SIEMENS



Data sheet 3RW5548-2HF14



SIRIUS soft starter 200-480 V 570 A, 110-250 V AC, spring-type terminals Fail-safe

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 	3RW5980-0HF00
 of communication module PROFINET standard usable 	3RW5980-0CS00
 of communication module PROFINET high-feature usable 	3RW5950-0CH00
 of communication module PROFIBUS usable 	3RW5980-0CP00
 of communication module Modbus TCP usable 	3RW5980-0CT00
 of communication module Modbus RTU usable 	3RW5980-0CR00
 of communication module Ethernet/IP 	3RW5980-0CE00
 of circuit breaker usable at 400 V 	3VA2580-6HN32-0AA0; Type of coordination 1, Iq = 65 kA, CLASS 10
 of circuit breaker usable at 500 V 	3VA2580-6HN32-0AA0; Type of coordination 1, Iq = 65 kA, CLASS 10
 of circuit breaker usable at 400 V at inside-delta circuit 	3VA2510-6HN32-0AA0; Type of coordination 1, Iq = 65 kA, CLASS 10
 of circuit breaker usable at 500 V at inside-delta circuit 	3VA2510-6HN32-0AA0: Type of coordination 1, Iq = 65 kA, CLASS 10
 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 	3NE1437-2; Type of coordination 2, Iq = 65 kA
 of back-up R fuse link for semiconductor protection usable up to 690 V 	3NC3342-1U; Type of coordination 2, Iq = 65 kA

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 %

(15) (5) (1) (1) (1) (1) (1) (1)	
certificate of suitability	Yes Yes dientudong
CE marking	Yes
UL approval	Yes
CSA approval	Yes
product component	V
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
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	No
spring-loaded terminal	Yes
PROFlenergy	Yes; in connection with the PROFINET Standard and PROFINET High- Feature communication modules

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combined braking comb	firmware update	Yes
combined braking comb	 removable terminal for control circuit 	Yes
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relative negative tolerance of the control supply voltage at AC at 50 Hz relative positive tolerance of the control supply 10 %		
· · · · · · · · · · · · · · · · · · ·	relative negative tolerance of the control supply	
TOTAL YOU ALL OV TIZE	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	10 % 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	1
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	200 111111
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	10.0 kg
type of electrical connection	huchar connection
for main current circuit for control circuit	busbar connection
	spring-loaded terminals
width of connection bar maximum	45 mm
wire length for thermistor connection	E0 m
• with conductor cross-section = 0.5 mm² maximum	50 m
• with conductor cross-section = 1.5 mm² maximum	150 m
with conductor cross-section = 2.5 mm² maximum	250 m
type of connectable conductor cross-sections	
 for DIN cable lug for main contacts stranded 	2x (50 240 mm²)

for DIN cable lug for main contacts finely stranded	2x (70 240 mm²)
type of connectable conductor cross-sections	2x (0.25 1.5 mm) dientudong
for control circuit solid	
 for control circuit finely stranded with core end processing 	2x (0.25 1.5 mm²)
at AWG cables for control circuit solid	2x (24 16)
at AWG cables for control circuit finely stranded with	2x (24 16)
core end processing	27 (24 10)
wire length	
 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
EMC emitted interference Communication/ Protocol	acc. to IEC 60947-4-2: Class A
1 1111 11 11 11	acc. to IEC 60947-4-2: Class A
Communication/ Protocol	acc. to IEC 60947-4-2: Class A Yes
communication/ Protocol communication module is supported • PROFINET standard • PROFINET high-feature	
communication/ Protocol communication module is supported • PROFINET standard	Yes
communication/ Protocol communication module is supported • PROFINET standard • PROFINET high-feature	Yes Yes
Communication/ Protocol communication module is supported • PROFINET standard • PROFINET high-feature • EtherNet/IP	Yes Yes Yes
Communication/ Protocol communication module is supported • PROFINET standard • PROFINET high-feature • EtherNet/IP • Modbus RTU	Yes Yes Yes Yes
communication/ Protocol communication module is supported • PROFINET standard • PROFINET high-feature • EtherNet/IP • Modbus RTU • Modbus TCP	Yes Yes Yes Yes Yes Yes
Communication/ Protocol communication module is supported • PROFINET standard • PROFINET high-feature • EtherNet/IP • Modbus RTU • Modbus TCP • PROFIBUS	Yes Yes Yes Yes Yes Yes
Communication/ Protocol communication module is supported PROFINET standard PROFINET high-feature EtherNet/IP Modbus RTU Modbus TCP PROFIBUS UL/CSA ratings	Yes Yes Yes Yes Yes Yes
Communication/ Protocol communication module is supported • PROFINET standard • PROFINET high-feature • EtherNet/IP • Modbus RTU • Modbus TCP • PROFIBUS UL/CSA ratings manufacturer's article number	Yes Yes Yes Yes Yes Yes
Communication/ Protocol communication module is supported PROFINET standard PROFINET high-feature EtherNet/IP Modbus RTU Modbus TCP PROFIBUS UL/CSA ratings manufacturer's article number of the fuse — usable for Standard Faults up to 575/600 V	Yes Yes Yes Yes Yes Yes Yes Yes
Communication/ Protocol communication module is supported PROFINET standard PROFINET high-feature EtherNet/IP Modbus RTU Modbus TCP PROFIBUS UL/CSA ratings manufacturer's article number of the fuse usable for Standard Faults up to 575/600 V according to UL usable for High Faults up to 575/600 V	Yes Yes Yes Yes Yes Yes Yes Yes Yes
Communication/ Protocol communication module is supported • PROFINET standard • PROFINET high-feature • EtherNet/IP • Modbus RTU • Modbus TCP • PROFIBUS UL/CSA ratings manufacturer's article number • of the fuse — usable for Standard Faults up to 575/600 V according to UL — usable for High Faults up to 575/600 V according to UL — usable for Standard Faults at inside-delta	Yes
communication/ Protocol communication module is supported PROFINET standard PROFINET high-feature EtherNet/IP Modbus RTU Modbus TCP PROFIBUS UL/CSA ratings manufacturer's article number of the fuse usable for Standard Faults up to 575/600 V according to UL usable for High Faults at inside-delta circuit up to 575/600 V according to UL usable for High Faults at inside-delta circuit up	Yes
communication/ Protocol communication module is supported PROFINET standard PROFINET high-feature EtherNet/IP Modbus RTU Modbus TCP PROFIBUS UL/CSA ratings manufacturer's article number of the fuse usable for Standard Faults up to 575/600 V according to UL usable for High Faults at inside-delta circuit up to 575/600 V according to UL usable for High Faults at inside-delta circuit up to 575/600 V according to UL	Yes
communication/ Protocol communication module is supported PROFINET standard PROFINET high-feature EtherNet/IP Modbus RTU Modbus TCP PROFIBUS UL/CSA ratings manufacturer's article number of the fuse usable for Standard Faults up to 575/600 V according to UL usable for High Faults up to 575/600 V according to UL usable for Standard Faults at inside-delta circuit up to 575/600 V according to UL usable for High Faults at inside-delta circuit up to 575/600 V according to UL operating power [hp] for 3-phase motors	Yes Yes Yes Yes Yes Yes Yes Yes Yes Type: Class J / L, max. 1600 A; Iq = 30 kA Type: Class J / L, max. 1200 A; Iq = 100 kA Type: Class J / L, max. 1600 A; Iq = 30 kA Type: Class J / L, max. 1200 A; Iq = 100 kA
communication/ Protocol communication module is supported PROFINET standard PROFINET high-feature EtherNet/IP Modbus RTU Modbus TCP PROFIBUS UL/CSA ratings manufacturer's article number of the fuse usable for Standard Faults up to 575/600 V according to UL usable for High Faults up to 575/600 V according to UL usable for Standard Faults at inside-delta circuit up to 575/600 V according to UL usable for High Faults at inside-delta circuit up to 575/600 V according to UL operating power [hp] for 3-phase motors at 200/208 V at 50 °C rated value	Yes Yes Yes Yes Yes Yes Yes Yes Type: Class J / L, max. 1600 A; Iq = 30 kA Type: Class J / L, max. 1200 A; Iq = 100 kA Type: Class J / L, max. 1600 A; Iq = 30 kA Type: Class J / L, max. 1200 A; Iq = 100 kA
Communication/ Protocol communication module is supported PROFINET standard PROFINET high-feature EtherNet/IP Modbus RTU Modbus TCP PROFIBUS UL/CSA ratings manufacturer's article number of the fuse usable for Standard Faults up to 575/600 V according to UL usable for High Faults up to 575/600 V according to UL usable for Standard Faults at inside-delta circuit up to 575/600 V according to UL usable for High Faults at inside-delta circuit up to 575/600 V according to UL operating power [hp] for 3-phase motors at 200/208 V at 50 °C rated value at 220/230 V at 50 °C rated value	Yes Yes Yes Yes Yes Yes Yes Yes Type: Class J / L, max. 1600 A; Iq = 30 kA Type: Class J / L, max. 1200 A; Iq = 100 kA Type: Class J / L, max. 1600 A; Iq = 30 kA Type: Class J / L, max. 1200 A; Iq = 100 kA Type: Class J / L, max. 1200 A; Iq = 100 kA
communication module is supported PROFINET standard PROFINET high-feature EtherNet/IP Modbus RTU Modbus TCP PROFIBUS UL/CSA ratings manufacturer's article number of the fuse — usable for Standard Faults up to 575/600 V according to UL — usable for High Faults up to 575/600 V according to UL — usable for Standard Faults at inside-delta circuit up to 575/600 V according to UL — usable for Aught Faults at inside-delta circuit up to 575/600 V according to UL — usable for High Faults at inside-delta circuit up to 575/600 V according to UL — usable for High Faults at inside-delta circuit up to 575/600 V according to UL operating power [hp] for 3-phase motors at 200/208 V at 50 °C rated value at 460/480 V at 50 °C rated value at 200/208 V at inside-delta circuit at 50 °C rated	Yes Yes Yes Yes Yes Yes Yes Yes Type: Class J / L, max. 1600 A; lq = 30 kA Type: Class J / L, max. 1200 A; lq = 100 kA Type: Class J / L, max. 1600 A; lq = 30 kA Type: Class J / L, max. 1200 A; lq = 100 kA Type: Class J / L, max. 1200 A; lq = 100 kA
communication module is supported PROFINET standard PROFINET high-feature EtherNet/IP Modbus RTU Modbus TCP PROFIBUS UL/CSA ratings manufacturer's article number of the fuse — usable for Standard Faults up to 575/600 V according to UL — usable for High Faults up to 575/600 V according to UL — usable for Standard Faults at inside-delta circuit up to 575/600 V according to UL — usable for High Faults at inside-delta circuit up to 575/600 V according to UL operating power [hp] for 3-phase motors at 200/208 V at 50 °C rated value at 260/480 V at 50 °C rated value at 200/208 V at inside-delta circuit at 50 °C rated value at 220/230 V at inside-delta circuit at 50 °C rated value at 220/230 V at inside-delta circuit at 50 °C rated value	Yes Yes Yes Yes Yes Yes Yes Yes Yes Type: Class J / L, max. 1600 A; Iq = 30 kA Type: Class J / L, max. 1200 A; Iq = 100 kA Type: Class J / L, max. 1600 A; Iq = 30 kA Type: Class J / L, max. 1200 A; Iq = 100 kA Type: Class J / L, max. 1200 A; Iq = 100 kA
communication / Protocol communication module is supported PROFINET standard PROFINET high-feature EtherNet/IP Modbus RTU Modbus TCP PROFIBUS UL/CSA ratings manufacturer's article number of the fuse usable for Standard Faults up to 575/600 V according to UL usable for High Faults up to 575/600 V according to UL usable for Standard Faults at inside-delta circuit up to 575/600 V according to UL usable for High Faults at inside-delta circuit up to 575/600 V according to UL operating power [hp] for 3-phase motors at 200/208 V at 50 °C rated value at 220/230 V at 50 °C rated value at 460/480 V at inside-delta circuit at 50 °C rated value at 220/230 V at inside-delta circuit at 50 °C rated value at 220/230 V at inside-delta circuit at 50 °C rated value at 2460/480 V at inside-delta circuit at 50 °C rated value at 460/480 V at inside-delta circuit at 50 °C rated value	Yes

safety device type according to IEC 61508-2	Type B
B10d value	Type B 648 000 dientudong
Safety Integrity Level (SIL)	/uroncudong
 according to IEC 61508 	SIL1
SIL Claim Limit (subsystem) according to EN 62061	SIL 1
performance level (PL) according to EN ISO 13849-1	С
category according to EN ISO 13849-1	2
stop category according to EN 60204-1	0
Safe failure fraction (SFF)	60 %
average diagnostic coverage level (DCavg)	90 %
diagnostics test interval by internal test function maximum	1 000 s
PFHD with high demand rate according to EN 62061	1E-6 1/h
PFDavg with low demand rate according to IEC 61508	0.09
hardware fault tolerance according to IEC 61508	0
T1 value for proof test interval or service life according to IEC 61508	20 y
safe state	Open load circuit
protection class IP on the front according to IEC 60529	IP00; IP20 with cover
touch protection on the front according to IEC 60529	finger-safe, for vertical contact from the front with cover
electromagnetic compatibility	acc. to IEC 60947-4-2
ATEX	
certificate of suitability	
• ATEX	Yes
• IECEx	Yes
 according to ATEX directive 2014/34/EU 	BVS 18 ATEX F 003 X
type of protection according to ATEX directive 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 according to IEC 61508 relating to ATEX	0
PFDavg with low demand rate according to IEC 61508 relating to ATEX	0.008
PFHD with high demand rate according to EN 62061 relating to ATEX	5E-7 1/h
Safety Integrity Level (SIL) according to IEC 61508 relating to ATEX	SIL1
T1 value for proof test interval or service life according to IEC 61508 relating to ATEX	3 s
Certificates/ approvals	

Certificates/ approvals

General Product Approval





Confirmation







EMC For use in hazardous locations Declaration of Conformity Test Certificates Marine / Shipping









Type Test Certificates/Test Report



Marine / Shipping other









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=3RW5548-2HF14

Cax online generator

 $\underline{http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en\&mlfb=3RW5548-2HF14}$

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

https://support.industry.siemens.com/cs/ww/en/ps/3RW5548-2HF14

 $Image\ database\ (product\ images,\ 2D\ dimension\ drawings,\ 3D\ models,\ device\ circuit\ diagrams,\ EPLAN\ macros,\ ...)$

http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5548-2HF14&lang=en

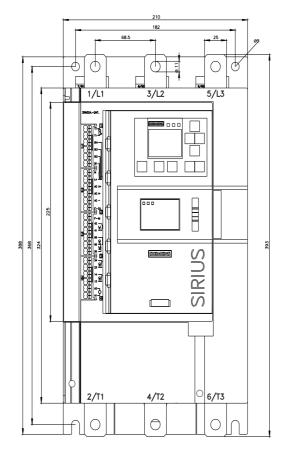
Characteristic: Tripping characteristics, I²t, Let-through current https://support.industry.siemens.com/cs/ww/en/ps/3RW5548-2HF14/char

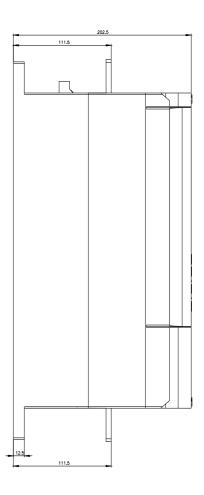
Characteristic: Installation altitude

 $\underline{http://www.automation.siemens.com/bilddb/index.aspx?view=Search\&mlfb=3RW5548-2HF14\&objecttype=14\&gridview=view1}$

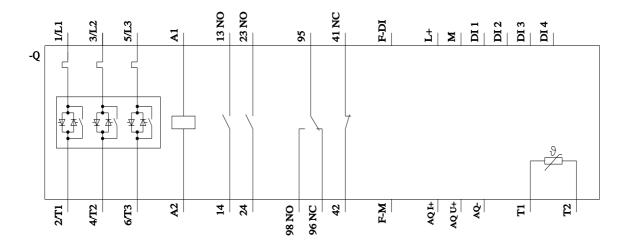
Simulation Tool for Soft Starters (STS)

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









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