



Solid-state contactor 3-phase 3RF3 AC 53 / 12.5 A / 40 °C 48-480 V / 110-230 V
AC 2-phase controlled Instantaneous switching screw terminal

product brand name	SIRIUS
product designation	solid-state contactor
design of the product	2-pole controlled
product type designation	3RF34
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 	3RA2921-1BA00 3RF3900-0QA88
product designation	
<ul style="list-style-type: none"> • _1 of the accessories that can be ordered • _2 of the accessories that can be ordered 	Link module Connection adapter
General technical data	
certificate of suitability	CE / UL / CSA / CCC / C-Tick (RCM)
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 • at AC in hot operating state per pole • without load current share typical 	22 W 7.33 W 3.5 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)	05/28/2009
SVHC substance name	Lead - 7439-92-1 Lead monoxide (lead oxide) - 1317-36-8
Weight	0.496 kg
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
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 ... 480 V 48 ... 480 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	
<ul style="list-style-type: none"> • at AC-3 at 400 V rated value • at AC-53a at 400 V at ambient temperature 40 °C rated value 	12.5 A
operational current minimum	500 mA
operating power	
<ul style="list-style-type: none"> • at AC-3 at 400 V rated value 	5.5 kW
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	1 200 V
reverse current of the thyristor	10 mA
derating temperature	40 °C
surge current resistance rated value	1 200 A
I²t value maximum	7 200 A ² ·s

Control circuit/ Control

type of voltage of the control supply voltage	AC
control supply voltage at AC	
<ul style="list-style-type: none"> • at 50 Hz • at 60 Hz 	110 ... 230 V
control supply voltage frequency	
<ul style="list-style-type: none"> • 1 rated value • 2 rated value 	50 Hz
relative symmetrical tolerance of the control supply voltage frequency	10 %
control supply voltage at AC	
<ul style="list-style-type: none"> • at 50 Hz full-scale value for signal<0> recognition • at 60 Hz full-scale value for signal<0> recognition 	40 V
control supply voltage	
<ul style="list-style-type: none"> • at AC initial value for signal <1> detection 	90 V
symmetrical line frequency tolerance	5 Hz
operating range factor control supply voltage rated value at AC at 50 Hz	
<ul style="list-style-type: none"> • initial value • full-scale value 	0.82
operating range factor control supply voltage rated value at AC at 60 Hz	
<ul style="list-style-type: none"> • initial value • full-scale value 	0.82
control current at minimum control supply voltage	
<ul style="list-style-type: none"> • at AC 	2 mA
control current at AC rated value	15 mA
ON-delay time	5 ms
OFF-delay time	30 ms; additionally max. one half-wave

Auxiliary circuit

type of switching contact	normally open contact (NO)
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

mounting position	vertical
fastening method side-by-side mounting	Yes
fastening method	screw and snap-on mounting onto 35 mm DIN rail
design of the thread of the screw for securing the equipment	M4
height	95 mm
width	90 mm
depth	100.8 mm
required spacing with side-by-side mounting	
<ul style="list-style-type: none"> • upwards • downwards 	70 mm
	50 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 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 • for AWG cables for main contacts 	2x (0.5 ... 2.5 mm ²) 2x (0.5 ... 1.5 mm ²) 2x (18 ... 14)
connectable conductor cross-section for main contacts <ul style="list-style-type: none"> • solid or stranded • finely stranded with core end processing 	1.5 ... 6 mm ² 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 ... 10
tightening torque <ul style="list-style-type: none"> • 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] <ul style="list-style-type: none"> • for main contacts with screw-type terminals • for auxiliary and control contacts with screw-type terminals 	18 ... 22 lbf·in 7.5 ... 5.3 lbf·in
design of the thread of the connection screw <ul style="list-style-type: none"> • for main contacts • of the auxiliary and control contacts 	M4 M3
stripped length of the cable <ul style="list-style-type: none"> • for main contacts • for auxiliary and control contacts 	7 mm 7 mm
UL/CSA ratings	
full-load current (FLA) for 3-phase AC motor <ul style="list-style-type: none"> • at 480 V rated value 	7.6 A
yielded mechanical performance [hp] for 3-phase AC motor <ul style="list-style-type: none"> • at 200/208 V rated value • at 220/230 V rated value • at 460/480 V rated value 	2 hp 2 hp 5 hp
Safety related data	
proportion of dangerous failures with high demand rate according to SN 31920	50 %
MTTF with high demand rate	76 a
IEC 61508	
T1 value for proof test interval or service life according to IEC 61508	20 a
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 • during storage 	-25 ... +60 °C -55 ... +80 °C
Electromagnetic compatibility	
conducted interference <ul style="list-style-type: none"> • due to burst according to IEC 61000-4-4 • due to conductor-earth surge according to IEC 61000-4-5 	2 kV / 5 kHz behavior criterion 2 2 kV behavior criterion 2

<ul style="list-style-type: none"> • due to conductor-conductor surge according to IEC 61000-4-5 • due to high-frequency radiation according to IEC 61000-4-6 	<p>1 kV behavior criterion 2</p> <p>140 dBuV in the frequency range 0.15 ... 80 MHz, behavior criterion 1</p>
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

<p>manufacturer's article number</p> <ul style="list-style-type: none"> • of full range R fuse link for semiconductor protection at NH design usable • 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 	<p>3NE1818-0</p> <p>5SE1363</p> <p>3NE8021-1</p> <p>3NC1032</p> <p>3NC1450</p> <p>3NC2280</p>
<p>manufacturer's article number of the gG fuse</p> <ul style="list-style-type: none"> • at NH design usable • at cylindrical design 10 x 38 mm usable • at cylindrical design 22 x 58 mm usable 	<p>3NA3810-6</p> <p>3NW6010-1</p> <p>3NW6210-1</p>

Approvals Certificates

General Product Approval	EMV
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Test Certificates	other	Environment
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[Type Test Certificates/Test Report](#)



[Confirmation](#)

[Environmental Confirmations](#)

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=3RF3412-1BB24>

Cax online generator

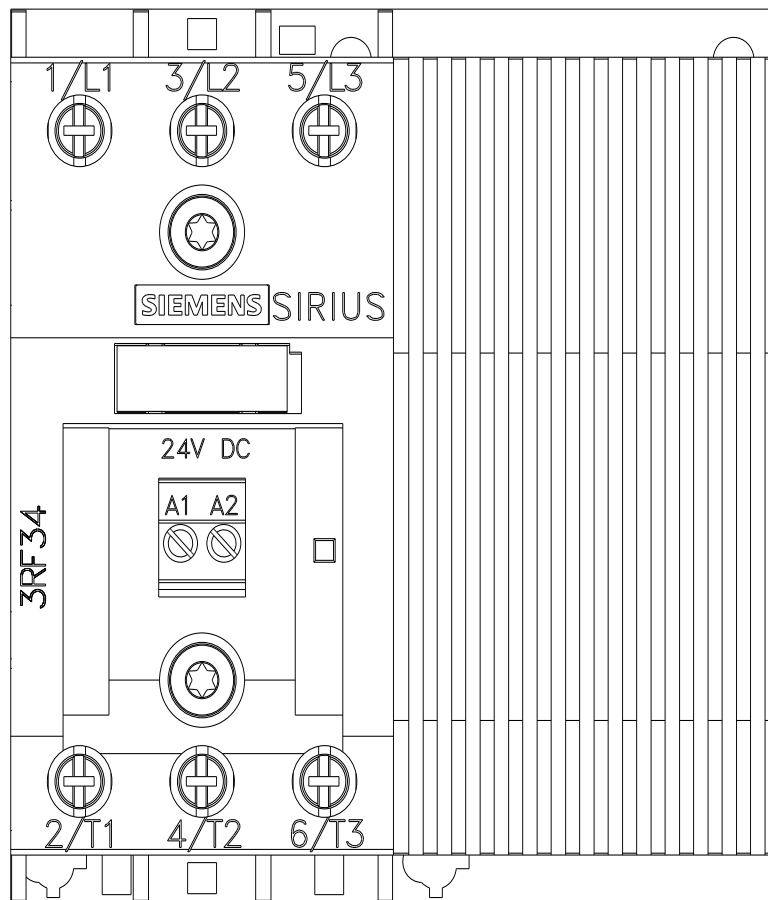
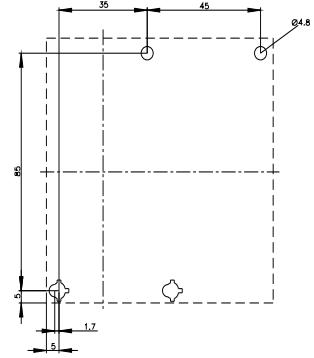
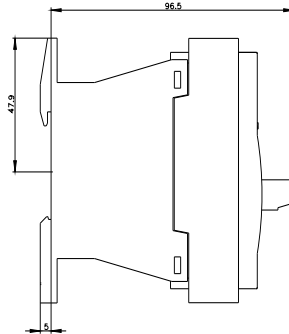
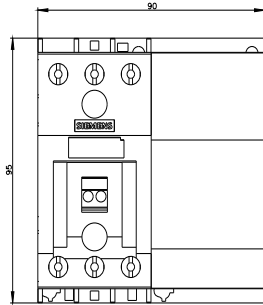
<https://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RF3412-1BB24>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RF3412-1BB24>

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

https://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RF3412-1BB24&lang=en





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