## **SIEMENS**

Data sheet 3RW5558-6HA14



SIRIUS soft starter 200-480 V 1280 A, 110-250 V AC Screw terminals





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>	3NB3357-1KK26; 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 %; 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	
<ul><li>ramp-up (soft starting)</li></ul>	Yes
<ul><li>ramp-down (soft stop)</li></ul>	Yes
breakaway pulse	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
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.
<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
analog output	Yes; 4 20 mA (default) / 0 10 V
• .	,

<ul> <li>programmable control inputs/outputs</li> </ul>	Yes
<ul> <li>condition monitoring</li> </ul>	Yes
<ul> <li>automatic parameterisation</li> </ul>	Yes
application wizards	Yes
alternative run-down	Yes
<ul> <li>emergency operation mode</li> </ul>	Yes
reversing operation	Yes
<ul> <li>soft starting at heavy starting conditions</li> </ul>	Yes
Power Electronics	
operational current	
• at 40 °C rated value	1 280 A
at 40 °C rated value minimum	256 A
at 50 °C rated value	1 139 A
at 60 °C rated value	1 030 A
operational current at inside-delta circuit	1 000 A
at 40 °C rated value	2 217 A
at 50 °C rated value  at 60 °C rated value	1 973 A 1 784 A
	1 784 A
operating voltage	200 400 //
• 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 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	400 kW
<ul> <li>at 230 V at inside-delta circuit at 40 °C rated value</li> </ul>	710 kW
at 400 V at 40 °C rated value	710 kW
<ul> <li>at 400 V at inside-delta circuit at 40 °C rated value</li> </ul>	1 200 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	10 75, Fichality to 500.10
• at 40 °C after startup	384 W
at 50 °C after startup	337 W
at 60 °C after startup	275 W
power loss [W] at AC at current limitation 350 %	
• at 40 °C during startup	23 279 W
• at 50 °C during startup	19 496 W
at 50 °C during startup     at 60 °C during startup	16 778 W
	Electronic, tripping in the event of thermal overload of the motor
type of the motor protection  Control circuit/ Control	Liectronic, tripping in the event of thermal overload of the motor
	AC
type of voltage of the control supply voltage	AC
control supply voltage at AC	440 070 4
• 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	10 %

fraguenav	
frequency	100 mA
control supply current in standby mode rated value	210 mA
holding current in bypass operation rated value	1 A
inrush current by closing the bypass contacts maximum	
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
<ul> <li>number of digital outputs parameterizable</li> </ul>	3
<ul> <li>number of digital outputs not parameterizable</li> </ul>	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°)
	screw fixing
fastening method	764 mm
height	
width	478 mm
depth	241 mm
required spacing with side-by-side mounting	40
• forwards	10 mm
• backwards	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	
• with conductor cross-section = 0.5 mm² maximum	50 m
• with conductor cross-section = 1.5 mm² maximum	150 m
• with conductor cross-section = 2.5 mm² maximum	250 m
type of connectable conductor cross-sections	
for DIN cable lug for main contacts stranded	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)
for control circuit finely stranded with core end processing	1x (0.5 2.5 mm²), 2x (0.5 1.5 mm²)
for AWG cables for control circuit solid	1x (20 12), 2x (20 14)
wire length	( · · · · · - ), - · · (- · · · · )
between soft starter and motor maximum	800 m
at the digital inputs at DC maximum	1 000 m
tightening torque	1 000 111
for main contacts with screw-type terminals	20 35 N·m
<ul> <li>for main contacts with screw-type terminals</li> <li>for auxiliary and control contacts with screw-type terminals</li> </ul>	0.8 1.2 N·m
tightening torque [lbf·in]	
for main contacts with screw-type terminals	177 310 lbf·in
The second secon	

for auxiliary and control contacts with screw-type terminals  Ambient conditions	7 10.3 lbf·in	
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	
during storage according to IEC 60721	(sand must not get into the devices), 3M6  1K6 (only occasional condensation), 1C2 (no salt mist), 1S2 (sand must not get	
	inside the devices), 1M4	
during transport according to IEC 60721  Environmental feetingst	2K2, 2C1, 2S1, 2M2 (max. fall height 0.3 m)	
Environmental footprint	Oirmana FarTack	
Siemens Eco Profile (SEP)	Siemens EcoTech	
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	
<ul> <li>Modbus RTU</li> </ul>	Yes	
<ul> <li>Modbus TCP</li> </ul>	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	
<ul> <li>usable for Standard Faults at inside-delta circuit up to 575/600 V according to UL</li> </ul>	Type: Class J / L, max. 3000 A; lq = 85 kA	
<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		
<ul> <li>at 200/208 V at 50 °C rated value</li> </ul>	400 hp	
<ul> <li>at 220/230 V at 50 °C rated value</li> </ul>	450 hp	
<ul> <li>at 460/480 V at 50 °C rated value</li> </ul>	1 000 hp	
• at 200/208 V at inside-delta circuit at 50 °C rated value	700 hp	
at 220/230 V at inside-delta circuit at 50 °C rated value	850 hp	
• at 460/480 V at inside-delta circuit at 50 °C rated value	1 700 hp	
contact rating of auxiliary contacts according to UL	R300-B300	
Electrical Safety		
protection class IP on the front according to IEC 60529	IP00	
ATEX	••	
	CII 1	
Safety Integrity Level (SIL) according to IEC 61508 relating to ATEX	SIL1	
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	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]	
Approvals Certificates		
General Product Approval		







Confirmation





EMV

For use in hazardous locations

**Test Certificates** 

Environment

Marine / Shipping



<u>KC</u>





Type Test Certificates/Test Report



Marine / Shipping





Confirmation

other



Siemens EcoTech



**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=3RW5558-6HA14

Cax online generator

 $\underline{\text{http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en\&mlfb=3RW5558-6HA14}}$ 

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

https://support.industry.siemens.com/cs/ww/en/ps/3RW5558-6HA14

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

 $\underline{\text{http://www.automation.siemens.com/bilddb/cax\_de.aspx?mlfb=3RW5558-6HA14\&lang=en}}$ 

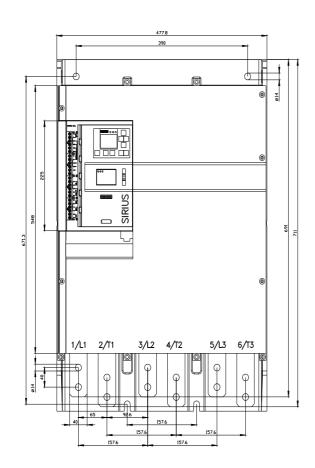
Characteristic: Tripping characteristics, I²t, Let-through current <a href="https://support.industry.siemens.com/cs/ww/en/ps/3RW5558-6HA14/char">https://support.industry.siemens.com/cs/ww/en/ps/3RW5558-6HA14/char</a>

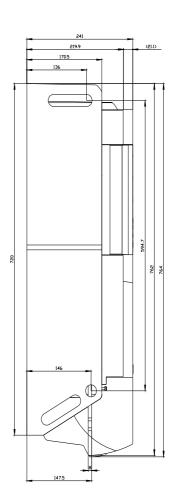
Characteristic: Installation altitude

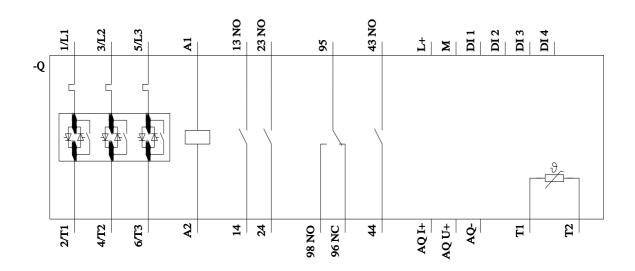
http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RW5558-6HA14&objecttype=14&gridview=view1

Simulation Tool for Soft Starters (STS)

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







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