SIEMENS

Data sheet 3RF3125-2AA02

semiconductor relay, 1-pole 3RF3 width 22.5 mm, 25 A 24-230 V / 24 V DC spring-loaded terminal

product brand name	SIRIUS
product designation	solid-state relay
product type designation	3RF31
manufacturer's article number	
● _1 of the accessories that can be ordered	3RF3900-0WA88
● _2 of the accessories that can be ordered	3RF3900-0EA18
product designation	
● _1 of the accessories that can be ordered	heat conducting foil
● _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	19 W
● at AC in hot operating state per pole	19 W
● without load current share typical	0.4 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	15g / 11 ms
vibration resistance according to IEC 60068-2-6	2g
reference code according to IEC 81346-2	Q
Substance Prohibitance (Date)	01/15/2024
SVHC substance name	Lead - 7439-92-1 Lead monoxide (lead oxide) - 1317-36-8
Net Weight	0.064 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	20 A
operational current	
● at AC-1 at 400 V rated value	20 A
● at AC-51 rated value	20 A
● at AC-51 according to IEC 60947-4-3	20 A
● according to UL 508 rated value	20 A
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 A²·s
Control circuit/ Control	
type of voltage of the control supply voltage	DC
control supply voltage at DC	15 ... 24 V
control supply voltage 1 at DC rated value	24 V
control supply voltage	
● at DC initial value for signal <1> detection	15 V
● at DC full-scale value for signal<0> recognition	5 V
operating range factor control supply voltage rated value at DC	
● initial value	0.63
● full-scale value	1
control current at minimum control supply voltage	
● at DC	13 mA
control current at DC rated value	15 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 CO contacts for auxiliary contacts	0
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	85 mm
width	22.5 mm
depth	48 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 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)
● for 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
● for AWG cables for auxiliary and control contacts	1x (20 ... 12)
AWG number as coded connectable conductor cross section for main contacts	18 ... 14
stripped length of the cable	
● for main contacts	10 mm
● for auxiliary and control contacts	10 mm
Electrical Safety	
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	-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
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	5SE1325
● of back-up R fuse link for semiconductor protection at NH design usable	3NE8015-1
● of back-up R fuse link for semiconductor protection at cylindrical design 10 x 38 mm usable	3NC1020; 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	3NC2225
manufacturer's article number of the gG fuse	
● at NH design usable	3NA6803; These fuses have a smaller rated current than the semiconductor relays
● at cylindrical design 10 x 38 mm usable	3NW6001-1; These fuses have a smaller rated current than the semiconductor relays
● at cylindrical design 14 x 51 mm usable	3NW6101-1; These fuses have a smaller rated current than the semiconductor relays
● at cylindrical design 22 x 58 mm usable	3NW6208-1; These fuses have a smaller rated current than the semiconductor relays
manufacturer's article number	
● of DIAZED fuse usable	5SB251; These fuses have a smaller rated current than the semiconductor relays
● of NEOZED fuse usable	5SE2313-2A; These fuses have a smaller rated current than the semiconductor relays

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