## **SIEMENS**

Data sheet 3RF3405-1BB24



Solid-state contactor 3-phase 3RF3 AC 53 / 5.2 A / 40  $^{\circ}\text{C}$  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><li>_1 of the accessories that can be ordered</li></ul>	3RA2921-1BA00
<ul><li>_2 of the accessories that can be ordered</li></ul>	3RF3900-0QA88
product designation	
<ul><li>_1 of the accessories that can be ordered</li></ul>	Link module
<ul><li>_2 of the accessories that can be ordered</li></ul>	Connection adapter
General technical data	
product function	instantaneous switching
power loss [W] for rated value of the current at AC in hot operating state	10 W
• per pole	3.33 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	
• at 50 Hz rated value	48 480 V
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	
● at 50 Hz	40 506 V
● at 60 Hz	40 506 V
operational current	
<ul><li>at AC-3 at 400 V rated value</li></ul>	5.2 A

<ul> <li>at AC-53a at 400 V at ambient temperature 40 °C rated value</li> </ul>	5.2 A
operational current minimum	100 mA
operating power	
at AC-3 at 400 V rated value	2.2 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	200 A
I2t value maximum	200 A²·s
Control circuit/ Control	
type of voltage of the control supply voltage	AC
control supply voltage 1 at AC	
● at 50 Hz	110 230 V
● at 60 Hz	110 230 V
control supply voltage frequency	
• 1 rated value	50 Hz
• 2 rated value	60 Hz
relative symmetrical tolerance of the control supply voltage frequency	10 %
control supply voltage at AC	
<ul> <li>at 50 Hz full-scale value for signal&lt;0&gt; recognition</li> </ul>	40 V
• at 60 Hz full-scale value for signal<0> recognition	40 V
control supply voltage	
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	
• initial value	0.82
• full-scale value	1.1
operating range factor control supply voltage rated value at AC at 60 Hz	
• initial value	0.82
• full-scale value	1.1
control current at minimum control supply voltage	
• 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
• side-by-side mounting	Yes
height	95 mm
width	45 mm
depth	100.8 mm
required spacing with side-by-side mounting	70
• upwards	70 mm
• downwards	50 mm
Connections/ Terminals	
product component removable terminal for auxiliary and control circuit	Yes
type of electrical connection  • for main current circuit	screw-type terminals

• for auxiliary and control circuit	screw-type terminals
for auxiliary and control circuit  type of connectable conductor cross sections	screw-type terminals
type of connectable conductor cross-sections  • for main contacts	
	0 (0.5
— solid	2x (0.5 2.5 mm²)
— finely stranded with core end processing	2x (0.5 1.5 mm²)
at AWG cables for main contacts	2x (18 14)
connectable conductor cross-section for main contacts	
solid or stranded	1 E 6 mm²
	1.5 6 mm²
finely stranded with core end processing	1 10 mm²
type of connectable conductor cross-sections	
for auxiliary and control contacts	A., (0.5. 0.5 mm²) 0., (0.5. 4.0 mm²)
— solid	1x (0.5 2.5 mm²), 2x (0.5 1.0 mm²)
— finely stranded with core end processing	1x (0.5 2.5 mm²), 2x (0.5 1.0 mm²)
— finely stranded without core end processing	1x (0.5 2.5 mm²), 2x (0.5 1.0 mm²)
at AWG cables for auxiliary and control contacts	1x (AWG 20 12)
AWG number as coded connectable conductor cross section for main contacts	14 10
tightening torque	
<ul> <li>for main contacts with screw-type terminals</li> </ul>	2 2.5 N·m
<ul> <li>for auxiliary and control contacts with screw-type terminals</li> </ul>	0.5 0.6 N·m
tightening torque [lbf·in]	
<ul> <li>for main contacts with screw-type terminals</li> </ul>	18 22 lbf·in
<ul> <li>for auxiliary and control contacts with screw-type terminals</li> </ul>	7.5 5.3 lbf·in
design of the thread of the connection screw	
for main contacts	M4
of the auxiliary and control contacts	M3
stripped length of the cable	,,,,
• for main contacts	7 mm
for auxiliary and control contacts	7 mm
	7 11111
UL/CSA ratings	
UL/CSA ratings full-load current (FLA) for 3-phase AC motor	
UL/CSA ratings full-load current (FLA) for 3-phase AC motor • at 480 V rated value	3.4 A
UL/CSA ratings full-load current (FLA) for 3-phase AC motor	
UL/CSA ratings full-load current (FLA) for 3-phase AC motor • at 480 V rated value	
UL/CSA ratings  full-load current (FLA) for 3-phase AC motor  • at 480 V rated value  yielded mechanical performance [hp] for 3-phase AC motor  • at 200/208 V rated value	3.4 A 0.5 hp
UL/CSA ratings  full-load current (FLA) for 3-phase AC motor  • at 480 V rated value  yielded mechanical performance [hp] for 3-phase AC motor	3.4 A
UL/CSA ratings  full-load current (FLA) for 3-phase AC motor  • at 480 V rated value  yielded mechanical performance [hp] for 3-phase AC motor  • at 200/208 V rated value  • at 220/230 V rated value  • at 460/480 V rated value	3.4 A 0.5 hp 0.75 hp
UL/CSA ratings  full-load current (FLA) for 3-phase AC motor  • at 480 V rated value  yielded mechanical performance [hp] for 3-phase AC motor  • at 200/208 V rated value  • at 220/230 V rated value  • at 460/480 V rated value  Safety related data	3.4 A  0.5 hp  0.75 hp  2 hp
UL/CSA ratings  full-load current (FLA) for 3-phase AC motor  • at 480 V rated value  yielded mechanical performance [hp] for 3-phase AC motor  • at 200/208 V rated value  • at 220/230 V rated value  • at 460/480 V rated value	3.4 A 0.5 hp 0.75 hp
UL/CSA ratings  full-load current (FLA) for 3-phase AC motor  • at 480 V rated value  yielded mechanical performance [hp] for 3-phase AC motor  • at 200/208 V rated value  • at 220/230 V rated value  • at 460/480 V rated value  Safety related data  proportion of dangerous failures with high demand rate	3.4 A  0.5 hp  0.75 hp  2 hp
UL/CSA ratings  full-load current (FLA) for 3-phase AC motor  ● at 480 V rated value  yielded mechanical performance [hp] for 3-phase AC motor  ● at 200/208 V rated value  ● at 220/230 V rated value  ● at 460/480 V rated value  Safety related data  proportion of dangerous failures with high demand rate acc. to SN 31920	3.4 A  0.5 hp  0.75 hp  2 hp
UL/CSA ratings  full-load current (FLA) for 3-phase AC motor  ● at 480 V rated value  yielded mechanical performance [hp] for 3-phase AC motor  ● at 200/208 V rated value  ● at 220/230 V rated value  ● at 460/480 V rated value  Safety related data  proportion of dangerous failures with high demand rate acc. to SN 31920  MTTF with high demand rate	3.4 A  0.5 hp 0.75 hp 2 hp  50 %  76 y
UL/CSA ratings  full-load current (FLA) for 3-phase AC motor  ● at 480 V rated value  yielded mechanical performance [hp] for 3-phase AC motor  ● at 200/208 V rated value  ● at 220/230 V rated value  ● at 460/480 V rated value  Safety related data  proportion of dangerous failures with high demand rate acc. to SN 31920  MTTF with high demand rate  T1 value for proof test interval or service life acc. to	3.4 A  0.5 hp 0.75 hp 2 hp  50 %  76 y
full-load current (FLA) for 3-phase AC motor  • at 480 V rated value  yielded mechanical performance [hp] for 3-phase AC motor  • at 200/208 V rated value  • at 220/230 V rated value  • at 460/480 V rated value  Safety related data  proportion of dangerous failures with high demand rate acc. to SN 31920  MTTF with high demand rate  T1 value for proof test interval or service life acc. to IEC 61508	3.4 A  0.5 hp 0.75 hp 2 hp  50 %  76 y 20 y
full-load current (FLA) for 3-phase AC motor  • at 480 V rated value  yielded mechanical performance [hp] for 3-phase AC motor  • at 200/208 V rated value  • at 220/230 V rated value  • at 460/480 V rated value  Safety related data  proportion of dangerous failures with high demand rate acc. to SN 31920  MTTF with high demand rate  T1 value for proof test interval or service life acc. to IEC 61508  protection class IP on the front acc. to IEC 60529	3.4 A  0.5 hp 0.75 hp 2 hp  50 %  76 y 20 y
full-load current (FLA) for 3-phase AC motor	3.4 A  0.5 hp 0.75 hp 2 hp  50 %  76 y 20 y
UL/CSA ratings  full-load current (FLA) for 3-phase AC motor  ● at 480 V rated value  yielded mechanical performance [hp] for 3-phase AC motor  ● at 200/208 V rated value  ● at 220/230 V rated value  ● at 460/480 V rated value  Safety related data  proportion of dangerous failures with high demand rate acc. to SN 31920  MTTF with high demand rate  T1 value for proof test interval or service life acc. to IEC 61508  protection class IP on the front acc. to IEC 60529  touch protection on the front acc. to IEC 60529  Ambient conditions	3.4 A  0.5 hp 0.75 hp 2 hp  50 %  76 y 20 y  IP20 finger-safe, for vertical contact from the front
full-load current (FLA) for 3-phase AC motor	3.4 A  0.5 hp 0.75 hp 2 hp  50 %  76 y 20 y  IP20 finger-safe, for vertical contact from the front
full-load current (FLA) for 3-phase AC motor  • at 480 V rated value  yielded mechanical performance [hp] for 3-phase AC motor  • at 200/208 V rated value  • at 220/230 V rated value  • at 460/480 V rated value  Safety related data  proportion of dangerous failures with high demand rate acc. to SN 31920  MTTF with high demand rate  T1 value for proof test interval or service life acc. to IEC 61508  protection class IP on the front acc. to IEC 60529  touch protection on the front acc. to IEC 60529  Ambient conditions  installation altitude at height above sea level maximum	3.4 A  0.5 hp 0.75 hp 2 hp  50 %  76 y 20 y  IP20 finger-safe, for vertical contact from the front
full-load current (FLA) for 3-phase AC motor  • at 480 V rated value  yielded mechanical performance [hp] for 3-phase AC motor  • at 200/208 V rated value  • at 220/230 V rated value  • at 460/480 V rated value  Safety related data  proportion of dangerous failures with high demand rate acc. to SN 31920  MTTF with high demand rate  T1 value for proof test interval or service life acc. to IEC 61508  protection class IP on the front acc. to IEC 60529  touch protection on the front acc. to IEC 60529  Ambient conditions  installation altitude at height above sea level maximum ambient temperature  • during operation  • during storage	3.4 A  0.5 hp 0.75 hp 2 hp  50 %  76 y 20 y  IP20 finger-safe, for vertical contact from the front  1 000 m  -25 +60 °C
full-load current (FLA) for 3-phase AC motor  • at 480 V rated value  yielded mechanical performance [hp] for 3-phase AC motor  • at 200/208 V rated value  • at 220/230 V rated value  • at 460/480 V rated value  Safety related data  proportion of dangerous failures with high demand rate acc. to SN 31920  MTTF with high demand rate  T1 value for proof test interval or service life acc. to IEC 61508  protection class IP on the front acc. to IEC 60529  touch protection on the front acc. to IEC 60529  Ambient conditions  installation altitude at height above sea level maximum ambient temperature  • during operation  • during storage  Electromagnetic compatibility	3.4 A  0.5 hp 0.75 hp 2 hp  50 %  76 y 20 y  IP20 finger-safe, for vertical contact from the front  1 000 m  -25 +60 °C
full-load current (FLA) for 3-phase AC motor	3.4 A  0.5 hp 0.75 hp 2 hp  50 %  76 y 20 y  IP20 finger-safe, for vertical contact from the front  1 000 m  -25 +60 °C -55 +80 °C
full-load current (FLA) for 3-phase AC motor	3.4 A  0.5 hp 0.75 hp 2 hp  50 %  76 y 20 y  IP20 finger-safe, for vertical contact from the front  1 000 m  -25 +60 °C -55 +80 °C
full-load current (FLA) for 3-phase AC motor	3.4 A  0.5 hp 0.75 hp 2 hp  50 %  76 y 20 y  IP20 finger-safe, for vertical contact from the front  1 000 m  -25 +60 °C -55 +80 °C
full-load current (FLA) for 3-phase AC motor	3.4 A  0.5 hp 0.75 hp 2 hp  50 %  76 y 20 y  IP20 finger-safe, for vertical contact from the front  1 000 m  -25 +60 °C -55 +80 °C
full-load current (FLA) for 3-phase AC motor  • at 480 V rated value  yielded mechanical performance [hp] for 3-phase AC motor  • at 200/208 V rated value • at 220/230 V rated value • at 460/480 V rated value  • at 460/480 V rated value  Safety related data  proportion of dangerous failures with high demand rate acc. to SN 31920  MTTF with high demand rate  T1 value for proof test interval or service life acc. to IEC 61508  protection class IP on the front acc. to IEC 60529  touch protection on the front acc. to IEC 60529  Ambient conditions  installation altitude at height above sea level maximum ambient temperature  • during operation • during storage  Electromagnetic compatibility  conducted interference  • 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-	3.4 A  0.5 hp 0.75 hp 2 hp  50 %  76 y 20 y  IP20 finger-safe, for vertical contact from the front  1 000 m  -25 +60 °C -55 +80 °C  2 kV / 5 kHz behavior criterion 2 2 kV behavior criterion 2
full-load current (FLA) for 3-phase AC motor	3.4 A  0.5 hp 0.75 hp 2 hp  50 %  76 y 20 y  IP20 finger-safe, for vertical contact from the front  1 000 m  -25 +60 °C -55 +80 °C  2 kV / 5 kHz behavior criterion 2 2 kV behavior criterion 2 1 kV 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> <li>of full range R fuse link for semiconductor protection at NH design usable</li> </ul>	<u>3NE1813-0</u>
<ul> <li>of full range R fuse link for semiconductor protection at cylindrical design usable</li> </ul>	<u>5SE1320</u>
<ul> <li>of back-up R fuse link for semiconductor protection at NH design usable</li> </ul>	<u>3NE8015-1</u>
<ul> <li>of back-up R fuse link for semiconductor protection at cylindrical design 10 x 38 mm usable</li> </ul>	<u>3NC1020</u>
<ul> <li>of back-up R fuse link for semiconductor protection at cylindrical design 14 x 51 mm usable</li> </ul>	<u>3NC1415</u>
<ul> <li>of back-up R fuse link for semiconductor protection at cylindrical design 22 x 58 mm usable</li> </ul>	<u>3NC2220</u>
manufacturer's article number of the gG fuse	
<ul> <li>at NH design usable</li> </ul>	3NA3801-6
<ul> <li>at cylindrical design 10 x 38 mm usable</li> </ul>	3NW6001-1
at cylindrical design 14 x 51 mm usable	<u>3NW6101-1</u>
manufacturer's article number	
<ul> <li>of DIAZED fuse usable</li> </ul>	<u>5SB171</u>
Certificates/ approvals	

## **General Product Approval**

**EMC** 

**Declaration of** Conformity













**Test Certificates** 

other

Type Test Certificates/Test Report

Confirmation

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=3RF3405-1BB24

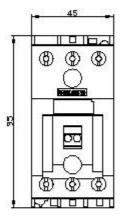
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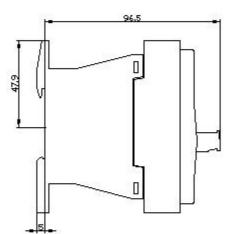
http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RF3405-1BB24

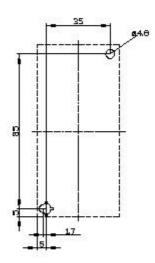
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

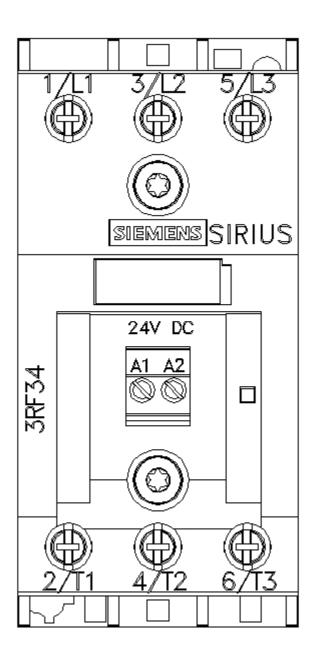
https://support.industry.siemens.com/cs/ww/en/ps/3RF3405-1BB24

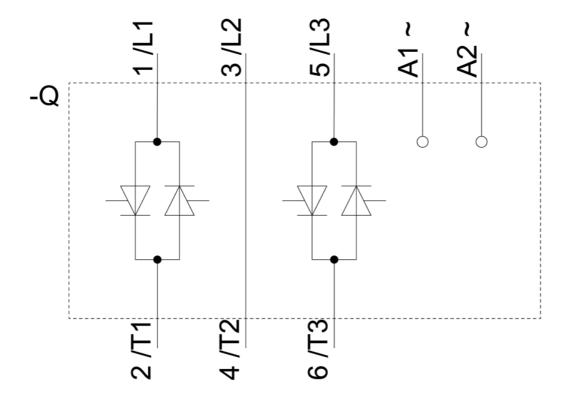
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