SIEMENS

product brand name

Data sheet 3RW5535-2HA06

SIRIUS



SIRIUS soft starter 200-690 V 143 A, 24 V AC/DC spring-type terminals

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 	3VA2220-7MN32-0AA0; Type of coordination 1, Iq = 65 kA, CLASS 10
• of circuit breaker usable at 400 V at inside-delta circuit	3VA2325-7MN32-0AA0; Type of coordination 1, Iq = 65 kA, CLASS 10
 of the gG fuse usable up to 690 V 	3NA3244-6; Type of coordination 1, Iq = 65 kA
• of the gG fuse usable at inside-delta circuit up to 500 V	3NA3244-6; Type of coordination 1, Iq = 65 kA
 of full range R fuse link for semiconductor protection usable up to 690 V 	3NE1227-0; Type of coordination 2, Iq = 65 kA
 of back-up R fuse link for semiconductor protection usable up to 690 V 	3NE3233; Type of coordination 2, Iq = 65 kA
eneral 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	5 (based on IEC 61557-12)
certificate of suitability	
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
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 protective separation	O KV
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
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 02/45/2019
Substance Prohibitance (Date)	02/15/2018
SVHC substance name	Blei - 7439-92-1 Bleimonoxid (Bleioxid) - 1317-36-8 2-Methyl-1-(4-methylthiophenyl)-2-morpho - 71868-10-5 "1,6,7,8,9,14,15,16,17,17,18,18-Dodecach Dicyclohexylphthalat (DCHP) - 84-61-7 Dibutylbis(pentan-2,4-dionato-O,O')zinn - 22673-19-4
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	No
spring-loaded terminal	Yes
PROFlenergy	Yes; in connection with the PROFINET Standard and PROFINET High-Feature communication modules
firmware update	Yes
removable terminal for control circuit	Yes
	Yes
voltage ramp	
voltage ramp torque control	
• torque control	Yes
torque controlcombined braking	Yes Yes
• torque control	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	143 A
 at 40 °C rated value minimum 	29 A
at 50 °C rated value	128 A
• at 60 °C rated value	118 A
operational current at inside-delta circuit	
• at 40 °C rated value	248 A
at 50 °C rated value	222 A
at 60 °C rated value	204 A
operating voltage	
rated value	200 690 V
at inside-delta circuit rated value	200 600 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 	37 kW
 at 230 V at inside-delta circuit at 40 °C rated value 	75 kW
 at 400 V at 40 °C rated value 	75 kW
 at 400 V at inside-delta circuit at 40 °C rated value 	132 kW
• at 500 V at 40 °C rated value	90 kW
 at 500 V at inside-delta circuit at 40 °C rated value 	160 kW
at 690 V at 40 °C rated value	132 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	43 W
• at 50 °C after startup	38 W
at 60 °C after startup	35 W
power loss [W] at AC at current limitation 350 $\%$	
 at 40 °C during startup 	2 115 W
 at 50 °C during startup 	1 795 W
at 60 °C during startup	1 593 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 60 Hz rated value	24 V
relative negative tolerance of the control supply voltage at AC at 50 Hz	-20 %
relative positive tolerance of the control supply voltage at AC at 50 Hz	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 voltage	-10 %
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 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
inrush current by closing the bypass contacts 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
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	8.5 kg
Connections/ Terminals	
type of electrical connection	
• for main current circuit	busbar connection
• for control circuit	spring-loaded terminals
width of connection bar maximum	25 mm
	20 11111
 wire length for thermistor connection 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
with conductor cross-section = 1.5 mm² maximum with conductor cross-section = 2.5 mm² maximum	250 m
type of connectable conductor cross-sections	200 111
	2v (16 95 mm²)
for DIN cable lug for main contacts stranded for DIN cable lug for main contacts finely stranded	2x (16 95 mm²)
for DIN cable lug for main contacts finely stranded tune of connectable conductor cross sections.	2x (25 120 mm²)
type of connectable conductor cross-sections	2v /0 25
for control circuit solid	2x (0.25 1.5 mm²)
for control circuit finely stranded with core end processing	2x (0.25 1.5 mm²)
for AWG cables for control circuit solid	2x (24 16)
for AWG cables for control circuit finely stranded with core end processing wire length	2x (24 16)
WITH LANDIN	

 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 	10 14 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	89 124 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	2 000 HI, Defaulty as of 1000 HI, see catalog
during operation	-25 +60 °C; Please observe derating at temperatures of 40 °C or above
during operation during storage and transport	-40 +80 °C
environmental category	40 · · · · · · ·
during operation according to IEC 60721	3K6 (no ice formation, only occasional condensation), 3C3 (no salt mist), 3S2
auming operation according to 120 00721	(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 according to UL	Siemens type: 3VA52, max. 250 A; Iq = 10 kA
— 60/480 V according to UL	Siemens type: 3VA52, max. 250 A; Iq max = 65 kA
— at 460/480 V at inside-delta circuit according to UL	Siemens type: 3VA52, max. 250 A; Iq = 10 kA
— 60/480 V at inside-delta circuit according to UL	Siemens type: 3VA52, max. 250 A; Iq max = 65 kA
— at 575/600 V according to UL	Siemens type: 3VA52, max. 250 A; Iq = 10 kA
— 75/600 V at inside-delta circuit according to UL	Siemens type: 3VA52, max. 250 A; Iq max = 65 kA
— at 575/600 V at inside-delta circuit according to UL	Siemens type: 3VA52, max. 250 A; Iq = 10 kA
• of the fuse	
— usable for Standard Faults up to 575/600 V	Type: Class RK5 / K5, max. 350 A; Iq = 10 kA
according to UL	,, ,, ,, ,, ,,,,,,,,,,,,,,,,,,,,,,,,,,,
— usable for High Faults up to 575/600 V according to UL	Type: Class J / L, max. 350 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. 350 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. 350 A; Iq = 100 kA
operating power [hp] for 3-phase motors	
• at 200/208 V at 50 °C rated value	40 hp
• at 220/230 V at 50 °C rated value	40 hp
• at 460/480 V at 50 °C rated value	100 hp
• at 575/600 V at 50 °C rated value	125 hp
• at 200/208 V at inside-delta circuit at 50 °C rated value	75 hp
• at 220/230 V at inside-delta circuit at 50 °C rated value	75 hp
• at 460/480 V at inside-delta circuit at 50 °C rated value	150 hp
• at 575/600 V at inside-delta circuit at 50 °C rated value	200 hp
contact rating of auxiliary contacts according to UL	R300-B300
Electrical Safety	
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
ATEX	

Safety Integrity Level (SIL) according to IEC 61508 relating to ATEX	SIL1
PFHD with high demand rate according to EN 62061 relating to ATEX	5E-7 1/h
PFDavg with low demand rate according to IEC 61508 relating to ATEX	0.008
hardware fault tolerance according to IEC 61508 relating to ATEX	0
T1 value for proof test interval or service life according to IEC 61508 relating to ATEX	3 a
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]

Certificates/ approvals

General Product Approval

EMV



Confirmation









EMV

For use in hazardous locations

Test Certificates

Marine / Shipping

<u>KC</u>





Type Test Certificates/Test Report





Marine / Shipping

other



Confirmation

Further information

Information on the packaging

https://support.industry.siemens.com/cs/ww/en/view/109813875

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=3RW5535-2HA06

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RW5535-2HA06

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

https://support.industry.siemens.com/cs/ww/en/ps/3RW5535-2HA06

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

http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5535-2HA06&lang=en

Characteristic: Tripping characteristics, I2t, Let-through current

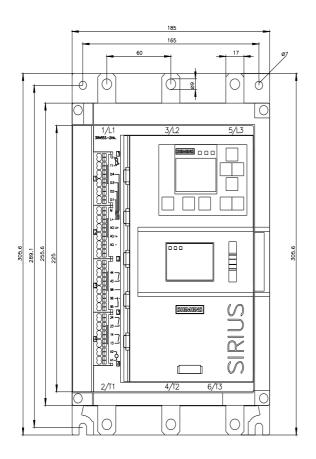
https://support.industry.siemens.com/cs/ww/en/ps/3RW5535-2HA06/char

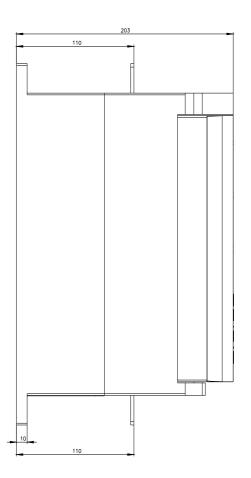
Characteristic: Installation altitude

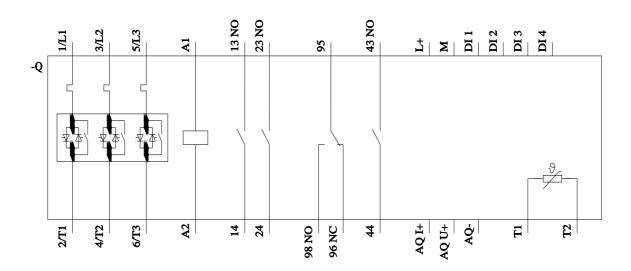
 $\underline{\text{http://www.automation.siemens.com/bilddb/index.aspx?view=Search\&mlfb=3RW5535-2HA06\&objecttype=14\&gridview=view1}$

Simulation Tool for Soft Starters (STS)

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







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