SIEMENS

3RW5055-6TB14 **Data sheet**



SIRIUS soft starter 200-480 V 143 A, 110-250 V AC Screw terminals Thermistor

Figure similar

product brand name	SIRIUS
product category	Hybrid switching devices
product designation	Soft starter
product type designation	3RW50
manufacturer's article number	
 of standard HMI module usable 	3RW5980-0HS01
 of high feature HMI module usable 	3RW5980-0HF00
 of communication module PROFINET standard usable 	3RW5980-0CS00
 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 	3VA2220-7MN32-0AA0; Type of assignment 1, Iq = 20 kA
 of circuit breaker usable at 500 V 	3VA2220-7MN32-0AA0; Type of assignment 1, Iq = 20 kA
 of the gG fuse usable up to 690 V 	3NA3244-6; Type of coordination 1, Iq = 65 kA
 of full range R fuse link for semiconductor protection usable up to 690 V 	3NE1 227-0; Type of coordination 2, Iq = 65 kA
 of back-up R fuse link for semiconductor protection usable up to 690 V 	3NE3 334 -0B; Type of coordination 2, Iq = 65 kA
 of line contactor usable up to 480 V 	<u>3RT1055</u>
 of line contactor usable up to 690 V 	<u>3RT1055</u>
eneral technical data	
starting voltage [%]	30 100 %
stopping voltage [%]	50 %; non-adjustable
start-up ramp time of soft starter	0 20 s
ramp-down time of soft starter	0 20 s
current limiting value [%] adjustable	130 700 %
certificate of suitability	
CE marking	Yes
UL approval	Yes
CSA approval	Yes
product component	
HMI-High Feature	No
• is supported HMI-Standard	Yes
is supported HMI-High Feature	Yes
product feature integrated bypass contact system	Yes
number of controlled phases	2
trip class	CLASS 10A / 10E (preset) / 20E; acc. to IEC 60947-4-2
buffering time in the event of power failure	
for main current circuit	100 ms

e for control circuit	100 mg		
• for control circuit	100 ms		
insulation voltage rated value	600 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		
surge voltage resistance rated value	6 kV		
maximum permissible voltage for protective separation	2021/		
between main and auxiliary circuit	600 V		
shock resistance	15 g / 11 ms, from 12 g / 11 ms with potential contact lifting		
vibration resistance	15 mm to 6 Hz; 2g to 500 Hz		
utilization category according to IEC 60947-4-2	AC-53a Q		
reference code according to IEC 81346-2			
Substance Prohibitance (Date)	09/23/2019		
product function	Von		
• ramp-up (soft starting)	Yes		
• ramp-down (soft stop)	Yes		
Soft Torque adjustable current limitation	Yes		
adjustable current limitation	Yes		
pump ramp down intrinsis dovice protection	Yes		
intrinsic device protection	Yes		
motor overload protection	Yes; Full motor protection (thermistor motor protection and electronic motor overload protection)		
evaluation of thermistor motor protection acute RESET.	Yes; Type A PTC or Klixon / Thermoclick		
auto-RESET	Yes		
• manual RESET	Yes		
• remote reset	Yes; By turning off the control supply voltage		
communication function	Yes		
operating measured value display	Yes; Only in conjunction with special accessories		
error logbook via aeftware parameterizable	Yes; Only in conjunction with special accessories		
via software parameterizable	No Yea		
via software configurable PROFlenoray	Yes		
PROFlenergyvoltage ramp	Yes; in connection with the PROFINET Standard communication module Yes		
torque control	No		
analog output	No		
Power Electronics	110		
operational current • at 40 °C rated value	143 A		
	128 A		
at 50 °C rated value at 60 °C rated value	128 A 118 A		
at 60 °C rated value	110 /		
operating voltage • rated value	200 480 V		
relative negative tolerance of the operating voltage	-15 %		
relative negative tolerance of the operating voltage	10 %		
operating power for 3-phase motors	10 /0		
at 230 V at 40 °C rated value	37 kW		
• at 400 V at 40 °C rated value	75 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 %		
adjustable motor current			
at rotary coding switch on switch position 1	68 A		
at rotary coding switch on switch position 2	73 A		
at rotary coding switch on switch position 3	78 A		
at rotary coding switch on switch position 4	83 A		
at rotary coding switch on switch position 5	88 A		
at rotary coding switch on switch position 6	93 A		
at rotary coding switch on switch position 7	98 A		
at rotary coding switch on switch position 8	103 A		
- acrotary obtains ownton on ownton position o			

 at rotary coding switch on switch position 9 	108 A		
 at rotary coding switch on switch position 10 	113 A		
 at rotary coding switch on switch position 11 	118 A		
 at rotary coding switch on switch position 12 	123 A		
 at rotary coding switch on switch position 13 	128 A		
 at rotary coding switch on switch position 14 	133 A		
 at rotary coding switch on switch position 15 	138 A		
 at rotary coding switch on switch position 16 	143 A		
• minimum	68 A		
minimum load [%]	15 %; Relative to smallest settable le		
power loss [W] for rated value of the current at AC			
• at 40 °C after startup	23 W		
• at 50 °C after startup	19 W		
• at 60 °C after startup	16 W		
power loss [W] at AC at current limitation 350 %			
 at 40 °C during startup 	1 336 W		
• at 50 °C during startup	1 134 W		
• at 60 °C during startup	1 007 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 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	30 mA		
holding current in bypass operation rated value	80 mA		
inrush current by closing the bypass contacts maximum	2.5 A		
inrush current peak at application of control supply voltage maximum	12.2 A		
duration of inrush current peak at application of control supply voltage	2.2 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	1		
number of digital outputs	3		
not parameterizable	2		
digital output version	2 normally-open contacts (NO) / 1 changeover contact (CO)		
number of analog outputs	0		
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	with vertical mounting surface +/-90° rotatable, with vertical mounting surface +/- 22.5° tiltable to the front and back		
fastening method	screw fixing		
height	198 mm		
width	120 mm		
depth	249 mm		
-			

**required spacing with side-by-side mounting ** howards ** on browards ** opwards ** of the side ** of control consection ** of control or creat ** of control or creat ** of the side of th		
backwards vorwards	required spacing with side-by-side mounting	
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Weight without packaging 3.2 kg		
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points finely stranded with core end processing • for main contacts for box terminal using both clamping points finely stranded without core end processing • for main contacts for box terminal using both clamping points stranded • for main contacts for box terminal using the back clamping point finely stranded with core end processing • for main contacts for box terminal using the back clamping point finely stranded without core end processing • for main contacts for box terminal using the back clamping point if stranded • for main contacts for box terminal using the back clamping point stranded • for an intervent conductor cross-sections • for AWG cables for main current circuit solid • for DIN cable lug for main contacts stranded • for DIN cable lug for main contacts finely stranded • for control circuit solid • for control circuit finely stranded with core end processing • for control circuit finely stranded with core end processing • for AWG cables for control circuit solid • for control circuit finely stranded with core end processing • for awG cables for control circuit solid • for control circuit finely stranded with core end processing • for fawG cables for control circuit solid • for control circuit finely stranded with core end processing • for fawG cables for control circuit solid • for awG cables for control circuit solid • for	points solid	
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opints stranded • for main contacts for box terminal using the back clamping point finely stranded with core end processing • for main contacts for box terminal using the back clamping point finely stranded without core end processing • for main contacts for box terminal using the back clamping point stranded • for main contacts for box terminal using the back clamping point stranded • for Clin Cable lug for main contacts stranded • for DIN cable lug for main contacts stranded • for DIN cable lug for main contacts finely stranded • for control circuit solid • for AWG cables for control circuit solid • for AWG cables for control circuit solid wire length • between soft starter and motor maximum • at the digital inputs at AC maximum • for main contacts with screw-type terminals • for awdillary and control contacts with screw-type terminals • for awdillary and control contacts with screw-type terminals • for awdillary and control contacts with screw-type terminals • for awdillary and control contacts with screw-type terminals • for awdillary and control contacts with screw-type terminals • for awdillary and control contacts with screw-type terminals • for awdillary and control contacts with screw-type terminals • for awdillary and control contacts with screw-type terminals • for awdillary and control contacts with screw-type terminals • for awdillary and control contacts with screw-type terminals • for awdillary and control contacts with screw-type • for main contacts with screw-type terminals • for awdillary and control contacts with screw-type • for main contacts with screw-type terminals • for awdillary and control contacts with screw-type	points finely stranded without core end processing	
clamping point finely stranded with core end processing • for main contacts for box terminal using the back clamping point finely stranded without core end processing • for main contacts for box terminal using the back clamping point stranded type of connectable conductor cross-sections • for AWG cables for main current circuit solid • 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 solid • for control circuit finely stranded with core end processing • for control circuit finely stranded with core end processing • for AWG cables for control circuit solid vire length • between soft starter and motor maximum • at the digital inputs at AC maximum • for main contacts with screw-type terminals • for auxiliary and control contacts with screw-type terminals tightening torque [lbf·in] • for auxiliary and control contacts with screw-type terminals Ambient conditions	points stranded	
clamping point finely stranded without core end processing • for main contacts for box terminal using the back clamping point stranded type of connectable conductor cross-sections • for AWG cables for main current circuit solid • 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 solid • for control circuit solid • for control circuit finely stranded with core end processing • for AWG cables for control circuit solid 1x (0.5 4.0 mm²), 2x (0.5 2.5 mm²) 1x (0.5 2.5 mm²), 2x (0.5 1.5 mm²) 1x (20 12), 2x (20 14) wire length • between soft starter and motor maximum • at the digital inputs at AC maximum 1 000 m tightening torque • for main contacts with screw-type terminals • for auxiliary and control contacts with screw-type terminals Ambient conditions 16 120 mm² 16 120 mm² 10 250 kcmil 16 95 mm² 25 120 mm² 17 x (0.5 4.0 mm²), 2x (0.5 2.5 mm²) 18 x (0.5 4.0 mm²), 2x (0.5 2.5 mm²) 19 x (0.5 4.0 mm²), 2x (0.5 1.5 mm²) 10 x (20 12), 2x (20 14) 10 x (20	clamping point finely stranded with core end processing	
type of connectable conductor cross-sections • for AWG cables for main current circuit solid • for DIN cable lug for main contacts stranded • for DIN cable lug for main contacts finely stranded • for DIN cable lug for main contacts finely stranded **Type of connectable conductor cross-sections • for control circuit solid • for control circuit solid • for control circuit finely stranded with core end processing • for AWG cables for control circuit solid **Time Inght* • between soft starter and motor maximum • at the digital inputs at AC maximum • for main contacts with screw-type terminals • for auxiliary and control contacts with screw-type terminals **Tightening torque* **Inght* *	clamping point finely stranded without core end processing	
• for AWG cables for main current circuit solid • for DIN cable lug for main contacts stranded • for DIN cable lug for main contacts finely stranded • for DIN cable lug for main contacts finely stranded • for control circuit solid • for control circuit solid • for control circuit finely stranded with core end processing • for AWG cables for control circuit solid • for AWG cables for control circuit solid • between soft starter and motor maximum • at the digital inputs at AC maximum • for main contacts with screw-type terminals • for auxiliary and control contacts with screw-type terminals • for auxiliary and control contacts with screw-type terminals • for auxiliary and control contacts with screw-type terminals Ambient conditions		
• for DIN cable lug for main contacts stranded • for DIN cable lug for main contacts finely 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 wire length • between soft starter and motor maximum • at the digital inputs at AC maximum itghtening torque • for main contacts with screw-type terminals tightening torque [Ibf-in] • for main contacts with screw-type terminals • for auxiliary and control contacts with screw-type terminals Ambient conditions 16 95 mm² 25 120 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) 1x (20 12), 2x (20 14) 1x (20 12)		
• 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 1x (0.5 4.0 mm²), 2x (0.5 2.5 mm²) • for AWG cables for control circuit solid 1x (20 12), 2x (20 1.5 mm²) • between soft starter and motor maximum • at the digital inputs at AC maximum • for main contacts with screw-type terminals • for auxiliary and control contacts with screw-type terminals tightening torque [Ibf-in] • for main contacts with screw-type terminals • for auxiliary and control contacts with screw-type terminals • for auxiliary and control contacts with screw-type terminals • for auxiliary and control contacts with screw-type terminals • for auxiliary and control contacts with screw-type terminals Ambient conditions		
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 1x (0.5 4.0 mm²), 2x (0.5 2.5 mm²) 1x (0.5 2.5 mm²), 2x (0.5 1.5 mm²) 1x (20 12), 2x (20 14) wire length • between soft starter and motor maximum • at the digital inputs at AC maximum 1 000 m tightening torque • for main contacts with screw-type terminals • for auxiliary and control contacts with screw-type terminals tightening torque [lbf-in] • for main contacts with screw-type terminals • for auxiliary and control contacts with screw-type terminals Ambient conditions	-	
• for control circuit solid • for control circuit finely stranded with core end processing • for AWG cables for control circuit solid • for auxiliary and motor maximum • at the digital inputs at AC maximum • for main contacts with screw-type terminals • for auxiliary and control contacts with screw-type		25 12U mm*
• for control circuit finely stranded with core end processing • for AWG cables for control circuit solid in a (20 12), 2x (20 14) in a (20 14)		1v (0.5
• for AWG cables for control circuit solid wire length • between soft starter and motor maximum • at the digital inputs at AC maximum tightening torque • for main contacts with screw-type terminals • for auxiliary and control contacts with screw-type terminals tightening torque [lbf-in] • for main contacts with screw-type terminals tightening torque [lbf-in] • for auxiliary and control contacts with screw-type terminals Ambient conditions 1 x (20 12), 2x (20 14) 800 m 1 0 14 N·m 0 8 14 N·m 8 9 1.2 N·m 1 0 14 N·m 1 0 14 N·m 1 0 1.2 N·m 1 0 1.2 N·m 1 0 1.2 N·m 1 0 1.2 Ibf-in 1 0 1.2 Ibf-in		
wire length • between soft starter and motor maximum • at the digital inputs at AC maximum 1 000 m tightening torque • for main contacts with screw-type terminals • for auxiliary and control contacts with screw-type terminals tightening torque [lbf-in] • for main contacts with screw-type terminals • for auxiliary and control contacts with screw-type terminals 89 124 lbf-in • for auxiliary and control contacts with screw-type terminals Ambient conditions	, , ,	
between soft starter and motor maximum at the digital inputs at AC maximum 1 000 m tightening torque for main contacts with screw-type terminals for auxiliary and control contacts with screw-type terminals tightening torque [lbf·in] for main contacts with screw-type terminals for auxiliary and control contacts with screw-type for auxiliary and control contacts with screw-type terminals Ambient conditions		11 (20 12), 28 (20 14)
■ at the digital inputs at AC maximum tightening torque ● for main contacts with screw-type terminals ● for auxiliary and control contacts with screw-type terminals tightening torque [lbf·in] ● for main contacts with screw-type terminals for auxiliary and control contacts with screw-type terminals for auxiliary and control contacts with screw-type terminals Ambient conditions	•	800 m
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		10 14 N·m
 for main contacts with screw-type terminals for auxiliary and control contacts with screw-type terminals Ambient conditions 89 124 lbf-in 7 10.3 lbf-in 	for auxiliary and control contacts with screw-type	
• for auxiliary and control contacts with screw-type terminals Ambient conditions 7 10.3 lbf-in	tightening torque [lbf·in]	
terminals Ambient conditions	• for main contacts with screw-type terminals	89 124 lbf·in
		7 10.3 lbf·in
	Ambient conditions	
installation altitude at neight above sea level maximum 5 000 m; derating as of 1000 m, see Manual	installation altitude at height above sea level maximum	5 000 m; derating as of 1000 m, see Manual
ambient temperature	ambient temperature	

• during operation	-25 +60 °C; Please observe derating at temperatures	of 40 °C or above
 during operation during storage and transport 	-40 +80 °C	0140 C 01 above
	-40 +00 G	
environmental category	2V6 (no ice formation, only acceptional condensation) 2	C2 (no colt mint) 252
 during operation according 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 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)	
EMC emitted interference	acc. to IEC 60947-4-2: Class A	
Communication/ Protocol		
communication module is supported		
 PROFINET standard 	Yes	
EtherNet/IP	Yes	
Modbus RTU	Yes	
Modbus TCP	Yes	
• PROFIBUS	Yes	
UL/CSA ratings		
manufacturer's article number		
of circuit breaker		
 usable for Standard Faults at 460/480 V according to UL 	Siemens type: 3VA5225, max. 250 A; lq = 10 kA	
of the fuse		
 usable for Standard Faults up to 575/600 V according to UL 	Type: Class RK5 / K5, max. 350 A; lq = 10 kA	
— usable for High Faults up to 575/600 V according to UL	Type: Class J, max. 350 A; lq = 100 kA	
operating power [hp] for 3-phase motors		
 at 200/208 V at 50 °C rated value 	40 hp	
• at 220/230 V at 50 °C rated value	40 hp	
 at 460/480 V at 50 °C rated value 	100 hp	
Safety related data		
protection class IP on the front according to IEC 60529	IP00; IP20 with cover	
touch protection on the front according to IEC 60529	finger-safe, for vertical contact from the front with cover	
ATEX		
certificate of suitability		
• ATEX	Yes	
• IECEx	Yes	
• UKEX	Yes	
hardware fault tolerance according to IEC 61508 relating to ATEX	0	
PFDavg with low demand rate according to IEC 61508 relating to ATEX	0.09	
PFHD with high demand rate according to EN 62061 relating to ATEX	9E-6 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		

General Product Approval

For use in hazardous locations





Confirmation







For use in hazardous locations

Declaration of Conformity

Test Certificates

Marine / Shipping



Explosion Protection Certificate





Type Test Certificates/Test Report







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=3RW5055-6TB14

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RW5055-6TB14

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

https://support.industry.siemens.com/cs/ww/en/ps/3RW5055-6TB14

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

http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5055-6TB14&lang=en

Characteristic: Tripping characteristics, I²t, Let-through current

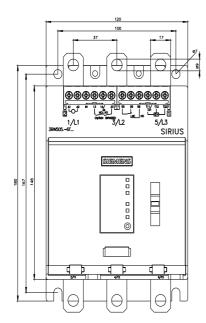
https://support.industry.siemens.com/cs/ww/en/ps/3RW5055-6TB14/char

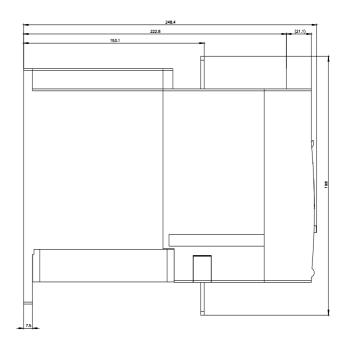
Characteristic: Installation altitude

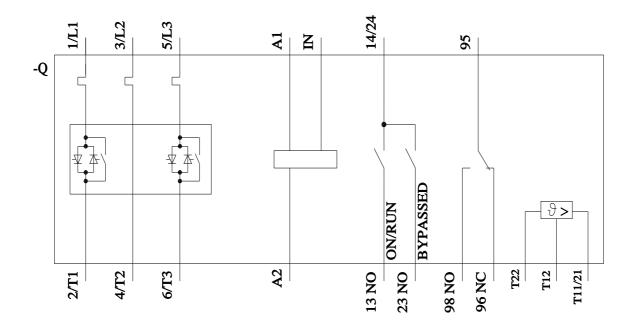
http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RW5055-6TB14&objecttype=14&gridview=view1

Simulation Tool for Soft Starters (STS)

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







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