SIEMENS

Data sheet

3RW5535-2HA16



SIRIUS soft starter 200-690 V 143 A, 110-250 V AC spring-type 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 	<u>3RW5980-0HF00</u>
 of communication module PROFINET standard usable 	<u>3RW5980-0CS00</u>
 of communication module PROFINET high-feature usable 	<u>3RW5950-0CH00</u>
 of communication module PROFIBUS usable 	<u>3RW5980-0CP00</u>
 of communication module Modbus TCP usable 	<u>3RW5980-0CT00</u>
 of communication module Modbus RTU usable 	<u>3RW5980-0CR00</u>
 of communication module Ethernet/IP 	<u>3RW5980-0CE00</u>
 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 	<u>3NE1227-0; Type of coordination 2, Iq = 65 kA</u>
 of back-up R fuse link for semiconductor protection usable up to 690 V 	<u>3NE3233; Type of coordination 2, Iq = 65 kA</u>
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 %

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
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 protective separation	
 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 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 Yes
trace function	Yes
 intrinsic device protection 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 Yes
error logbook via software parameterizable	Yes
 via software parameterizable via software configurable 	Yes
via sontware configurable screw terminal	Yes No
spring-loaded terminal	Yes
Spring-loaded terminal 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
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

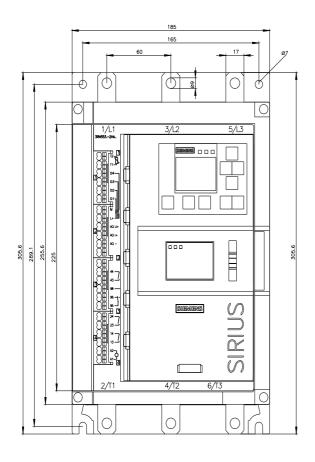
e olternetive run devre	Van
alternative run-down	Yes
emergency operation mode	Yes
reversing operation	Yes
soft starting at heavy starting conditions	Yes
Power Electronics	
operational current	
• at 40 °C rated value	143 A
• at 40 °C rated value minimum	29 A
• at 50 °C rated value	128 A
at 60 °C rated value	118 A
operational current at inside-delta circuit	040.4
• 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
control supply voltage at AC	
• at 50 Hz	110 250 V
• at 60 Hz	110 250 V
relative negative tolerance of the control supply voltage at AC at 50 Hz	-15 %
relative positive tolerance of the control supply voltage at AC at 50 Hz	10 %
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 %

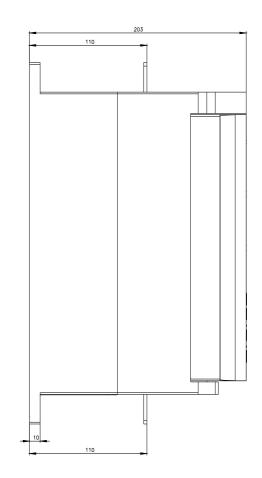
control supply current in standby mode rated value	100 mA
holding current in bypass operation rated value	180 mA
inrush current by closing the bypass contacts maximum	0.8 A
inrush current peak at application of control supply voltage maximum	43 A
duration of inrush current peak at application of control 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
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	
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	1A
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
wire length for thermistor connection	
with conductor cross-section = 0.5 mm ² maximum	50 m
with conductor cross-section = 0.5 mm ² maximum with conductor cross-section = 1.5 mm ² maximum	150 m
with conductor cross-section = 2.5 mm ² maximum	250 m
type of connectable conductor cross-sections	$2u(40 - 05mm^2)$
for DIN cable lug for main contacts stranded	2x (16 95 mm ²)
for DIN cable lug for main contacts finely stranded	2x (25 120 mm²)
type of connectable conductor cross-sections	
for control circuit solid	2x (0.25 1.5 mm ²)
 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 	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 	10 14 N·m
 for auxiliary and control contacts with screw-type 	0.8 1.2 N·m
terminals	
tightening torque [lbf·in]	

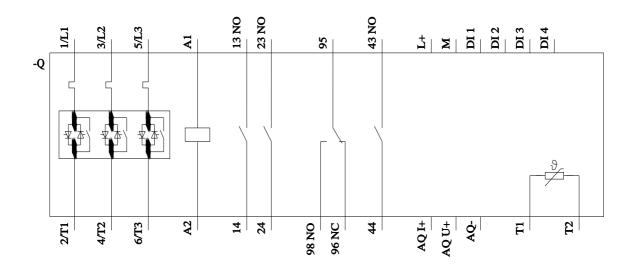
 for main contacts with screw-type terminals 	89 124 lbf·in		
 for auxiliary and control contacts with screw-type 	7 10.3 lbf·in		
terminals			
mbient conditions			
installation altitude at height above sea level maximum	2 000 m; Derating as of 1000 m, see catalog		
ambient temperature	25 = 160 °C: Diagon phone is derating at temperatures of 40 °C or show		
during operation	-25 +60 °C; Please observe derating at temperatures of 40 °C or above -40 +80 °C		
during storage and transport environmental category	-40+00.C		
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 g 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		
ommunication/ Protocol			
communication module is supported			
PROFINET standard	Yes		
PROFINET high-feature	Yes		
EtherNet/IP	Yes		
Modbus RTU	Yes		
Modbus TCP	Yes		
PROFIBUS	Yes		
L/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		
 — usable for High Faults at 460/480 V according to UL 	Siemens type: 3VA52, max. 250 A; lq max = 65 kA		
 — usable for Standard Faults at 460/480 V at inside- delta circuit according to UL 	Siemens type: 3VA52, max. 250 A; Iq = 10 kA		
 — usable for High Faults at 460/480 V at inside-delta circuit according to UL 	Siemens type: 3VA52, max. 250 A; lq max = 65 kA		
 — usable for Standard Faults at 575/600 V according to UL 	Siemens type: 3VA52, max. 250 A; Iq = 10 kA		
 usable for High Faults at 575/600 V at inside-delta circuit according to UL usable for Standard Faults at 575/600 V at inside- 	Siemens type: 3VA52, max. 250 A; lq max = 65 kA Siemens type: 3VA52, max. 250 A; lq = 10 kA		
delta circuit according to UL			
 of the fuse — usable for Standard Faults up to 575/600 V 	Type: Class RK5 / K5, max. 350 A; Ig = 10 kA		
— usable for Standard Faults up to 575/600 V according to UL — usable for High Faults up to 575/600 V according to	Type: Class RK5 / K5, max. 350 A, $Iq = 10$ kA		
UL — usable for Standard Faults at inside-delta circuit up	Type: Class RK5 / K5, max. 350 A; Iq = 10 kA		
— usable for Standard Patits at Inside-delta circuit up to 575/600 V according to UL — usable for High Faults at inside-delta circuit up to	Type: Class J / L, max. 350 A; Iq = 100 kA		
575/600 V according to UL			
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		
afety related data			
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		

certificate of suitability

ATEX			Yes			
IECEX accounting to ATEX	V directive 2044/24/ELL		Yes			
according to ATEX directive 2014/34/EU type of protection according to ATEX directive 2014/34/EU			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]				
hardware fault tolerand ATEX	e according to IEC 61	1508 relating to	0			
PFDavg with low dema relating to ATEX	nd rate according to I	IEC 61508	0.008			
PFHD with high deman to ATEX	id rate according to E	N 62061 relating	5E-7 1/h			
Safety Integrity Level (to ATEX	SIL) according to IEC	61508 relating	SIL1			
T1 value for proof test IEC 61508 relating to A		e according to	3а			
ertificates/ approvals						
General Product Appro	oval					EMC
		<u>Confirmatio</u>	חמ		EHC	
For use in hazardous I	ocations	Declaration of formity	Con-	Test Certificates	Marine / Shipping	
K ATEX	IECEx	CE EG-Konf.		Type Test Certific- ates/Test Report	ABS	B UREAU VERITAS
Marine / Shipping		other				
Lloyd's Register	PRS	<u>Confirmatio</u>	<u>on</u>			
LRS						
Irther information	o exit the Russian ma	arket (see here)				
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