## **SIEMENS**

Data sheet 3RW5556-6HA14

**SIRIUS** 



SIRIUS soft starter 200-480 V 1100 A, 110-250 V AC Screw terminals

Figure similar

product brand name

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
<ul> <li>of communication module PROFINET high-feature usable</li> </ul>	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
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 %
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
surge voltage resistance rated value	6 kV
maximum permissible voltage for safe isolation	
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
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 acc. to IEC 60947-4-2	AC 53a
reference code acc. to IEC 81346-2	Q
Substance Prohibitance (Date)	11.02.2019
product function	
<ul><li>ramp-up (soft starting)</li></ul>	Yes
• ramp-down (soft stop)	Yes
<ul><li>breakaway pulse</li></ul>	Yes
<ul> <li>adjustable current limitation</li> </ul>	Yes
<ul> <li>creep speed in both directions of rotation</li> </ul>	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) / 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     via aaftuvaa paramatarinahla	Yes
via software parameterizable	Yes
via software configurable     agray terminal	Yes
screw terminal     pring leaded terminal	Yes
spring-loaded terminal     BROFlorersy	No
PROFlenergy     firmware undate	Yes; in connection with the PROFINET Standard and PROFINET High- Feature communication modules
firmware update     removable terminal for control circuit	Yes
removable terminal for control circuit	Yes
voltage ramp     torque control	Yes
torque control     combined braking	Yes
combined braking	Yes

e analog autnut	Yes; 4 20 mA (default) / 0 10 V
<ul><li>analog output</li><li>programmable control inputs/outputs</li></ul>	Yes
condition monitoring	Yes
automatic parameterisation	Yes
application wizards	Yes
alternative run-down	Yes
	Yes
emergency operation mode     reversing operation	Yes
reversing operation     a soft starting at books starting conditions.	
<ul> <li>soft starting at heavy starting conditions</li> <li>Power Electronics</li> </ul>	Yes
operational current	
at 40 °C rated value	1 100 A
at 40 °C rated value     at 40 °C rated value minimum	220 A
at 50 °C rated value     at 50 °C rated value	979 A
at 60 °C rated value	890 A
operational current at inside-delta circuit	030 A
at 40 °C rated value	1 905 A
at 50 °C rated value	1 695 A
at 60 °C rated value     at 60 °C rated value	1 541 A
operating voltage	TOTER
• 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	10 /0
relative positive tolerance of the operating voltage at inside-delta circuit	10 %
operating power for 3-phase motors	
<ul> <li>at 230 V at 40 °C rated value</li> </ul>	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	
at 40 °C after startup	330 W
<ul> <li>at 50 °C after startup</li> </ul>	270 W
at 60 °C after startup	223 W
power loss [W] at AC at current limitation 350 %	40 500 W
• at 40 °C during startup	18 502 W
• at 50 °C during startup	15 568 W
at 60 °C during startup  type of the motor protection	13 552 W
type of the motor protection	Electronic, tripping in the event of thermal overload of the motor
Control circuit/ Control	AC
type of voltage of the control supply voltage	AC
control supply voltage at AC	110 250 V
• at 50 Hz	110 250 V
• at 60 Hz	110 250 V -15 %
relative negative tolerance of the control supply voltage at AC at 50 Hz	
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	210 mA
locked-rotor current at close of bypass contact maximum	1 A
inrush current peak at application of control supply voltage maximum	44 A
duration of inrush current peak at application of control supply voltage	1.7 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
<ul> <li>at DC-13 at 24 V rated value</li> </ul>	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	
<ul><li>forwards</li></ul>	10 mm
<ul><li>backwards</li></ul>	0 mm
• upwards	100 mm
<ul><li>downwards</li></ul>	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	
<ul> <li>with conductor cross-section = 0.5 mm² maximum</li> </ul>	50 m
<ul> <li>with conductor cross-section = 1.5 mm² maximum</li> </ul>	150 m
• with conductor cross-section = 2.5 mm² maximum	250 m
type of connectable conductor cross-sections	
<ul> <li>for DIN cable lug for main contacts stranded</li> </ul>	2x (50 240 mm²)
for DIN cable lug for main contacts finely stranded	2x (70 240 mm²)
type of connectable conductor cross-sections	
for control circuit solid	1x (0.5 4.0 mm²), 2x (0.5 2.5 mm²)
<ul> <li>for control circuit finely stranded with core end processing</li> </ul>	1x (0.5 2.5 mm²), 2x (0.5 1.5 mm²)
at AWG cables for control circuit solid	1x (20 12), 2x (20 14)
wire length	
<ul> <li>between soft starter and motor maximum</li> </ul>	800 m
at the digital inputs at DC maximum	1 000 m
tightening torque	

<ul> <li>for main contacts with screw-type terminals</li> </ul>	20 35 N·m
<ul> <li>for auxiliary and control contacts with screw-type</li> </ul>	0.8 1.2 N·m
terminals	
tightening torque [lbf·in]	
<ul> <li>for main contacts with screw-type terminals</li> </ul>	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	
<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	0//0 / : fti
<ul> <li>during operation acc. to IEC 60721</li> </ul>	3K6 (no ice formation, only occasional condensation), 3C3 (no salt mist), 3S2 (sand must not get into the devices), 3M6
<ul> <li>during storage acc. to IEC 60721</li> </ul>	1K6 (only occasional condensation), 1C2 (no salt mist), 1S2 (sand must
Garing Storage acc. to 1EO 00721	not get inside the devices), 1M4
<ul> <li>during transport acc. 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	
PROFINET standard	Yes
PROFINET standard     PROFINET high-feature	Yes
• EtherNet/IP	Yes
Modbus RTU	Yes
Modbus TCP	Yes
PROFIBUS	Yes
UL/CSA ratings	165
manufacturer's article number  • of the fuse	
	Type: Class 1/1 may 2000 A: Is = 95 kA
<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
— usable for High Faults up to 575/600 V	Type: Class J / L, max. 3000 A; Iq = 100 kA
according to UL	7,
<ul> <li>usable for Standard Faults at inside-delta</li> </ul>	Type: Class J / L, max. 3000 A; Iq = 85 kA
circuit up to 575/600 V according to UL	
<ul> <li>usable for High Faults at inside-delta circuit up to 575/600 V according to UL</li> </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	250 hn
• at 220/230 V at 50 °C rated value	350 hp
	400 hp
• at 460/480 V at 50 °C rated value	850 hp
<ul> <li>at 200/208 V at inside-delta circuit at 50 °C rated value</li> </ul>	600 hp
<ul> <li>at 220/230 V at inside-delta circuit at 50 °C rated value</li> </ul>	700 hp
<ul> <li>at 460/480 V at inside-delta circuit at 50 °C rated value</li> </ul>	1 500 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
• IECEX	Yes
according to ATEX directive 2014/34/EU	BVS 18 ATEX F 003 X
type of protection according to ATEX directive	II (2)G [Ex eb Gb] [Ex db Gb] [Ex pxb Gb], II (2)D [Ex tb Db] [Ex pxb Db],
2014/34/EU	I (M2) [Ex db Mb]
hardware fault tolerance acc. to IEC 61508 relating to ATEX	0
PFDavg with low demand rate acc. to IEC 61508	0.008

relating to ATEX	
PFHD with high demand rate acc. to EN 62061 relating to ATEX	0.0000005 1/h
Safety Integrity Level (SIL) acc. to IEC 61508 relating to ATEX	SIL1
T1 value for proof test interval or service life acc. to IEC 61508 relating to ATEX	3 y

Certificates/ approvals

**General Product Approval** 

EMC

For use in hazardous locations













For use in hazardous locations Declaration of Conformity

**Test Certificates** 

Marine / Shipping





Type Test Certificates/Test Report







Marine / Shipping

other





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=3RW5556-6HA14

Cax online generator

 $\underline{\text{http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en\&mlfb=3RW5556-6HA14}}$ 

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

https://support.industry.siemens.com/cs/ww/en/ps/3RW5556-6HA14

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

http://www.automation.siemens.com/bilddb/cax\_de.aspx?mlfb=3RW5556-6HA14&lang=en

Characteristic: Tripping characteristics,  $I^2t$ , Let-through current

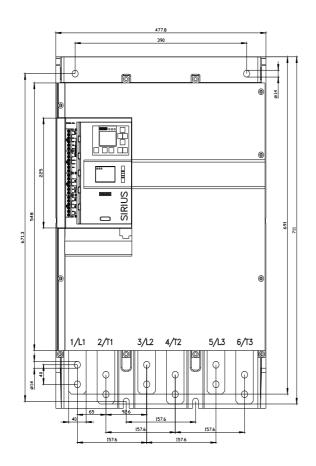
https://support.industry.siemens.com/cs/ww/en/ps/3RW5556-6HA14/char

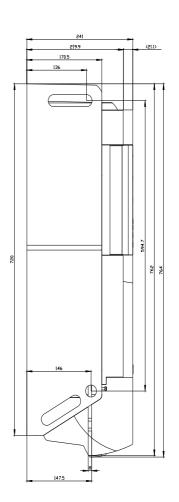
Characteristic: Installation altitude

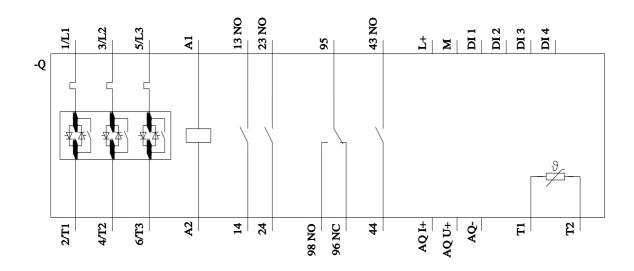
 $\underline{\text{http://www.automation.siemens.com/bilddb/index.aspx?view=Search\&mlfb=3RW5556-6HA14\&objecttype=14\&gridview=view1}$ 

Simulation Tool for Soft Starters (STS)

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







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