SIEMENS



3RW5548-6HF14

Data sheet



SIRIUS soft starter 200-480 V 570 A, 110-250 V AC, Screw terminals Failsafe

Figure similar

product brand name	SIRIUS			
product category	Hybrid switching devices			
product designation	Failsafe soft starters			
product type designation	3RW55			
manufacturer's article number				
 of high feature HMI module usable 	<u>3RW5980-0HF00</u>			
 of communication module PROFINET standard usable 	<u>3RW5980-0CS00</u>			
 of communication module PROFINET high-feature usable 	<u>3RW5950-0CH00</u>			
 of communication module PROFIBUS usable 	<u>3RW5980-0CP00</u>			
 of communication module Modbus TCP usable 	<u>3RW5980-0CT00</u>			
 of communication module Modbus RTU usable 	<u>3RW5980-0CR00</u>			
 of communication module Ethernet/IP 	<u>3RW5980-0CE00</u>			
 of circuit breaker usable at 400 V 	3VA2580-6HN32-0AA0; Type of coordination 1, Iq = 65 kA, CLASS 1			
 of circuit breaker usable at 500 V 	3VA2580-6HN32-0AA0; Type of coordination 1, Iq = 65 kA, CLASS 1			
 of circuit breaker usable at 400 V at inside-delta circuit 	<u>3VA2510-6HN32-0AA0; Type of coordination 1, Iq = 65 kA, CLASS 10</u>			
 of circuit breaker usable at 500 V at inside-delta circuit 	<u>3VA2510-6HN32-0AA0; Type of coordination 1. lq = 65 kA. CLASS 10</u>			
 of the gG fuse usable up to 690 V 	2x3NA3365-6; Type of coordination 1, Iq = 65 kA			
 of the gG fuse usable at inside-delta circuit up to 500 V 	2x3NA3365-6; Type of coordination 1, Iq = 65 kA			
 of full range R fuse link for semiconductor protection usable up to 690 V 	<u>3NE1437-2; Type of coordination 2, Iq = 65 kA</u>			
 of back-up R fuse link for semiconductor protection usable up to 690 V 	<u>3NC3342-1U; Type of coordination 2, Iq = 65 kA</u>			
General technical data				
starting voltage [%]	20 100 %			
stopping voltage [%]	50 %; non-adjustable			
start-up ramp time of soft starter	0 360 s			
ramp-down time of soft starter	0 360 s			
start torque [%]	10 100 %			
stopping torque [%]	10 100 %			
torque limitation [%]	20 200 %			
current limiting value [%] adjustable	125 800 %			
breakaway voltage [%] adjustable	40 100 %			
breakaway time adjustable	0 2 s			
number of parameter sets	3			
accuracy class according to IEC 61557-12	5 %			

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certificate of suitability	Yes (p) dientudong		
• CE marking	Yes		
UL approval			
CSA approval	Yes		
product component			
HMI-High Feature	Yes		
 is supported HMI-High Feature 	Yes		
product feature integrated bypass contact system	Yes		
number of controlled phases	3		
trip class	CLASS 10A / 10E (default) / 20E / 30E; acc. to IEC 60947-4-2		
current unbalance limiting value [%]	10 60 %		
ground-fault monitoring limiting value [%]	10 95 %		
buffering time in the event of power failure			
 for main current circuit 	100 ms		
for control circuit	100 ms		
idle time adjustable	0 255 s		
insulation voltage rated value	480 V		
degree of pollution	3, acc. to IEC 60947-4-2		
impulse voltage rated value	6 kV		
blocking voltage of the thyristor maximum	1 400 V		
service factor	1.15		
surge voltage resistance rated value	6 kV		
maximum permissible voltage for safe isolation			
 between main and auxiliary circuit 	480 V; does not apply for thermistor connection		
shock resistance	15 g / 11 ms, from 6 g / 11 ms with potential contact lifting		
vibration resistance	15 mm up to 6 Hz; 2 g up to 500 Hz		
recovery time after overload trip adjustable	60 1 800 s		
utilization category according to IEC 60947-4-2	AC 53a		
reference code according to IEC 81346-2	Q		
Substance Prohibitance (Date)	11/22/2019		
product function			
 ramp-up (soft starting) 	Yes		
• ramp-down (soft stop)	Yes		
breakaway pulse	Yes		
adjustable current limitation	Yes		
 creep speed in both directions of rotation 	Yes		
• pump ramp down	Yes		
• DC braking	Yes		
motor heating	Yes		
slave pointer function	Yes		
trace function	Yes		
intrinsic device protection	Yes		
 matrixe device protection motor overload protection 	Yes; Full motor protection (thermistor motor protection and electronic motor overload protection) / When using the motor overload protection according to ATEX, an upstream contactor is required in inside-delta circuit.		
 evaluation of thermistor motor protection 	Yes; Type A PTC or Klixon / Thermoclick		
inside-delta circuit	Yes		
auto-RESET	Yes		
manual RESET	Yes		
remote reset	Yes		
 communication function 	Yes		
 operating measured value display 	Yes		
• event list	Yes		
• error logbook	Yes		
via software parameterizable	Yes		
via software configurable	Yes		
screw terminal	Yes		
spring-loaded terminal	No		
PROFlenergy	Yes; in connection with the PROFINET Standard and PROFINET High-		
	Feature communication modules		

firmware update	Yes Yes (co)dientudong				
 removable terminal for control circuit 	Yes				
voltage ramp					
torque control	Yes				
combined braking	Yes				
analog output	Yes; 4 20 mA (default) / 0 10 V				
programmable control inputs/outputs	Yes				
condition monitoring	Yes				
automatic parameterisation	Yes				
 application wizards alternative run-down 	Yes				
emergency operation mode	Yes				
reversing operation	Yes				
 soft starting at heavy starting conditions 	Yes				
Power Electronics					
operational current					
• at 40 °C rated value	570 A				
 at 40 °C rated value minimum 	114 A				
 at 50 °C rated value 	504 A				
• at 60 °C rated value	460 A				
operational current at inside-delta circuit					
 at 40 °C rated value 	987 A				
• at 50 °C rated value	873 A				
• at 60 °C rated value	796 A				
operating voltage					
rated value	200 480 V				
at inside-delta circuit rated value	200 480 V				
relative negative tolerance of the operating voltage relative positive tolerance of the operating voltage	-15 % 10 %				
relative positive tolerance of the operating voltage at	-15 %				
inside-delta circuit					
relative positive tolerance of the operating voltage at inside-delta circuit	10 %				
operating power for 3-phase motors					
• at 230 V at 40 °C rated value	160 kW				
• at 230 V at inside-delta circuit at 40 °C rated value	315 kW				
• at 400 V at 40 °C rated value	315 kW				
at 400 V at inside-delta circuit at 40 °C rated value	560 kW				
Operating frequency 1 rated value Operating frequency 2 rated value	50 Hz 60 Hz				
relative negative tolerance of the operating frequency	-10 %				
relative negative tolerance of the operating frequency	10 %				
minimum load [%]	10 %; Relative to set le				
power loss [W] for rated value of the current at AC					
• at 40 °C after startup	171 W				
• at 50 °C after startup	151 W				
• at 60 °C after startup	141 W				
power loss [W] at AC at current limitation 350 %					
• at 40 °C during startup	10 229 W				
• at 50 °C during startup	8 488 W				
• at 60 °C during startup	7 651 W				
type of the motor protection	Electronic, tripping in the event of thermal overload of the motor				
Control circuit/ Control					
type of voltage of the control supply voltage control supply voltage at AC	AC				
• at 50 Hz	110 250 V				
• at 60 Hz	110 250 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 %				

3RW55486HF14 Page 3/9 Subject to change without notice © Copyright Siemens

relative negative tolerance of the control supply voltage at AC at 60 Hz	10 % (P) dientudong			
relative positive tolerance of the control supply voltage at AC at 60 Hz	10%			
control supply voltage frequency	50 60 Hz			
relative negative tolerance of the control supply voltage frequency	-10 %			
relative positive tolerance of the control supply voltage frequency	10 %			
control supply current in standby mode rated value	100 mA			
holding current in bypass operation rated value	150 mA			
locked-rotor current at close of bypass contact maximum	0.87 A			
inrush current peak at application of control supply voltage maximum	43 A			
duration of inrush current peak at application of control supply voltage	1.6 ms			
design of the overvoltage protection	Varistor			
design of short-circuit protection for control circuit	4 A gG fuse (Icu=1 kA), 6 A quick-acting fuse (Icu=1 kA), C1 miniature circuit breaker (Icu= 600 A), C6 miniature circuit breaker (Icu= 300 A); Is not part of scope of supply			
Inputs/ Outputs				
number of digital inputs	4			
• with fail-safe	1			
parameterizable	4			
 number of digital outputs 	3			
Number of digital outputs with fail-safe	1			
number of digital outputs parameterizable	2			
 number of digital outputs not parameterizable 	-			
digital output version	2 normally-open contacts (NO) / 1 normally-closed contact (NC) / 1			
	changeover contact (CO)			
number of analog outputs	1			
switching capacity current of the relay outputs				
 at AC-15 at 250 V rated value 	3 A			
at DC-13 at 24 V rated value	1 A			
Response times				
OFF-delay time with safety-related request when switched off via control inputs maximum	100 ms			
Installation/ mounting/ dimensions				
mounting position	Vertical (can be rotated +/- 90° and tilted forward or backward +/- 22.5°)			
fastening method	screw fixing			
height	393 mm			
width	210 mm			
depth	203 mm			
required spacing with side-by-side mounting				
• forwards	10 mm			
backwards	0 mm			
• upwards	100 mm			
• downwards	75 mm			
• at the side	5 mm			
weight without packaging	10.9 kg			
Connections/ Terminals				
type of electrical connection				
for main current circuit	busbar connection			
for control circuit	screw-type terminals			
width of connection bar maximum	45 mm			
wire length for thermistor connection				
 with conductor cross-section = 0.5 mm² maximum 	50 m			
• with conductor cross-section = 1.5 mm ² maximum	150 m			
• with conductor cross-section = 2.5 mm ² maximum	250 m			
type of connectable conductor cross-sections	200 m			
for DIN cable lug for main contacts stranded	2x (50 240 mm²)			

 for DIN cable lug for main contacts finely stranded 	2x (70 240 mm ²)		
type of connectable conductor cross-sections	1x (0.5 4.0 mm ²)		
for control circuit solid			
 for control circuit finely stranded with core end processing 	1x (0.5 2.5 mm²), 2x		
 at AWG cables for control circuit solid 	1x (20 12), 2x (20 14)		
wire length	(x (20 12), 2x (20 1))		
between soft starter and motor maximum	800 m		
 at the digital inputs at DC maximum 	1 000 m		
tightening torque			
 for main contacts with screw-type terminals 	14 24 N·m		
 for auxiliary and control contacts with screw-type 	0.8 1.2 N·m		
terminals			
tightening torque [lbf·in]			
 for main contacts with screw-type terminals 	124 210 lbf·in		
 for auxiliary and control contacts with screw-type terminals 	7 10.3 lbf·in		
Ambient conditions			
installation altitude at height above sea level maximum	2 000 m; Derating as of 1000 m, see catalog		
ambient temperature			
during operation	-25 +60 °C; Please observe derating at temperatures of 40 °C or		
	above		
• during storage and transport	-40 +80 °C		
environmental category			
 during operation according to IEC 60721 	3K6 (no ice formation, only occasional condensation), 3C3 (no salt mist), 3S2 (sand must not get into the devices), 3M6		
during storage according to IEC 60721	1K6 (only occasional condensation), 1C2 (no salt mist), 1S2 (sand must not get inside the devices), 1M4		
during transport according to IEC 60721	2K2, 2C1, 2S1, 2M2 (max. fall height 0.3 m)		
EMC emitted interference	acc. to IEC 60947-4-2: Class A		
Communication/ Protocol			
communication module is supported			
PROFINET standard	Yes		
PROFINET high-feature	Yes		
EtherNet/IP	Yes		
Modbus RTU	Yes		
Modbus TCP	Yes		
PROFIBUS	Yes		
UL/CSA ratings			
manufacturer's article number			
• of the fuse			
 — usable for Standard Faults up to 575/600 V according to UL 	Type: Class J / L, max. 1600 A; Iq = 30 kA		
— usable for High Faults up to 575/600 V	Type: Class J / L, max. 1200 A; Iq = 100 kA		
according to UL			
 — usable for Standard Faults at inside-delta circuit up to 575/600 V according to UL 	Type: Class J / L, max. 1600 A; Iq = 30 kA		
 — usable for High Faults at inside-delta circuit up to 575/600 V according to UL 	Type: Class J / L, max. 1200 A; Iq = 100 kA		
operating power [hp] for 3-phase motors			
• at 200/208 V at 50 °C rated value	150 hp		
• at 220/230 V at 50 °C rated value	200 hp		
● at 460/480 V at 50 °C rated value	400 hp		
 at 200/208 V at inside-delta circuit at 50 °C rated value 	300 hp		
 at 220/230 V at inside-delta circuit at 50 °C rated value 	350 hp		
 at 460/480 V at inside-delta circuit at 50 °C rated value 	750 hp		
contact rating of auxiliary contacts according to UL Safety related data	R300-B300		
safety device type according to IEC 61508-2	Туре В		
B10d value	648 000		

3RW55486HF14 Page 5/9 Subject to change without notice © Copyright Siemens

Safety Integrity Level (SI • according to IEC 61: SIL Claim Limit (subsyst performance level (PL) acc category according to EN stop category according Safe failure fraction (SFF average diagnostic cove diagnostics test interval maximum PFHD with high demand ra PFDavg with low demand hardware fault tolerance T1 value for proof test inter IEC 61508	508 tem) according to cording to EN ISO ISO 13849-1 to EN 60204-1 F) trage level (DCav	13849-1	SIL1 SIL1 c 2 0	e)dien	tudong		
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stop category according Safe failure fraction (SFF average diagnostic cove diagnostics test interval maximum PFHD with high demand ra PFDavg with low demand hardware fault tolerance T1 value for proof test inter IEC 61508	to EN 60204-1 ⁻⁾ erage level (DCav	a)					
Safe failure fraction (SFF average diagnostic cove diagnostics test interval maximum PFHD with high demand ra PFDavg with low demand hardware fault tolerance T1 value for proof test inter IEC 61508	⁼) erage level (DCav	a)	0				
average diagnostic cove diagnostics test interval maximum PFHD with high demand ra PFDavg with low demand hardware fault tolerance T1 value for proof test inter IEC 61508	erage level (DCav	a)					
diagnostics test interval maximum PFHD with high demand ra PFDavg with low demand hardware fault tolerance T1 value for proof test inte IEC 61508	<u> </u>	a)	60 %				
maximum PFHD with high demand ra PFDavg with low demand hardware fault tolerance T1 value for proof test inte IEC 61508	by internal test f		90 %				
PFDavg with low demand hardware fault tolerance T1 value for proof test inte IEC 61508		unction	1 000 s				
hardware fault tolerance T1 value for proof test inte IEC 61508	ate according to E	N 62061	1E-6 1/h				
T1 value for proof test inte IEC 61508	d rate according	to IEC 61508	0.09				
IEC 61508	according to IEC	61508	0				
	erval or service life	according to	20 y				
safe state			Open load circuit				
protection class IP on th 60529	e front according	g to IEC	IP00; IP20 with cover				
touch protection on the	front according t	o IEC 60529	finger-safe, for vertical co	ntact from the front with c	over		
electromagnetic compat			acc. to IEC 60947-4-2				
ATEX	-						
certificate of suitability							
• ATEX			Yes				
• IECEx			Yes				
 according to ATEX of 	directive 2014/34/F	=U	BVS 18 ATEX F 003 X				
type of protection accord 2014/34/EU			II (2)G [Ex eb Gb] [Ex db Gb] [Ex pxb Gb], II (2)D [Ex tb Db] [Ex pxb Db], I (M2) [Ex db Mb]				
hardware fault tolerance relating to ATEX	according to IEC	61508	0				
PFDavg with low demand relating to ATEX	d rate according	to IEC 61508	3 0.008				
	D with high demand rate according to EN 62061			5E-7 1/h			
Safety Integrity Level (SI relating to ATEX	L) according to I	EC 61508	SIL1				
T1 value for proof test in according to IEC 61508 r		life	3 s				
Certificates/ approvals							
General Product Approv	val						
		<u>Confirmatior</u>			EHC		
EMC Fo	or use in hazardo	us locations	Declaration of Conformity	Test Certificates	Marine / Shipping		
RCM	KEX ATEX	IECE×	CE EG-Konf.	<u>Type Test Certific-</u> ates/Test Report	ABS		
Marine / Shipping				other			
	Lloydis Register urs	PRS	DNV-GL ENVILLEDER	<u>Confirmation</u>			

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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=3RW5548-6HF14

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RW5548-6HF14

Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

https://support.industry.siemens.com/cs/ww/en/ps/3RW5548-6HF14

Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...) http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5548-6HF14&lang=en

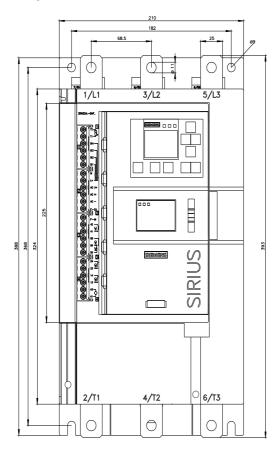
Characteristic: Tripping characteristics, I²t, Let-through current

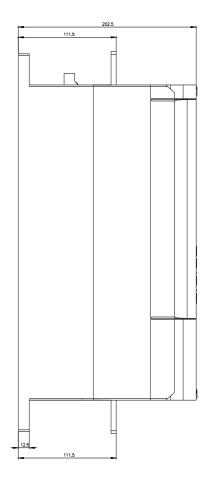
https://support.industry.siemens.com/cs/ww/en/ps/3RW5548-6HF14/char

Characteristic: Installation altitude

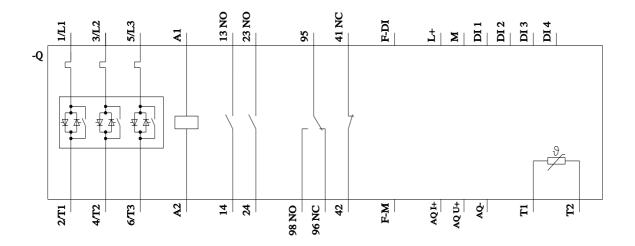
http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RW5548-6HF14&objecttype=14&gridview=view1 Simulation Tool for Soft Starters (STS)

https://support.industry.siemens.com/cs/ww/en/view/101494917









last modified:

5/13/2022 🖸

