SIEMENS

Data sheet 3RF3410-2BB24

Solid-state contactor 3-phase 3RF3 AC 53 / 9.2 A / 40 °C 48-480 V / 110-230 V AC 2-phase controlled Instantaneous switching Spring-type terminal

product brand name	SIRIUS
product designation	solid-state contactor
design of the product	two-phase controlled
product type designation	3RF34
General technical data	
product function	instantaneous switching
power loss [W] for rated value of the current at AC in hot operating state	16 W
● per pole	5.33 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	
● at AC-3 at 400 V rated value	9.2 A
● at AC-53a at 400 V at ambient temperature 40 °C rated value	9.2 A
operational current minimum	500 mA
operating power	
● at AC-3 at 400 V rated value	4 kW
rate of voltage rise at the thyristor for main contacts	1 000 V/µs

maximum permissible	
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	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	
● at 50 Hz full-scale value for signal<0> recognition	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	90 mm
depth	100.8 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	spring-loaded terminals
● for auxiliary and control circuit	spring-loaded terminals
type of connectable conductor cross-sections	
● for main contacts	
— solid	2x (0.5 ... 2.5 mm²)
— finely stranded with core end processing	2x (0.5 ... 1.5 mm²)
— finely stranded without core end processing	2x (0.5 ... 2.5 mm²)

● at AWG cables for main contacts	2x (18 ... 14)
connectable conductor cross-section for main contacts	
● solid or stranded	0.5 ... 2.5 mm²
● finely stranded with core end processing	0.5 ... 1.5 mm²
● finely stranded without core end processing	0.5 ... 2.5 mm²
type of connectable conductor cross-sections	
● for auxiliary and control contacts	
— solid	0.5 ... 1.5 mm²
— finely stranded with core end processing	0.5 ... 2.5 mm²
— finely stranded without core end processing	0.5 ... 2.5 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
stripped length of the cable	
● for main contacts	10 mm
● for auxiliary and control contacts	10 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	1.5 hp
● at 220/230 V rated value	2 hp
● at 460/480 V rated value	3 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	
● during operation	-25 ... +60 °C
● during storage	-55 ... +80 °C
Electromagnetic compatibility	
conducted interference	
● due to burst acc. to IEC 61000-4-4	2 kV / 5 kHz behavior criterion 2
● due to conductor-earth surge acc. to IEC 61000-4-5	2 kV behavior criterion 2
● due to conductor-conductor surge acc. to IEC 61000-4-5	1 kV behavior criterion 2
● due to high-frequency radiation acc. to IEC 61000-4-6	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	
● 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
● at cylindrical design 10 x 38 mm usable	3NW6005-1
● at cylindrical design 14 x 51 mm usable	3NW6105-1
● at cylindrical design 22 x 58 mm usable	3NW6205-1
manufacturer's article number	
● of DIAZED fuse usable	5SB311

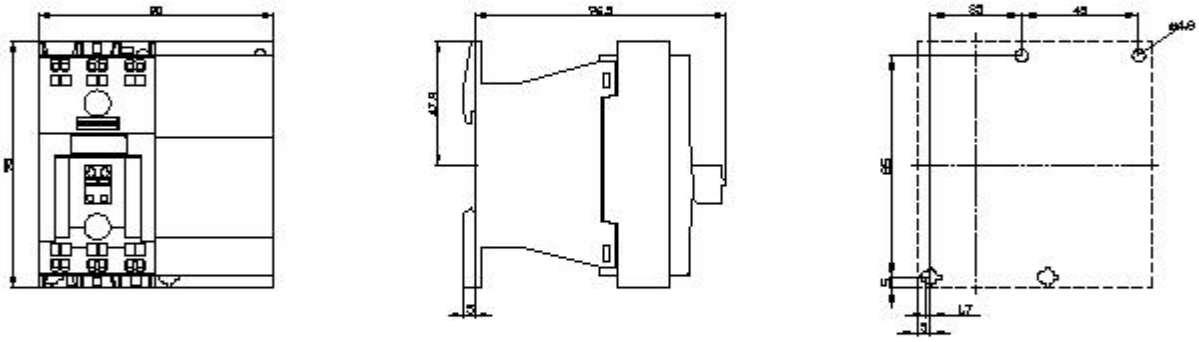
Certificates/ approvals

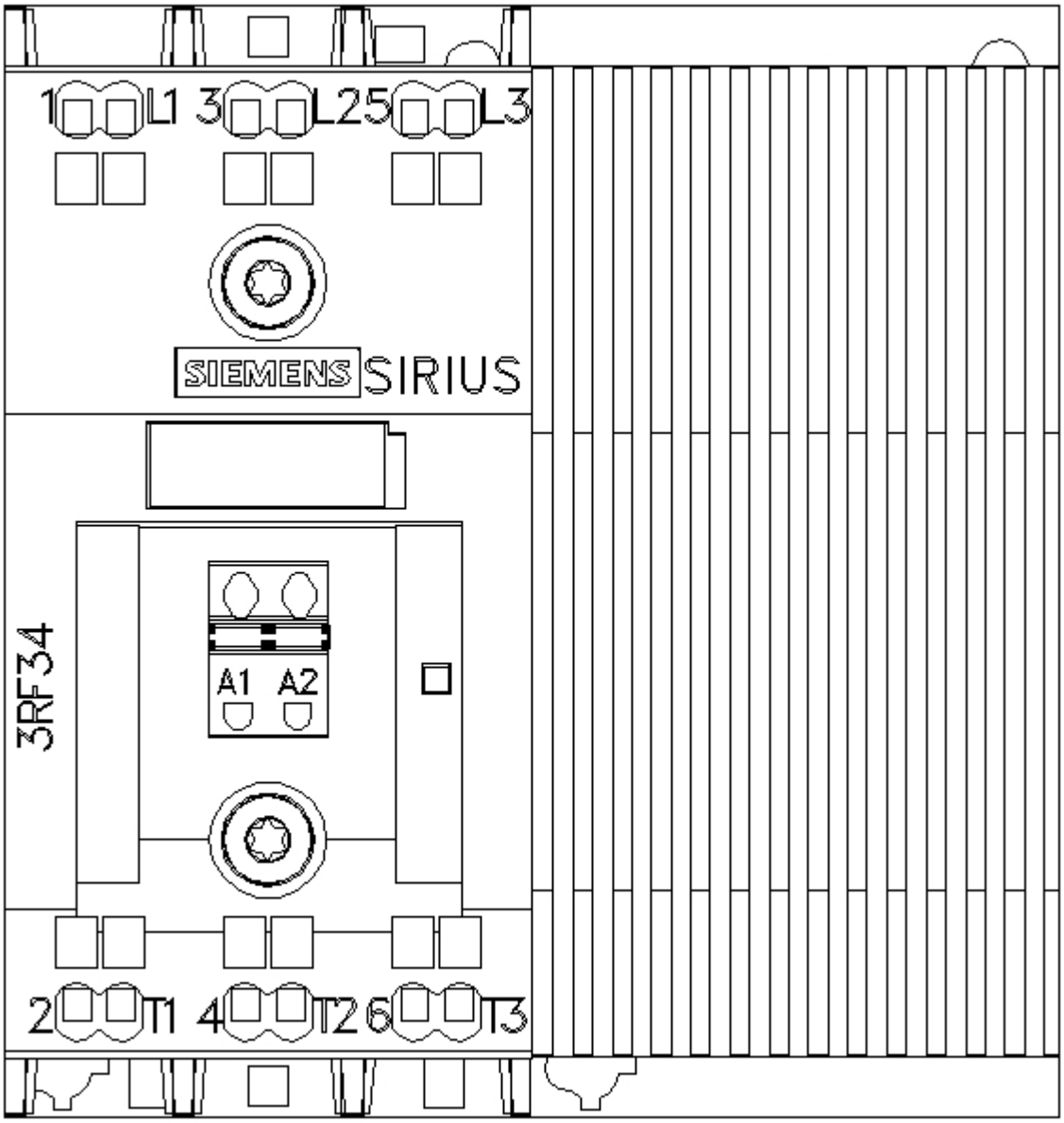
General Product Approval	EMC	Declaration of Conformity

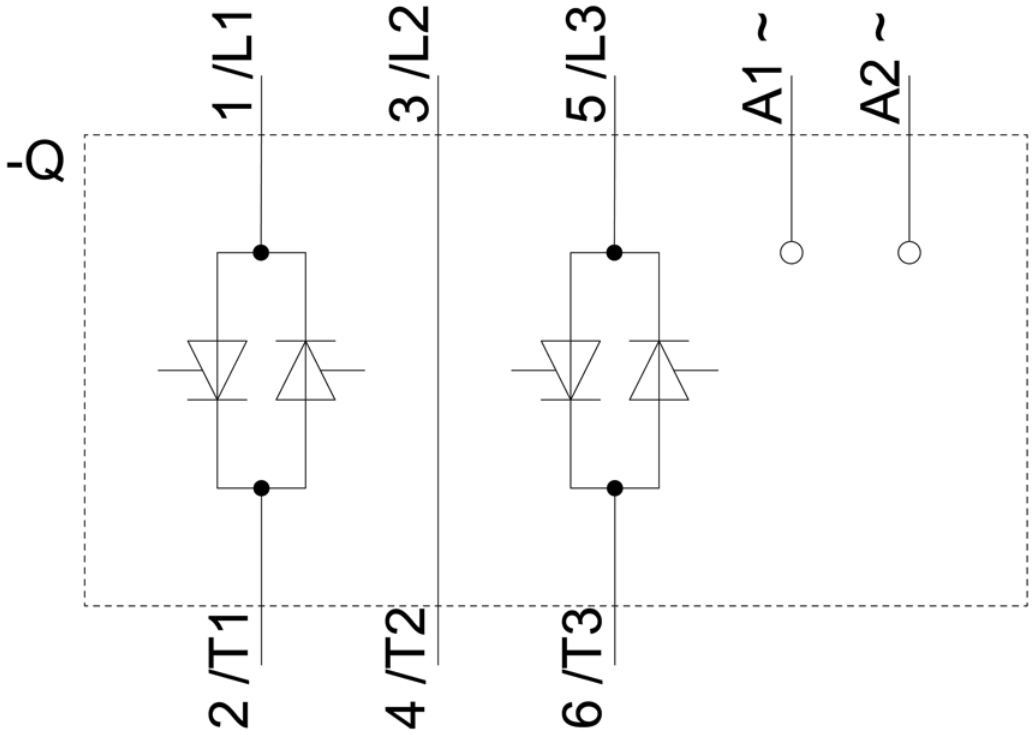
Test Certificates	other
Type Test Certificates/Test Report	Confirmation

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=3RF3410-2BB24
Cax online generator
http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RF3410-2BB24
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)
https://support.industry.siemens.com/cs/ww/en/ps/3RF3410-2BB24
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RF3410-2BB24&lang=en







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