



semiconductor relay 3RF5, 1-pole, width 22.5 mm, 24 A, 24-1100 V DC, 110 V DC, screw terminal

product brand name	SIRIUS
product designation	solid-state relay
design of the product	1-pole
product type designation	3RF51
manufacturer's article number	
<ul style="list-style-type: none"> • _1 of the accessories that can be ordered • _2 of the accessories that can be ordered 	3RF3900-0WA88 3RF3900-2TA88
product designation	
<ul style="list-style-type: none"> • _1 of the accessories that can be ordered • _2 of the accessories that can be ordered 	heat conducting foil for semiconductor relays control connector
General technical data	
product function	instantaneous switching
power loss [W] for rated value of the current	
<ul style="list-style-type: none"> • at AC in hot operating state per pole • without load current share typical 	19 W 0.55 W
insulation voltage rated value	1 500 V
degree of pollution	3
impulse withstand voltage (Uimp)	10 kV
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 81346-2:2019	Q
Substance Prohibitance (Date)	03/27/2024
SVHC substance name	Lead - 7439-92-1
Net Weight	0.078 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	DC
operating voltage	
<ul style="list-style-type: none"> • at DC rated value 	24 ... 1 100 V
voltage peak maximum	1 270 V
duration of the voltage peak	20 ms
operational current rated value maximum	23 A
operational current	
<ul style="list-style-type: none"> • at 25 °C rated value • at 40 °C rated value • at 70 °C rated value 	24 A 23 A 18 A

operational current	
<ul style="list-style-type: none"> • according to UL 508 rated value 	17.5 A
operational current at DC	
<ul style="list-style-type: none"> • rated value 	23 A
<ul style="list-style-type: none"> • at 600 V rated value 	23 A
<ul style="list-style-type: none"> • at 1100 V rated value 	18.5 A
derating temperature	40 °C
Control circuit/ Control	
type of voltage of the control supply voltage	DC
control supply voltage at DC rated value	110 V
control supply voltage at DC full-scale value for signal<0> recognition	40 V
operating range factor control supply voltage rated value at DC	
<ul style="list-style-type: none"> • initial value 	0.7
<ul style="list-style-type: none"> • full-scale value 	1.25
control current at minimum control supply voltage at DC	8 mA
control current at DC rated value	9 mA
ON-delay time	5 ms
OFF-delay time	22 ms
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	22.5 mm
depth	51 mm
Connections/ Terminals	
product component removable terminal for auxiliary and control circuit	Yes
type of electrical connection	
<ul style="list-style-type: none"> • for main current circuit 	screw-type terminals
<ul style="list-style-type: none"> • for auxiliary and control circuit 	screw-type terminals
type of connectable conductor cross-sections	
<ul style="list-style-type: none"> • for main contacts <ul style="list-style-type: none"> — solid 	2x (1.5 ... 2.5 mm ²), 2x (2.5 ... 6 mm ²)
<ul style="list-style-type: none"> — finely stranded with core end processing 	2x (1 ... 2.5 mm ²), 2x (2.5 ... 6 mm ²), 1x 10 mm ²
<ul style="list-style-type: none"> • for AWG cables for main contacts 	2x (14 ... 10)
connectable conductor cross-section for main contacts	
<ul style="list-style-type: none"> • solid or stranded 	1.5 ... 6 mm ²
<ul style="list-style-type: none"> • finely stranded with core end processing 	1 ... 10 mm ²
type of connectable conductor cross-sections	
<ul style="list-style-type: none"> • for auxiliary and control contacts <ul style="list-style-type: none"> — solid 	1x (0.5 ... 2.5 mm ²), 2x (0.5 ... 1 mm ²)
<ul style="list-style-type: none"> — finely stranded with core end processing 	1x (0.5 ... 2.5 mm ²), 2x (0.5 ... 1 mm ²)
<ul style="list-style-type: none"> — finely stranded without core end processing 	1x (0.5 ... 2.5 mm ²), 2x (0.5 ... 1 mm ²)
<ul style="list-style-type: none"> • for AWG cables for auxiliary and control contacts 	1x (20 ... 12)
AWG number as coded connectable conductor cross section for main contacts	14 ... 10
tightening torque	
<ul style="list-style-type: none"> • for main contacts with screw-type terminals 	2 ... 2.5 N·m
<ul style="list-style-type: none"> • for auxiliary and control contacts with screw-type terminals 	0.5 ... 0.6 N·m
tightening torque [lbf-in]	
<ul style="list-style-type: none"> • for main contacts with screw-type terminals 	7 ... 10.3 lbf-in
<ul style="list-style-type: none"> • for auxiliary and control contacts with screw-type terminals 	4.5 ... 5.3 lbf-in
stripped length of the cable	

<ul style="list-style-type: none"> • for main contacts 	7 mm
<ul style="list-style-type: none"> • for auxiliary and control contacts 	7 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	
<ul style="list-style-type: none"> • during operation 	-25 ... +60 °C
<ul style="list-style-type: none"> • during storage 	-55 ... +80 °C
Environmental footprint	
Environmental Product Declaration (EPD)	Yes
Electromagnetic compatibility	
conducted interference	
<ul style="list-style-type: none"> • due to burst according to IEC 61000-4-4 	2 kV / 5 kHz behavior criterion 2
<ul style="list-style-type: none"> • due to conductor-earth surge according to IEC 61000-4-5 	2 kV behavior criterion 2
<ul style="list-style-type: none"> • due to conductor-conductor surge according to IEC 61000-4-5 	1 kV behavior criterion 2
<ul style="list-style-type: none"> • 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
last modified:	9/3/2025 