



SIRIUS soft starter 200-600 V 13 A, 24 V AC/DC spring-type terminals Thermistor input

product brand name	SIRIUS
product category	Hybrid switching devices
product designation	Soft starter
product type designation	3RW52
manufacturer's article number	<ul style="list-style-type: none"> of standard HMI module usable 3RW5980-0HS00 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 3RV2032-4TA10; Type of coordination 1, Iq = 65 kA, CLASS 10 of circuit breaker usable at 500 V 3RV2032-4TA10; Type of coordination 1, Iq = 18 kA, CLASS 10 of circuit breaker usable at 400 V at inside-delta circuit 3RV2032-4DA10; Type of coordination 1, Iq = 65 kA, CLASS 10 of circuit breaker usable at 500 V at inside-delta circuit 3RV2032-4DA10; Type of coordination 1, Iq = 18 kA, CLASS 10 of the gG fuse usable up to 690 V 3NA3820-6; Type of coordination 1, Iq = 65 kA of the gG fuse usable at inside-delta circuit up to 500 V 3NA3820-6; Type of coordination 1, Iq = 65 kA of full range R fuse link for semiconductor protection usable up to 690 V 3NE1815-0; Type of coordination 2, Iq = 65 kA of back-up R fuse link for semiconductor protection usable up to 690 V 3NE8017-1; Type of coordination 2, Iq = 65 kA
General technical data	
starting voltage [%]	30 ... 100 %
stopping voltage [%]	50 %; non-adjustable
start-up ramp time of soft starter	0 ... 20 s
current limiting value [%] adjustable	130 ... 700 %
certificate of suitability	<ul style="list-style-type: none"> CE marking Yes UL approval Yes CSA approval Yes
product component	<ul style="list-style-type: none"> 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	3

buffering time in the event of power failure	
• for main current circuit	100 ms
• 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	1 600 V
service factor	1
surge voltage resistance rated value	6 kV
maximum permissible voltage for protective separation	
• 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; 2 g to 500 Hz
utilization category according to IEC 60947-4-2	AC 53a
reference code according to IEC 81346-2	Q
Substance Prohibitance (day/month/year)	02/15/2018
SVHC substance name	Lead CAS-No. 7439-92-1 Lead monoxide (lead oxide) CAS-No. 1317-36-8 2-methyl-1-(4-methylthiophenyl)-2-morpholinopropan-1-one CAS-No. 71868-10-5 Melamine CAS-No. 108-78-1 6,6'-di-tert-butyl-2,2'-methylenedi-p-cresol CAS-No. 119-47-1 Dibutylbis(pentane-2,4-dionato-O,O')tin CAS-No. 22673-19-4 Diboron trioxide CAS-No. 1303-86-2 Perfluorobutane sulfonic acid (PFBS) and its salts CAS-No. -
Net Weight	1.657 kg
product function	
• ramp-up (soft starting)	Yes
• soft stopping	Yes
• Soft Torque	Yes
• adjustable current limitation	Yes
• pump stop	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	Yes; Type A PTC or Klaxon / Thermoclick
• inside-delta circuit	Yes
• 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	Yes; Only in conjunction with special accessories
• via software parameterizable	No
• via software configurable	Yes
• PROFInergy	Yes; in connection with the PROFINET Standard communication module
• firmware update	Yes
• removable terminal for control circuit	Yes
• torque control	No
• analog output	No
Power Electronics	
operational current	
• at 40 °C rated value	13 A
• at 50 °C rated value	11.5 A
• at 60 °C rated value	10.5 A
operational current at inside-delta circuit	
• at 40 °C rated value	22.5 A
• at 50 °C rated value	19.9 A
• at 60 °C rated value	18.2 A
operating voltage	
• rated value	200 ... 600 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	3 kW
• at 230 V at inside-delta circuit at 40 °C rated value	5.5 kW
• at 400 V at 40 °C rated value	5.5 kW
• at 400 V at inside-delta circuit at 40 °C rated value	11 kW
• at 500 V at 40 °C rated value	7.5 kW
• at 500 V at inside-delta circuit at 40 °C rated value	15 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	5.5 A
• at rotary coding switch on switch position 2	6 A
• at rotary coding switch on switch position 3	6.5 A
• at rotary coding switch on switch position 4	7 A
• at rotary coding switch on switch position 5	7.5 A
• at rotary coding switch on switch position 6	8 A
• at rotary coding switch on switch position 7	8.5 A
• at rotary coding switch on switch position 8	9 A
• at rotary coding switch on switch position 9	9.5 A
• at rotary coding switch on switch position 10	10 A
• at rotary coding switch on switch position 11	10.5 A
• at rotary coding switch on switch position 12	11 A
• at rotary coding switch on switch position 13	11.5 A
• at rotary coding switch on switch position 14	12 A
• at rotary coding switch on switch position 15	12.5 A
• at rotary coding switch on switch position 16	13 A
• minimum	5.5 A
adjustable motor current	
• for inside-delta circuit at rotary coding switch on switch position 1	9.5 A
• for inside-delta circuit at rotary coding switch on switch position 2	10.4 A
• for inside-delta circuit at rotary coding switch on switch position 3	11.3 A
• for inside-delta circuit at rotary coding switch on switch position 4	12.1 A
• for inside-delta circuit at rotary coding switch on switch position 5	13 A
• for inside-delta circuit at rotary coding switch on switch position 6	13.9 A
• for inside-delta circuit at rotary coding switch on switch position 7	14.7 A
• for inside-delta circuit at rotary coding switch on switch position 8	15.6 A
• for inside-delta circuit at rotary coding switch on switch position 9	16.5 A
• for inside-delta circuit at rotary coding switch on switch position 10	17.3 A
• for inside-delta circuit at rotary coding switch on switch position 11	18.2 A
• for inside-delta circuit at rotary coding switch on switch position 12	19.1 A
• for inside-delta circuit at rotary coding switch on switch position 13	19.9 A

<ul style="list-style-type: none"> • for inside-delta circuit at rotary coding switch on switch position 14 • for inside-delta circuit at rotary coding switch on switch position 15 • for inside-delta circuit at rotary coding switch on switch position 16 • at inside-delta circuit minimum 	20.8 A 21.7 A 22.5 A 9.5 A
minimum load [%]	15 %; Relative to smallest settable I _e
power loss [W] for rated value of the current at AC <ul style="list-style-type: none"> • at 40 °C after startup • at 50 °C after startup • at 60 °C after startup 	16 W 15 W 15 W
power loss [W] at AC at current limitation 350% <ul style="list-style-type: none"> • at 40 °C during startup • at 50 °C during startup • at 60 °C during startup 	210 W 178 W 161 W
Control circuit/ Control	
type of voltage of the control supply voltage	AC/DC
control supply voltage at AC <ul style="list-style-type: none"> • at 50 Hz rated value • at 60 Hz rated value 	24 V 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 DC	-20 %
relative positive tolerance of the control supply voltage at DC	20 %
control supply current in standby mode rated value	160 mA
holding current in bypass operation rated value	360 mA
inrush current by closing the bypass contacts maximum	0.75 A
inrush current peak at application of control supply voltage maximum	3.3 A
duration of inrush current peak at application of control supply voltage	12.1 ms
design of the overvoltage protection	Varistor
design of short-circuit protection for control circuit	4 A gG fuse (I _{cu} =1 kA), 6 A quick-acting fuse (I _{cu} =1 kA), C1 miniature circuit breaker (I _{cu} = 600 A), C6 miniature circuit breaker (I _{cu} = 300 A); Is not part of scope of supply
Inputs/ Outputs	
number of digital inputs	1
number of digital outputs <ul style="list-style-type: none"> • not parameterizable 	3 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 <ul style="list-style-type: none"> • at AC-15 at 250 V rated value • at DC-13 at 24 V rated value 	3 A 1 A
Installation/ mounting/ dimensions	
mounting position	+/- 10° rotation possible and can be tilted forward or backward on vertical mounting surface
fastening method	screw fixing

height	275 mm
width	170 mm
depth	152 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	2.1 kg
Connections/ Terminals	
type of electrical connection	
• for main current circuit	screw-type terminals
• for control circuit	spring-loaded terminals
wire length for thermistor connection	
• with conductor cross-section = 0.5 mm ² maximum	50 m
• with conductor cross-section = 1.5 mm ² maximum	150 m
• with conductor cross-section = 2.5 mm ² maximum	250 m
type of connectable conductor cross-sections	
• for main contacts	
— solid	2x (1.0 ... 2.5 mm ²), 2x (2.5 ... 10 mm ²)
— finely stranded with core end processing	2x (1.0 ... 2.5 mm ²), 2x (2.5 ... 6.0 mm ²)
• for AWG cables for main current circuit solid	2x (16 ... 12), 2x (14 ... 8)
type of connectable conductor cross-sections	
• for control circuit solid	2x (0.25 ... 1.5 mm ²)
• for control circuit finely stranded with core end processing	2x (0.25 ... 1.5 mm ²)
• for AWG cables for control circuit solid	2x (24 ... 16)
• for AWG cables for control circuit finely stranded with core end processing	2x (24 ... 16)
wire length	
• between soft starter and motor maximum	800 m
• at the digital inputs at AC maximum	100 m
• at the digital inputs at DC maximum	1 000 m
tightening torque	
• for main contacts with screw-type terminals	2 ... 2.5 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	18 ... 22 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	5 000 m
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 (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)
Electromagnetic compatibility	
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				
<ul style="list-style-type: none">• of circuit breaker usable for Standard Faults<ul style="list-style-type: none">— at 460/480 V according to UL— 60/480 V according to UL— at 460/480 V at inside-delta circuit according to UL— 60/480 V at inside-delta circuit according to UL— at 575/600 V according to UL— at 575/600 V at inside-delta circuit according to UL• of the fuse<ul style="list-style-type: none">— usable for Standard Faults up to 575/600 V according to UL— usable for High Faults up to 575/600 V according to UL— usable for Standard Faults at inside-delta circuit up to 575/600 V according to UL— usable for High Faults at inside-delta circuit up to 575/600 V according to UL		<p>Siemens type: 3RV2742, max. 40 A or 3VA51, max. 40 A; Iq = 5 kA</p> <p>Siemens type: 3RV2742, max. 30 A or 3VA51, max. 35 A; Iq max = 65 kA</p> <p>Siemens type: 3RV2742, max. 40 A or 3VA51, max. 40 A; Iq = 5 kA</p> <p>Siemens type: 3RV2742, max. 30 A or 3VA51, max. 35 A; Iq max = 65 kA</p> <p>Siemens type: 3RV2742, max. 40 A or 3VA51, max. 40 A; Iq = 5 kA</p> <p>Siemens type: 3RV2742, max. 40 A or 3VA51, max. 40 A; Iq = 5 kA</p> <p>Type: Class RK5 / K5, max. 50 A; Iq = 5 kA</p> <p>Type: Class J / L, max. 50 A; Iq = 100 kA</p> <p>Type: Class RK5 / K5, max. 50 A; Iq = 5 kA</p> <p>Type: Class J / L, max. 50 A; Iq = 100 kA</p>		
operating power [hp] for 3-phase motors				
<ul style="list-style-type: none">• at 200/208 V at 50 °C rated value• at 220/230 V at 50 °C rated value• at 460/480 V at 50 °C rated value• at 575/600 V at 50 °C rated value• at 200/208 V at inside-delta circuit at 50 °C rated value• at 220/230 V at inside-delta circuit at 50 °C rated value• at 460/480 V at inside-delta circuit at 50 °C rated value• at 575/600 V at inside-delta circuit at 50 °C rated value		<p>2 hp</p> <p>3 hp</p> <p>7.5 hp</p> <p>10 hp</p> <p>5 hp</p> <p>5 hp</p> <p>10 hp</p> <p>15 hp</p>		
contact rating of auxiliary contacts according to UL		R300-B300		
Electrical Safety				
protection class IP on the front according to IEC 60529		IP20		
touch protection on the front according to IEC 60529		finger-safe, for vertical contact from the front		
Approvals Certificates				
Environmental Product Declaration				
<ul style="list-style-type: none">• global warming potential [CO2 eq] / during manufacturing• global warming potential [CO2 eq] / during sales• global warming potential [CO2 eq] / during operation• global warming potential [CO2 eq] / after end of life• global warming potential [CO2 eq] / total		<p>37.2 kg</p> <p>0.66 kg</p> <p>152 kg</p> <p>-4.19 kg</p> <p>185 kg</p>		
Environment		General Product Approval		
<div><div>Environmental Con- firmations</div><div></div><div></div><div></div><div></div><div></div></div>				
General Product Approval		EMV	Test Certificates	Maritime application
<div></div> <div></div> <div></div> <div></div>			Type Test Certificates/Test Report	
Maritime application		other		
<div></div> <div></div> <div></div> <div></div>		<div>Confirmation</div> <div></div>		

Further information

Information on the packaging

<https://support.industry.siemens.com/cs/ww/en/view/109813875>

Information for data generation and storage

<https://support.industry.siemens.com/cs/ww/en/view/109995012>

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=3RW5213-3TC05>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RW5213-3TC05>

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

https://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5213-3TC05&lang=en

Cax online generator

<https://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RW5213-3TC05>

Kennlinien

<https://curves.simaris.siemens.com/curves/3RW5213-3TC05>

Characteristic: Tripping characteristics, I²t, Let-through current

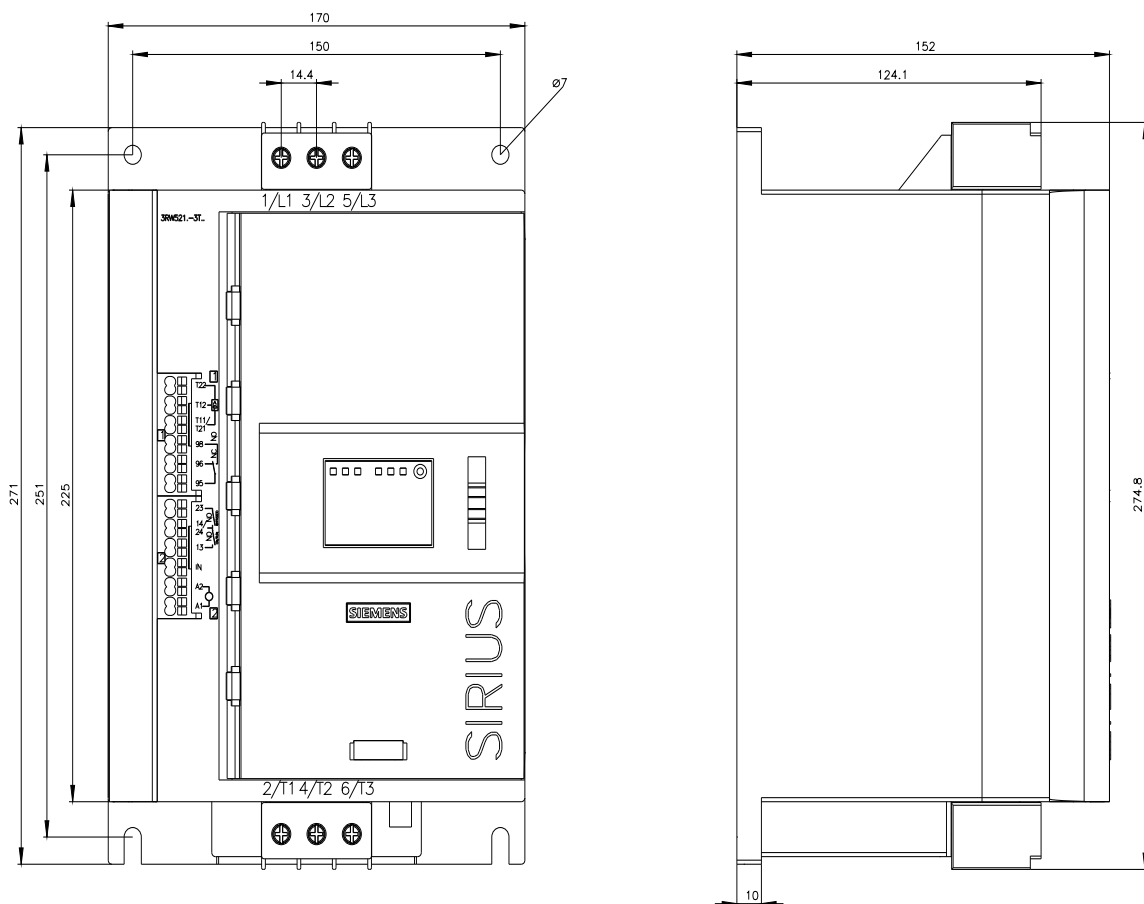
<https://support.industry.siemens.com/cs/ww/en/ps/3RW5213-3TC05/char>

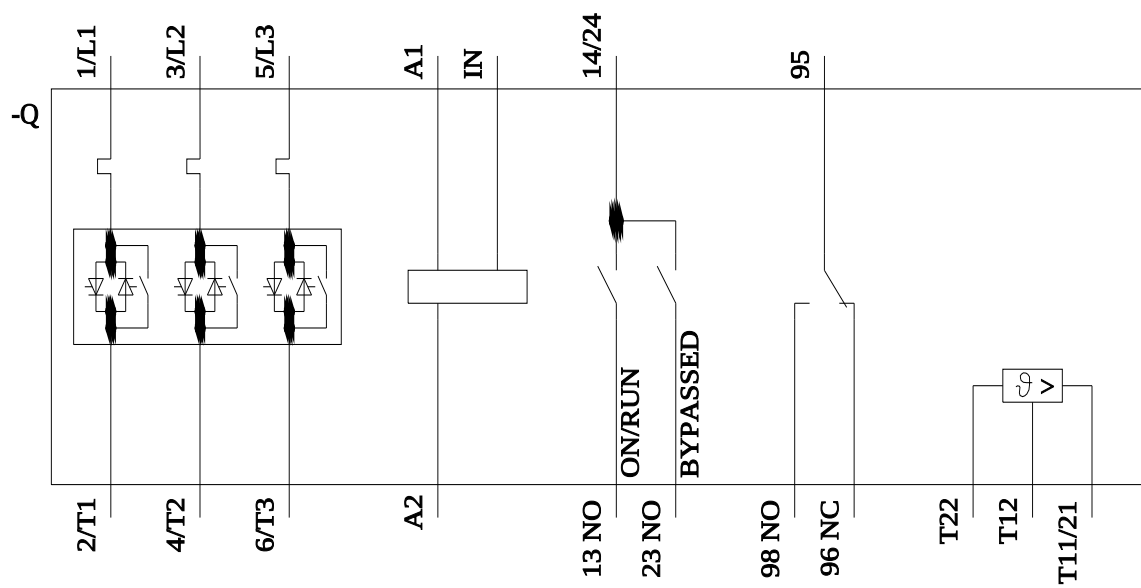
Characteristic: Installation altitude

https://www.automation.siemens.com/bilddb/index.aspx?gridview=view2&objkey=G_NSBO_XX_01704&showdetail=true&view=Search

Simulation Tool for Soft Starters (STS)

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





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