SIEMENS



Data sheet 3RW5547-2HF14



SIRIUS soft starter 200-480 V 470 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 	3VA2450-7MN32-0AA0; Type of coordination 1, Iq = 65 kA, CLASS 10
 of circuit breaker usable at 500 V 	3VA2450-7MN32-0AA0; Type of coordination 1, lq = 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 	3NE1436-2; Type of coordination 2, Iq = 65 kA
 of back-up R fuse link for semiconductor protection usable up to 690 V 	3NE3340-8; Type of coordination 2, Iq = 65 kA
 of the redundant contactor for applications > SIL 1 according to EN 62061 	3TF69
 of the redundant contactor for applications > SIL 1 at inside-delta circuit according to EN 62061 	3TF69
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

breakaway voltage [%] adjustable

125 ... 800 %

40 ... 100 %

breakaway fine adjustable accuracy class according to IEC 61557-12 5 % accuracy class according to IEC 61557-12 5 % - CE marking - CE marking - Ves - CSA approval - CSA approval - CSA approval - HMI-High Feature - Is supported HMI-High Feature - Is supp	harden all the	
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Product component Yes Ye		
HiM-High Feature Yes		Yes
ves	•	· ·
product feature integrated bypass contact system number of controlled phases 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 60 % 100 ms	_	
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 error logbook via software parameterizable via software configurable Yes Yes 		
 via software parameterizable via software configurable Yes 		
• via software configurable Yes	_	

 spring-loaded terminal 	Yes
PROFlenergy	Yes; in connection the PNOF N E Standard PROF N E F High - Feature communication dules
• firmware update	Yes
removable terminal for control circuit	Yes
voltage ramp	Yes
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	Yes
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	470 A
at 40 °C rated value at 40 °C rated value minimum	94 A
at 50 °C rated value at 50 °C rated value	416 A
at 60 °C rated value	380 A
operational current at inside-delta circuit	
at 40 °C rated value	814 A
at 50 °C rated value	721 A
at 60 °C rated value	658 A
operating voltage	
rated value	200 480 V
at inside-delta circuit rated value	200 480 V
relative negative tolerance of the operating voltage	-15 %
relative positive tolerance of the operating voltage	10 %
relative negative tolerance of the operating voltage at inside-delta circuit	-15 %
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 	132 kW
 at 230 V at inside-delta circuit at 40 °C rated value 	250 kW
 at 400 V at 40 °C rated value 	250 kW
• at 400 V at inside-delta circuit at 40 °C rated value	400 kW
Operating frequency 1 rated value	50 Hz
Operating frequency 2 rated value	60 Hz
relative negative tolerance of the operating frequency	-10 %
relative positive 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	141 W
• at 50 °C after startup	125 W
• at 60 °C after startup	114 W
power loss [W] at AC at current limitation 350 %	7.054.14
• at 40 °C during startup	7 651 W
at 50 °C during startup of 60 °C during startup	6 400 W
at 60 °C during startup type of the mater protection	5 620 W
type of the motor protection	Electronic, tripping in the event of thermal overload of the motor
Control circuit/ Control	AC
type of voltage of the control supply voltage control supply voltage at AC	AC
at 50 Hz	110 250 V
• at 60 Hz	
relative negative tolerance of the control supply	110 250 V -15 %

voltage at AC at 50 Hz	diantudana
relative positive tolerance of the control supply voltage at AC at 50 Hz	10% dientudong
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 %
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	
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	spring-loaded 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 mm² maximum 	150 m

	255
with conductor cross-section = 2.5 mm² maximum	250 m
type of connectable conductor cross-sections	2x (50 240 mm²) dientudong
for DIN cable lug for main contacts stranded for DIN cable lug for main contacts finely stranded	
for DIN cable lug for main contacts finely stranded type of connectable conductor cross-sections	2x (70 240 mm²)
for control circuit solid	2x (0.25 1.5 mm²)
for control circuit finely stranded with core end	2x (0.25 1.5 mm²)
processing	ZA (0.20 1.0 mm)
 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	
wire length	
between soft starter and motor maximum	800 m
at the digital inputs at DC maximum	1 000 m
tightening torque	44 24 N
for main contacts with screw-type terminals for appliant and control contacts with cores to the	14 24 N·m 0.8 1.2 N·m
 for auxiliary and control contacts with screw-type terminals 	U.8 1.2 N·III
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	Vaa
PROFINET standard PROFINET birth footure	Yes
PROFINET high-feature EtherNet/IP	Yes
Modbus RTU	Yes
Modbus RTU Modbus TCP	Yes 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 according to UL	Type: Class J / L, max. 1200 A; Iq = 100 kA
usable for Standard Faults at inside-delta	
	Type: Class J / L, max. 1600 A; Iq = 30 kA
circuit up to 575/600 V according to UL — usable for High Faults at inside-delta circuit up	Type: Class J / L, max. 1600 A; Iq = 30 kA Type: Class J / L, max. 1200 A; Iq = 100 kA
circuit up to 575/600 V according to UL	
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	
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	Type: Class J / L, max. 1200 A; Iq = 100 kA
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	Type: Class J / L, max. 1200 A; Iq = 100 kA
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	Type: Class J / L, max. 1200 A; Iq = 100 kA 150 hp 150 hp
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 50 °C rated value • at 200/208 V at inside-delta circuit at 50 °C rated	Type: Class J / L, max. 1200 A; Iq = 100 kA 150 hp 150 hp 350 hp

value	
contact rating of auxiliary contacts according to UL	R300-B300
Safety related data	N300-B300
	Type D
safety device type according to IEC 61508-2	Type B
B10d value	648 000
Safety Integrity Level (SIL)	011.4
according to IEC 61508	SIL1
SIL Claim Limit (subsystem) according to EN 62061	SIL 1
performance level (PL) according to EN ISO 13849-1	C
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

General Product Approval





Confirmation







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





(Ex



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=3RW5547-2HF14

Cax online generator

 $\underline{http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en\&mlfb=3RW5547-2HF14}$

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

https://support.industry.siemens.com/cs/ww/en/ps/3RW5547-2HF14

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

http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5547-2HF14&lang=en

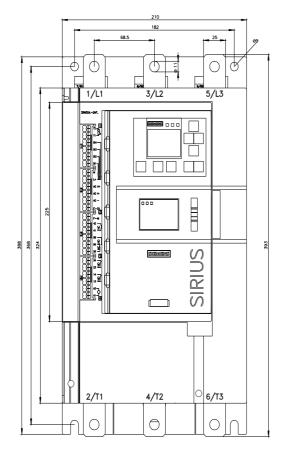
Characteristic: Tripping characteristics, I²t, Let-through current https://support.industry.siemens.com/cs/ww/en/ps/3RW5547-2HF14/char

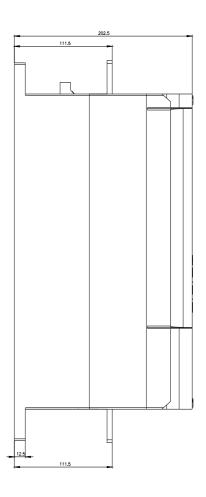
Characteristic: Installation altitude

 $\underline{http://www.automation.siemens.com/bilddb/index.aspx?view=Search\&mlfb=3RW5547-2HF14\&objecttype=14\&gridview=view1}$

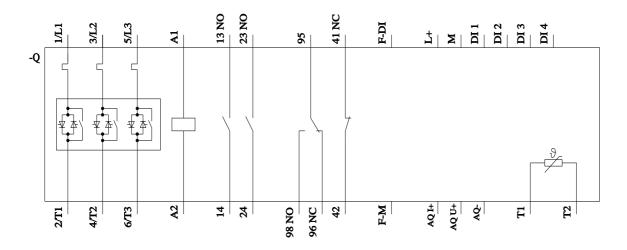
Simulation Tool for Soft Starters (STS)

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









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