SIEMENS

Data sheet 3RW4046-1TB05



SIRIUS soft starter S3 80 A, 55 kW/500 V, 40 °C 400-600 V AC, 24 V AC/DC
Screw terminals Thermistor motor protection

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	No
product component motor brake output	No
insulation voltage rated value	600 V
degree of pollution	3, acc. to IEC 60947-4-2
blocking voltage of the thyristor maximum	1 600 V
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	80 A
● at 50 °C rated value	73 A
● at 60 °C rated value	66 A
yielded mechanical performance for 3-phase motors	
● at 400 V	
— at standard circuit at 40 °C rated value	45 kW
● at 500 V	
— at standard circuit at 40 °C rated value	55 kW
operating frequency rated value	50 ... 60 Hz
relative negative tolerance of the operating frequency	-10 %
relative positive tolerance of the operating frequency	10 %
operating voltage at standard circuit rated value	400 ... 600 V
relative negative tolerance of the operating voltage at standard circuit	-15 %
relative positive tolerance of the operating voltage at	10 %

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standard circuit	
minimum load [%]	20 %
adjustable motor current for motor overload protection minimum rated value	43 A
continuous operating current [% of Ie] at 40 °C	115 %
power loss [W] at operational current at 40 °C during operation typical	12 W
Control circuit/ Control	
type of voltage of the control supply voltage	AC/DC
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	24 V
● at 60 Hz rated value	24 V
relative negative tolerance of the control supply voltage at AC at 50 Hz	-20 %
relative positive tolerance of the control supply voltage at AC at 50 Hz	20 %
relative negative tolerance of the control supply voltage at AC at 60 Hz	-20 %
relative positive tolerance of the control supply voltage at AC at 60 Hz	20 %
control supply voltage 1 at DC rated value	24 V
relative negative tolerance of the control supply voltage at DC	-20 %
relative positive tolerance of the control supply voltage at DC	20 %
display version for fault signal	red
Mechanical data	
size of engine control device	S3
width	70 mm
height	170 mm
depth	190 mm
fastening method	screw and snap-on mounting
mounting position	With additional fan: With vertical mounting surface +/-90° rotatable, with vertical mounting surface +/- 22.5° tiltable to the front and back Without additional fan: With vertical mounting surface +/-10° rotatable, with vertical mounting surface +/- 10° t
required spacing with side-by-side mounting	
● upwards	60 mm
● at the side	30 mm
● downwards	40 mm
wire length maximum	300 m
number of poles for main current circuit	3
Connections/ Terminals	
type of electrical connection	
● for main current circuit	screw-type terminals
● for auxiliary and control circuit	screw-type terminals
number of NC contacts for auxiliary contacts	0
number of NO contacts for auxiliary contacts	2
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	
● solid	2x (2.5 ... 16 mm²)
● finely stranded with core end processing	2.5 ... 35 mm²
● stranded	4 ... 70 mm²
type of connectable conductor cross-sections for main contacts for box terminal using the back clamping point	
● solid	2x (2.5 ... 16 mm²)

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● finely stranded with core end processing	2.5 ... 50 mm²
● stranded	10 ... 70 mm²
type of connectable conductor cross-sections for main contacts for box terminal using both clamping points	
● solid	2x (2.5 ... 16 mm²)
● finely stranded with core end processing	2x (2.5 ... 35 mm²)
● stranded	2x (10 ... 50 mm²)
type of connectable conductor cross-sections for AWG cables for main contacts for box terminal	
● using the back clamping point	2x (10 ... 1/0)
● using the front clamping point	2x (10 ... 1/0)
● using both clamping points	10 ... 2/0
type of connectable conductor cross-sections for DIN cable lug for main contacts	
● finely stranded	2 x (10 ... 50 mm²)
● stranded	2x (10 ... 70 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	2x (7 ... 1/0)
● 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	-25 ... +60 °C
● during storage	-40 ... +80 °C
derating temperature	40 °C
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
UL/CSA ratings	
yielded mechanical performance [hp] for 3-phase AC motor	
● at 460/480 V	
— at standard circuit at 50 °C rated value	50 hp
● at 575/600 V	
— at standard circuit at 50 °C rated value	60 hp
contact rating of auxiliary contacts according to UL	B300 / R300
Approvals Certificates	
Environmental Product Declaration	
● global warming potential [CO2 eq] / during manufacturing	23.7 kg
● global warming potential [CO2 eq] / during sales	0.471 kg
● global warming potential [CO2 eq] / during operation	158 kg
● global warming potential [CO2 eq] / after end of life	-6.65 kg
● global warming potential [CO2 eq] / total	175 kg

Environment	**General Product Approval**

Environmental Confirmations

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General Product Approval	EMV	For use in hazardous locations		Test Certificates
EG-Konf.	RCM	ATEX	IECEx	Special Test Certificate

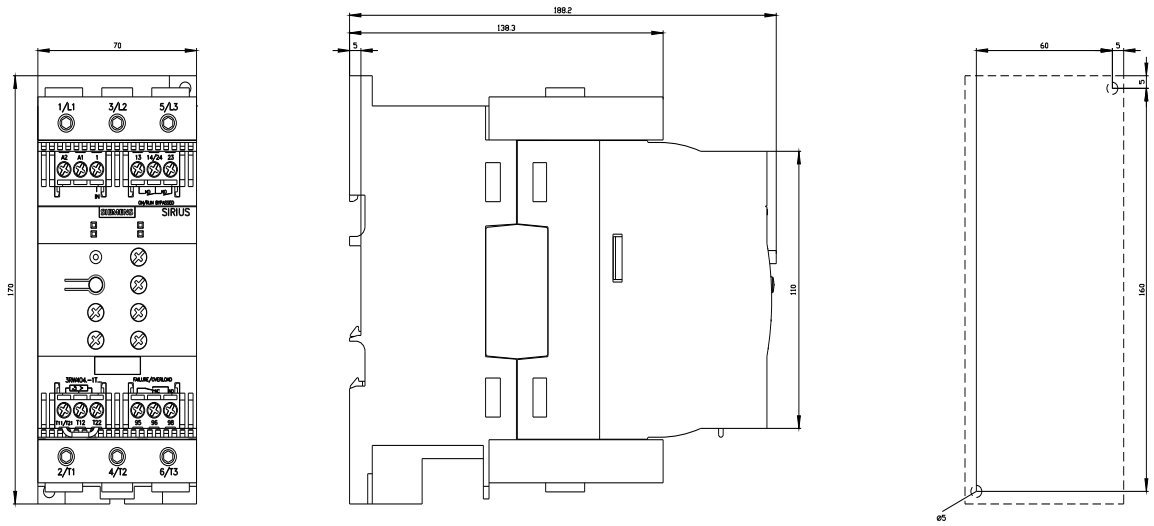
Test Certificates	Maritime application			other	
Type Test Certificates/Test Report	DNV	LRS	PRS	Confirmation	产品合格 QC PASS

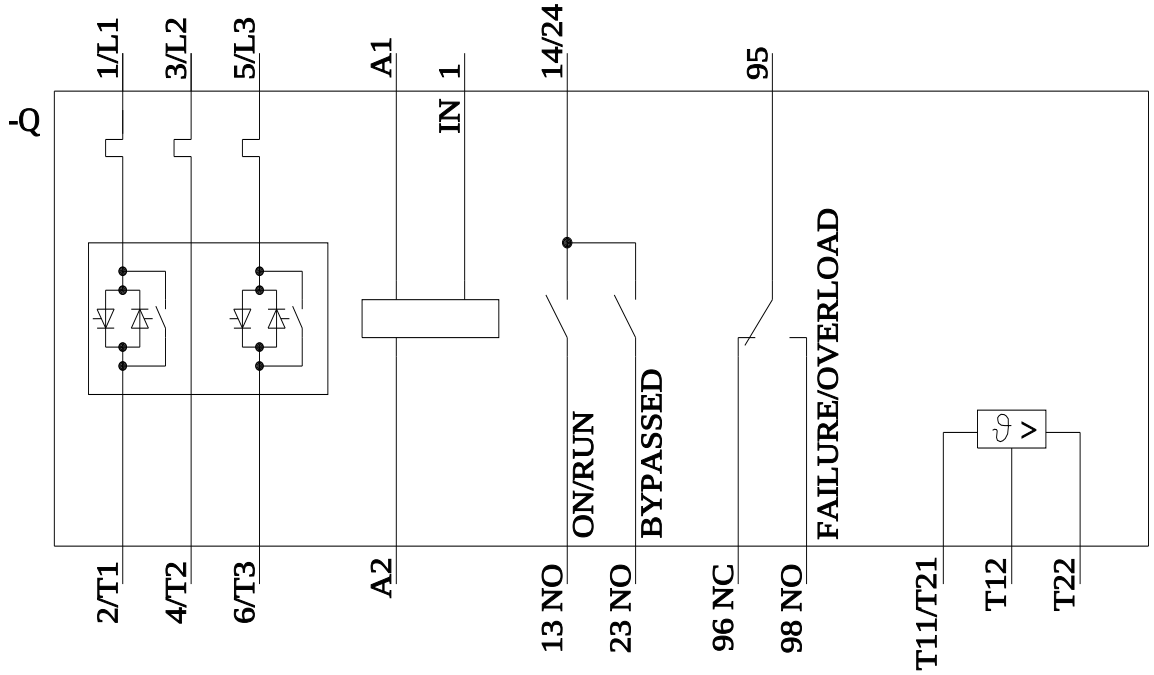
Railway	
Special Test Certificate	Confirmation

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=3RW4046-1TB05
Cax online generator
https://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RW4046-1TB05
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)
https://support.industry.siemens.com/cs/ww/en/ps/3RW4046-1TB05
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)
https://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW4046-1TB05&lang=en

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