



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"> <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>
General technical data	<p>starting voltage [%]</p> <p>stopping voltage [%]</p> <p>start-up ramp time of soft starter</p> <p>current limiting value [%] adjustable</p> <p>certificate of suitability</p> <ul style="list-style-type: none"> <li>CE marking</li> <li>UL approval</li> <li>CSA approval</li> </ul> <p>product component</p> <ul style="list-style-type: none"> <li>HMI-High Feature</li> <li>is supported HMI-Standard</li> <li>is supported HMI-High Feature</li> </ul> <p>product feature integrated bypass contact system</p> <p>number of controlled phases</p> <p>buffering time in the event of power failure</p>
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	<p>Yes</p> <p>Yes</p> <p>Yes</p>
product component	<p>No</p> <p>Yes</p> <p>Yes</p>
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
<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>	1 600 V
<b>service factor</b>	1
<b>surge voltage resistance rated value</b>	6 kV
<b>maximum permissible voltage for protective separation</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 according to IEC 60947-4-2	AC 53a
<b>reference code according to IEC 81346-2</b>	Q
<b>Substance Prohibitance (Date)</b>	02/15/2018
<b>SVHC substance name</b>	Lead - 7439-92-1 Lead monoxide (lead oxide) - 1317-36-8 2-methyl-1-(4-methylthiophenyl)-2-morpholinopropan-1-one - 71868-10-5 Dibutylbis(pentane-2,4-dionato-O,O')tin - 22673-19-4 Diboron trioxide - 1303-86-2
<b>Weight</b>	2.3 kg
<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 Klixon / 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	32 A
• at 50 °C rated value	28.4 A
• at 60 °C rated value	26 A
<b>operational current at inside-delta circuit</b>	
• at 40 °C rated value	55.4 A
• at 50 °C rated value	49 A
• at 60 °C rated value	45 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	7.5 kW
• at 230 V at inside-delta circuit at 40 °C rated value	15 kW
• at 400 V at 40 °C rated value	15 kW
• at 400 V at inside-delta circuit at 40 °C rated value	22 kW
• at 500 V at 40 °C rated value	18.5 kW
• at 500 V at inside-delta circuit at 40 °C rated value	30 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	14 A
• at rotary coding switch on switch position 2	15.2 A
• at rotary coding switch on switch position 3	16.4 A
• at rotary coding switch on switch position 4	17.6 A
• at rotary coding switch on switch position 5	18.8 A
• at rotary coding switch on switch position 6	20 A
• at rotary coding switch on switch position 7	21.2 A
• at rotary coding switch on switch position 8	22.4 A
• at rotary coding switch on switch position 9	23.6 A
• at rotary coding switch on switch position 10	24.8 A
• at rotary coding switch on switch position 11	26 A
• at rotary coding switch on switch position 12	27.2 A
• at rotary coding switch on switch position 13	28.4 A
• at rotary coding switch on switch position 14	29.6 A
• at rotary coding switch on switch position 15	30.8 A
• at rotary coding switch on switch position 16	32 A
• minimum	14 A
<b>adjustable motor current</b>	
• for inside-delta circuit at rotary coding switch on switch position 1	24.2 A
• for inside-delta circuit at rotary coding switch on switch position 2	26.3 A
• for inside-delta circuit at rotary coding switch on switch position 3	28.4 A
• for inside-delta circuit at rotary coding switch on switch position 4	30.5 A
• for inside-delta circuit at rotary coding switch on switch position 5	32.6 A
• for inside-delta circuit at rotary coding switch on switch position 6	34.6 A
• for inside-delta circuit at rotary coding switch on switch position 7	36.7 A
• for inside-delta circuit at rotary coding switch on switch position 8	38.8 A
• for inside-delta circuit at rotary coding switch on switch position 9	40.9 A
• for inside-delta circuit at rotary coding switch on switch position 10	43 A
• for inside-delta circuit at rotary coding switch on switch position 11	45 A
• for inside-delta circuit at rotary coding switch on switch position 12	47.1 A
• for inside-delta circuit at rotary coding switch on switch position 13	49.2 A
• for inside-delta circuit at rotary coding switch on switch position 14	51.3 A
• for inside-delta circuit at rotary coding switch on switch position 15	53.3 A
• for inside-delta circuit at rotary coding switch on switch position 16	55.4 A
• at inside-delta circuit minimum	24.2 A
<b>minimum load [%]</b>	15 %; Relative to smallest settable $I_e$
<b>power loss [W] for rated value of the current at AC</b>	
• at 40 °C after startup	22 W

• at 50 °C after startup	21 W
• at 60 °C after startup	20 W
<b>power loss [W] at AC at current limitation 350 %</b>	
• at 40 °C during startup	531 W
• at 50 °C during startup	449 W
• at 60 °C during startup	395 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>	
• at 50 Hz rated value	24 V
• at 60 Hz rated value	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 at DC rated value</b>	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>inrush current by closing the bypass contacts maximum</b>	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
<b>design of the overvoltage protection</b>	Varistor
<b>design of short-circuit protection for control circuit</b>	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
<b>Inputs/ Outputs</b>	
<b>number of digital inputs</b>	1
<b>number of digital outputs</b>	3
• not parameterizable	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>	
• at AC-15 at 250 V rated value	3 A
• at DC-13 at 24 V rated value	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>	275 mm
<b>width</b>	170 mm
<b>depth</b>	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
<b>weight without packaging</b>	2.3 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>for 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>for 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 according to IEC 60721</li> <li>during storage according to IEC 60721</li> <li>during transport according 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>Environmental footprint</b>		
Global Warming Potential [CO <sub>2</sub> eq] total	185 kg	
Global Warming Potential [CO <sub>2</sub> eq] during manufacturing	37.2 kg	
global warming potential [CO <sub>2</sub> eq] during sales	0.66 kg	
Global Warming Potential [CO <sub>2</sub> eq] during operation	152 kg	
Global Warming Potential [CO <sub>2</sub> eq] after end of life	-4.19 kg	
Siemens Eco Profile (SEP)	Siemens EcoTech	
<b>Electromagnetic compatibility</b>		
<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> <li>PROFIBUS</li> </ul>	
	Yes Yes Yes Yes Yes	
<b>UL/CSA ratings</b>		
<b>manufacturer's article number</b>		
<b>• of circuit breaker usable for Standard Faults</b>		
— at 460/480 V according to UL	Siemens type: 3RV2742, max. 70 A or 3VA51, max. 100 A; I <sub>q</sub> = 5 kA	
— 60/480 V according to UL	Siemens type: 3RV2742, max. 40 A or 3VA51, max. 60 A; I <sub>q</sub> max = 65 kA	
— at 460/480 V at inside-delta circuit according to UL	Siemens type: 3RV2742, max. 70 A or 3VA51, max. 100 A; I <sub>q</sub> = 5 kA	
— 60/480 V at inside-delta circuit according to UL	Siemens type: 3VA51, max. 60 A; I <sub>q</sub> max = 65 kA	

— at 575/600 V according to UL	Siemens type: 3RV2742, max. 70 A or 3VA51, max. 100 A; $I_q = 5 \text{ kA}$
— at 575/600 V at inside-delta circuit according to UL	Siemens type: 3RV2742, max. 70 A or 3VA51, max. 100 A; $I_q = 5 \text{ kA}$
• of the fuse	
— usable for Standard Faults up to 575/600 V according to UL	Type: Class RK5 / K5, max. 125 A; $I_q = 5 \text{ kA}$
— usable for High Faults up to 575/600 V according to UL	Type: Class J / L, max. 125 A; $I_q = 100 \text{ kA}$
— usable for Standard Faults at inside-delta circuit up to 575/600 V according to UL	Type: Class RK5 / K5, max. 125 A; $I_q = 5 \text{ kA}$
— usable for High Faults at inside-delta circuit up to 575/600 V according to UL	Type: Class J / L, max. 125 A; $I_q = 100 \text{ kA}$
<b>operating power [hp] for 3-phase motors</b>	
• at 200/208 V at 50 °C rated value	7.5 hp
• at 220/230 V at 50 °C rated value	10 hp
• at 460/480 V at 50 °C rated value	20 hp
• at 575/600 V at 50 °C rated value	25 hp
• at 200/208 V at inside-delta circuit at 50 °C rated value	15 hp
• at 220/230 V at inside-delta circuit at 50 °C rated value	15 hp
• at 460/480 V at inside-delta circuit at 50 °C rated value	30 hp
• at 575/600 V at inside-delta circuit at 50 °C rated value	40 hp
<b>contact rating of auxiliary contacts according to UL</b>	R300-B300
Electrical Safety	
<b>protection class IP on the front according to IEC 60529</b>	IP20
<b>touch protection on the front according to IEC 60529</b>	finger-safe, for vertical contact from the front

## Approvals Certificates

### General Product Approval



[Confirmation](#)



EMV	Test Certificates	Marine / Shipping
	<a href="#">KC</a>	 ABS

Marine / Shipping	other	Environment
	<a href="#">Confirmation</a>	 <a href="#">Siemens EcoTech</a>

Further information
Information on the packaging <a href="https://support.industry.siemens.com/cs/ww/en/view/109813875">https://support.industry.siemens.com/cs/ww/en/view/109813875</a>
Information- and Downloadcenter (Catalogs, Brochures,...) <a href="https://www.siemens.com/ic10">https://www.siemens.com/ic10</a>
Industry Mall (Online ordering system) <a href="https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RW5216-1TC05">https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RW5216-1TC05</a>
Cax online generator <a href="http://support.automation.siemens.com/WW/CAxOrder/default.aspx?lang=en&amp;mlfb=3RW5216-1TC05">http://support.automation.siemens.com/WW/CAxOrder/default.aspx?lang=en&amp;mlfb=3RW5216-1TC05</a>
Service&Support (Manuals, Certificates, Characteristics, FAQs,...) <a href="https://support.industry.siemens.com/cs/ww/en/ps/3RW5216-1TC05">https://support.industry.siemens.com/cs/ww/en/ps/3RW5216-1TC05</a>
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...) <a href="http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5216-1TC05&amp;lang=en">http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5216-1TC05&amp;lang=en</a>
Characteristic: Tripping characteristics, $I_t$ , Let-through current <a href="https://support.industry.siemens.com/cs/ww/en/ps/3RW5216-1TC05/char">https://support.industry.siemens.com/cs/ww/en/ps/3RW5216-1TC05/char</a>
Characteristic: Installation altitude <a href="http://www.automation.siemens.com/bilddb/index.aspx?view=Search&amp;mlfb=3RW5216-1TC05&amp;objecttype=14&amp;gridview=view1">http://www.automation.siemens.com/bilddb/index.aspx?view=Search&amp;mlfb=3RW5216-1TC05&amp;objecttype=14&amp;gridview=view1</a>
Simulation Tool for Soft Starters (STS) <a href="https://support.industry.siemens.com/cs/ww/en/view/101494917">https://support.industry.siemens.com/cs/ww/en/view/101494917</a>





