SIEMENS

Data sheet 3RW5558-6HA16

SIRIUS



SIRIUS soft starter 200-690 V 1280 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	
 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 	3NB3357-1KK26; 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
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

# IMIM-High Feature		_
# is supported MM-High Feature Yes Product feature integrated bypass contact system number of controlled phases 3 CLASS 10A / 10E (default) / 20E / 30E; acc. to IEC 60947-4-2 current unblance limiting value [%] 10 60 % ground-fault monitoring limiting value [%] 10 60 % ground-fault limiting limiting value [%] 10 60 % ground-fault lim	product component	
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Feature communication modules • firmware update • removable terminal for control circuit • voltage ramp Feature communication modules Yes Yes	 spring-type terminal 	No
 removable terminal for control circuit voltage ramp Yes 	PROFlenergy	
• voltage ramp Yes	firmware update	Yes
	 removable terminal for control circuit 	Yes
• torque control Yes	voltage ramp	Yes
	• torque control	Yes

	V.
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 	1 280 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	
 at 40 °C rated value 	2 217 A
 at 50 °C rated value 	1 973 A
at 60 °C rated value	1 784 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 	400 kW
 at 230 V at inside-delta circuit at 40 °C rated value 	710 kW
 at 400 V at 40 °C rated value 	710 kW
• at 400 V at inside-delta circuit at 40 °C rated value	1 200 kW
 at 500 V at 40 °C rated value 	900 kW
 at 500 V at inside-delta circuit at 40 °C rated value 	1 500 kW
 at 690 V at 40 °C rated value 	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	
 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 60 °C during startup	16 778 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	10 %

voltage at AC at 50 Hz	
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 inputs for thermistor connection	1; Type A PTC or Klixon / Thermoclick
 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
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	hash an annual trans
for main current circuit for control 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 = 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 	250 m
with conductor cross-section = 2.5 mm² maximum type of connectable conductor cross-sections	ZJU III
for DIN cable lug for main contacts stranded	2x (50 240 mm²)
for DIN cable lug for main contacts stranded for DIN cable lug for main contacts finely stranded	2x (30 240 mm²)
type of connectable conductor cross-sections	27 (10 270 Hilli)
type of confidentable 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 	1x (0.5 2.5 mm²), 2x (0.5 1.5 mm²)
processing	4 (22 42) 2 (22 44)
at 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	
 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 terminals 	7 10.3 lbf·in
Ambient conditions	
installation altitude at height above sea level maximum	2 000 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 acc. 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 acc. to IEC 60721 	1K6 (only occasional condensation), 1C2 (no salt mist), 1S2 (sand must not get inside the devices), 1M4
 during transport acc. to IEC 60721 	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 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 according to UL 	Type: Class J / L, max. 3000 A; Iq = 85 kA
 usable for High Faults up to 575/600 V according to 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 	400 hp
 at 220/230 V at 50 °C rated value 	450 hp
 at 460/480 V at 50 °C rated value 	1 000 hp
 at 575/600 V at 50 °C rated value 	1 250 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
• at 575/600 V at inside-delta circuit at 50 °C rated value	2 200 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 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 acc. to IEC 61508 relating to ATEX	0
PFDavg with low demand rate acc. to IEC 61508 relating to ATEX	0.008
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
Cartificates/ approvals	

Certificates/ approvals

General Product Approval

EMC

For use in hazardous locations













For use in hazardous locations Declaration of Conformity

Test Certificates

Marine / Shipping

other





Type Test Certificates/Test Report





Confirmation

Further informatior

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=3RW5558-6HA16

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RW5558-6HA16

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

https://support.industry.siemens.com/cs/ww/en/ps/3RW5558-6HA16

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

http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5558-6HA16&lang=en

Characteristic: Tripping characteristics, I²t, Let-through current

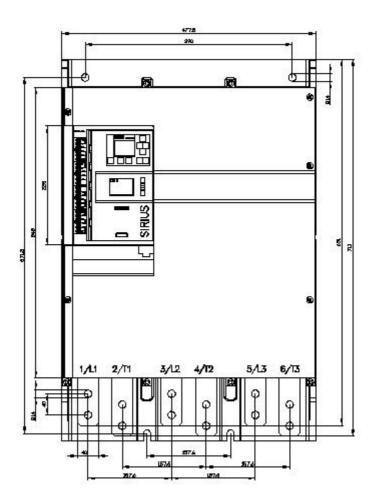
https://support.industry.siemens.com/cs/ww/en/ps/3RW5558-6HA16/char

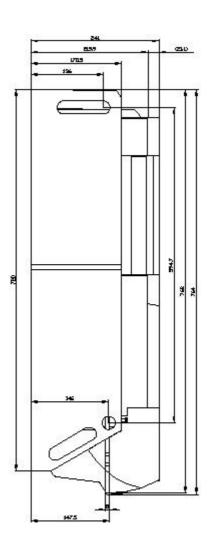
Characteristic: Installation altitude

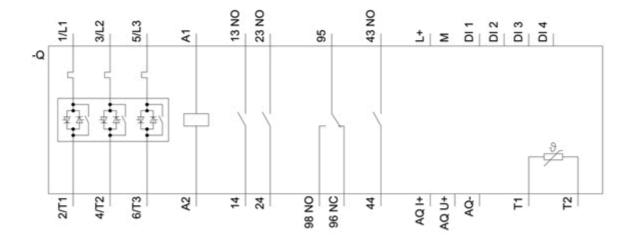
 $\underline{http://www.automation.siemens.com/bilddb/index.aspx?view=Search\&mlfb=3RW5558-6HA16\&objecttype=14\&gridview=view1.pdf}$

Simulation Tool for Soft Starters (STS)

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







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