



SIRIUS soft starter 200-600 V 18 A, 24 V AC/DC Screw terminals  
Thermistor input












product brand name	SIRIUS
product category	Hybrid switching devices
product designation	Soft starter
product type designation	3RW52
manufacturer's article number	<div><ul style="list-style-type: none"><li>• of standard HMI module usable</li><li>• of high feature HMI module usable</li><li>• of communication module PROFINET standard usable</li><li>• of communication module PROFIBUS usable</li><li>• of communication module Modbus TCP usable</li><li>• of communication module Modbus RTU usable</li><li>• of communication module Ethernet/IP</li><li>• of circuit breaker usable at 400 V</li><li>• of circuit breaker usable at 500 V</li><li>• of circuit breaker usable at 400 V at inside-delta circuit</li><li>• of circuit breaker usable at 500 V at inside-delta circuit</li><li>• of the gG fuse usable up to 690 V</li><li>• of the gG fuse usable at inside-delta circuit up to 500 V</li><li>• of full range R fuse link for semiconductor protection usable up to 690 V</li><li>• of back-up R fuse link for semiconductor protection usable up to 690 V</li></ul></div>
General technical data	
starting voltage [%]	30 ... 100 %
stopping voltage [%]	50 ... 50 %
start-up ramp time of soft starter	0 ... 20 s
current limiting value [%] adjustable	130 ... 700 %
certificate of suitability	<div><ul style="list-style-type: none"><li>• CE marking</li><li>• UL approval</li><li>• CSA approval</li></ul></div>
product component is supported	<div><ul style="list-style-type: none"><li>• HMI-Standard</li><li>• HMI-High Feature</li></ul></div>
product feature integrated bypass contact system	Yes

<b>number of controlled phases</b>	3
<b>trip class</b>	CLASS 10A (default) / 10E / 20E; acc. to IEC 60947-4-2
<b>buffering time in the event of power failure</b>	
• for main current circuit	100 ms
• for control circuit	100 ms
insulation voltage rated value	600 V
<b>degree of pollution</b>	3, acc. to IEC 60947-4-2
<b>impulse voltage rated value</b>	6 kV
<b>blocking voltage of the thyristor maximum</b>	1 600 V
<b>service factor</b>	1
<b>surge voltage resistance rated value</b>	6 kV
<b>maximum permissible voltage for safe isolation</b>	
• between main and auxiliary circuit	600 V
<b>shock resistance</b>	15 g / 11 ms, from 12 g / 11 ms with potential contact lifting
<b>vibration resistance</b>	15 mm to 6 Hz; 2g to 500 Hz
utilization category acc. to IEC 60947-4-2	AC 53a
<b>reference code acc. to IEC 81346-2</b>	Q
<b>Substance Prohibitance (Date)</b>	15.02.2018 00:00:00
<b>product function</b>	
• ramp-up (soft starting)	Yes
• ramp-down (soft stop)	Yes
• Soft Torque	Yes
• adjustable current limitation	Yes
• pump ramp down	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
• <b>PROFenergy</b>	Yes; in connection with the PROFINET Standard communication module
• <b>firmware update</b>	Yes
• <b>removable terminal for control circuit</b>	Yes
• torque control	No
• analog output	No
<b>Power Electronics</b>	
<b>operational current</b>	
• at 40 °C rated value	18 A
• at 50 °C rated value	16 A
• at 60 °C rated value	14 A
<b>operational current at inside-delta circuit</b>	
• at 40 °C rated value	31.5 A
• at 50 °C rated value	28 A
• at 60 °C rated value	23.9 A
<b>operating voltage</b>	
• rated value	200 ... 600 V
• at inside-delta circuit rated value	200 ... 600 V
<b>relative negative tolerance of the operating voltage</b>	-15 %
<b>relative positive tolerance of the operating voltage</b>	10 %
<b>relative negative tolerance of the operating voltage at inside-delta circuit</b>	-15 %

<b>relative positive tolerance of the operating voltage at inside-delta circuit</b>	10 %
<b>operating power for 3-phase motors</b>	
• at 230 V at 40 °C rated value	4 kW
• at 230 V at inside-delta circuit at 40 °C rated value	7.5 kW
• at 400 V at 40 °C rated value	7.5 kW
• at 400 V at inside-delta circuit at 40 °C rated value	15 kW
• at 500 V at 40 °C rated value	11 kW
• at 500 V at inside-delta circuit at 40 °C rated value	18.5 kW
<b>Operating frequency 1 rated value</b>	50 Hz
<b>Operating frequency 2 rated value</b>	60 Hz
<b>relative negative tolerance of the operating frequency</b>	-10 %
<b>relative positive tolerance of the operating frequency</b>	10 %
<b>adjustable motor current</b>	
• at rotary coding switch on switch position 1	7.5 A
• at rotary coding switch on switch position 2	8.2 A
• at rotary coding switch on switch position 3	8.9 A
• at rotary coding switch on switch position 4	9.6 A
• at rotary coding switch on switch position 5	10.3 A
• at rotary coding switch on switch position 6	11 A
• at rotary coding switch on switch position 7	11.7 A
• at rotary coding switch on switch position 8	12.4 A
• at rotary coding switch on switch position 9	13.1 A
• at rotary coding switch on switch position 10	13.8 A
• at rotary coding switch on switch position 11	14.5 A
• at rotary coding switch on switch position 12	15.2 A
• at rotary coding switch on switch position 13	15.9 A
• at rotary coding switch on switch position 14	16.6 A
• at rotary coding switch on switch position 15	17.3 A
• at rotary coding switch on switch position 16	18 A
• minimum	7.5 A
<b>adjustable motor current</b>	
• for inside-delta circuit at rotary coding switch on switch position 1	13 A
• for inside-delta circuit at rotary coding switch on switch position 2	14.2 A
• for inside-delta circuit at rotary coding switch on switch position 3	15.4 A
• for inside-delta circuit at rotary coding switch on switch position 4	16.6 A
• for inside-delta circuit at rotary coding switch on switch position 5	17.8 A
• for inside-delta circuit at rotary coding switch on switch position 6	19.1 A
• for inside-delta circuit at rotary coding switch on switch position 7	20.3 A
• for inside-delta circuit at rotary coding switch on switch position 8	21.5 A
• for inside-delta circuit at rotary coding switch on switch position 9	22.7 A
• for inside-delta circuit at rotary coding switch on switch position 10	23.9 A
• for inside-delta circuit at rotary coding switch on switch position 11	25.1 A
• for inside-delta circuit at rotary coding switch on switch position 12	26.3 A
• for inside-delta circuit at rotary coding switch on switch position 13	27.5 A
• for inside-delta circuit at rotary coding switch on switch position 14	28.8 A
• for inside-delta circuit at rotary coding switch on switch position 15	30 A

<ul style="list-style-type: none"> <li>• for inside-delta circuit at rotary coding switch on switch position 16</li> <li>• at inside-delta circuit minimum</li> </ul>	31.2 A 13 A
<b>minimum load [%]</b>	15 %; Relative to smallest settable I <sub>e</sub>
<b>power loss [W] for rated value of the current at AC</b> <ul style="list-style-type: none"> <li>• at 40 °C after startup</li> <li>• at 50 °C after startup</li> <li>• at 60 °C after startup</li> </ul>	17 W 17 W 16 W
<b>power loss [W] at AC at current limitation 350 %</b> <ul style="list-style-type: none"> <li>• at 40 °C during startup</li> <li>• at 50 °C during startup</li> <li>• at 60 °C during startup</li> </ul>	276 W 241 W 200 W
<b>Control circuit/ Control</b>	
<b>type of voltage of the control supply voltage</b>	AC/DC
<b>control supply voltage at AC</b> <ul style="list-style-type: none"> <li>• at 50 Hz rated value</li> <li>• at 60 Hz rated value</li> </ul>	24 V 24 V
<b>relative negative tolerance of the control supply voltage at AC at 50 Hz</b>	-20 %
<b>relative positive tolerance of the control supply voltage at AC at 50 Hz</b>	20 %
<b>relative negative tolerance of the control supply voltage at AC at 60 Hz</b>	-20 %
<b>relative positive tolerance of the control supply voltage at AC at 60 Hz</b>	20 %
<b>control supply voltage frequency</b>	50 ... 60 Hz
<b>relative negative tolerance of the control supply voltage frequency</b>	-10 %
<b>relative positive tolerance of the control supply voltage frequency</b>	10 %
<b>control supply voltage</b> <ul style="list-style-type: none"> <li>• at DC rated value</li> </ul>	24 V
<b>relative negative tolerance of the control supply voltage at DC</b>	-20 %
<b>relative positive tolerance of the control supply voltage at DC</b>	20 %
<b>control supply current in standby mode rated value</b>	160 mA
<b>holding current in bypass operation rated value</b>	360 mA
<b>locked-rotor current at close of bypass contact maximum</b>	0.75 A
<b>inrush current peak at application of control supply voltage maximum</b>	3.3 A
<b>duration of inrush current peak at application of control supply voltage</b>	12.1 ms
<b>design of the overvoltage protection</b>	Varistor
<b>design of short-circuit protection for control circuit</b>	4 A gG fuse (I <sub>cu</sub> =1 kA), 6 A quick-acting fuse (I <sub>cu</sub> =1 kA), C1 miniature circuit breaker (I <sub>cu</sub> = 600 A), C6 miniature circuit breaker (I <sub>cu</sub> = 300 A); Is not part of scope of supply
<b>Inputs/ Outputs</b>	
<b>number of digital inputs</b>	1
<b>number of inputs for thermistor connection</b>	1; Type A PTC or Klaxon / Thermoclick
<b>number of digital outputs</b> <ul style="list-style-type: none"> <li>• not parameterizable</li> </ul>	3 2
<b>digital output version</b>	2 normally-open contacts (NO) / 1 changeover contact (CO)
<b>number of analog outputs</b>	0
<b>switching capacity current of the relay outputs</b> <ul style="list-style-type: none"> <li>• at AC-15 at 250 V rated value</li> <li>• at DC-13 at 24 V rated value</li> </ul>	3 A 1 A
<b>Installation/ mounting/ dimensions</b>	
<b>mounting position</b>	+/- 10° rotation possible and can be tilted forward or backward on vertical mounting surface
<b>fastening method</b>	screw fixing

<b>height</b>	275 mm
<b>width</b>	170 mm
<b>depth</b>	152 mm
required spacing with side-by-side mounting	
<ul style="list-style-type: none"> <li>• forwards</li> <li>• backwards</li> <li>• upwards</li> <li>• downwards</li> <li>• at the side</li> </ul>	10 mm 0 mm 100 mm 75 mm 5 mm
<b>weight without packaging</b>	2.1 kg
<b>Connections/ Terminals</b>	
<b>type of electrical connection</b>	
<ul style="list-style-type: none"> <li>• for main current circuit</li> <li>• for control circuit</li> </ul>	screw-type terminals screw-type terminals
<b>wire length for thermistor connection</b>	
<ul style="list-style-type: none"> <li>• with conductor cross-section = 0.5 mm<sup>2</sup> maximum</li> <li>• with conductor cross-section = 1.5 mm<sup>2</sup> maximum</li> <li>• with conductor cross-section = 2.5 mm<sup>2</sup> maximum</li> </ul>	50 m 150 m 250 m
<b>type of connectable conductor cross-sections</b>	
<ul style="list-style-type: none"> <li>• for main contacts <ul style="list-style-type: none"> <li>— solid</li> <li>— finely stranded with core end processing</li> </ul> </li> <li>• at AWG cables for main current circuit solid</li> </ul>	2x (1.0 ... 2.5 mm <sup>2</sup> ), 2x (2.5 ... 10 mm <sup>2</sup> ) 2x (1.0 ... 2.5 mm <sup>2</sup> ), 2x (2.5 ... 6.0 mm <sup>2</sup> ) 2x (16 ... 12), 2x (14 ... 8)
<b>type of connectable conductor cross-sections</b>	
<ul style="list-style-type: none"> <li>• for control circuit solid</li> <li>• for control circuit finely stranded with core end processing</li> <li>• at AWG cables for control circuit solid</li> </ul>	1x (0.5 ... 4.0 mm <sup>2</sup> ), 2x (0.5 ... 2.5 mm <sup>2</sup> ) 1x (0.5 ... 2.5 mm <sup>2</sup> ), 2x (0.5 ... 1.5 mm <sup>2</sup> ) 1x (20 ... 12), 2x (20 ... 14)
<b>wire length</b>	
<ul style="list-style-type: none"> <li>• between soft starter and motor maximum</li> <li>• at the digital inputs at AC maximum</li> <li>• at the digital inputs at DC maximum</li> </ul>	800 m 100 m 1 000 m
<b>tightening torque</b>	
<ul style="list-style-type: none"> <li>• for main contacts with screw-type terminals</li> <li>• for auxiliary and control contacts with screw-type terminals</li> </ul>	2 ... 2.5 N·m 0.8 ... 1.2 N·m
<b>tightening torque [lbf·in]</b>	
<ul style="list-style-type: none"> <li>• for main contacts with screw-type terminals</li> <li>• for auxiliary and control contacts with screw-type terminals</li> </ul>	18 ... 22 lbf·in 7 ... 10.3 lbf·in
<b>Ambient conditions</b>	
installation altitude at height above sea level maximum	5 000 m; Derating as of 1000 m, see catalog
<b>ambient temperature</b>	
<ul style="list-style-type: none"> <li>• during operation</li> <li>• during storage and transport</li> </ul>	-25 ... +60 °C; Please observe derating at temperatures of 40 °C or above -40 ... +80 °C
<b>environmental category</b>	
<ul style="list-style-type: none"> <li>• during operation acc. to IEC 60721</li> <li>• during storage acc. to IEC 60721</li> <li>• during transport 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 1K6 (only occasional condensation), 1C2 (no salt mist), 1S2 (sand must not get inside the devices), 1M4 2K2, 2C1, 2S1, 2M2 (max. fall height 0.3 m)
<b>EMC emitted interference</b>	acc. to IEC 60947-4-2: Class A
<b>Communication/ Protocol</b>	
<b>communication module is supported</b>	
<ul style="list-style-type: none"> <li>• PROFINET standard</li> <li>• EtherNet/IP</li> <li>• Modbus RTU</li> <li>• Modbus TCP</li> </ul>	Yes Yes Yes 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: 3RV2742, max. 60 A or 3VA51, max. 60 A; Iq = 5 kA
— usable for High Faults at 460/480 V according to UL		Siemens type: 3RV2742, max. 30 A or 3VA51, max. 35 A; Iq max = 65 kA
— usable for Standard Faults at 460/480 V at inside-delta circuit according to UL		Siemens type: 3RV2742, max. 60 A or 3VA51, max. 60 A; Iq = 5 kA
— usable for High Faults at 460/480 V at inside-delta circuit according to UL		Siemens type: 3VA51, max. 35 A; Iq max = 65 kA
— usable for Standard Faults at 575/600 V according to UL		Siemens type: 3RV2742, max. 60 A or 3VA51, max. 60 A; Iq = 5 kA
— usable for Standard Faults at 575/600 V at inside-delta circuit according to UL		Siemens type: 3RV2742, max. 60 A or 3VA51, max. 60 A; Iq = 5 kA
• of the fuse		
— usable for Standard Faults up to 575/600 V according to UL		Type: Class RK5 / K5, max. 70 A; Iq = 5 kA
— usable for High Faults up to 575/600 V according to UL		Type: Class J / L, max. 70 A; Iq = 100 kA
— usable for Standard Faults at inside-delta circuit up to 575/600 V according to UL		Type: Class RK5 / K5, max. 70 A; Iq = 5 kA
— usable for High Faults at inside-delta circuit up to 575/600 V according to UL		Type: Class J / L, max. 70 A; Iq = 100 kA
operating power [hp] for 3-phase motors		
• at 200/208 V at 50 °C rated value		3 hp
• at 220/230 V at 50 °C rated value		5 hp
• at 460/480 V at 50 °C rated value		10 hp
• at 575/600 V at 50 °C rated value		10 hp
• at 200/208 V at inside-delta circuit at 50 °C rated value		7.5 hp
• at 220/230 V at inside-delta circuit at 50 °C rated value		7.5 hp
• at 460/480 V at inside-delta circuit at 50 °C rated value		20 hp
• at 575/600 V at inside-delta circuit at 50 °C rated value		25 hp
contact rating of auxiliary contacts according to UL		R300-B300
Safety related data		
protection class IP on the front acc. to IEC 60529		IP20
touch protection on the front acc. to IEC 60529		finger-safe, for vertical contact from the front
electromagnetic compatibility		in accordance with IEC 60947-4-2
Certificates/ approvals		
General Product Approval		EMC
		Declaration of Conformity
<div><div> CSA</div><div> CCC</div><div> UL</div><div></div><div> RCM</div><div> EG-Konf.</div></div>		
Test Certificates		Marine / Shipping
<div><div><a href="#">Type Test Certificates/Test Report</a></div><div> ABS</div><div> BUREAU VERITAS</div><div> LRS</div><div> PRS</div><div> DNV GL</div></div>		
other		

#### 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=3RW5214-1TC05>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RW5214-1TC05>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RW5214-1TC05>

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

[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RW5214-1TC05&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5214-1TC05&lang=en)

Characteristic: Tripping characteristics, I<sup>2</sup>t, Let-through current

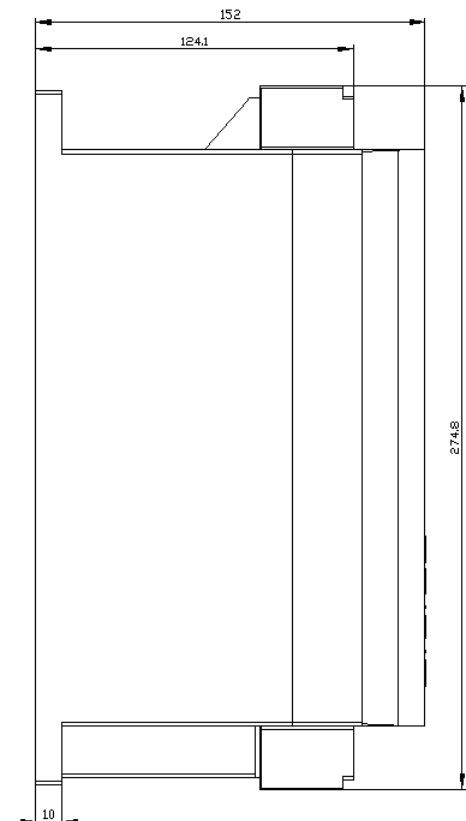
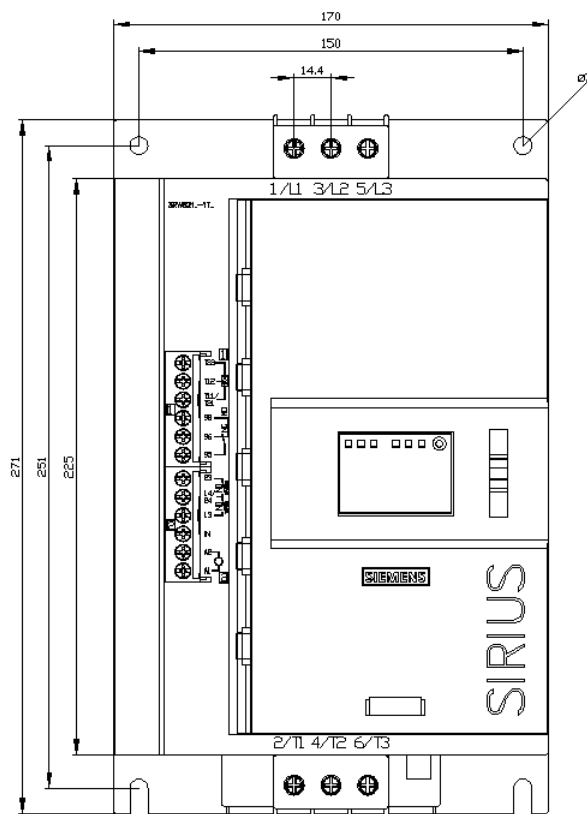
<https://support.industry.siemens.com/cs/ww/en/ps/3RW5214-1TC05/char>

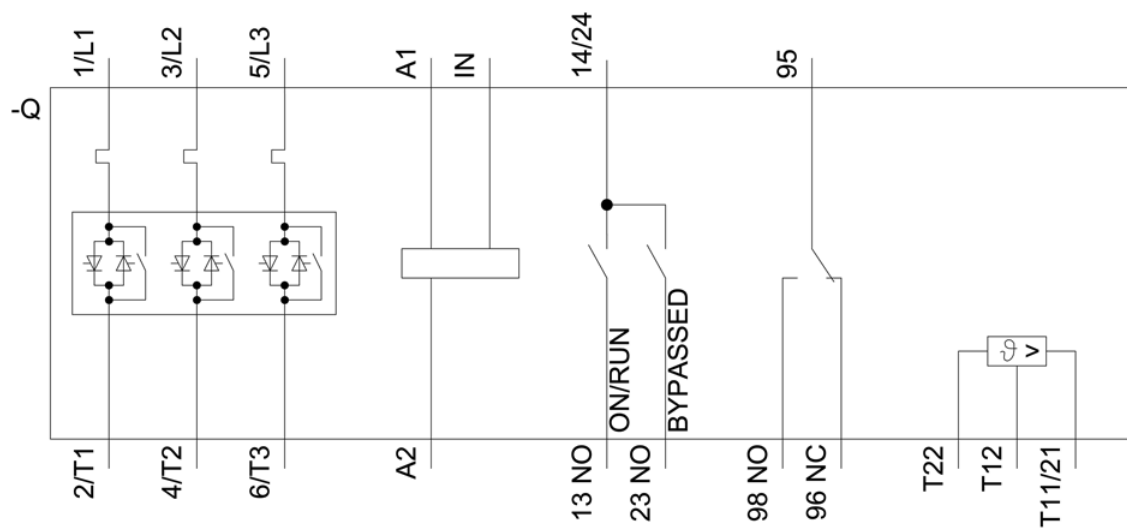
Characteristic: Installation altitude

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RW5214-1TC05&objecttype=14&gridview=view1>

Simulation Tool for Soft Starters (STS)

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





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