SIEMENS

Data sheet 3RF3416-2BB06

Solid-state contactor 3-phase 3RF3 AC 53 / 16 A / 40 °C 48-600 V / 24 V DC 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	
certificate of suitability	CE / UL / CSA / CCC / C-Tick (RCM)
product function	instantaneous switching
power loss [W] for rated value of the current	
● at AC in hot operating state	28 W
● at AC in hot operating state per pole	9.33 W
● without load current share typical	0.4 W
insulation voltage rated value	600 V
type of voltage	
● of the operating voltage	AC
● of the control supply voltage	DC
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	0.484 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	
● at AC	
— at 50 Hz rated value	48 ... 600 V
— at 60 Hz rated value	48 ... 600 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 ... 660 V
● at 60 Hz	40 ... 660 V
operational current	

● at AC-3 at 400 V rated value	16 A
● at AC-53a at 400 V at ambient temperature 40 °C rated value	16 A
operational current minimum	500 mA
operating power	
● at AC-3 at 400 V rated value	7.5 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	1 600 V
reverse current of the thyristor	10 mA
derating temperature	40 °C
surge current resistance rated value	1 150 A
I2t value maximum	6 600 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	1 ms
OFF-delay time	1 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	
● 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)
● for 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	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)
● for AWG cables for auxiliary and control contacts	1x (AWG 20 ... 12)
AWG number as coded connectable conductor cross section for main contacts	14 ... 10
design of the thread of the connection screw	
● of the auxiliary and control contacts	M3
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	7.6 A
● at 600 V rated value	9 A
yielded mechanical performance [hp] for 3-phase AC motor	
● at 200/208 V rated value	2 hp
● at 220/230 V rated value	2 hp
● at 460/480 V rated value	5 hp
● at 575/600 V rated value	7.5 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	
● 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	3NE1817-0
● of back-up R fuse link for semiconductor protection at NH design usable	3NE8022-1
● 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 at cylindrical design 22 x 58 mm usable	3NC2280
manufacturer's article number of the gG fuse	
● at NH design usable	3NA3812-6

Approvals Certificates

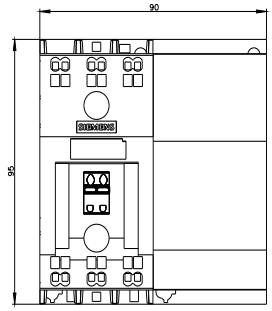
General Product Approval

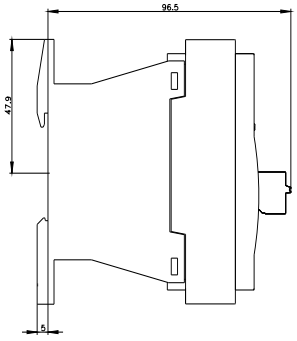
Confirmation

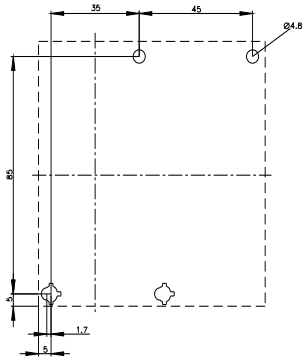
EMV	Test Certificates	other	Environment
RCM	Type Test Certificates/Test Report	Confirmation	Environmental Confirmations

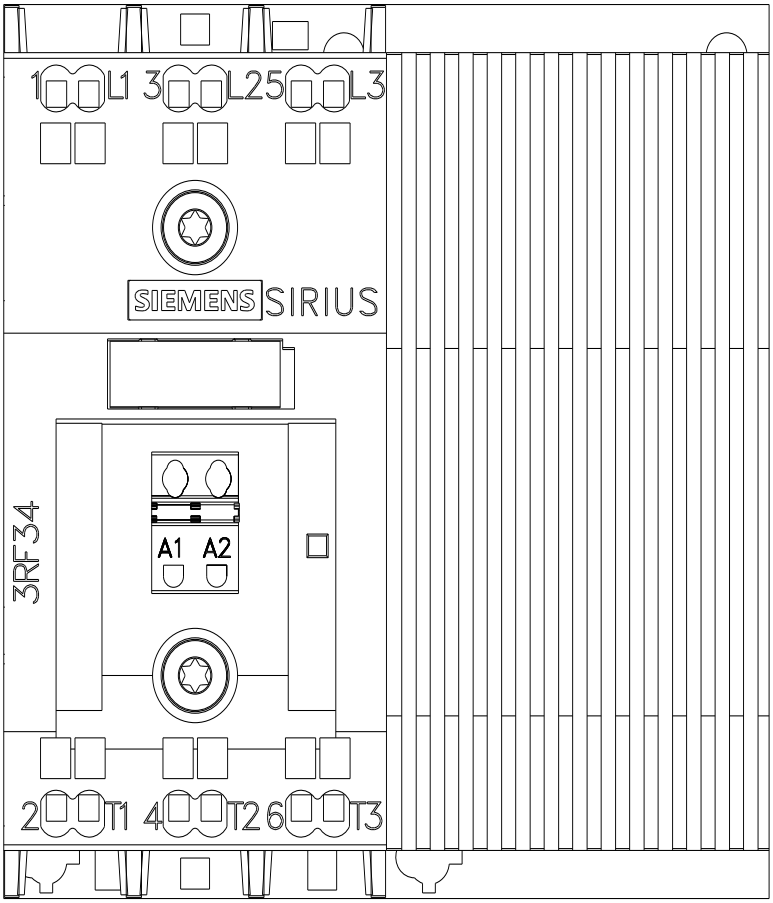
Further information

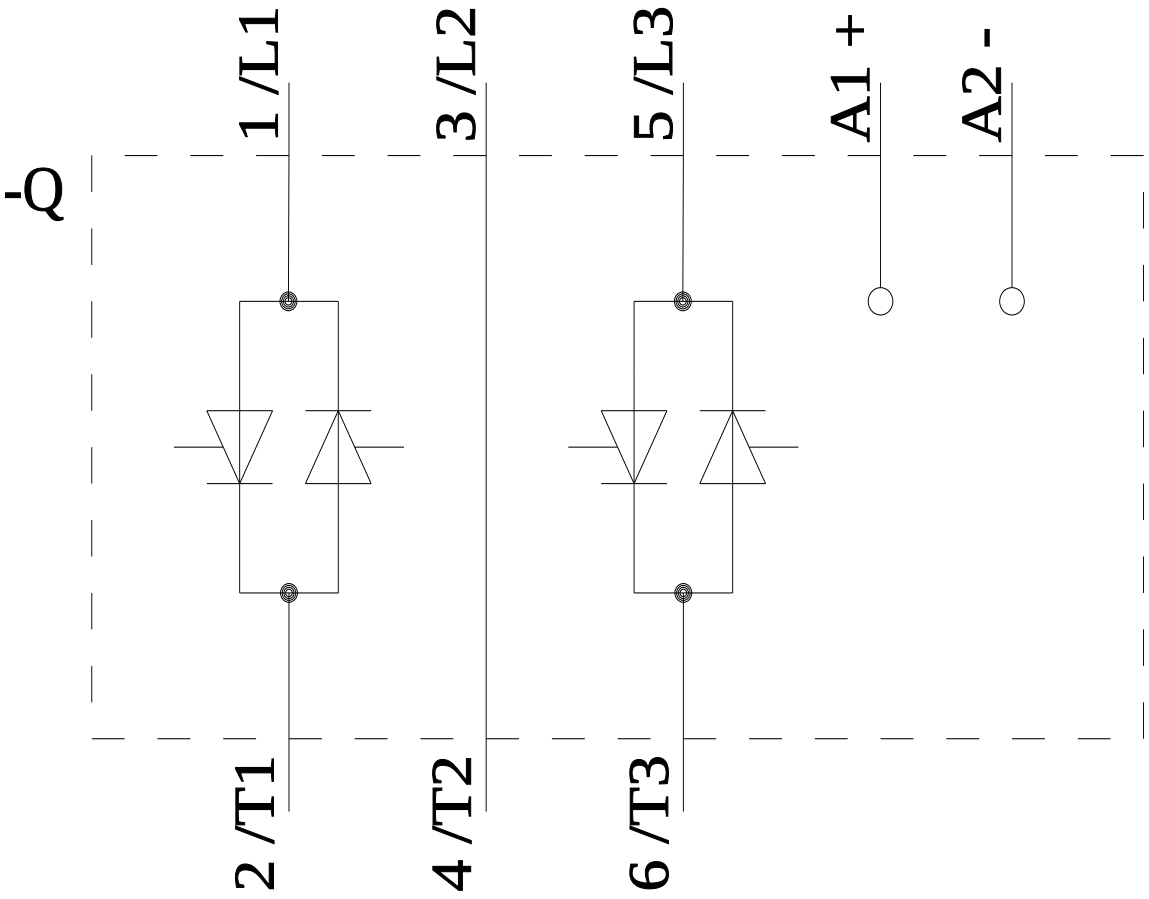
Information on the packaging
https://support.industry.siemens.com/cs/ww/en/view/109813875
Information- and Downloadcenter (Catalogs, Brochures,…)
https://www.siemens.com/ic10
Industry Mall (Online ordering system)
https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RF3416-2BB06
Cax online generator
http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RF3416-2BB06
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)
https://support.industry.siemens.com/cs/ww/en/ps/3RF3416-2BB06
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RF3416-2BB06&lang=en











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