## **SIEMENS**

Data sheet 3RW5056-6TB04

SIRIUS



SIRIUS soft starter 200-480 V 171 A, 24 V AC/DC Screw terminals Thermistor input

Figure similar

product brand name

product brand name	
product category	Hybrid switching devices
product designation	Soft starter
product type designation	3RW50
manufacturer's article number	
<ul> <li>of standard HMI module usable</li> </ul>	3RW5980-0HS01
<ul> <li>of high feature HMI module usable</li> </ul>	3RW5980-0HF00
<ul> <li>of communication module PROFINET standard usable</li> </ul>	3RW5980-0CS00
<ul> <li>of communication module PROFIBUS usable</li> </ul>	3RW5980-0CP00
<ul> <li>of communication module Modbus TCP usable</li> </ul>	3RW5980-0CT00
<ul> <li>of communication module Modbus RTU usable</li> </ul>	3RW5980-0CR00
<ul> <li>of communication module Ethernet/IP</li> </ul>	3RW5980-0CE00
<ul> <li>of circuit breaker usable at 400 V</li> </ul>	3VA2220-7MN32-0AA0; Type of assignment 1, Iq = 20 kA
<ul> <li>of circuit breaker usable at 500 V</li> </ul>	3VA2220-7MN32-0AA0; Type of assignment 1, Iq = 20 kA
<ul> <li>of the gG fuse usable up to 690 V</li> </ul>	3NA3244-6; Type of coordination 1, Iq = 65 kA
<ul> <li>of full range R fuse link for semiconductor protection usable up to 690 V</li> </ul>	3NE1 230-0; Type of coordination 2, Iq = 65 kA
<ul> <li>of back-up R fuse link for semiconductor protection usable up to 690 V</li> </ul>	3NE3 335; Type of coordination 2, Iq = 65 kA
<ul> <li>of line contactor usable up to 480 V</li> </ul>	<u>3RT1056</u>
<ul> <li>of line contactor usable up to 690 V</li> </ul>	<u>3RT1064</u>
General technical data	
starting voltage [%]	30 100 %
stopping voltage [%]	50 50 %
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 acc. to IEC 61557-12	5 %
certificate of suitability	
CE marking	Yes
<ul> <li>UL approval</li> </ul>	Yes
CSA approval	Yes
product component is supported	
HMI-Standard	Yes
HMI-High Feature	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
insulation voltage rated value	600 V
degree of pollution	3, acc. to IEC 60947-4-2
impulse voltage rated value	6 kV
blocking voltage of the thyristor maximum	1 400 V
service factor	1
surge voltage resistance rated value	6 kV
maximum permissible voltage for safe isolation	
<ul> <li>between main and auxiliary circuit</li> </ul>	600 V
shock resistance	15 g / 11 ms, from 12 g / 11 ms with potential contact lifting
vibration resistance	15 mm to 6 Hz; 2g to 500 Hz
reference code acc. to IEC 81346-2	Q
Substance Prohibitance (Date)	23.09.2019 00:00:00
product function	
• 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)
<ul> <li>evaluation of thermistor motor protection</li> </ul>	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     orror lagbook	Yes; Only in conjunction with special accessories Yes; Only in conjunction with special accessories
error logbook     via poftware peremeterizable	
via software parameterizable	No V
via software configurable	Yes
PROFlenergy	Yes; in connection with the PROFINET Standard communication module
<ul><li>voltage ramp</li></ul>	Yes
torque control	No
analog output	No
Power Electronics	
operational current	
<ul> <li>at 40 °C rated value</li> </ul>	171 A
<ul> <li>at 50 °C rated value</li> </ul>	153 A
at 60 °C rated value	141 A
operating voltage	
rated value	200 480 V
relative negative tolerance of the operating voltage	-15 %
relative positive tolerance of the operating voltage	10 %
operating power for 3-phase motors	
<ul> <li>at 230 V at 40 °C rated value</li> </ul>	45 kW
at 400 V at 40 °C rated value	90 kW
Operating frequency 1 rated value	50 Hz
Operating frequency 2 rated value	60 Hz
relative negative tolerance of the operating frequency	-10 %
relative positive tolerance of the operating frequency	10 %
adjustable motor current	
<ul> <li>at rotary coding switch on switch position 1</li> </ul>	81 A
at rotary coding switch on switch position 2	87 A
<ul> <li>at rotary coding switch on switch position 3</li> </ul>	93 A
•	

	circuit breaker (Icu= 600 A), C6 miniature circuit breaker (Icu= 300 A); Is not part of scope of supply
design of short-circuit protection for control circuit	4 A gG fuse (Icu=1 kA), 6 A quick-acting fuse (Icu=1 kA), C1 miniature
design of the overvoltage protection	Varistor
duration of inrush current peak at application of control supply voltage	12.1 ms
inrush current peak at application of control supply voltage maximum	3.3 A
locked-rotor current at close of bypass contact maximum	7.6 A
holding current in bypass operation rated value	360 mA
control supply current in standby mode rated value	160 mA
relative positive tolerance of the control supply voltage at DC	20 %
relative negative tolerance of the control supply voltage at DC	-20 %
at DC rated value	24 V
control supply voltage	
relative positive tolerance of the control supply voltage frequency	10 %
relative negative tolerance of the control supply voltage frequency	-10 %
control supply voltage frequency	50 60 Hz
relative positive tolerance of the control supply voltage at AC at 60 Hz	20 %
relative negative tolerance of the control supply voltage at AC at 60 Hz	-20 %
relative positive tolerance of the control supply voltage at AC at 50 Hz	20 %
relative negative tolerance of the control supply voltage at AC at 50 Hz	-20 %
at 60 Hz rated value	24 V
at 50 Hz rated value	24 V
control supply voltage at AC	
type of voltage of the control supply voltage	AC/DC
Control circuit/ Control	
type of the motor protection	Electronic, tripping in the event of thermal overload of the motor
at 60 °C during startup      at 60 °C during startup	1 308 W
at 40 °C during startup      at 50 °C during startup	1 751 W
power loss [W] at AC at current limitation 350 %  • at 40 °C during startup	1 751 W
• at 60 °C after startup	20 W
at 50 °C after startup     at 60 °C after startup	23 W
• at 40 °C after startup	29 W
power loss [W] for rated value of the current at AC	
minimum load [%]	15 %; Relative to smallest settable le
• minimum	81 A
at rotary coding switch on switch position 16	171 A
at rotary coding switch on switch position 15	165 A
at rotary coding switch on switch position 14	159 A
at rotary coding switch on switch position 12     at rotary coding switch on switch position 13	153 A
at rotary coding switch on switch position 11     at rotary coding switch on switch position 12	141 A
<ul> <li>at rotary coding switch on switch position 10</li> <li>at rotary coding switch on switch position 11</li> </ul>	135 A 141 A
at rotary coding switch on switch position 9     at rotary coding switch on switch position 10	129 A
at rotary coding switch on switch position 8     at rotary coding switch on switch position 9	123 A
at rotary coding switch on switch position 7     at rotary coding switch on switch position 9	117 A
at rotary coding switch on switch position 6	111 A
<ul> <li>at rotary coding switch on switch position 5</li> </ul>	105 A

number of digital inputs	1
number of inputs for thermistor connection	1; Type A PTC or Klixon / Thermoclick
number of digital outputs	3
not parameterizable	2
digital output version	2 normally-open contacts (NO) / 1 changeover contact (CO)
number of analog outputs	0
switching capacity current of the relay outputs	
at AC-15 at 250 V rated value	3 A
• at DC-13 at 24 V rated value	1 A
Installation/ mounting/ dimensions	
mounting position	with vertical mounting surface +/-90° rotatable, with vertical mounting
	surface +/- 22.5° tiltable to the front and back
fastening method	screw fixing
height	198 mm
width	120 mm
depth	249 mm
required spacing with side-by-side mounting	
<ul><li>forwards</li></ul>	10 mm
<ul><li>backwards</li></ul>	0 mm
• upwards	100 mm
• downwards	75 mm
at the side	5 mm
weight without packaging	5.2 kg
Connections/ Terminals	
type of electrical connection	
for main current circuit	busbar connection
for control circuit	screw-type terminals
width of connection bar maximum	25 mm
wire length for thermistor connection	
• with conductor cross-section = 0.5 mm² maximum	50 m
• with conductor cross-section = 1.5 mm² maximum	150 m
with conductor cross-section = 2.5 mm² maximum	250 m
type of connectable conductor cross-sections	40 400 2
for main contacts for box terminal using the front clamping point solid	16 120 mm²
<ul> <li>for main contacts for box terminal using the front clamping point finely stranded with core end processing</li> </ul>	16 120 mm²
<ul> <li>for main contacts for box terminal using the front clamping point finely stranded without core end processing</li> </ul>	10 120 mm²
<ul> <li>for main contacts for box terminal using the front clamping point stranded</li> </ul>	16 70 mm²
<ul> <li>at AWG cables for main contacts for box terminal using the front clamping point</li> </ul>	6 250 kcmil
<ul> <li>for main contacts for box terminal using the back clamping point solid</li> </ul>	16 120 mm²
<ul> <li>at AWG cables for main contacts for box terminal using the back clamping point</li> </ul>	6 250 kcmil
<ul> <li>for main contacts for box terminal using both clamping points solid</li> </ul>	max. 1x 95 mm², 1x 120 mm²
<ul> <li>for main contacts for box terminal using both clamping points finely stranded with core end processing</li> </ul>	max. 1x 95 mm², 1x 120 mm²
<ul> <li>for main contacts for box terminal using both clamping points finely stranded without core end processing</li> </ul>	max. 1x 95 mm², 1x 120 mm²
<ul> <li>for main contacts for box terminal using both clamping points stranded</li> </ul>	max. 2x 120 mm²
<ul> <li>for main contacts for box terminal using the back clamping point finely stranded with core end processing</li> </ul>	16 120 mm²

<ul> <li>for main contacts for box terminal using the back clamping point finely stranded without core end processing</li> </ul>	10 120 mm²
for main contacts for box terminal using the back clamping point stranded	16 120 mm²
type of connectable conductor cross-sections	
<ul> <li>at AWG cables for main current circuit solid</li> </ul>	4 250 kcmil
<ul> <li>for DIN cable lug for main contacts stranded</li> </ul>	16 95 mm²
<ul> <li>for DIN cable lug for main contacts finely stranded</li> </ul>	25 120 mm²
type of connectable conductor cross-sections	
for control circuit solid	1x (0.5 4.0 mm²), 2x (0.5 2.5 mm²)
<ul> <li>for control circuit finely stranded with core end processing</li> </ul>	1x (0.5 2.5 mm²), 2x (0.5 1.5 mm²)
<ul> <li>at AWG cables for control circuit solid</li> </ul>	1x (20 12), 2x (20 14)
wire length	
<ul> <li>between soft starter and motor maximum</li> </ul>	800 m
<ul> <li>at the digital inputs at AC maximum</li> </ul>	1 000 m
tightening torque	
<ul> <li>for main contacts with screw-type terminals</li> </ul>	10 14 N·m
<ul> <li>for auxiliary and control contacts with screw-type</li> </ul>	0.8 1.2 N·m
terminals	
tightening torque [lbf·in]	
<ul> <li>for main contacts with screw-type terminals</li> </ul>	89 124 lbf·in
<ul> <li>for auxiliary and control contacts with screw-type</li> </ul>	7 10.3 lbf·in
terminals	
Ambient conditions	
installation altitude at height above sea level maximum	5 000 m; Derating as of 1000 m, see manual
ambient temperature	
during operation	-25 +60 °C; Please observe derating at temperatures of 40 °C or above
during storage and transport	-40 +80 °C
environmental category	
during operation acc. to IEC 60721	3K6 (no ice formation, only occasional condensation), 3C3 (no salt mist), 3S2 (sand must not get into the devices), 3M6
during storage acc. to IEC 60721	1K6 (only occasional condensation), 1C2 (no salt mist), 1S2 (sand must not get inside the devices), 1M4
• during transport acc. to IEC 60721	2K2, 2C1, 2S1, 2M2 (max. fall height 0.3 m)
EMC emitted interference	acc. to IEC 60947-4-2: Class A
Communication/ Protocol	
communication module is supported	
<ul> <li>PROFINET standard</li> </ul>	Yes
• EtherNet/IP	Yes
<ul><li>Modbus RTU</li></ul>	Yes
Modbus TCP	Yes
• PROFIBUS	Yes
UL/CSA ratings	
manufacturer's article number	
of circuit breaker	
<ul> <li>usable for Standard Faults at 460/480 V according to UL</li> </ul>	Siemens type: 3VA5225, max. 250 A; Iq = 10 kA
<ul> <li>usable for High Faults at 460/480 V according to UL</li> </ul>	Siemens type: 3VA52, max. 250 A; Iq max = 65 kA
of the fuse	
<ul> <li>usable for Standard Faults up to 575/600 V according to UL</li> </ul>	Type: Class RK5 / K5, max. 400 A; Iq = 10 kA
usable for High Faults up to 575/600 V     according to UL	Type: Class J, max. 350 A; Iq = 100 kA
operating power [hp] for 3-phase motors	
<ul> <li>at 200/208 V at 50 °C rated value</li> </ul>	50 hp
<ul> <li>at 220/230 V at 50 °C rated value</li> </ul>	50 hp
<ul> <li>at 460/480 V at 50 °C rated value</li> </ul>	100 hp

0-5-6	
Safety related data	
protection class IP on the front acc. to IEC 60529	IP00; IP20 with cover
touch protection on the front acc. to IEC 60529	finger-safe, for vertical contact from the front with cover
ATEX	
certificate of suitability	
• ATEX	Yes
• IECEx	Yes
hardware fault tolerance acc. to IEC 61508 relating to ATEX	0
PFDavg with low demand rate acc. to IEC 61508 relating to ATEX	0.09
PFHD with high demand rate acc. to EN 62061 relating to ATEX	0.000009 1/h
Safety Integrity Level (SIL) acc. to IEC 61508 relating to ATEX	SIL1
T1 value for proof test interval or service life acc. to IEC 61508 relating to ATEX	3 y
Contification   approvale	

Certificates/ approvals

**General Product Approval** 

For use in hazardous locations













**Declaration of Conformity** 

**Test Certificates** 

other



**Miscellaneous** 

Type Test Certificates/Test Report

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=3RW5056-6TB04

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RW5056-6TB04

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

https://support.industry.siemens.com/cs/ww/en/ps/3RW5056-6TB04

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

http://www.automation.siemens.com/bilddb/cax\_de.aspx?mlfb=3RW5056-6TB04&lang=en

Characteristic: Tripping characteristics, I²t, Let-through current

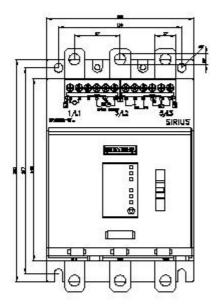
https://support.industry.siemens.com/cs/ww/en/ps/3RW5056-6TB04/char

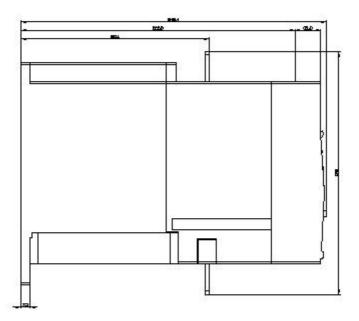
Characteristic: Installation altitude

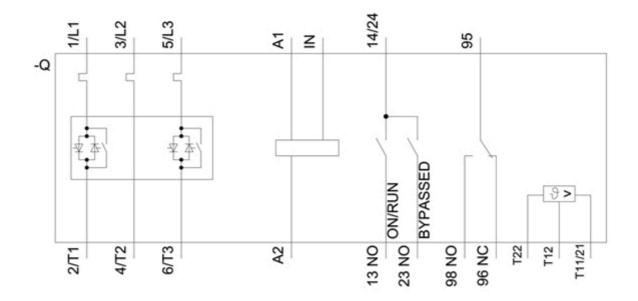
 $\underline{http://www.automation.siemens.com/bilddb/index.aspx?view=Search\&mlfb=3RW5056-6TB04\&objecttype=14\&gridview=view1.pdf$ 

Simulation Tool for Soft Starters (STS)

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







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