SIEMENS

Data sheet 3RW5554-2HA06



SIRIUS soft starter 200-690 V 840 A, 24 V AC/DC Spring-type terminals

Figure similar

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 	3VA2510-6HN32-0AA0; Type of coordination 1, Iq = 65 kA, CLASS 10
 of circuit breaker usable at 500 V 	3VA2510-6HN32-0AA0; Type of coordination 1, Iq = 65 kA, CLASS 10
 of circuit breaker usable at 400 V at inside-delta circuit 	3VA2716-7AB05-0AA0; Type of coordination 1, Iq = 65 kA, CLASS 10
 of circuit breaker usable at 500 V at inside-delta circuit 	3VA2716-7AB05-0AA0; 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 full range R fuse link for semiconductor protection usable up to 690 V 	3NB3351-1KK26; Type of coordination 2, Iq = 65 kA
 of back-up R fuse link for semiconductor protection usable up to 690 V 	3NC3343-1U; Type of coordination 2, Iq = 65 kA
Conoral technical data	

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 %

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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
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 %
recovery time after overload trip adjustable	60 1 800 s
buffering time in the event of power failure	00 1 000 0
• for main current circuit	100 ms
	100 ms
• for control circuit	0 255 s
idle time adjustable	
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
utilization category acc. to IEC 60947-4-2	AC 53a
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
reference code acc. to IEC 81346-2	Q
Substance Prohibitance (Date)	11.02.2019 00:00:00
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 parameterizable via software configurable	Yes
■ via suitwate culliquianie	153
_	
• screw terminal	No
_	

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	840 A
• at 40 °C rated value minimum	168 A
• at 50 °C rated value	748 A
• at 60 °C rated value	670 A
operational current at inside-delta circuit	
at 40 °C rated value	1 454 A
• at 50 °C rated value	1 295 A
 at 60 °C rated value 	1 160 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 	250 kW
 at 230 V at inside-delta circuit at 40 °C rated value 	450 kW
 at 400 V at 40 °C rated value 	450 kW
 at 400 V at inside-delta circuit at 40 °C rated value 	800 kW
 at 500 V at 40 °C rated value 	560 kW
 at 500 V at inside-delta circuit at 40 °C rated value 	900 kW
at 690 V at 40 °C rated value	800 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	000 144
• at 40 °C after startup	252 W
• at 50 °C after startup	205 W
• at 60 °C after startup	164 W
power loss [W] at AC at current limitation 350 %	44.444.W
• at 40 °C during startup	14 441 W
at 50 °C during startup at 60 °C during startup	12 187 W
• at 60 °C during startup	10 405 W
type of the motor protection	Electronic, tripping in the event of thermal overload of the motor
Control circuit/ Control	ACIDO
type of voltage of the control supply voltage	AC/DC
control supply voltage at AC	04.1/
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 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	1 100 mA
locked-rotor current at close of bypass contact maximum	6.7 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 inputs for thermistor connection	1; Type A PTC or Klixon / Thermoclick
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	764 mm
width	478 mm
depth	241 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	45 kg
Connections/ Terminals	
type of electrical connection	
type of electrical connection ● for main current circuit	busbar connection
	busbar connection spring-loaded terminals

width of connection has maximum	EE mm
width of connection bar maximum	55 mm
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	250 111
for DIN cable lug for main contacts stranded	2x (50 240 mm²)
for DIN cable lug for main contacts stranded for DIN cable lug for main contacts finely stranded	2x (70 240 mm²)
type of connectable conductor cross-sections	ZX (70 240 Hilli)
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	ZX (0.20 1.0 mm)
 at AWG cables for control circuit solid 	2x (24 16)
at AWG cables for control circuit finely stranded with core end processing	2x (24 16)
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 	20 35 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 	177 310 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
during topping of any to IEO 00704	not get inside the devices), 1M4
during transport acc. to IEC 60721 EMC emitted interference	2K2, 2C1, 2S1, 2M2 (max. fall height 0.3 m)
	acc. to IEC 60947-4-2: Class A
Communication/ Protocol	
communication module is supported • PROFINET standard	Yes
	Yes
PROFINET high-featureEtherNet/IP	Yes
Modbus RTU	Yes
Modbus RTO Modbus TCP	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. 2500 A; Iq = 42 kA
usable for High Faults up to 575/600 V according to UL	Type: Class J / L, max. 2500 A; Iq = 100 kA
usable for Standard Faults at inside-delta circuit up to 575/600 V according to UL	Type: Class J / L, max. 2500 A; Iq = 42 kA
usable for High Faults at inside-delta circuit up to 575/600 V according to UL	Type: Class J / L, max. 2500 A; Iq = 100 kA
operating power [hp] for 3-phase motors	
 at 200/208 V at 50 °C rated value 	250 hp
 at 220/230 V at 50 °C rated value 	300 hp

 at 460/480 V at 50 °C rated value 	600 hp
 at 575/600 V at 50 °C rated value 	800 hp
 at 200/208 V at inside-delta circuit at 50 °C rated value 	450 hp
 at 220/230 V at inside-delta circuit at 50 °C rated value 	550 hp
 at 460/480 V at inside-delta circuit at 50 °C rated value 	1 150 hp
 at 575/600 V at inside-delta circuit at 50 °C rated value 	1 450 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
electromagnetic compatibility	acc. to IEC 60947-4-2
ATEX	
certificate of suitability	
ATEX	Yes
• ATEX	res
• ATEX • IECEX	Yes
• IECEx	Yes
IECEX according to ATEX directive 2014/34/EU type of protection according to ATEX directive	Yes BVS 18 ATEX F 003 X II (2)G [Ex eb Gb] [Ex db Gb] [Ex pxb Gb], II (2)D [Ex tb Db] [Ex pxb Db],
IECEx according to ATEX directive 2014/34/EU type of protection according to ATEX directive 2014/34/EU hardware fault tolerance acc. to IEC 61508 relating to	Yes BVS 18 ATEX F 003 X 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]
IECEX according to ATEX directive 2014/34/EU type of protection according to ATEX directive 2014/34/EU hardware fault tolerance acc. to IEC 61508 relating to ATEX PFDavg with low demand rate acc. to IEC 61508	Yes BVS 18 ATEX F 003 X 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] 0
IECEX according to ATEX directive 2014/34/EU type of protection according to ATEX directive 2014/34/EU hardware fault tolerance acc. to IEC 61508 relating to ATEX PFDavg with low demand rate acc. to IEC 61508 relating to ATEX PFHD with high demand rate acc. to EN 62061 relating	Yes BVS 18 ATEX F 003 X 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] 0 0.008



Certificates/ approvals

General Product Approval









EMC



For use in hazard-

ous locations

IECEx

For use in hazardous locations **Declaration of Conformity**

Test Certificates

Marine / Shipping

other





Type Test Certificates/Test Report





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=3RW5554-2HA06

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RW5554-2HA06

 ${\bf Service \& Support~(Manuals,~Certificates,~Characteristics,~FAQs,...)}$

https://support.industry.siemens.com/cs/ww/en/ps/3RW5554-2HA06

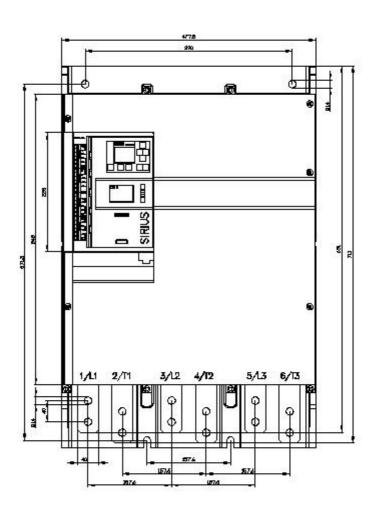
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)

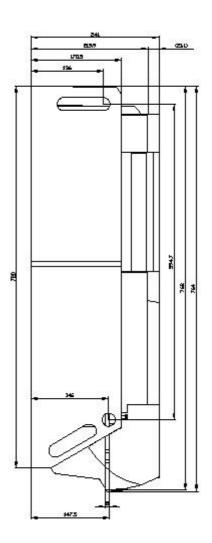
 $\underline{\text{http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5554-2HA06\&lang=en}}$

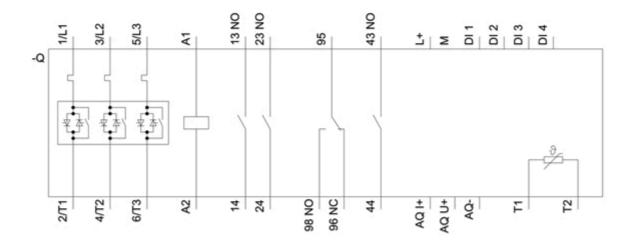
Characteristic: Tripping characteristics, I²t, Let-through current

https://support.industry.siemens.com/cs/ww/en/ps/3RW5554-2HA06/char

Simulation Tool for Soft Starters (STS)
https://support.industry.siemens.com/cs/ww/en/view/101494917







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