



SIRIUS soft starter 200-480 V 93 A, 110-250 V AC Screw terminals Analog output

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	

3RW5980-0HS00
3RW5980-0HF00
3RW5980-0CS00
3RW5980-0CP00
3RW5980-0CT00
3RW5980-0CR00
3RW5980-0CE00
3VA2216-7MN32-0AA0: Type of coordination 1, Iq = 15 kA, CLASS 10
3VA2216-7MN32-0AA0: Type of coordination 1, Iq = 10 kA, CLASS 10
3VA2220-7MN32-0AA0: Type of coordination 1, Iq = 15 kA, CLASS 10
3VA2220-7MN32-0AA0: Type of coordination 1, Iq = 10 kA, CLASS 10
3NA3136-6: Type of coordination 1, Iq = 65 kA
3NA3136-6: Type of coordination 1, Iq = 65 kA
3NE1224-0: Type of coordination 2, Iq = 65 kA
3NE4124: Type of coordination 2, Iq = 65 kA

<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
<b>insulation voltage rated value</b>	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>	1 400 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
<b>utilization category acc. to IEC 60947-4-2</b>	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; Electronic motor overload protection
• evaluation of thermistor motor protection	No
• 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>PROFInergy</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	Yes; 4 ... 20 mA (default) / 0 ... 10 V (parameterizable with High Feature HMI)
<b>Power Electronics</b>	
<b>operational current</b>	
• at 40 °C rated value	93 A
• at 50 °C rated value	83 A
• at 60 °C rated value	76 A
<b>operational current at inside-delta circuit</b>	
• at 40 °C rated value	161 A
• at 50 °C rated value	143 A
• at 60 °C rated value	131 A
<b>operating voltage</b>	
• rated value	200 ... 480 V
• at inside-delta circuit rated value	200 ... 480 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	22 kW
• at 230 V at inside-delta circuit at 40 °C rated value	45 kW
• at 400 V at 40 °C rated value	45 kW
• at 400 V at inside-delta circuit at 40 °C rated value	90 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	40.5 A
• at rotary coding switch on switch position 2	44 A
• at rotary coding switch on switch position 3	47.5 A
• at rotary coding switch on switch position 4	51 A
• at rotary coding switch on switch position 5	54.5 A
• at rotary coding switch on switch position 6	58 A
• at rotary coding switch on switch position 7	61.5 A
• at rotary coding switch on switch position 8	65 A
• at rotary coding switch on switch position 9	68.5 A
• at rotary coding switch on switch position 10	72 A
• at rotary coding switch on switch position 11	75.5 A
• at rotary coding switch on switch position 12	79 A
• at rotary coding switch on switch position 13	82.5 A
• at rotary coding switch on switch position 14	86 A
• at rotary coding switch on switch position 15	89.5 A
• at rotary coding switch on switch position 16	93 A
• minimum	40.5 A
<b>adjustable motor current</b>	
• for inside-delta circuit at rotary coding switch on switch position 1	70.1 A
• for inside-delta circuit at rotary coding switch on switch position 2	76.2 A
• for inside-delta circuit at rotary coding switch on switch position 3	82.3 A
• for inside-delta circuit at rotary coding switch on switch position 4	88.3 A
• for inside-delta circuit at rotary coding switch on switch position 5	94.4 A
• for inside-delta circuit at rotary coding switch on switch position 6	100 A
• for inside-delta circuit at rotary coding switch on switch position 7	107 A
• for inside-delta circuit at rotary coding switch on switch position 8	113 A
• for inside-delta circuit at rotary coding switch on switch position 9	119 A
• for inside-delta circuit at rotary coding switch on switch position 10	125 A
• for inside-delta circuit at rotary coding switch on switch position 11	131 A
• for inside-delta circuit at rotary coding switch on switch position 12	137 A
• for inside-delta circuit at rotary coding switch on switch position 13	143 A
• for inside-delta circuit at rotary coding switch on switch position 14	149 A
• for inside-delta circuit at rotary coding switch on switch position 15	155 A
• for inside-delta circuit at rotary coding switch on switch position 16	161 A

<ul style="list-style-type: none"> <li>• at inside-delta circuit minimum</li> </ul>	70.1 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>	40 W 37 W 35 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>	1 270 W 1 077 W 959 W
<b>Control circuit/ Control</b>	
<b>type of voltage of the control supply voltage</b>	AC
<b>control supply voltage at AC</b> <ul style="list-style-type: none"> <li>• at 50 Hz</li> <li>• at 60 Hz</li> </ul>	110 ... 250 V 110 ... 250 V
<b>relative negative tolerance of the control supply voltage at AC at 50 Hz</b>	-15 %
<b>relative positive tolerance of the control supply voltage at AC at 50 Hz</b>	10 %
<b>relative negative tolerance of the control supply voltage at AC at 60 Hz</b>	-15 %
<b>relative positive tolerance of the control supply voltage at AC at 60 Hz</b>	10 %
<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 current in standby mode rated value</b>	30 mA
<b>holding current in bypass operation rated value</b>	75 mA
<b>locked-rotor current at close of bypass contact maximum</b>	2.5 A
<b>inrush current peak at application of control supply voltage maximum</b>	12.2 A
<b>duration of inrush current peak at application of control supply voltage</b>	2.2 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>	0
<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>	1
<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>	with vertical mounting surface +/-90° rotatable, with vertical mounting surface +/- 22.5° tiltable to the front and back
<b>fastening method</b>	screw fixing
<b>height</b>	306 mm
<b>width</b>	185 mm
<b>depth</b>	203 mm
<b>required spacing with side-by-side mounting</b> <ul style="list-style-type: none"> <li>• forwards</li> <li>• backwards</li> <li>• upwards</li> </ul>	10 mm 0 mm 100 mm

<ul style="list-style-type: none"> <li>• downwards</li> </ul>	75 mm
<ul style="list-style-type: none"> <li>• at the side</li> </ul>	5 mm
<b>weight without packaging</b>	6.9 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>	box terminal screw-type terminals
<b>width of connection bar maximum</b>	25 mm
<b>type of connectable conductor cross-sections</b>	
<ul style="list-style-type: none"> <li>• for main contacts for box terminal using the front clamping point solid</li> </ul>	1x (2.5 ... 16 mm <sup>2</sup> )
<ul style="list-style-type: none"> <li>• for main contacts for box terminal using the front clamping point finely stranded with core end processing</li> </ul>	1x (2.5 ... 50 mm <sup>2</sup> )
<ul style="list-style-type: none"> <li>• for main contacts for box terminal using the front clamping point stranded</li> </ul>	1x (10 ... 70 mm <sup>2</sup> )
<ul style="list-style-type: none"> <li>• at AWG cables for main contacts for box terminal using the front clamping point</li> </ul>	1x (10 ... 2/0)
<ul style="list-style-type: none"> <li>• for main contacts for box terminal using the back clamping point solid</li> </ul>	1x (2.5 ... 16 mm <sup>2</sup> )
<ul style="list-style-type: none"> <li>• at AWG cables for main contacts for box terminal using the back clamping point</li> </ul>	1x (10 ... 2/0)
<ul style="list-style-type: none"> <li>• for main contacts for box terminal using both clamping points solid</li> </ul>	2x (2.5 ... 16 mm <sup>2</sup> )
<ul style="list-style-type: none"> <li>• for main contacts for box terminal using both clamping points finely stranded with core end processing</li> </ul>	2x (2.5 ... 35 mm <sup>2</sup> )
<ul style="list-style-type: none"> <li>• for main contacts for box terminal using both clamping points stranded</li> </ul>	2x (6 ... 16 mm <sup>2</sup> ), 2x (10 ... 50 mm <sup>2</sup> )
<ul style="list-style-type: none"> <li>• for main contacts for box terminal using the back clamping point finely stranded with core end processing</li> </ul>	1x (2.5 ... 50 mm <sup>2</sup> )
<ul style="list-style-type: none"> <li>• for main contacts for box terminal using the back clamping point stranded</li> </ul>	1x (10 ... 70 mm <sup>2</sup> )
<b>type of connectable conductor cross-sections</b>	
<ul style="list-style-type: none"> <li>• for control circuit solid</li> </ul>	1x (0.5 ... 4.0 mm <sup>2</sup> ), 2x (0.5 ... 2.5 mm <sup>2</sup> )
<ul style="list-style-type: none"> <li>• for control circuit finely stranded with core end processing</li> </ul>	1x (0.5 ... 2.5 mm <sup>2</sup> ), 2x (0.5 ... 1.5 mm <sup>2</sup> )
<ul style="list-style-type: none"> <li>• at AWG cables for control circuit solid</li> </ul>	1x (20 ... 12), 2x (20 ... 14)
<b>wire length</b>	
<ul style="list-style-type: none"> <li>• between soft starter and motor maximum</li> </ul>	800 m
<ul style="list-style-type: none"> <li>• at the digital inputs at AC maximum</li> </ul>	100 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>	4.5 ... 6 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>	40 ... 53 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> </ul>	-25 ... +60 °C; Please observe derating at temperatures of 40 °C or above
<ul style="list-style-type: none"> <li>• during storage and transport</li> </ul>	-40 ... +80 °C
<b>environmental category</b>	
<ul style="list-style-type: none"> <li>• during operation 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
<ul style="list-style-type: none"> <li>• during storage acc. to IEC 60721</li> </ul>	1K6 (only occasional condensation), 1C2 (no salt mist), 1S2 (sand must not get inside the devices), 1M4
<ul style="list-style-type: none"> <li>• during transport acc. to IEC 60721</li> </ul>	2K2, 2C1, 2S1, 2M2 (max. fall height 0.3 m)
<b>EMC emitted interference</b>	acc. to IEC 60947-4-2: Class A





## other

[Confirmation](#)

## 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=3RW5227-1AC14>

**Cax online generator**

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RW5227-1AC14>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RW5227-1AC14>

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

[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RW5227-1AC14&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5227-1AC14&lang=en)

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RW5227-1AC14/char>

**Characteristic: Installation altitude**

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RW5227-1AC14&objecttype=14&gridview=view1>

**Simulation Tool for Soft Starters (STS)**

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





