



solid-state contactor 1-pole 3RF3 AC-1 / 20 A / 40 °C 48-460 V / 4-30 V DC short-circuit-proof with B miniature circuit breaker screw terminal

product brand name	SIRIUS
product designation	solid-state contactor
product type designation	3RF33
manufacturer's article number	
<ul style="list-style-type: none"> • _1 of the accessories that can be ordered • _3 of the accessories that can be ordered • _4 of the accessories that can be ordered • _5 of the accessories that can be ordered 	3RF2900-3PA88 3RF3900-0EA18 3RF3920-0GA16 3RF3920-0FA08
product designation	
<ul style="list-style-type: none"> • _1 of the accessories that can be ordered • _3 of the accessories that can be ordered • _4 of the accessories that can be ordered • _5 of the accessories that can be ordered 	terminal cover converter load monitoring load monitoring, basis
General technical data	
product function	zero-point switching
product feature	short-circuit-proof with B miniature circuit breaker
power loss [V·A] maximum	18.6 VA
power loss [W] for rated value of the current	
<ul style="list-style-type: none"> • at AC in hot operating state • at AC in hot operating state per pole • without load current share typical 	18.5 W 18.5 W 0.5 W
insulation voltage rated value	600 V
degree of pollution	3
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 Dibutylbis(pentane-2,4-dionato-O,O')tin - 22673-19-4
Net Weight	0.186 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	

<ul style="list-style-type: none"> • at AC <ul style="list-style-type: none"> — at 50 Hz rated value — at 60 Hz rated value 	48 ... 460 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 <ul style="list-style-type: none"> • at 50 Hz • at 60 Hz 	40 ... 506 V
operational current rated value maximum	20 A
operational current <ul style="list-style-type: none"> • at AC-1 at 400 V rated value • at AC-51 rated value • at AC-51 according to IEC 60947-4-3 • according to UL 508 rated value 	20 A
ampacity maximum	20 A
operational current minimum	500 mA
operational current of the MCB at AC rated value	20 A
rate of voltage rise at the thyristor for main contacts maximum permissible	1 000 V/ μ s
blocking voltage at the thyristor for main contacts maximum permissible	1 200 V
reverse current of the thyristor	10 mA
derating temperature	40 °C
surge current resistance rated value	1 300 A
I²t value maximum	8 000 A ² ·s
Control circuit/ Control	
type of voltage of the control supply voltage	DC
control supply voltage at DC	4 ... 30 V
control supply voltage 1 at DC	4 ... 30 V
control supply voltage <ul style="list-style-type: none"> • at DC initial value for signal <1> detection • at DC full-scale value for signal<0> recognition 	4 V
operating range factor control supply voltage rated value at DC <ul style="list-style-type: none"> • initial value • full-scale value 	1 V
control current at minimum control supply voltage <ul style="list-style-type: none"> • at DC 	0.17
control current at DC rated value	1.25
ON-delay time	18 mA
OFF-delay time	20 mA
ON-delay time	1 ms; additionally max. one half-wave
OFF-delay time	1 ms; additionally max. one half-wave
Installation/ mounting/ dimensions	
fastening method side-by-side mounting	Yes
fastening method	screw fixing and snap-on mounting on standard mounting rail 35 mm according to IEC 60715
design of the thread of the screw for securing the equipment	M4
height	95 mm
width	22.5 mm
depth	121 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 • 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 — finely stranded with core end processing 	screw-type terminals
	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

<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 — 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	
<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 	18 ... 22 lbf·in
<ul style="list-style-type: none"> • for auxiliary and control contacts with screw-type terminals 	4.5 ... 5.3 lbf·in
design of the thread of the connection screw	
<ul style="list-style-type: none"> • for main contacts 	M4
<ul style="list-style-type: none"> • of the auxiliary and control contacts 	M3
stripped length of the cable	
<ul style="list-style-type: none"> • for main contacts 	10 mm
<ul style="list-style-type: none"> • for auxiliary and control contacts 	7 mm
type of grounding	grounding by snapping onto grounded DIN rails
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
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
Short-circuit protection, design of the fuse link	
manufacturer's article number	
<ul style="list-style-type: none"> • of gS fuse for semiconductor protection at NH design usable 	3NE1814-0
<ul style="list-style-type: none"> • of full range R fuse link for semiconductor protection at cylindrical design usable 	5SE1325
<ul style="list-style-type: none"> • of back-up R fuse link for semiconductor protection at NH design usable 	3NE8814-0MK
<ul style="list-style-type: none"> • of back-up R fuse link for semiconductor protection at cylindrical design 10 x 38 mm usable 	3NC1032
<ul style="list-style-type: none"> • of back-up R fuse link for semiconductor protection at cylindrical design 14 x 51 mm usable 	3NC1450
<ul style="list-style-type: none"> • of back-up R fuse link for semiconductor protection at cylindrical design 22 x 58 mm usable 	3NC2263

manufacturer's article number of the gG fuse <ul style="list-style-type: none"> • at NH design usable • at cylindrical design 10 x 38 mm usable • at cylindrical design 14 x 51 mm usable • at cylindrical design 22 x 58 mm usable 	3NA6807 3NW6007-1 3NW6105-1: These fuses have a smaller rated current than the semiconductor relays 3NW6205-1: These fuses have a smaller rated current than the semiconductor relays
manufacturer's article number <ul style="list-style-type: none"> • of DIAZED fuse usable • of NEOZED fuse usable 	5SB2711 5SE2320

Approvals Certificates

Environment	General Product Approval	EMV	other
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[Environmental Confirmations](#)



[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=3RF3320-1DA44>

Cax online generator

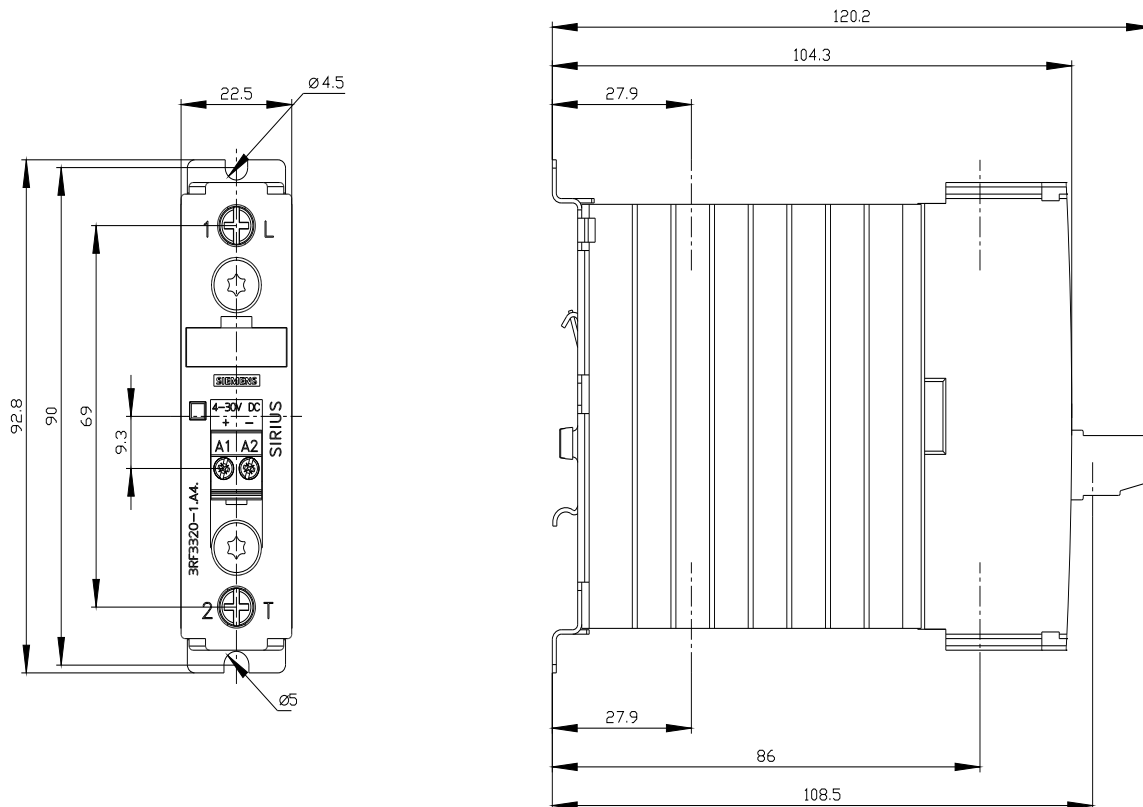
<https://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RF3320-1DA44>

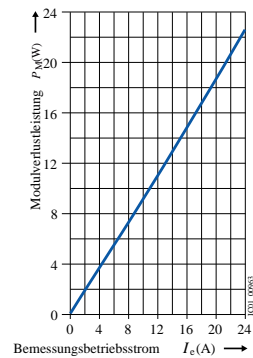
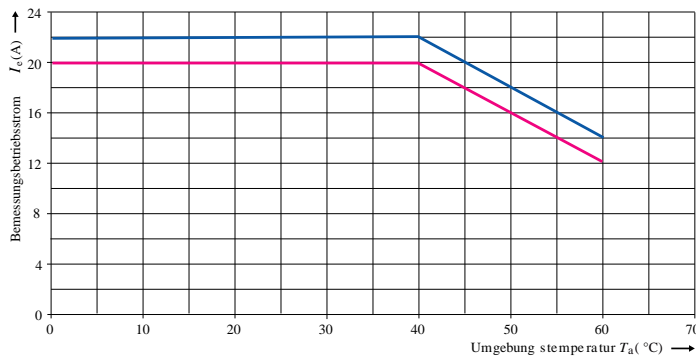
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

<https://support.industry.siemens.com/cs/ww/en/ps/3RF3320-1DA44>

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

https://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RF3320-1DA44&lang=en





— I_c nach IEC 60947-4-3 bei Einzelanstellung
— I_c nach IEC 60947-4-3 bei Dicht-an-Dicht-Montage

last modified:

2/7/2026