SIEMENS

Data sheet 3RW5556-6HA04



SIRIUS soft starter 200-480 V 1100 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 	3VA2716-7AB05-0AA0; Type of coordination 1, Iq = 65 kA, CLASS 10
 of circuit breaker usable at 500 V 	3VA2716-7AB05-0AA0; Type of coordination 1, Iq = 65 kA, CLASS 10
 of the gG fuse usable up to 690 V 	3x3NA3365-6; Type of coordination 1, Iq = 65 kA
 of full range R fuse link for semiconductor protection usable up to 690 V 	3NB3354-1KK26; Type of coordination 2, Iq = 65 kA
 of back-up R fuse link for semiconductor protection usable up to 690 V 	3x3NE3340-8; 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	
·	

e is supported HMI High Footure	Yes
is supported HMI-High Feature	
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	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 protective separation	
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
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)	02/11/2019
SVHC substance name	Lead - 7439-92-1 Lead monoxide (lead oxide) - 1317-36-8 2-methyl-1-(4-methylthiophenyl)-2-morpholinopropan-1-one - 71868-10-5 Lead titanium trioxide - 12060-00-3
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
min/max pointer	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
• 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	1 100 A
at 40 °C rated value minimum	220 A
• at 50 °C rated value	979 A
• at 60 °C rated value	890 A
operational current at inside-delta circuit	
• at 40 °C rated value	1 905 A
at 50 °C rated value	1 695 A
at 60 °C rated value	1 541 A
operating voltage	10117.
• rated value	200 480 V
at inside-delta circuit rated value	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	-15 %
inside-delta circuit	-13 70
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	315 kW
• at 230 V at inside-delta circuit at 40 °C rated value	560 kW
• at 400 V at 40 °C rated value	560 kW
• at 400 V at inside-delta circuit at 40 °C rated value	1 000 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	330 W
at 50 °C after startup	270 W
at 60 °C after startup	223 W
power loss [W] at AC at current limitation 350 %	
at 40 °C during startup	18 502 W
at 50 °C during startup	15 568 W
at 60 °C during startup at 60 °C during startup	13 552 W
type of the motor protection	Electronic, tripping in the event of thermal overload of the motor
Control circuit/ Control	Elocation, appling in the event of allermal evented of the meter
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 at 60 Hz rated value	24 V
relative negative tolerance of the control supply voltage at	-20 %
AC at 50 Hz relative positive tolerance of the control supply voltage at	20 %
AC at 50 Hz relative negative tolerance of the control supply voltage at	-20 %
AC at 60 Hz relative positive tolerance of the control supply voltage at	20 %
AC at 60 Hz	
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	10 %

frequency	
control supply voltage at DC	
rated value	24 V
relative negative tolerance of the control supply voltage at	-20 %
DC relative positive tolerance of the control supply voltage at	20 %
DC	
control supply current in standby mode rated value	440 mA
holding current in bypass operation rated value	1 100 mA
inrush current by closing the bypass contacts 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 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
	TA TA
Installation/ mounting/ dimensions	N 5 1/2 1 1 1 1 1 1 2 2 2 2 2 2 2 2 2 2 2 2
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	61 kg
Connections/ Terminals	
type of electrical connection	
for main current circuit	busbar connection
• for control circuit	screw-type terminals
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 = 1.5 mm² maximum	150 m
	100 111
 with conductor cross-section = 2.5 mm² maximum 	250 m
• with conductor cross-section = 2.5 mm² maximum type of connectable conductor cross-sections	
type of connectable conductor cross-sections	250 m
type of connectable conductor cross-sections • for DIN cable lug for main contacts stranded • for DIN cable lug for main contacts finely stranded	250 m 2x (50 240 mm²)
type of connectable conductor cross-sections • for DIN cable lug for main contacts stranded • for DIN cable lug for main contacts finely stranded type of connectable conductor cross-sections	250 m 2x (50 240 mm²) 2x (70 240 mm²)
type of connectable conductor cross-sections • for DIN cable lug for main contacts stranded • for DIN cable lug for main contacts finely stranded type of connectable conductor cross-sections • for control circuit solid	250 m 2x (50 240 mm²) 2x (70 240 mm²) 1x (0.5 4.0 mm²), 2x (0.5 2.5 mm²)
type of connectable conductor cross-sections • for DIN cable lug for main contacts stranded • for DIN cable lug for main contacts finely stranded type of connectable conductor cross-sections • for control circuit solid • for control circuit finely stranded with core end processing	250 m 2x (50 240 mm²) 2x (70 240 mm²) 1x (0.5 4.0 mm²), 2x (0.5 2.5 mm²) 1x (0.5 2.5 mm²), 2x (0.5 1.5 mm²)
type of connectable conductor cross-sections • for DIN cable lug for main contacts stranded • for DIN cable lug for main contacts finely stranded type of connectable conductor cross-sections • for control circuit solid • for control circuit finely stranded with core end processing • for AWG cables for control circuit solid	250 m 2x (50 240 mm²) 2x (70 240 mm²) 1x (0.5 4.0 mm²), 2x (0.5 2.5 mm²)
type of connectable conductor cross-sections • for DIN cable lug for main contacts stranded • for DIN cable lug for main contacts finely stranded type of connectable conductor cross-sections • for control circuit solid • for control circuit finely stranded with core end processing	250 m 2x (50 240 mm²) 2x (70 240 mm²) 1x (0.5 4.0 mm²), 2x (0.5 2.5 mm²) 1x (0.5 2.5 mm²), 2x (0.5 1.5 mm²)

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	7 10.3 lbf-in
terminals	
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
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	(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)
Environmental footprint	
Siemens Eco Profile (SEP)	Siemens EcoTech
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 the fuse	
— usable for Standard Faults up to 575/600 V	Type: Class J / L, max. 3000 A; Iq = 85 kA
according to UL	7
— usable for High Faults up to 575/600 V according to	Type: Class J / L, max. 3000 A; Iq = 100 kA
UL — usable for Standard Faults at inside-delta circuit up	Type: Class J / L, max. 3000 A; Iq = 85 kA
to 575/600 V according to UL	1, po. 01000 0 / L, 1110x. 0000 A, 14 - 00 kA
— usable for High Faults at inside-delta circuit up to	Type: Class J / L, max. 3000 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	350 hp
at 200/208 V at 50 °C rated value at 220/230 V at 50 °C rated value	350 hp
at 220/230 V at 50 °C rated value at 460/480 V at 50 °C rated value	400 hp
at 400/460 V at 50 C rated value at 200/208 V at inside-delta circuit at 50 °C rated value	850 hp
at 200/208 V at inside-delta circuit at 50 °C rated value at 220/230 V at inside-delta circuit at 50 °C rated value	600 hp
	700 hp
at 460/480 V at inside-delta circuit at 50 °C rated value contact rating of auxiliary contacts according to UL	1 500 hp R300-B300
Electrical Safety	1,000-2000
protection class IP on the front according to IEC 60529	IP00
ATEX	11 00
Safety Integrity Level (SIL) according to IEC 61508 relating	SIL1
to ATEX	OIL I
PFHD with high demand rate according to IEC 61508 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

• according to ATEX directive 2014/34/EU

Yes

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]

Approvals Certificates

General Product Approval







Confirmation





EMV

For use in hazardous locations

Test Certificates

Marine / Shipping



<u>KC</u>

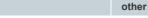




Type Test Certificates/Test Report



Marine / Shipping



Environment









Confirmation





Environment

Environmental Confirmations

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=3RW5556-6HA04

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RW5556-6HA04

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

https://support.industry.siemens.com/cs/ww/en/ps/3RW5556-6HA04

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

 $\underline{\text{http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5556-6HA04\&lang=en}}$

Characteristic: Tripping characteristics, I²t, Let-through current

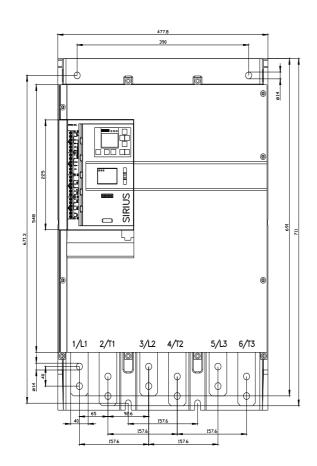
https://support.industry.siemens.com/cs/ww/en/ps/3RW5556-6HA04/char

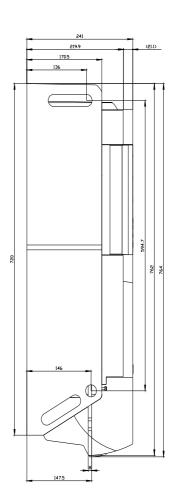
Characteristic: Installation altitude

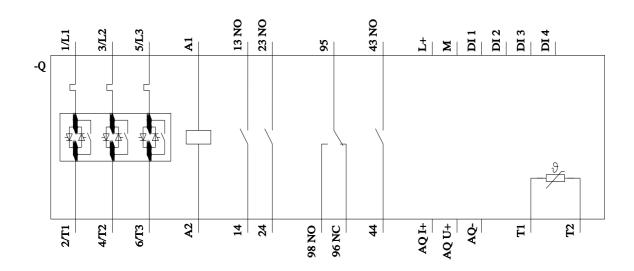
http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RW5556-6HA04&objecttype=14&gridview=view1

Simulation Tool for Soft Starters (STS)

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







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