



SIRIUS soft starter 200-600 V 315 A, 110-250 V AC Screw terminals Analog output

Siemens  
EcoTech



<b>product brand name</b>	SIRIUS
<b>product category</b>	Hybrid switching devices
<b>product designation</b>	Soft starter
<b>product type designation</b>	3RW50
<b>manufacturer's article number</b>	<ul style="list-style-type: none"> <li>• of standard HMI module usable <a href="#">3RW5980-0HS01</a></li> <li>• of high feature HMI module usable <a href="#">3RW5980-0HF00</a></li> <li>• of communication module PROFINET standard usable <a href="#">3RW5980-0CS00</a></li> <li>• of communication module PROFIBUS usable <a href="#">3RW5980-0CP00</a></li> <li>• of communication module Modbus TCP usable <a href="#">3RW5980-0CT00</a></li> <li>• of communication module Modbus RTU usable <a href="#">3RW5980-0CR00</a></li> <li>• of communication module Ethernet/IP <a href="#">3RW5980-0CE00</a></li> <li>• of circuit breaker usable at 400 V <a href="#">3VA2440-7MN32-0AA0: Type of assignment 1, Iq = 65 kA</a></li> <li>• of circuit breaker usable at 500 V <a href="#">3VA2440-7MN32-0AA0: Type of assignment 1, Iq = 65 kA</a></li> <li>• of the gG fuse usable up to 690 V 2x3NA3365-6; Type of coordination 1, Iq = 65 kA</li> <li>• of full range R fuse link for semiconductor protection usable up to 690 V <a href="#">3NE1 333-2: Type of coordination 2, Iq = 65 kA</a></li> <li>• of back-up R fuse link for semiconductor protection usable up to 690 V <a href="#">3NE3 335: Type of coordination 2, Iq = 65 kA</a></li> <li>• of line contactor usable up to 480 V <a href="#">3RT1075</a></li> <li>• of line contactor usable up to 690 V <a href="#">3RT1075</a></li> </ul>
<b>General technical data</b>	
<b>starting voltage [%]</b>	30 ... 100 %
<b>stopping voltage [%]</b>	50 %; non-adjustable
<b>start-up ramp time of soft starter</b>	0 ... 20 s
<b>ramp-down time of soft starter</b>	0 ... 20 s
<b>current limiting value [%] adjustable</b>	130 ... 700 %
<b>certificate of suitability</b>	
• CE marking	Yes
• UL approval	Yes
• CSA approval	Yes
<b>product component</b>	
• HMI-High Feature	No
• is supported HMI-Standard	Yes
• is supported HMI-High Feature	Yes
<b>product feature integrated bypass contact system</b>	Yes
<b>number of controlled phases</b>	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>	1 600 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; 2 g 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 (day/month/year)</b>	09/23/2019
<b>SVHC substance name</b>	Lead CAS-No. 7439-92-1 Lead monoxide (lead oxide) CAS-No. 1317-36-8 2,2',6,6'-tetrabromo-4,4'-isopropylidenediphenol CAS-No. 79-94-7 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
<b>Net Weight</b>	8.135 kg
<b>product function</b>	
• 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; Electronic motor overload protection
• evaluation of thermistor motor protection	No
• 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
• voltage ramp	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	315 A
• at 50 °C rated value	279 A
• at 60 °C rated value	255 A
<b>operating voltage</b>	
• 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>operating power for 3-phase motors</b>	
• at 230 V at 40 °C rated value	90 kW
• at 400 V at 40 °C rated value	160 kW
• at 500 V at 40 °C rated value	200 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	135 A
• at rotary coding switch on switch position 2	147 A
• at rotary coding switch on switch position 3	159 A
• at rotary coding switch on switch position 4	171 A
• at rotary coding switch on switch position 5	183 A
• at rotary coding switch on switch position 6	195 A
• at rotary coding switch on switch position 7	207 A
• at rotary coding switch on switch position 8	219 A
• at rotary coding switch on switch position 9	231 A
• at rotary coding switch on switch position 10	243 A
• at rotary coding switch on switch position 11	255 A
• at rotary coding switch on switch position 12	267 A
• at rotary coding switch on switch position 13	279 A
• at rotary coding switch on switch position 14	291 A
• at rotary coding switch on switch position 15	303 A
• at rotary coding switch on switch position 16	315 A
• minimum	135 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>	
• at 40 °C after startup	36 W
• at 50 °C after startup	29 W
• at 60 °C after startup	24 W
<b>power loss [W] at AC at current limitation 350 %</b>	
• at 40 °C during startup	3 368 W
• at 50 °C during startup	2 805 W
• at 60 °C during startup	2 455 W
<b>type of the motor protection</b>	Electronic, tripping in the event of thermal overload of the motor
<b>Control circuit/ Control</b>	
<b>type of voltage of the control supply voltage</b>	AC
<b>control supply voltage at AC</b>	
• at 50 Hz	110 ... 250 V
• at 60 Hz	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>	105 mA
<b>inrush current by closing the bypass contacts maximum</b>	2.2 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
<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 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>	1
<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>	230 mm
<b>width</b>	160 mm
<b>depth</b>	282 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>	7.3 kg
<b>Connections/ Terminals</b>	
<b>type of electrical connection</b>	
• for main current circuit	busbar connection
• for control circuit	screw-type terminals
<b>width of connection bar maximum</b>	35 mm; with connection cover 3RT1966-4EA1 maximum length 45 mm
<b>type of connectable conductor cross-sections for main contacts for box terminal</b>	
• using the front clamping point solid	95 ... 300 mm <sup>2</sup>
• using the front clamping point finely stranded with core end processing	70 ... 240 mm <sup>2</sup>
• using the front clamping point finely stranded without core end processing	70 ... 240 mm <sup>2</sup>
• using the front clamping point stranded	95 ... 300 mm <sup>2</sup>
• using the back clamping point solid	120 ... 240 mm <sup>2</sup>
• r box terminal using the back clamping point	250 ... 500 kcmil
• using both clamping points solid	min. 2x 70 mm <sup>2</sup> , max. 2x 240 mm <sup>2</sup>
• using both clamping points finely stranded with core end processing	min. 2x 50 mm <sup>2</sup> , max. 2x 185 mm <sup>2</sup>
• using both clamping points finely stranded without core end processing	min. 2x 50 mm <sup>2</sup> , max. 2x 185 mm <sup>2</sup>
• using both clamping points stranded	min. 2x 70 mm <sup>2</sup> , max. 2x 240 mm <sup>2</sup>
• using the back clamping point finely stranded with core end processing	120 ... 185 mm <sup>2</sup>
• using the back clamping point finely stranded without core end processing	120 ... 185 mm <sup>2</sup>
• using the back clamping point stranded	120 ... 240 mm <sup>2</sup>
<b>type of connectable conductor cross-sections</b>	
• for AWG cables for main current circuit solid	2/0 ... 500 kcmil
• for DIN cable lug for main contacts stranded	50 ... 240 mm <sup>2</sup>
• for DIN cable lug for main contacts finely stranded	70 ... 240 mm <sup>2</sup>
<b>type of connectable conductor cross-sections</b>	
• for control circuit solid	1x (0.5 ... 4.0 mm <sup>2</sup> ), 2x (0.5 ... 2.5 mm <sup>2</sup> )
• for control circuit finely stranded with core end processing	1x (0.5 ... 2.5 mm <sup>2</sup> ), 2x (0.5 ... 1.5 mm <sup>2</sup> )
• for AWG cables for control circuit solid	1x (20 ... 12), 2x (20 ... 14)
<b>wire length</b>	
• between soft starter and motor maximum	800 m
• at the digital inputs at AC maximum	1 000 m
<b>tightening torque</b>	
• for main contacts with screw-type terminals	14 ... 24 N·m
• for auxiliary and control contacts with screw-type terminals	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>	124 ... 210 lbf-in 7 ... 10.3 lbf-in
<b>Ambient conditions</b>	
installation altitude at height above sea level maximum	5 000 m
<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>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>	
<ul style="list-style-type: none"> <li>• of circuit breaker <ul style="list-style-type: none"> <li>— usable for High Faults at 460/480 V according to UL</li> </ul> </li> <li>• of the fuse <ul style="list-style-type: none"> <li>— usable for Standard Faults up to 575/600 V according to UL</li> <li>— usable for High Faults up to 575/600 V according to UL</li> </ul> </li> </ul>	Siemens type: 3VA54, max. 600 A; Iq max = 65 kA Type: Class L, max. 1000 A; Iq = 18 kA Type: Class L, max. 1000 A; Iq = 100 kA
<b>operating power [hp] for 3-phase motors</b>	
<ul style="list-style-type: none"> <li>• at 200/208 V at 50 °C rated value</li> <li>• at 220/230 V at 50 °C rated value</li> <li>• at 460/480 V at 50 °C rated value</li> <li>• at 575/600 V at 50 °C rated value</li> </ul>	75 hp 100 hp 200 hp 250 hp
<b>Electrical Safety</b>	
<b>protection class IP on the front according to IEC 60529</b>	IP00; IP20 with cover
<b>touch protection on the front according to IEC 60529</b>	finger-safe, for vertical contact from the front with cover
<b>ATEX</b>	
<b>Safety Integrity Level (SIL) according to IEC 61508 relating to ATEX</b>	SIL 1
<b>PFHD with high demand rate according to IEC 61508 relating to ATEX</b>	9E-6 1/h
<b>PFDavg with low demand rate according to IEC 61508 relating to ATEX</b>	0.09
<b>hardware fault tolerance according to IEC 61508 relating to ATEX</b>	0
<b>T1 value for proof test interval or service life according to IEC 61508 relating to ATEX</b>	3 a
<b>certificate of suitability</b>	
<ul style="list-style-type: none"> <li>• ATEX</li> <li>• IECEx</li> <li>• UKEX</li> </ul>	Yes Yes Yes
<b>Approvals Certificates</b>	
<b>Environmental Product Declaration</b>	
<ul style="list-style-type: none"> <li>• global warming potential [CO2 eq] / during manufacturing</li> <li>• global warming potential [CO2 eq] / during sales</li> <li>• global warming potential [CO2 eq] / during operation</li> <li>• global warming potential [CO2 eq] / after end of life</li> <li>• global warming potential [CO2 eq] / total</li> </ul>	87.4 kg 2.05 kg 407 kg -32.4 kg 464 kg

Environment	General Product Approval
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[Environmental Confirmations](#)



General Product Approval	EMV	For use in hazardous locations
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[Miscellaneous](#)

Test Certificates	Maritime application	other
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[Type Test Certificates/Test Report](#)



[Confirmation](#)

other
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[Confirmation](#)



Further information
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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=3RW5074-6AB15>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RW5074-6AB15>

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

[https://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RW5074-6AB15&lang=en](https://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5074-6AB15&lang=en)

Cax online generator

<https://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RW5074-6AB15>

Characteristic curves

[https://curves.simaris.siemens.com/curves/<mmp\\_prod\\_noCOMP="HAUPT"></mmp\\_prod\\_no>](https://curves.simaris.siemens.com/curves/<mmp_prod_noCOMP=)

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RW5074-6AB15/char>

Characteristic: Installation altitude

[https://www.automation.siemens.com/bilddb/index.aspx?gridview=view2&objkey=G\\_NSB0\\_XX\\_01704&showdetail=true&view=Search](https://www.automation.siemens.com/bilddb/index.aspx?gridview=view2&objkey=G_NSB0_XX_01704&showdetail=true&view=Search)

Simulation Tool for Soft Starters (STS)

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





