SIEMENS



Data sheet 3RW5525-1HA04



SIRIUS soft starter 200-480 V 63 A, 24 V AC/DC Screw terminals

product brand name	SIRIUS
product category	Hybrid switching devices
product designation	Soft starter
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 	3VA2163-7MN32-0AA0; Type of coordination 1, Iq = 65 kA, CLASS 10
 of circuit breaker usable at 500 V 	3VA2163-7MN32-0AA0; Type of coordination 1, Iq = 20 kA, CLASS 10
 of circuit breaker usable at 400 V at inside-delta circuit 	3VA2110-7MN32-0AA0; Type of coordination 1, Iq = 65 kA, CLASS 10
 of circuit breaker usable at 500 V at inside-delta circuit 	3VA2110-7MN32-0AA0; Type of coordination 1, Iq = 65 kA, CLASS 10
 of the gG fuse usable up to 690 V 	3NA3830-6; Type of coordination 1, Iq = 65 kA
 of the gG fuse usable at inside-delta circuit up to 500 V 	3NA3830-6; Type of coordination 1, Iq = 65 kA
 of full range R fuse link for semiconductor protection usable up to 690 V 	3NE1022-0; Type of coordination 2, Iq = 65 kA
 of back-up R fuse link for semiconductor protection usable up to 690 V 	3NE3227; 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 %
certificate of suitability	

CE marking	Yes Yes Yes
 UL approval 	Yes
CSA approval	Yes Juloutudong
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)	02/15/2018
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	Yes
spring-loaded terminal	No
PROFlenergy	Yes; in connection with the PROFINET Standard and PROFINET High- Feature communication modules
firmware update	Yes

 removable terminal for control circuit 	Yes
voltage ramp	Yes Yes Yes
 torque control 	
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	63 A
• at 40 °C rated value minimum	13 A
• at 50 °C rated value	55.5 A
at 60 °C rated value	50.5 A
operational current at inside-delta circuit	400 A
• at 40 °C rated value	109 A
• at 50 °C rated value	96 A
• at 60 °C rated value	87.5 A
operating voltage	000 400 1/
• rated value	200 480 V
at inside-delta circuit rated value valetive pagetive televance of the expecting valtege	200 480 V -15 %
relative negative tolerance of the operating voltage relative positive tolerance of the operating voltage	10 %
relative positive tolerance of the operating voltage at	-15 %
inside-delta circuit	10 /0
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 	18.5 kW
 at 230 V at inside-delta circuit at 40 °C rated value 	30 kW
 at 400 V at 40 °C rated value 	30 kW
at 400 V at inside-delta circuit at 40 °C rated value	55 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	19 W
at 40 °C after startup at 50 °C after startup	
 at 50 °C after startup at 60 °C after startup 	17 W 15 W
power loss [W] at AC at current limitation 350 %	10 44
• at 40 °C during startup	1 056 W
at 50 °C during startup at 50 °C during startup	732 W
at 60 °C during startup at 60 °C during startup	647 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	AC/DC
control supply voltage at AC	
• at 50 Hz rated value	24 V
• at 50 Hz fated value	
at 60 Hz rated value at 60 Hz rated value	24 V
at 60 Hz rated value relative negative tolerance of the control supply	24 V -20 %
at 60 Hz rated value relative negative tolerance of the control supply voltage at AC at 50 Hz relative positive tolerance of the control supply	
at 60 Hz rated value relative negative tolerance of the control supply voltage at AC at 50 Hz	-20 %

voltage at AC at 60 Hz	ov dientudena
relative positive tolerance of the control supply voltage at AC at 60 Hz	20 % dientudong
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 voltage	
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 %
control supply current in standby mode rated value	440 mA
holding current in bypass operation rated value	870 mA
locked-rotor current at close of bypass contact maximum	6.3 A
inrush current peak at application of control supply voltage maximum	7.5 A
duration of inrush current peak at application of control supply voltage	20 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
parameterizable	4
number of digital outputs	4
number of digital outputs number of digital outputs parameterizable	3
	1
number of digital outputs not parameterizable digital output version	
digital output version number of analog outputs	3 normally-open contacts (NO) / 1 changeover contact (CO) 1
switching capacity current of the relay outputs	
at AC-15 at 250 V rated value	3 A
at DC-13 at 250 V rated value	1 A
Installation/ mounting/ dimensions	
mounting position	Vertical (can be rotated +/- 90° and tilted forward or backward +/- 22.5°)
	screw fixing
fastening method	306 mm
height width	185 mm
depth required spacing with side by side mounting	203 mm
required spacing with side-by-side mounting • forwards	10 mm
forwardsbackwards	10 mm 0 mm
	0 mm 100 mm
upwards downwards	75 mm
at the side	
	5 mm
weight without packaging	5.9 kg
Connections/ Terminals	
type of electrical connection	hov terminal
for main current circuit for control circuit	box terminal
width of connection bar maximum	screw-type terminals 25 mm
wire length for thermistor connection	20 11111
with conductor cross-section = 0.5 mm² maximum	50 m
 with conductor cross-section = 0.5 mm² maximum with conductor cross-section = 1.5 mm² maximum 	150 m
	250 m
with conductor cross-section = 2.5 mm² maximum type of connectable conductor cross-sections	200 111
 type of connectable conductor cross-sections for main contacts for box terminal using the front clamping point solid 	1x (2.5 16 mm²)

 for main contacts for box terminal using the front clamping point finely stranded with core end 	1x (2.5 50 mm²)
for main contacts for box terminal using the front	1x (10 70 mm²) dientudong
clamping point strandedat AWG cables for main contacts for box terminal	1x (10 2/0)
using the front clamping pointfor main contacts for box terminal using the back	1x (2.5 16 mm²)
clamping point solidat AWG cables for main contacts for box terminal	1x (10 2/0)
using the back clamping pointfor main contacts for box terminal using both	2x (2.5 16 mm²)
clamping points solid • for main contacts for box terminal using both	2x (2.5 35 mm²)
clamping points finely stranded with core end processing	, (
 for main contacts for box terminal using both clamping points stranded 	2x (6 16 mm²), 2x (10 50 mm²)
 for main contacts for box terminal using the back clamping point finely stranded with core end processing 	1x (2.5 50 mm²)
for main contacts for box terminal using the back clamping point stranded	1x (10 70 mm²)
type of connectable conductor cross-sections	
 for control circuit solid 	1x (0.5 4.0 mm²), 2x (0.5 2.5 mm²)
 for control circuit finely stranded with core end processing 	1x (0.5 2.5 mm²), 2x (0.5 1.5 mm²)
at AWG cables for control circuit solid	1x (20 12), 2x (20 14)
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 	4.5 6 N·m
for auxiliary and control contacts with screw-type terminals	0.8 1.2 N·m
tightening torque [lbf·in]	
 for main contacts with screw-type terminals 	40 53 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	5 000 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 circuit breaker 	
— usable for Standard Faults at 460/480 V	Siemens type: 3RV2742, max. 70 A or 3VA51, max. 125 A; Iq = 10 kA

according to UL - usable for High Faults at 460/480 V according Siemens type: 3VA to UL - usable for Standard Faults at 460/480 V at Siemens type: 3VA5 inside-delta circuit according to UL - usable for High Faults at 460/480 V at inside-Siemens type: 3VA51, max. 125 A; Iq max = 65 kA delta circuit according to UL - usable for Standard Faults at 575/600 V Siemens type: 3RV2742, max. 70 A or 3VA51, max. 125 A; Iq = 10 kA according to UL - usable for High Faults at 575/600 V at inside-Siemens type: 3VA51, max. 125 A; Iq max = 65 kA delta circuit according to UL - usable for Standard Faults at 575/600 V at Siemens type: 3VA51, max. 125 A; Iq = 10 kA inside-delta circuit according to UL usable for Standard Faults up to 575/600 V Type: Class RK5 / K5, max. 200 A; Iq = 10 kA according to UL usable for High Faults up to 575/600 V Type: Class J / L, max. 225 A; Iq = 100 kA according to UL - usable for Standard Faults at inside-delta Type: Class RK5 / K5, max. 200 A; Iq = 10 kA circuit up to 575/600 V according to UL usable for High Faults at inside-delta circuit up Type: Class J / L, max. 225 A; Iq = 100 kA to 575/600 V according to UL operating power [hp] for 3-phase motors at 200/208 V at 50 °C rated value 15 hp at 220/230 V at 50 °C rated value 20 hp • at 460/480 V at 50 °C rated value 40 hp • at 200/208 V at inside-delta circuit at 50 °C rated 30 hp value • at 220/230 V at inside-delta circuit at 50 °C rated 30 hp value • at 460/480 V at inside-delta circuit at 50 °C rated 75 hp contact rating of auxiliary contacts according to UL R300-B300 Safety related data protection class IP on the front according to IEC 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 certificate of suitability ATEX Yes IFCEx Yes • according to ATEX directive 2014/34/EU BVS 18 ATEX F 003 X type of protection according to ATEX directive II (2)G [Ex eb Gb] [Ex db Gb] [Ex pxb Gb], II (2)D [Ex tb Db] [Ex pxb Db], 2014/34/EU I (M2) [Ex db Mb] hardware fault tolerance according to IEC 61508 relating to ATEX PFDavg with low demand rate according to IEC 61508 0.008 relating to ATEX PFHD with high demand rate according to EN 62061 5E-7 1/h relating to ATEX Safety Integrity Level (SIL) according to IEC 61508 SIL₁ relating to ATEX T1 value for proof test interval or service life 3saccording to IEC 61508 relating to ATEX Certificates/ approvals



General Product Approval

Confirmation









EMC

For use in hazardous locations

Declaration of Conformity









Marine / Shipping

other







Confirmation

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=3RW5525-1HA04

Cax online generator

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

https://support.industry.siemens.com/cs/ww/en/ps/3RW5525-1HA04

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

http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5525-1HA04&lang=en

Characteristic: Tripping characteristics, I²t, Let-through current

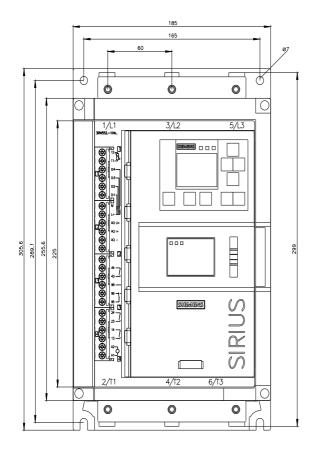
https://support.industry.siemens.com/cs/ww/en/ps/3RW5525-1HA04/char

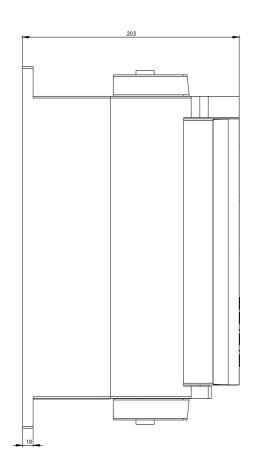
Characteristic: Installation altitude

http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RW5525-1HA04&objecttype=14&gridview=view1

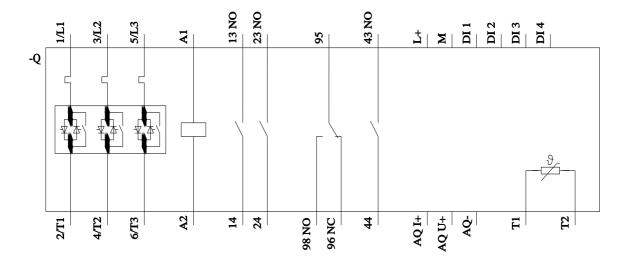
Simulation Tool for Soft Starters (STS)

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









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