SIEMENS

Data sheet 3RF3405-1BD04

Solid-state contactor 3-phase 3RF3 AC 53 / 5.4 A / 40 °C 48-480 V / 24 V DC Reversing circuit Instantaneous switching screw terminal

product brand name	SIRIUS
product designation	solid-state reversing contactor
design of the product	two-phase controlled
product type designation	3RF34
manufacturer's article number	
• _1 of the accessories that can be ordered	3RA2921-1BA00
• _2 of the accessories that can be ordered	3RF3900-0QA88
product designation	
• _1 of the accessories that can be ordered	Link module
• _2 of the accessories that can be ordered	Connection adapter
General technical data	
product function	instantaneous switching
power loss [W] for rated value of the current	
• at AC in hot operating state	9 W
• at AC in hot operating state per pole	3 W
• without load current share typical	0.4 W
insulation voltage rated value	600 V
type of voltage of the control supply voltage	DC
surge voltage resistance of main circuit rated value	6 kV
shock resistance according to IEC 60068-2-27	15g / 11 ms
vibration resistance according to IEC 60068-2-6	2g
certificate of suitability	CE / UL / CSA / CCC / C-Tick (RCM)
reference code according to IEC 81346-2	Q
Substance Prohibitance (Date)	05/28/2009
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	
• at AC-3 at 400 V rated value	5.4 A
• at AC-53a at 400 V at ambient temperature 40 °C rated value	5.4 A
operational current minimum	500 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	600 A
I2t value maximum	1 800 A²·s
Control circuit/ Control	
type of voltage of the control supply voltage	DC
control supply voltage 1	
● at DC rated value	24 V
control supply voltage	
● at DC initial value for signal <1> detection	15 V
● at DC full-scale value for signal<0> recognition	5 V
symmetrical line frequency tolerance	5 Hz
operating range factor control supply voltage rated value at DC	
● initial value	0.63
● full-scale value	1.25
control current at minimum control supply voltage	
● at DC	2 mA
control current at DC rated value	15 mA
ON-delay time	5 ms
OFF-delay time	5 ms; additionally max. one half-wave
switchover delay of reversing contactor	60 ... 100 ms
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 DIN rail
● side-by-side mounting	Yes
design of the thread of the screw for securing the equipment	M4
height	95 mm
width	45 mm
depth	113.8 mm
required spacing with side-by-side mounting	
● 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
type of connectable conductor cross-sections	
● for main contacts	
— solid	2x (1.5 ... 2.5 mm²), 2x (2.5 ... 6 mm²)
— finely stranded with core end processing	2x (1 ... 2.5 mm²), 2x (2.5 ... 6 mm²), 1x 10 mm²
● at AWG cables for main contacts	2x (14 ... 10)
connectable conductor cross-section for main contacts	
● solid or stranded	1.5 ... 6 mm²
● finely stranded with core end processing	1 ... 10 mm²
type of connectable conductor cross-sections	
● for auxiliary and control contacts	
— 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	
● for main contacts with screw-type terminals	2 ... 2.5 N·m
● for auxiliary and control contacts with screw-type terminals	0.5 ... 0.6 N·m
tightening torque [lbf·in]	
● for main contacts with screw-type terminals	18 ... 22 lbf·in
● for auxiliary and control contacts with screw-type terminals	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	10 mm
● for auxiliary and control contacts	7 mm
UL/CSA ratings	
full-load current (FLA) for 3-phase AC motor	
● at 480 V rated value	4.8 A
yielded mechanical performance [hp] for 3-phase AC motor	
● at 200/208 V rated value	1 hp
● at 220/230 V rated value	1 hp
● at 460/480 V rated value	3 hp
Safety related data	
proportion of dangerous failures with high demand rate according to SN 31920	50 %
MTTF with high demand rate	39 y
T1 value for proof test interval or service life according to IEC 61508	6 y
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	
● during operation	-25 ... +60 °C
● during storage	-55 ... +80 °C
Electromagnetic compatibility	
conducted interference	
● due to burst according to IEC 61000-4-4	2 kV / 5 kHz behavior criterion 2
● due to conductor-earth surge according to IEC 61000-4-5	2 kV behavior criterion 2
● due to conductor-conductor surge according to IEC 61000-4-5	1 kV behavior criterion 2
● due to high-frequency radiation according to IEC 61000-4-6	140 dBuV in the frequency range 0.15 ... 80 MHz, 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 A for industrial environment
Short-circuit protection, design of the fuse link	
manufacturer's article number	
● of full range R fuse link for semiconductor protection at NH design usable	3NE1802-0
● of full range R fuse link for semiconductor protection at cylindrical design usable	5SE1335
● of back-up R fuse link for semiconductor protection at NH design usable	3NE8020-1
● of back-up R fuse link for semiconductor protection at cylindrical design 10 x 38 mm usable	3NC1032
● of back-up R fuse link for semiconductor protection at cylindrical design 14 x 51 mm usable	3NC1450
● of back-up R fuse link for semiconductor protection	3NC2263

at cylindrical design 22 x 58 mm usable	
manufacturer's article number of the gG fuse	
● at NH design usable	3NA3805-6

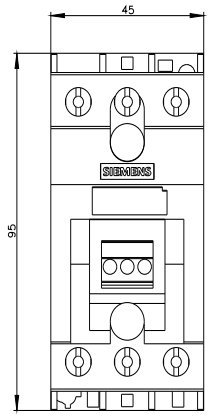
Certificates/ approvals

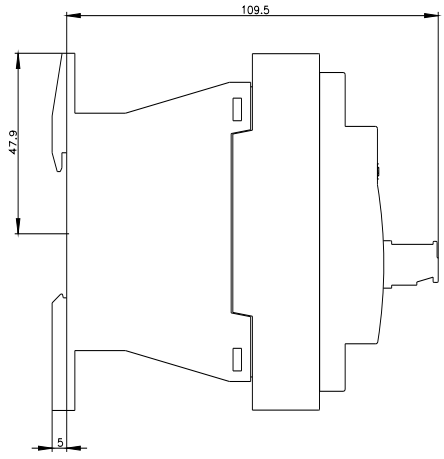
General Product Approval					EMC
CSA	CCC	Confirmation	UL	EAC	RCM

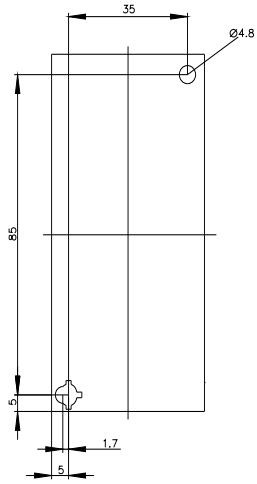
Declaration of Conformity	Test Certificates	other
EG-Konf. UKCA	Type Test Certificates/Test Report	Confirmation

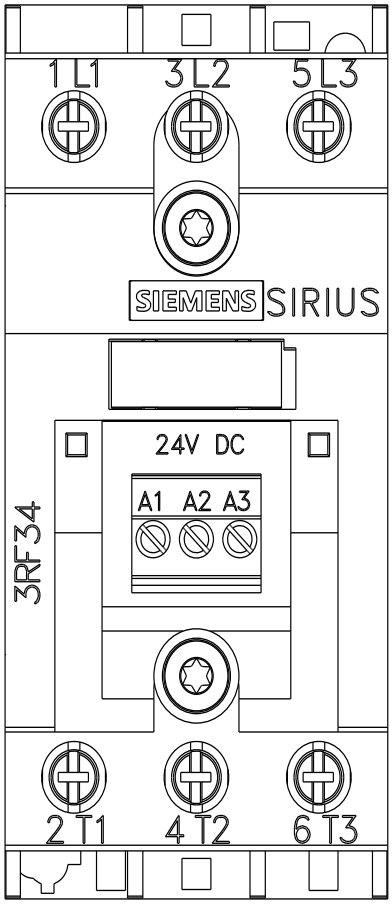
Further information

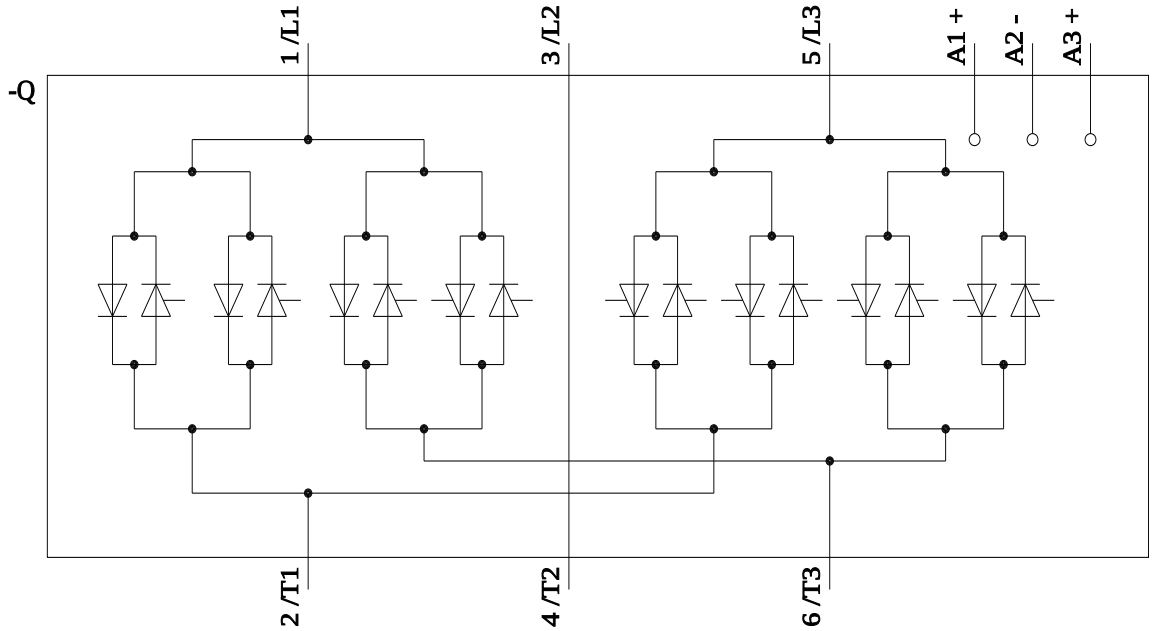
Information- and Downloadcenter (Catalogs, Brochures,…)
https://www.siemens.com/ic10
Industry Mall (Online ordering system)
https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RF3405-1BD04
Cax online generator
http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RF3405-1BD04
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)
https://support.industry.siemens.com/cs/ww/en/ps/3RF3405-1BD04
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RF3405-1BD04&lang=en











last modified: 11/21/2022