SIEMENS

Data sheet 3RW5527-1HA06



SIRIUS soft starter 200-690 V 93 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 	3VA2216-7MN32-0AA0; Type of coordination 1, Iq = 15 kA, CLASS 10
 of circuit breaker usable at 500 V 	3VA2216-7MN32-0AA0; Type of coordination 1, Iq = 10 kA, CLASS 10
 of circuit breaker usable at 400 V at inside-delta circuit 	3VA2220-7MN32-0AA0; Type of coordination 1, Iq = 15 kA, CLASS 10
 of circuit breaker usable at 500 V at inside-delta circuit 	3VA2220-7MN32-0AA0; Type of coordination 1, Iq = 10 kA, CLASS 10
 of the gG fuse usable up to 690 V 	3NA3136-6; Type of coordination 1, Iq = 65 kA
 of the gG fuse usable at inside-delta circuit up to 500 V 	3NA3136-6; Type of coordination 1, Iq = 65 kA
 of full range R fuse link for semiconductor protection usable up to 690 V 	3NE1224-0; 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 50 %
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 acc. to IEC 61557-12	5 %
certificate of suitability	

- CE marking	Voc			
CE marking	Yes			
• UL approval	Yes			
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	690 V			
degree of pollution	3, acc. to IEC 60947-4-2			
impulse voltage rated value	8 kV			
blocking voltage of the thyristor maximum	1 800 V			
service factor	1.15			
surge voltage resistance rated value	8 kV			
maximum permissible voltage for safe isolation				
between main and auxiliary circuit	690 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 acc. to IEC 60947-4-2	AC 53a			
reference code acc. to IEC 81346-2	Q			
Substance Prohibitance (Date)	15.02.2018			
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)			
evaluation of thermistor motor protection	Yes; Type A PTC or Klixon / Thermoclick			
• inside-delta circuit	Yes; Only up to 600 V operating voltage			
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			
a firmware undete	Yes			
firmware update	165			
 irrniware update removable terminal for control circuit 	Yes			

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relative positive tolerance of the operating frequency minimum load [%] power loss [W] for rated value of the current at AC • at 40 °C after startup • at 50 °C after startup • at 60 °C after startup • at 40 °C during startup • at 40 °C during startup • at 50 °C during startup • at 50 °C during startup • at 60 °C during startup **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 • at 50 Hz rated value • at 60 Hz rated value • 24 V • at 60 Hz rated value • 20 %	Operating frequency 2 rated value	60 Hz				
minimum load [%] power loss [W] for rated value of the current at AC • at 40 °C after startup • at 50 °C after startup • at 60 °C after startup power loss [W] at AC at current limitation 350 % • at 40 °C during startup • at 50 °C during startup • at 50 °C during startup • at 60 °C during startup • at 60 °C during startup • at 60 °C during startup power loss [W] at AC at current limitation 350 % • at 40 °C during startup • at 60 °C during startup type of the motor protection Control circuit/ Control type of voltage of the control supply voltage control supply voltage at AC • at 50 Hz rated value • at 60 Hz rated value • 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 relative positive tolerance of the control supply 28 W 28 W 28 W 29 W 1 258 W 1 258 W 1 258 W 2 48 W 2 48 W 2 48 W Electronic, tripping in the event of thermal overload of the motor Control circuit/ Control 24 V 24 V 24 V relative negative tolerance of the control supply voltage at AC at 50 Hz relative positive tolerance of the control supply	relative negative tolerance of the operating frequency	-10 %				
power loss [W] for rated value of the current at AC • at 40 °C after startup • at 50 °C after startup • at 60 °C after startup 23 W power loss [W] at AC at current limitation 350 % • at 40 °C during startup • at 50 °C during startup • at 50 °C during startup • at 60 °C during startup • at 60 °C during startup • at 60 °C during startup type of the motor protection Control circuit/ Control type of voltage of the control supply voltage • at 50 Hz rated value • at 60 Hz rated value • 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 28 W 28 W 28 W 29 W 20 W AC/DC 20 W 20 W	relative positive tolerance of the operating frequency	10 %				
 at 40 °C after startup at 50 °C after startup at 60 °C after startup 23 W power loss [W] at AC at current limitation 350 % at 40 °C during startup at 50 °C during startup 1 258 W at 60 °C during startup 48 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 at 60 Hz rated value at 50 Hz a		10 %; Relative to set le				
 at 50 °C after startup at 60 °C after startup 23 W power loss [W] at AC at current limitation 350 % at 40 °C during startup at 50 °C during startup at 60 °C during startup at 60 °C during startup be at 60 °C during startup at 60 °C during startup be at 60 °C during startup control circuit/ Control type of the motor protection Electronic, tripping in the event of thermal overload of the motor Control supply voltage of the control supply voltage aC/DC control supply voltage at AC at 50 Hz rated value at 60 Hz rated value<						
 at 60 °C after startup power loss [W] at AC at current limitation 350 % at 40 °C during startup at 50 °C during startup at 60 °C during startup 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 at 60 Hz rated value at 50 Hz relative negative tolerance of the control supply voltage at AC at 50 Hz relative positive tolerance of the control supply 20 % 	·	28 W				
power loss [W] at AC at current limitation 350 % • at 40 °C during startup • at 50 °C during startup • at 60 °C during startup 1 065 W • at 60 °C during startup 948 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 • 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 voltage at AC at 50 Hz relative positive tolerance of the control supply 20 %	·	25 W				
 at 40 °C during startup at 50 °C during startup at 60 °C during startup ye48 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 at 60 Hz rated value 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 20 % 	·	23 W				
 at 50 °C during startup at 60 °C during startup 948 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 at 60 Hz rated value 24 V relative negative tolerance of the control supply voltage at AC at 50 Hz relative positive tolerance of the control supply 20 % 						
 at 60 °C during startup 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 at 50 Hz rated value at 50 Hz rated value 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 20 % 						
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control supply voltage at AC • at 50 Hz rated value • 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 20 %						
 at 50 Hz rated value at 60 Hz rated value 24 V relative negative tolerance of the control supply voltage at AC at 50 Hz relative positive tolerance of the control supply 20 % 		AC/DC				
● 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 24 V -20 % 20 %						
relative negative tolerance of the control supply voltage at AC at 50 Hz relative positive tolerance of the control supply 20 %	at 50 Hz rated value					
voltage at AC at 50 Hz relative positive tolerance of the control supply 20 %						
		-20 %				
		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 frequency	50 60 Hz		
relative negative tolerance of the control supply	-10 %		
voltage frequency			
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	-20 %		
voltage at DC			
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 parameterizable	3		
number of digital outputs not parameterizable	1		
digital output version	3 normally-open contacts (NO) / 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		
Installation/ mounting/ dimensions			
mounting position	Vertical (can be rotated +/- 90° and tilted forward or backward +/- 22.5°)		
fastening method	screw fixing		
height	306 mm		
width	185 mm 203 mm		
depth required spacing with side-by-side mounting	200 111111		
forwards • forwards	10 mm		
backwards	0 mm		
• upwards	100 mm		
downwards	75 mm		
at the side	5 mm		
weight without packaging	7.15 kg		
Connections/ Terminals			
type of electrical connection			
for main current circuit	box terminal		
• for control circuit	screw-type terminals		
width of connection bar maximum	25 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		
• with conductor cross-section = 2.5 mm² maximum	250 m		
type of connectable conductor cross-sections			
 for main contacts for box terminal using the front 	1x (2.5 16 mm²)		

clamping point solid				
for main contacts for box terminal using the front clamping point finely stranded with core end processing	1x (2.5 50 mm²)			
for main contacts for box terminal using the front clamping point stranded	1x (10 70 mm²)			
 at AWG cables for main contacts for box terminal using the front clamping point 	1x (10 2/0)			
for main contacts for box terminal using the back clamping point solid	1x (2.5 16 mm²)			
 at AWG cables for main contacts for box terminal using the back clamping point 	1x (10 2/0)			
 for main contacts for box terminal using both clamping points solid 	2x (2.5 16 mm²)			
 for main contacts for box terminal using both clamping points finely stranded with core end processing 	2x (2.5 35 mm²)			
 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	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 acc. 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 acc. to IEC 60721	1K6 (only occasional condensation), 1C2 (no salt mist), 1S2 (sand must not get inside the devices), 1M4			
• during transport acc. 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 DROSINUS	Yes			
PROFIBUS III (CSA rations)	Yes			
UL/CSA ratings				
manufacturer's article number				
of circuit breaker				

 usable for Standard Faults at 460/480 V according to UL 	Siemens type: 3VA51, max.	125 A; Iq = 10 kA			
 usable for High Faults at 460/480 V according to UL 	Siemens type: 3VA51, max. 125 A; Iq max = 65 kA				
 usable for Standard Faults at 460/480 V at inside-delta circuit according to UL 	Siemens type: 3VA51, max. 125 A; Iq = 10 kA				
 usable for High Faults at 460/480 V at inside- delta circuit according to UL 	Siemens type: 3VA51, max. 125 A; lq max = 65 kA				
 usable for Standard Faults at 575/600 V according to UL 	Siemens type: 3VA51, max. 125 A; Iq = 10 kA				
 usable for High Faults at 575/600 V at inside- delta circuit according to UL 	Siemens type: 3VA51, max. 125 A; Iq max = 65 kA				
 usable for Standard Faults at 575/600 V at inside-delta circuit according to UL 	Siemens type: 3VA51, max. 125 A; Iq = 10 kA				
of the fuse					
 usable for Standard Faults up to 575/600 V according to UL 	Type: Class RK5 / K5, max. 300 A; Iq = 10 kA				
 usable for High Faults up to 575/600 V according to UL 	Type: Class J / L, max. 250 A; Iq = 100 kA				
 usable for Standard Faults at inside-delta circuit up to 575/600 V according to UL 	Type: Class RK5 / K5, max. 300 A; Iq = 10 kA				
— usable for High Faults at inside-delta circuit up to 575/600 V according to UL	Type: Class J / L, max. 250 A; Iq = 100 kA				
operating power [hp] for 3-phase motors					
 at 200/208 V at 50 °C rated value 	25 hp				
 at 220/230 V at 50 °C rated value 	30 hp				
 at 460/480 V at 50 °C rated value 	60 hp				
at 575/600 V at 50 °C rated value	75 hp				
 at 200/208 V at inside-delta circuit at 50 °C rated value 	40 hp				
 at 220/230 V at inside-delta circuit at 50 °C rated value 	50 hp				
 at 460/480 V at inside-delta circuit at 50 °C rated value 	100 hp				
at 575/600 V at inside-delta circuit at 50 °C rated value	125 hp				
contact rating of auxiliary contacts according to UL	R300-B300				
Safety related data					
protection class IP on the front acc. to IEC 60529	IP00; IP20 with cover				
touch protection on the front acc. to IEC 60529	finger-safe, for vertical conta	ct from the front with co	over		
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 acc. to IEC 61508 relating to ATEX	0				
PFDavg with low demand rate acc. to IEC 61508 relating to ATEX	0.008				
PFHD with high demand rate acc. to EN 62061 relating to ATEX	0.0000005 1/h				
Safety Integrity Level (SIL) acc. to IEC 61508 relating to ATEX	SIL1				
T1 value for proof test interval or service life acc. to IEC 61508 relating to ATEX	3 y				
Certificates/ approvals					
General Product Approval		EMC	For use in hazard- ous locations		













For use in hazardous locations Declaration of Conformity

Test Certificates

Marine / Shipping





Type Test Certificates/Test Report







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=3RW5527-1HA06

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RW5527-1HA06

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

https://support.industry.siemens.com/cs/ww/en/ps/3RW5527-1HA06

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

http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5527-1HA06&lang=en

Characteristic: Tripping characteristics, I2t, Let-through current

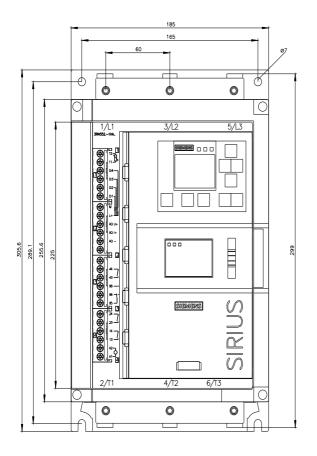
https://support.industry.siemens.com/cs/ww/en/ps/3RW5527-1HA06/char

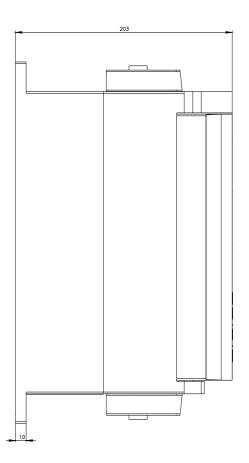
Characteristic: Installation altitude

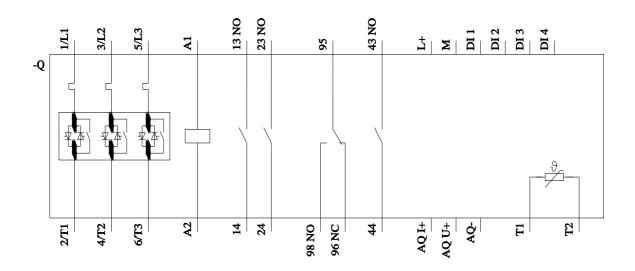
http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RW5527-1HA06&objecttype=14&gridview=view1

Simulation Tool for Soft Starters (STS)

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







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