



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	two-phase 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	
product function	instantaneous switching
power loss [W] for rated value of the current at AC in hot operating state	22 W
<ul style="list-style-type: none"> • per pole 	7.33 W
power loss [W] for rated value of the current without load current share typical	3.5 W
insulation voltage rated value	600 V
type of voltage of the control supply voltage	AC
surge voltage resistance of main circuit rated value	6 kV
shock resistance acc. to IEC 60068-2-27	15g / 11 ms
vibration resistance acc. to IEC 60068-2-6	2g
certificate of suitability	CE / UL / CSA / CCC / C-Tick (RCM)
reference code acc. to IEC 81346-2	Q
Substance Prohibitance (Date)	28.05.2009 00:00:00
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
operating voltage at AC	
<ul style="list-style-type: none"> • at 50 Hz rated value • at 60 Hz rated value 	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 	12.5 A

<ul style="list-style-type: none"> 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 1 at AC	
<ul style="list-style-type: none"> at 50 Hz at 60 Hz 	110 ... 230 V 110 ... 230 V
control supply voltage frequency	
<ul style="list-style-type: none"> 1 rated value 2 rated value 	50 Hz 60 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 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 1.1
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 1.1
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	
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	screw and snap-on mounting onto 35 mm standard mounting rail
<ul style="list-style-type: none"> side-by-side mounting 	Yes
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 	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 — finely stranded with core end processing at 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 at AWG cables for auxiliary and control contacts 	1x (0.5 ... 2.5 mm ²), 2x (0.5 ... 1.0 mm ²) 1x (0.5 ... 2.5 mm ²), 2x (0.5 ... 1.0 mm ²) 1x (0.5 ... 2.5 mm ²), 2x (0.5 ... 1.0 mm ²) 1x (AWG 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 acc. to SN 31920	50 %
MTTF with high demand rate	76 y
T1 value for proof test interval or service life acc. to IEC 61508	20 y
protection class IP on the front acc. to IEC 60529	IP20
touch protection on the front acc. 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 acc. to IEC 61000-4-4 due to conductor-earth surge acc. to IEC 61000-4-5 due to conductor-conductor surge acc. to IEC 61000-4-5 due to high-frequency radiation acc. 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
electrostatic discharge acc. to IEC 61000-4-2	4 kV contact discharging / 8 kV air discharging, behavior criterion 2

conducted HF interference emissions acc. to CISPR11	Class A for industrial environment
field-bound HF interference emission acc. to CISPR11	Class A for industrial environment
Short-circuit protection, design of the fuse link	
manufacturer's article number <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 	3NE1818-0 5SE1363 3NE8021-1 3NC1032 3NC1450 3NC2280
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 	3NA3810-6 3NW6010-1 3NW6116-1 3NW6210-1
manufacturer's article number <ul style="list-style-type: none"> • of DIAZED fuse usable 	5SB321

Certificates/ approvals

General Product Approval	EMC	Declaration of Conformity
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Test Certificates	other
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[Type Test Certificates/Test Report](#)

[Confirmation](#)

Further information

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

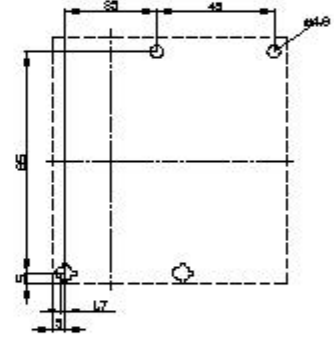
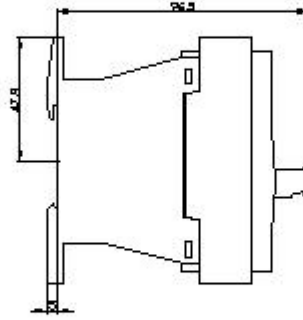
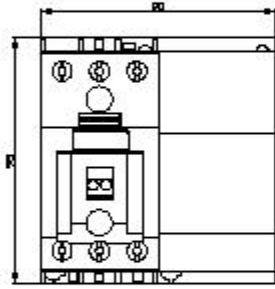
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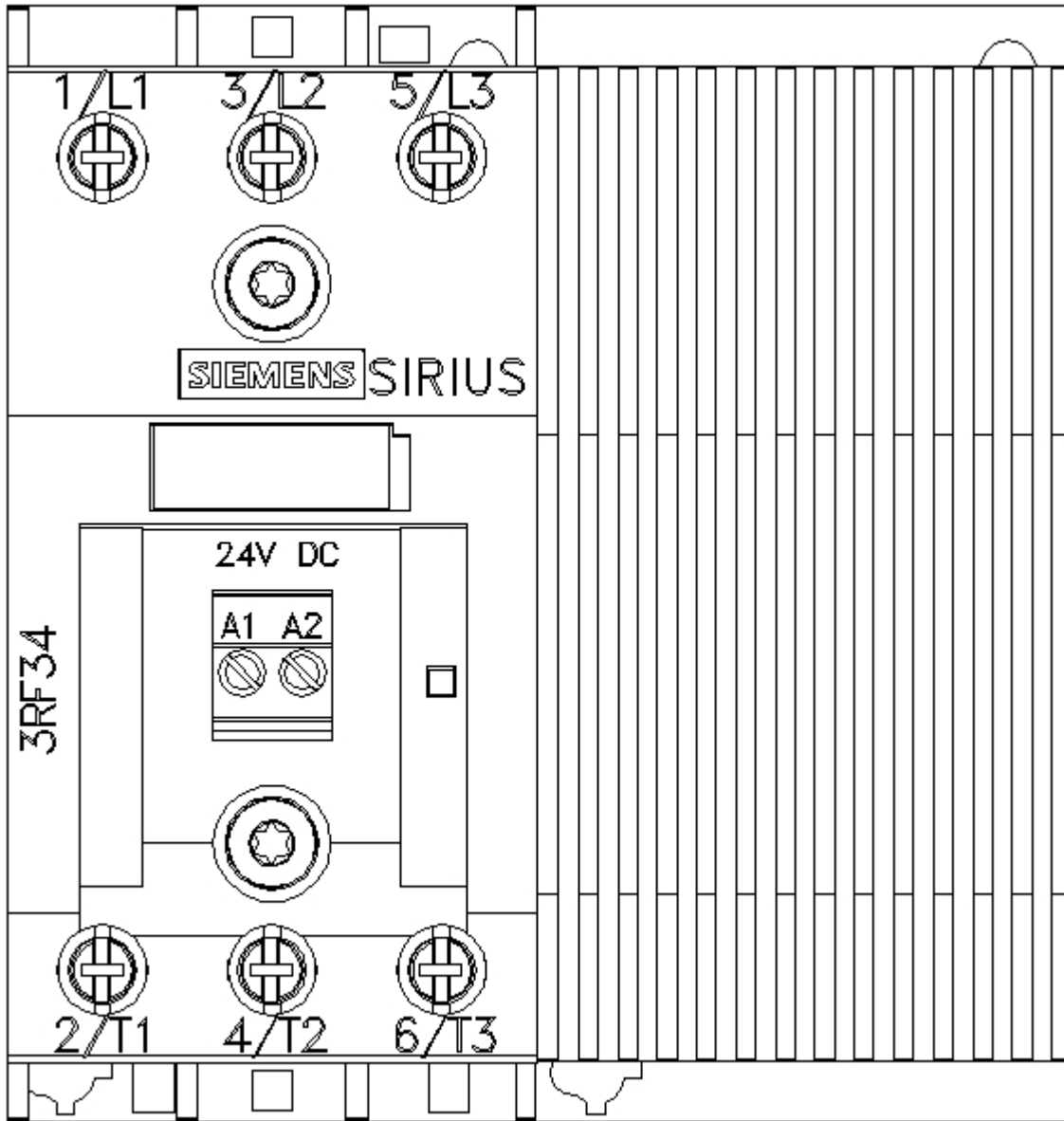
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

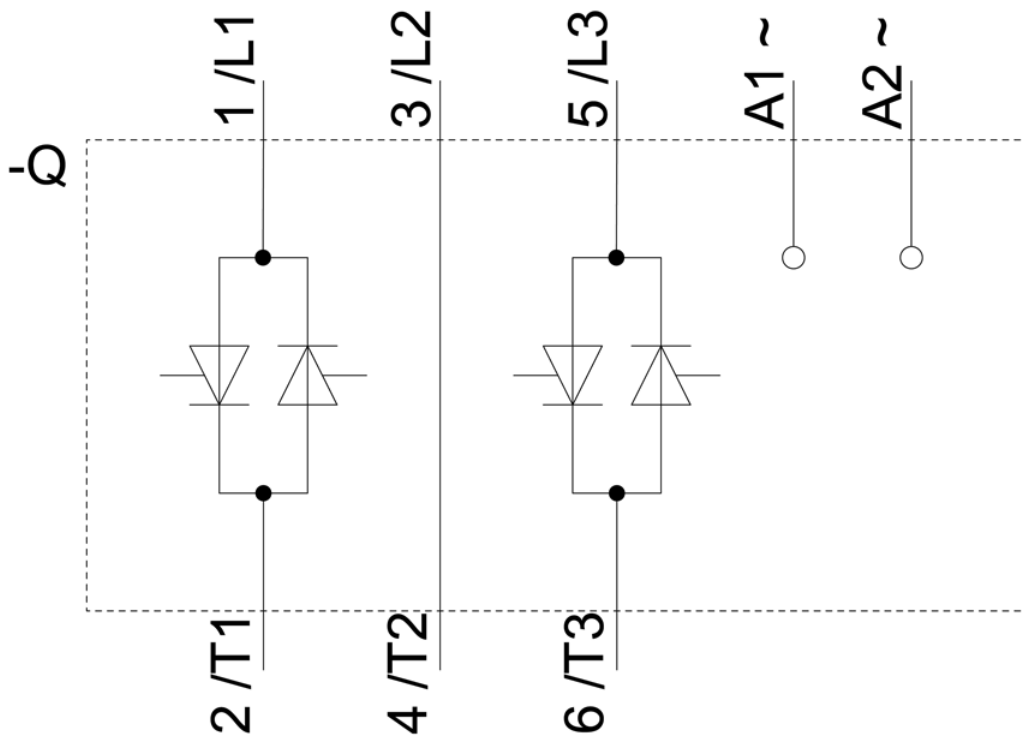
<https://support.industry.siemens.com/cs/ww/en/ps/3RF3412-1BB24>

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

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







last modified:

3/11/2021 