



Figure similar

SIRIUS soft starter 200-480 V 210 A, 24 V AC/DC Spring-loaded terminals  
Thermistor input

**product brand name**

SIRIUS

**product category**

Hybrid switching devices

**product designation**

Soft starter

**product type designation**

3RW50

**manufacturer's article number**

[3RW5980-0HS01](#)

- of standard HMI module usable
- of high feature HMI module usable
- of communication module PROFINET standard usable
- of communication module PROFIBUS usable
- of communication module Modbus TCP usable
- of communication module Modbus RTU usable
- of communication module Ethernet/IP
- of circuit breaker usable at 400 V
- of circuit breaker usable at 500 V
- of the gG fuse usable up to 690 V
- of full range R fuse link for semiconductor protection usable up to 690 V
- of back-up R fuse link for semiconductor protection usable up to 690 V
- of line contactor usable up to 480 V
- of line contactor usable up to 690 V

[3RW5980-0HF00](#)

[3RW5980-0CS00](#)

[3RW5980-0CP00](#)

[3RW5980-0CT00](#)

[3RW5980-0CR00](#)

[3RW5980-0CE00](#)

[3VA2440-7MN32-0AA0](#); Type of assignment 1,  $I_q = 65 \text{ kA}$

[3VA2440-7MN32-0AA0](#); Type of assignment 1,  $I_q = 65 \text{ kA}$

2x3NA3354-6; Type of coordination 1,  $I_q = 65 \text{ kA}$

[3NE1 230-2](#); Type of coordination 2,  $I_q = 65 \text{ kA}$

[3NE3 333](#); Type of coordination 2,  $I_q = 65 \text{ kA}$

[3RT1064](#)

[3RT1064](#)

### General technical data

**starting voltage [%]**

30 ... 100 %

**stopping voltage [%]**

50 %; non-adjustable

**start-up ramp time of soft starter**

0 ... 20 s

**ramp-down time of soft starter**

0 ... 20 s

**current limiting value [%] adjustable**

130 ... 700 %

**accuracy class according to IEC 61557-12**

5 %

**certificate of suitability**

Yes

- CE marking
- UL approval
- CSA approval

Yes

Yes

**product component**

No

- HMI-High Feature
- is supported HMI-Standard
- is supported HMI-High Feature

Yes

Yes

**product feature integrated bypass contact system**

Yes

**number of controlled phases**

2

**trip class**

CLASS 10A / 10E (preset) / 20E; acc. to IEC 60947-4-2

**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 safe isolation</b>	600 V
• between main and auxiliary circuit	15 g / 11 ms, from 12 g / 11 ms with potential contact lifting
<b>shock resistance</b>	15 mm to 6 Hz; 2g to 500 Hz
<b>vibration resistance</b>	AC-53a
utilization category according to IEC 60947-4-2	Q
<b>reference code according to IEC 81346-2</b>	09/23/2019
<b>Substance Prohibition (Date)</b>	
<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 (theristor motor protection and electronic motor overload protection)
• evaluation of thermistor motor protection	Yes; Type A PTC or Klixon / Thermoclick
• 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>PROFlenergy</b>	Yes; in connection with the PROFINET Standard communication module
• voltage ramp	Yes
• torque control	No
• analog output	No

## Power Electronics

<b>operational current</b>	210 A
• at 40 °C rated value	186 A
• at 50 °C rated value	170 A
<b>operating voltage</b>	200 ... 480 V
• rated value	-15 %
<b>relative negative tolerance of the operating voltage</b>	10 %
<b>relative positive tolerance of the operating voltage</b>	
<b>operating power for 3-phase motors</b>	
• at 230 V at 40 °C rated value	55 kW
• at 400 V at 40 °C rated value	110 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	90 A
• at rotary coding switch on switch position 2	98 A
• at rotary coding switch on switch position 3	106 A
• at rotary coding switch on switch position 4	114 A
• at rotary coding switch on switch position 5	122 A
• at rotary coding switch on switch position 6	130 A
• at rotary coding switch on switch position 7	138 A
• at rotary coding switch on switch position 8	146 A
• at rotary coding switch on switch position 9	154 A

• at rotary coding switch on switch position 10	162 A
• at rotary coding switch on switch position 11	170 A
• at rotary coding switch on switch position 12	178 A
• at rotary coding switch on switch position 13	186 A
• at rotary coding switch on switch position 14	194 A
• at rotary coding switch on switch position 15	202 A
• at rotary coding switch on switch position 16	210 A
• minimum	90 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	16 W
• at 50 °C after startup	13 W
• at 60 °C after startup	11 W
<b>power loss [W] at AC at current limitation 350 %</b>	
• at 40 °C during startup	2 237 W
• at 50 °C during startup	1 867 W
• at 60 °C during startup	1 637 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/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</b>	
• at DC rated value	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>	490 mA
<b>inrush current by closing the bypass contacts maximum</b>	7.6 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 ( $I_{cu}=1$ 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
<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>	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

## Connections/ Terminals

<b>type of electrical connection</b>	busbar connection spring-loaded terminals
• for main current circuit	35 mm; with connection cover 3RT1966-4EA1 maximum length 45 mm
• for control circuit	
<b>width of connection bar maximum</b>	
<b>wire length for thermistor connection</b>	
• with conductor cross-section = 0.5 mm <sup>2</sup> maximum	50 m
• with conductor cross-section = 1.5 mm <sup>2</sup> maximum	150 m
• with conductor cross-section = 2.5 mm <sup>2</sup> maximum	250 m
<b>type of connectable conductor cross-sections</b>	
• for main contacts for box terminal using the front clamping point solid	95 ... 300 mm <sup>2</sup>
• for main contacts for box terminal using the front clamping point finely stranded with core end processing	70 ... 240 mm <sup>2</sup>
• for main contacts for box terminal using the front clamping point finely stranded without core end processing	70 ... 240 mm <sup>2</sup>
• for main contacts for box terminal using the front clamping point stranded	95 ... 300 mm <sup>2</sup>
• at AWG cables for main contacts for box terminal using the front clamping point	3/0 ... 600 kcmil
• for main contacts for box terminal using the back clamping point solid	120 ... 240 mm <sup>2</sup>
• at AWG cables for main contacts for box terminal using the back clamping point	250 ... 500 kcmil
• for main contacts for box terminal using both clamping points solid	min. 2x 70 mm <sup>2</sup> , max. 2x 240 mm <sup>2</sup>
• for main contacts for box terminal using both clamping points finely stranded with core end processing	min. 2x 50 mm <sup>2</sup> , max. 2x 185 mm <sup>2</sup>
• for main contacts for box terminal using both clamping points finely stranded without core end processing	min. 2x 50 mm <sup>2</sup> , max. 2x 185 mm <sup>2</sup>
• for main contacts for box terminal using both clamping points stranded	min. 2x 70 mm <sup>2</sup> , max. 2x 240 mm <sup>2</sup>
• for main contacts for box terminal using the back clamping point finely stranded with core end processing	120 ... 185 mm <sup>2</sup>
• for main contacts for box terminal using the back clamping point finely stranded without core end processing	120 ... 185 mm <sup>2</sup>
• for main contacts for box terminal using the back clamping point stranded	120 ... 240 mm <sup>2</sup>
<b>type of connectable conductor cross-sections</b>	
• at 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	2x (0.25 ... 1.5 mm <sup>2</sup> )
• for control circuit finely stranded with core end processing	2x (0.25 ... 1.5 mm <sup>2</sup> )
• at AWG cables for control circuit solid	2x (24 ... 16)
• at AWG cables for control circuit finely stranded with core end processing	2x (24 ... 16)
<b>wire length</b>	
• between soft starter and motor maximum	800 m

<ul style="list-style-type: none"> <li>at the digital inputs at AC maximum</li> </ul> <p><b>tightening torque</b></p> <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>	1 000 m  14 ... 24 N·m 0.8 ... 1.2 N·m
<p><b>tightening torque [lbf·in]</b></p> <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>	
<p>installation altitude at height above sea level maximum</p> <p><b>ambient temperature</b></p> <ul style="list-style-type: none"> <li>during operation</li> <li>during storage and transport</li> </ul>	5 000 m; derating as of 1000 m, see Manual  -25 ... +60 °C; Please observe derating at temperatures of 40 °C or above -40 ... +80 °C
<p><b>environmental category</b></p> <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>EMC emitted interference</b>	acc. to IEC 60947-4-2: Class A
<b>Communication/ Protocol</b>	
<p><b>communication module is supported</b></p> <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>	
<p><b>manufacturer's article number</b></p> <ul style="list-style-type: none"> <li><b>of circuit breaker</b> <ul style="list-style-type: none"> <li>usable for High Faults at 460/480 V according to UL</li> </ul> </li> <li><b>of the fuse</b> <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. 700 A; Iq = 10 kA  Type: Class L, max. 700 A; Iq = 100 kA
<p><b>operating power [hp] for 3-phase motors</b></p> <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> </ul>	60 hp 60 hp 150 hp
<b>Safety related data</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>	
<p><b>certificate of suitability</b></p> <ul style="list-style-type: none"> <li>ATEX</li> <li>IECEx</li> <li>UKEX</li> </ul>	Yes Yes Yes
<b>hardware fault tolerance according to IEC 61508 relating to ATEX</b>	0
<b>PFDavg with low demand rate according to IEC 61508 relating to ATEX</b>	0.09
<b>PFHD with high demand rate according to EN 62061 relating to ATEX</b>	9E-6 1/h
<b>Safety Integrity Level (SIL) according to IEC 61508 relating to ATEX</b>	SIL1
<b>T1 value for proof test interval or service life according to IEC 61508 relating to ATEX</b>	3 a
<b>Certificates/ approvals</b>	
<b>General Product Approval</b>	<b>For use in hazardous locations</b>



[Confirmation](#)



CCC



UL



ATEX

For use in hazardous locations	Declaration of Conformity	Test Certificates	Marine / Shipping
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IECEx

[Explosion Protection Certificate](#)



EG-Konf.



[Type Test Certificates/Test Report](#)



ABS

Marine / Shipping	other
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LRS



[Confirmation](#)

## Further information

Information on the packaging

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

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=3RW5072-2TB04>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RW5072-2TB04>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RW5072-2TB04>

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

[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RW5072-2TB04&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5072-2TB04&lang=en)

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

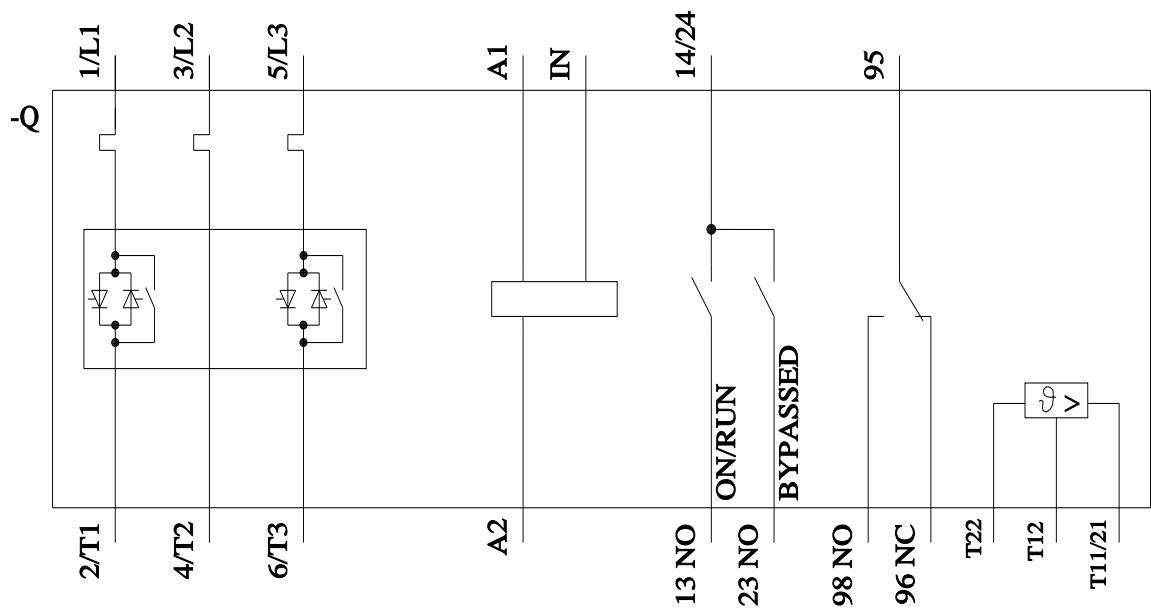
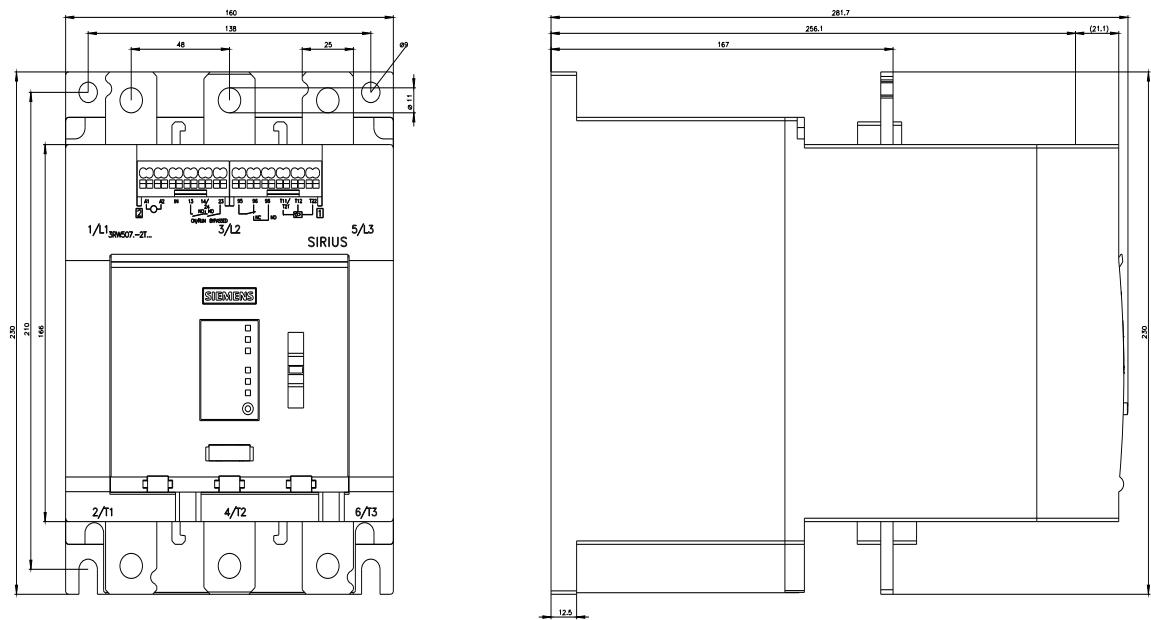
<https://support.industry.siemens.com/cs/ww/en/ps/3RW5072-2TB04/char>

Characteristic: Installation altitude

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RW5072-2TB04&objecttype=14&gridview=view1>

Simulation Tool for Soft Starters (STS)

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





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