## **SIEMENS**

Data sheet 3RW5556-6HA04



SIRIUS soft starter 200-480 V 1100 A, 24 V AC/DC Screw terminals

Figure similar

product brand name	SIRIUS
product category	Hybrid switching devices
product designation	Soft starter
product type designation	3RW55
manufacturer's article number	
<ul> <li>of high feature HMI module usable</li> </ul>	3RW5980-0HF00
<ul> <li>of communication module PROFINET standard usable</li> </ul>	3RW5980-0CS00
• of communication module PROFINET high-feature usable	3RW5950-0CH00
<ul> <li>of communication module PROFIBUS usable</li> </ul>	3RW5980-0CP00
<ul> <li>of communication module Modbus TCP usable</li> </ul>	3RW5980-0CT00
<ul> <li>of communication module Modbus RTU usable</li> </ul>	3RW5980-0CR00
<ul> <li>of communication module Ethernet/IP</li> </ul>	3RW5980-0CE00
<ul> <li>of circuit breaker usable at 400 V</li> </ul>	3VA2716-7AB05-0AA0: Type of coordination 1, Iq = 65 kA, CLASS 10
<ul> <li>of circuit breaker usable at 500 V</li> </ul>	3VA2716-7AB05-0AA0: Type of coordination 1, Iq = 65 kA, CLASS 10
<ul> <li>of the gG fuse usable up to 690 V</li> </ul>	3x3NA3365-6; Type of coordination 1, Iq = 65 kA
<ul> <li>of full range R fuse link for semiconductor protection usable up to 690 V</li> </ul>	3NB3354-1KK26: Type of coordination 2. Iq = 65 kA
<ul> <li>of back-up R fuse link for semiconductor protection usable up to 690 V</li> </ul>	3x3NE3340-8; Type of coordination 2, Iq = 65 kA
Seneral 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
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	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
	6 kV
maximum permissible voltage for protective separation	O NV
	480 V; does not apply for thermistor connection
between main and auxiliary circuit	
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 60 1 800 s
recovery time after overload trip adjustable	
utilization category according to IEC 60947-4-2	AC 53a
reference code according to IEC 81346-2	Q 02/44/2040
Substance Prohibitance (Date)	02/11/2019
product function	Voc
• 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
<ul> <li>motor heating</li> </ul>	Yes
<ul> <li>slave pointer function</li> </ul>	Yes
• trace function	Yes
<ul> <li>intrinsic device protection</li> </ul>	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.
<ul> <li>evaluation of thermistor motor protection</li> </ul>	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
<ul> <li>removable terminal for control circuit</li> </ul>	Yes
voltage ramp	Yes
• torque control	Yes
combined braking	Yes
<del>-</del>	
analog output	Yes; 4 20 mA (default) / 0 10 V
	Yes; 4 20 mA (default) / 0 10 V Yes
programmable control inputs/outputs	
	Yes

-14	V
alternative run-down	Yes
emergency operation mode	Yes Yes
reversing operation	
soft starting at heavy starting conditions     Power Electronics	Yes
operational current	1 100 A
at 40 °C rated value	
<ul> <li>at 40 °C rated value minimum</li> <li>at 50 °C rated value</li> </ul>	220 A 979 A
at 60 °C rated value     at 60 °C rated value	890 A
operational current at inside-delta circuit	090 A
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
relative negative tolerance of the operating voltage	-15 %
relative positive tolerance of the operating voltage	10 %
relative negative tolerance of the operating voltage at	-15 %
inside-delta circuit	
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
<ul> <li>at 230 V at inside-delta circuit at 40 °C rated value</li> </ul>	560 kW
<ul> <li>at 400 V at 40 °C rated value</li> </ul>	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	200 14
• at 40 °C after startup	330 W
• at 50 °C after startup	270 W
at 60 °C after startup  power loss [W] at AC at current limitation 350 %	223 W
	18 502 W
<ul> <li>at 40 °C during startup</li> <li>at 50 °C during startup</li> </ul>	15 568 W
at 50 °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	Elosa sino, alpping in the event of the mail eventual of the motor
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 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	-20 %

DC .	
DC relative positive tolerance of the control supply voltage at	20 %
DC	20 /0
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
<ul> <li>number of digital outputs parameterizable</li> </ul>	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	61 kg
Connections/ Terminals	
type of electrical connection	husban ann a fin
for main current circuit	busbar connection
• for control circuit	screw-type terminals
width of connection bar maximum	55 mm
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	50 m
with conductor cross-section = 1.5 mm² maximum     with conductor cross-section = 2.5 mm² maximum	150 m
with conductor cross-section = 2.5 mm² maximum  type of connectable conductor cross sections	250 m
type of connectable conductor cross-sections	2v (50 240 mm²)
for DIN cable lug for main contacts stranded     for DIN cable lug for main contacts finely stranded	2x (50 240 mm²)
for DIN cable lug for main contacts finely stranded  type of connectable conductor cross sections.	2x (70 240 mm²)
type of connectable conductor cross-sections	1v (0.5 4.0 mm²) 2v (0.5 2.5 mm²)
for control circuit solid     for control circuit finally stranded with core and processing.	1x (0.5 4.0 mm²), 2x (0.5 2.5 mm²)
for Control circuit finely stranded with core end processing     for AWC cables for central circuit solid.	1x (0.5 2.5 mm²), 2x (0.5 1.5 mm²)
for AWG cables for control circuit solid  wire length	1x (20 12), 2x (20 14)
wire length	900 m
between soft starter and motor maximum     at the digital inpute at DC maximum.	800 m
at the digital inputs at DC maximum  Aightening forms	1 000 m
tightening torque	20 25 N m
for main contacts with screw-type terminals     for applications and control contacts with corpus type	20 35 N·m
<ul> <li>for auxiliary and control contacts with screw-type terminals</li> </ul>	0.8 1.2 N·m

finhtoning tourns [lbf in]	
tightening torque [lbf·in]	477 040 lbf:-
for main contacts with screw-type terminals     for a william and control contacts with screw type	177 310 lbf-in
<ul> <li>for auxiliary and control contacts with screw-type terminals</li> </ul>	7 10.3 lbf·in
Ambient conditions	
installation altitude at height above sea level maximum	5 000 m; Derating as of 1000 m, see catalog
ambient temperature	
<ul> <li>during operation</li> </ul>	-25 +60 °C; Please observe derating at temperatures of 40 °C or above
during storage and transport	-40 +80 °C
environmental category	
<ul> <li>during operation according to IEC 60721</li> </ul>	3K6 (no ice formation, only occasional condensation), 3C3 (no salt mist), 3S2
<ul> <li>during storage according to IEC 60721</li> </ul>	<ul><li>(sand must not get into the devices), 3M6</li><li>1K6 (only occasional condensation), 1C2 (no salt mist), 1S2 (sand must not get inside the devices), 1M4</li></ul>
<ul> <li>during transport according to IEC 60721</li> </ul>	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	
<ul> <li>PROFINET standard</li> </ul>	Yes
<ul> <li>PROFINET high-feature</li> </ul>	Yes
• EtherNet/IP	Yes
Modbus RTU	Yes
Modbus TCP	Yes
PROFIBUS	Yes
UL/CSA ratings	
manufacturer's article number	
• of the fuse	
<ul> <li>— usable for Standard Faults up to 575/600 V according to UL</li> </ul>	Type: Class J / L, max. 3000 A; Iq = 85 kA
<ul> <li>— usable for High Faults up to 575/600 V according to UL</li> </ul>	Type: Class J / L, max. 3000 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. 3000 A; Iq = 85 kA
usable for High Faults at inside-delta circuit up to     575/600 V according to UL	Type: Class J / L, max. 3000 A; Iq = 100 kA
operating power [hp] for 3-phase motors	
• at 200/208 V at 50 °C rated value	350 hp
• at 220/230 V at 50 °C rated value	400 hp
• at 460/480 V at 50 °C rated value	850 hp
at 200/208 V at inside-delta circuit at 50 °C rated value	600 hp
at 220/230 V at inside-delta circuit at 50 °C rated value	700 hp
at 460/480 V at inside-delta circuit at 50 °C rated value	1 500 hp
contact rating of auxiliary contacts according to UL	R300-B300
Safety related data	IDOO
protection class IP on the front according to IEC 60529 electromagnetic compatibility	IP00 acc. to IEC 60947-4-2
ATEX	400. to 120 000T1 -T-2
certificate of suitability	
ATEX	Yes
• IECEX	Yes
<ul> <li>according to ATEX directive 2014/34/EU</li> </ul>	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 according to IEC 61508 relating to ATEX	0
PFDavg with low demand rate according to IEC 61508 relating to ATEX	0.008
PFHD with high demand rate according to EN 62061 relating to ATEX	5E-7 1/h
Safety Integrity Level (SIL) according to IEC 61508 relating to ATEX	SIL1
T1 value for proof test interval or service life according to IEC 61508 relating to ATEX	3 a
Certificates/ approvals	





Confirmation







For use in hazardous locations

Declaration of Conformity

**Test Certificates** 

Marine / Shipping







Type Test Certificates/Test Report





Marine / Shipping

other





Confirmation

## Further information

Siemens has decided to exit the Russian market (see here).

https://press.siemens.com/global/en/pressrelease/siemens-wind-down-russian-business

Siemens is working on the renewal of the current EAC certificates.

Please contact your local Siemens office on the status of validity of the EAC certification if you intend to import or offer to supply these products to an EAC relevant market (other than the sanctioned EAEU member states Russia or Belarus).

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, ...)

http://www.automation.siemens.com/bilddb/cax\_de.aspx?mlfb=3RW5556-6HA04&lang=en

 $\label{lem:characteristic} \textbf{Characteristics}, \ l^2t, \ \textbf{Let-through current}$ 

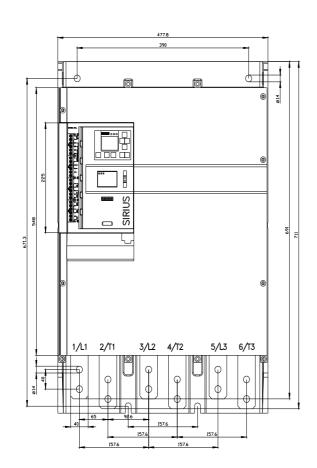
https://support.industry.siemens.com/cs/ww/en/ps/3RW5556-6HA04/char

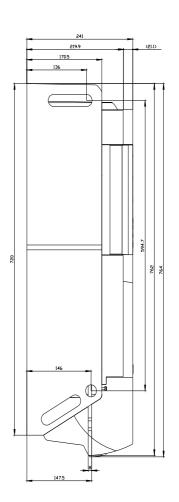
Characteristic: Installation altitude

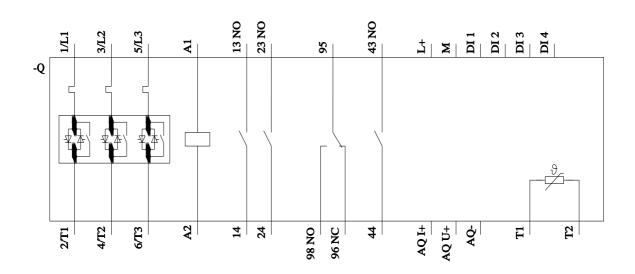
 $\underline{\text{http://www.automation.siemens.com/bilddb/index.aspx?view=Search\&mlfb=3RW5556-6HA04\&objecttype=14\&gridview=view1}$ 

Simulation Tool for Soft Starters (STS)

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











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