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Data sheet 3RW4446-6BC46



SIRIUS soft starter Values at 690 V, 40 °C standard: 356 A, 355 kW Inside-delta: only up to 600 V 400-690 V AC, 230 V AC Screw terminals !!! Phased-out product !!! Successor is SIRIUS 3RW5, Preferred successor type is >>3RW5546-6HA16<<

General technical data	
product brand name	SIRIUS
product designation	Soft starter
product feature	
● integrated bypass contact system	Yes
● thyristors	Yes
product function	
● intrinsic device protection	Yes
● motor overload protection	Yes
● evaluation of thermistor motor protection	Yes
● external reset	Yes
● adjustable current limitation	Yes
● inside-delta circuit	Yes
product component motor brake output	Yes
insulation voltage rated value	690 V
degree of pollution	3, acc. to IEC 60947-4-2
reference code according to EN 61346-2	Q
reference code according to DIN 40719 extended according to IEC 204-2 according to IEC 750	G
Power Electronics	
operational current	
● at 40 °C rated value	356 A
● at 50 °C rated value	315 A
● at 60 °C rated value	280 A
operational current for 3-phase motors at inside-delta circuit	
● at 40 °C rated value	617 A
● at 50 °C rated value	546 A
● at 60 °C rated value	485 A
yielded mechanical performance for 3-phase motors	
● at 400 V	
— at standard circuit at 40 °C rated value	200 kW
— at inside-delta circuit at 40 °C rated value	355 kW
● at 500 V	
— at standard circuit at 40 °C rated value	250 kW
— at inside-delta circuit at 40 °C rated value	450 kW
● at 690 V at standard circuit at 40 °C rated value	355 kW
operating frequency rated value	50 ... 60 Hz
relative negative tolerance of the operating frequency	-10 %
relative positive tolerance of the operating frequency	10 %

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operating voltage at standard circuit rated value	400 ... 690 V
relative negative tolerance of the operating voltage at standard circuit	-15 %
relative positive tolerance of the operating voltage at standard circuit	10 %
operating voltage at inside-delta circuit rated value	400 ... 600 V
relative negative tolerance of the operating voltage at inside-delta circuit	-15 %
relative positive tolerance of the operating voltage at inside-delta circuit	10 %
minimum load [%]	8 %
adjustable motor current for motor overload protection minimum rated value	71 A
continuous operating current [% of Ie] at 40 °C	115 %
power loss [W] at operational current at 40 °C during operation typical	174 W
Control circuit/ Control	
type of voltage of the control supply voltage	AC
control supply voltage frequency 1 rated value	50 Hz
control supply voltage frequency 2 rated value	60 Hz
relative negative tolerance of the control supply voltage frequency	-10 %
relative positive tolerance of the control supply voltage frequency	10 %
control supply voltage 1 at AC	
● at 50 Hz rated value	230 V
● at 60 Hz rated value	230 V
relative negative tolerance of the control supply voltage at AC at 50 Hz	-15 %
relative positive tolerance of the control supply voltage at AC at 50 Hz	10 %
relative negative tolerance of the control supply voltage at AC at 60 Hz	-15 %
relative positive tolerance of the control supply voltage at AC at 60 Hz	10 %
display version for fault signal	Display
Mechanical data	
width	210 mm
height	230 mm
depth	298 mm
fastening method	screw fixing
mounting position	with vertical mounting surface +/-90° rotatable, with vertical mounting surface +/- 22.5° tiltable to the front and back
required spacing with side-by-side mounting	
● upwards	100 mm
● at the side	5 mm
● downwards	75 mm
wire length maximum	500 m
number of poles for main current circuit	3
Connections/ Terminals	
type of electrical connection	
● for main current circuit	busbar connection
● for auxiliary and control circuit	screw-type terminals
number of NC contacts for auxiliary contacts	0
number of NO contacts for auxiliary contacts	3
number of CO contacts for auxiliary contacts	1
type of connectable conductor cross-sections for main contacts for box terminal using the front clamping point	
● finely stranded with core end processing	70 ... 240 mm²
● finely stranded without core end processing	70 ... 240 mm²
● stranded	95 ... 300 mm²
type of connectable conductor cross-sections for main contacts for box terminal using the back clamping point	

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● finely stranded with core end processing	120 ... 185 mm²
● finely stranded without core end processing	120 ... 185 mm²
● stranded	120 ... 240 mm²
type of connectable conductor cross-sections for main contacts for box terminal using both clamping points	
● finely stranded with core end processing	min. 2x 50 mm², max. 2x 185 mm²
● finely stranded without core end processing	min. 2x 50 mm², max. 2x 185 mm²
● stranded	max. 2x 70 mm², max. 2x 240 mm²
type of connectable conductor cross-sections for AWG cables for main contacts for box terminal	
● using the back clamping point	250 ... 500 kcmil
● using the front clamping point	3/0 ... 600 kcmil
● using both clamping points	min. 2x 2/0, max. 2x 500 kcmil
type of connectable conductor cross-sections for DIN cable lug for main contacts	
● finely stranded	50 ... 240 mm²
● stranded	70 ... 240 mm²
type of connectable conductor cross-sections for auxiliary contacts	
● solid	2x (0.5 ... 2.5 mm²)
● finely stranded with core end processing	2x (0.5 ... 1.5 mm²)
type of connectable conductor cross-sections for AWG cables	
● for main contacts	2/0 ... 500 kcmil
● for auxiliary contacts	2x (20 ... 14)
● for auxiliary contacts finely stranded with core end processing	2x (20 ... 16)
Ambient conditions	
installation altitude at height above sea level	5 000 m
environmental category	
● during transport according to IEC 60721	2K2, 2C1, 2S1, 2M2 (max. fall height 0.3 m)
● during storage according to IEC 60721	1K6 (only occasional condensation), 1C2 (no salt mist), 1S2 (sand must not get inside the devices), 1M4
● during operation according to IEC 60721	3K6 (no formation of ice, no condensation), 3C3 (no salt mist), 3S2 (sand must not get into the devices), 3M6
ambient temperature	
● during operation	60 °C
● during storage	-25 ... +80 °C
derating temperature	40 °C
protection class IP on the front according to IEC 60529	IP00; IP20 with box terminal/cover
touch protection on the front according to IEC 60529	finger-safe, for vertical contact from the front with box terminal/cover
UL/CSA ratings	
yielded mechanical performance [hp] for 3-phase AC motor	
● at 460/480 V	
— at standard circuit at 50 °C rated value	250 hp
— at inside-delta circuit at 50 °C rated value	450 hp
● at 575/600 V	
— at standard circuit at 50 °C rated value	300 hp
— at inside-delta circuit at 50 °C rated value	600 hp
contact rating of auxiliary contacts according to UL	B300 / R300

Approvals Certificates

Environment	General Product Approval					
Environmental Confirmations	CCC	cULus	EAC	UKCA	CE EG-Konf.	

EMV	Test Certificates	Maritime application

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Special Test Certificate

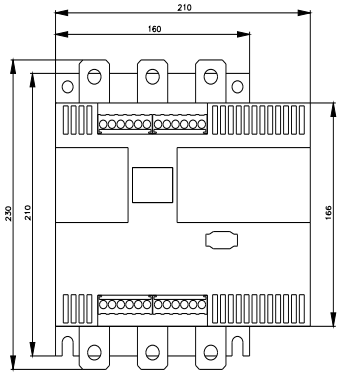
Type Test Certificates/Test Report

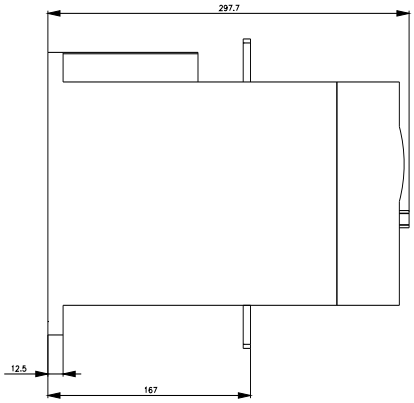
Maritime application	other

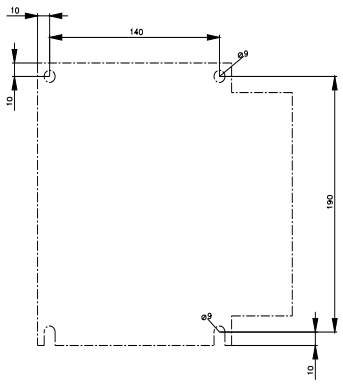
Confirmation

Further information

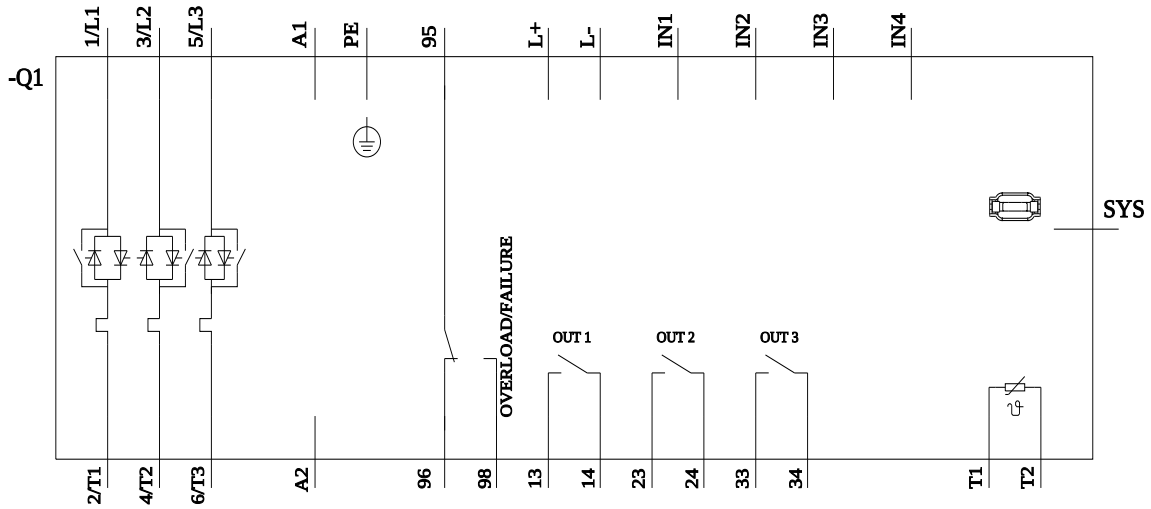
Simulation Tool for Soft Starters (STS)
https://support.industry.siemens.com/cs/ww/en/view/101494917
Information on the packaging
https://support.industry.siemens.com/cs/ww/en/view/109813875
Information for data generation and storage
https://support.industry.siemens.com/cs/ww/en/view/109995012
Information- 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=3RW4446-6BC46
Cax online generator
https://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RW4446-6BC46
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)
https://support.industry.siemens.com/cs/ww/en/ps/3RW4446-6BC46
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)
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