cylindrical design 22 x 58 mm usable
- at cylindrical design 22 x 58 mm usable note

[3NA6803](#): These fuses have a smaller rated current than the semiconductor relays

These fuses have a smaller rated current than the semiconductor relays

[3NW6001-1](#): These fuses have a smaller rated current than the semiconductor relays

These fuses have a smaller rated current than the semiconductor relays

[3NW6101-1](#): These fuses have a smaller rated current than the semiconductor relays

These fuses have a smaller rated current than the semiconductor relays

[3NW6208-1](#): These fuses have a smaller rated current than the semiconductor relays

These fuses have a smaller rated current than the semiconductor relays

manufacturer's article number

- of DIAZED fuse usable
- of DIAZED fuse usable note
- of NEOZED fuse usable

[5SB251](#): These fuses have a smaller rated current than the semiconductor relays

These fuses have a smaller rated current than the semiconductor relays

[5SE2310](#): These fuses have a smaller rated current than the semiconductor relays

Approvals Certificates

Environment

General Product Approval

[Environmental Confirmations](#)



Siemens
EcoTech



EMV

Test Certificates

other



[Type Test Certificates/Test Report](#)

[Confirmation](#)



[Confirmation](#)

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=3RF3025-1AA22>

Cax online generator

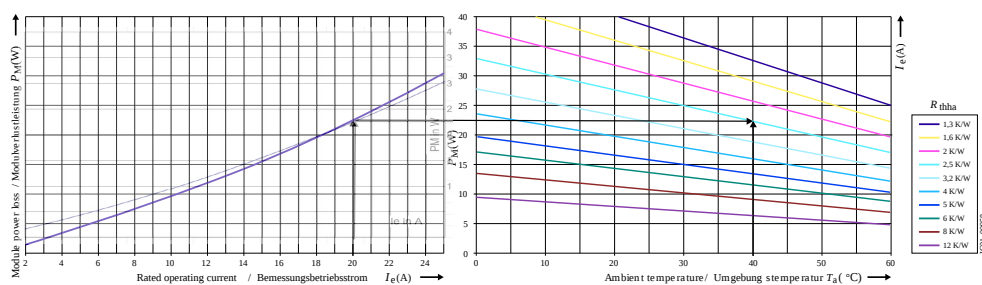
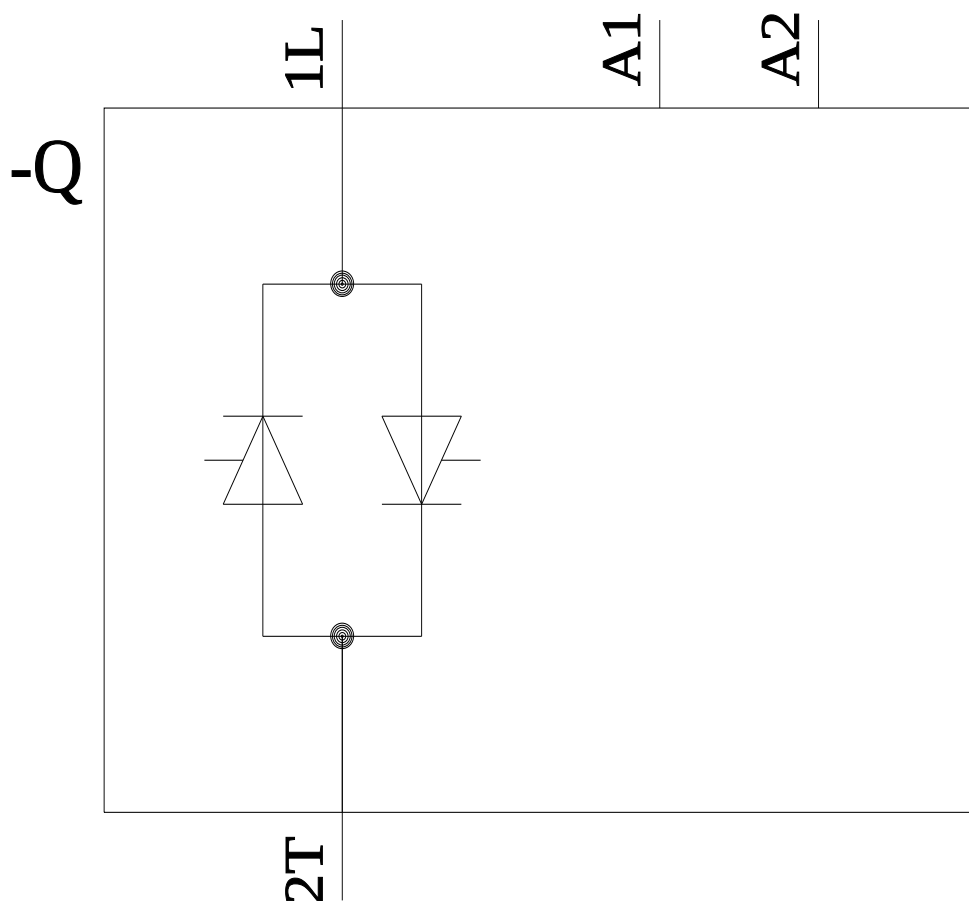
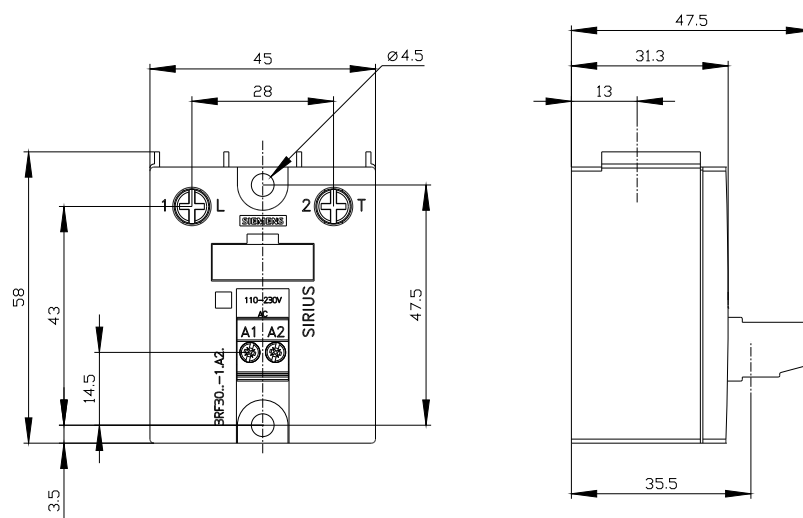
<https://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RF3025-1AA22>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RF3025-1AA22>

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

https://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RF3025-1AA22&lang=en



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