SIEMENS

Data sheet 3RW5074-6TB04

SIRIUS



SIRIUS soft starter 200-480 V 315 A, 24 V AC/DC Screw terminals Thermistor input



product category	Hybrid switching devices
product designation	Soft starter
product type designation	3RW50
manufacturer's article number	
 of standard HMI module usable 	3RW5980-0HS01
 of high feature HMI module usable 	3RW5980-0HF00
 of communication module PROFINET standard usable 	3RW5980-0CS00
 of communication module PROFIBUS usable 	3RW5980-0CP00
 of communication module Modbus TCP usable 	3RW5980-0CT00
 of communication module Modbus RTU usable 	3RW5980-0CR00
 of communication module Ethernet/IP 	3RW5980-0CE00
 of circuit breaker usable at 400 V 	3VA2440-7MN32-0AA0; Type of assignment 1, Iq = 65 kA
 of circuit breaker usable at 500 V 	3VA2440-7MN32-0AA0; Type of assignment 1, Iq = 65 kA
 of the gG fuse usable up to 690 V 	2x3NA3365-6; Type of coordination 1, lq = 65 kA
 of full range R fuse link for semiconductor protection usable up to 690 V 	3NE1 333-2; Type of coordination 2, Iq = 65 kA
 of back-up R fuse link for semiconductor protection usable up to 690 V 	3NE3 335; Type of coordination 2, Iq = 65 kA
 of line contactor usable up to 480 V 	<u>3RT1075</u>
 of line contactor usable up to 690 V 	<u>3RT1075</u>
eneral 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 %
certificate of suitability	
CE marking	Yes
UL approval	Yes
CSA approval	Yes
product component	
HMI-High Feature	No
• is supported HMI-Standard	Yes
• is supported HMI-High Feature	Yes
product feature integrated bypass contact system	Yes
number of controlled phases	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	1 600 V
service factor	1
surge voltage resistance rated value	6 kV
maximum permissible voltage for protective separation	O NV
between main and auxiliary circuit	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
utilization category according to IEC 60947-4-2	AC-53a
reference code according to IEC 81346-2	Q
Substance Prohibitance (Date)	09/23/2019
SVHC substance name	Lead - 7439-92-1
	Lead monoxide (lead oxide) - 1317-36-8 2-methyl-1-(4-methylthiophenyl)-2-morpholinopropan-1-one - 71868-10-5
Weight	8.2 kg
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)
 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
PROFlenergy	Yes; in connection with the PROFINET Standard communication module
voltage ramp	Yes
torque control	No
analog output	No
Power Electronics	
operational current	
• at 40 °C rated value	315 A
at 50 °C rated value	279 A
at 60 °C rated value	255 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	20111
at 230 V at 40 °C rated value	90 kW
at 400 V at 40 °C rated value	160 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	
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 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
minimum load [%]	15 %; Relative to smallest settable le
power loss [W] for rated value of the current at AC	
 at 40 °C after startup 	36 W
 at 50 °C after startup 	29 W
• at 60 °C after startup	24 W
power loss [W] at AC at current limitation 350 %	
at 40 °C during startup	3 368 W
at 50 °C during startup	2 805 W
at 60 °C during startup	2 455 W
type of the motor protection	Electronic, tripping in the event of thermal overload of the motor
Control circuit/ Control	= 100000 mo, anypoing in the oronic or anomal oronicad or anomalous
type of voltage of the control supply voltage	AC/DC
control supply voltage at AC	AUIDO
• at 50 Hz rated value	24 V
at 60 Hz rated value	24 V
relative negative tolerance of the control supply voltage at AC at 50 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 60 Hz	-20 %
relative positive tolerance of the control supply voltage at AC at 60 Hz	20 %
control supply voltage frequency	50 60 Hz
relative negative tolerance of the control supply voltage frequency	-10 %
relative positive tolerance of the control supply voltage frequency	10 %
control supply voltage at DC rated value	24 V
relative negative tolerance of the control supply voltage at DC	-20 %
relative positive tolerance of the control supply voltage at DC	20 %
control supply current in standby mode rated value	160 mA
holding current in bypass operation rated value	490 mA
inrush current by closing the bypass contacts maximum	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
design of the overvoltage protection	Varistor
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 circuit breaker (Icu= 600 A), C6 miniature circuit breaker (Icu= 300 A); Is not part of scope of supply
Inputs/ Outputs	
number of digital inputs	1
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	0

at AC-15 at 250 V rated value	3 A
at DC-13 at 24 V rated value	1A
nstallation/ 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	230 mm
width	160 mm
depth	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
weight without packaging	7.3 kg
Connections/ Terminals	
type of electrical connection	
for main current circuit	busbar connection
for control circuit	screw-type terminals
width of connection bar maximum	35 mm; with connection cover 3RT1966-4EA1 maximum length 45 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 for main contacts for box terminal	
 using the front clamping point solid 	95 300 mm²
 using the front clamping point finely stranded with core end processing 	70 240 mm²
 using the front clamping point finely stranded without core end processing 	70 240 mm²
 using the front clamping point stranded 	95 300 mm²
 using the back clamping point solid 	120 240 mm²
 r box terminal using the back clamping point 	250 500 kcmil
 using both clamping points solid 	min. 2x 70 mm², max. 2x 240 mm²
 using both clamping points finely stranded with core end processing 	min. 2x 50 mm², max. 2x 185 mm²
 using both clamping points finely stranded without core end processing 	min. 2x 50 mm², max. 2x 185 mm²
 using both clamping points stranded 	min. 2x 70 mm², max. 2x 240 mm²
 using the back clamping point finely stranded with core end processing 	120 185 mm²
 using the back clamping point finely stranded without core end processing 	120 185 mm²
using the back clamping point stranded	120 240 mm²
type of connectable conductor cross-sections	
 for AWG cables for main current circuit solid 	2/0 500 kcmil
 for DIN cable lug for main contacts stranded 	50 240 mm²
for DIN cable lug for main contacts finely stranded	70 240 mm²
type of connectable conductor cross-sections	
 for control circuit solid 	1x (0.5 4.0 mm²), 2x (0.5 2.5 mm²)
 for control circuit finely stranded with core end processing 	1x (0.5 2.5 mm²), 2x (0.5 1.5 mm²)
for AWG cables for control circuit solid	1x (20 12), 2x (20 14)
wire length	
between soft starter and motor maximum	800 m
at the digital inputs at AC maximum	1 000 m
tightening torque	
 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
tightening torque [lbf·in]	
 for main contacts with screw-type terminals 	124 210 lbf·in

for auxiliary and control contacts with screw-type terminals	7 10.3 lbf-in
Ambient conditions	
installation altitude at height above sea level maximum	5 000 m; derating as of 1000 m, see Manual
ambient temperature	o ooo ni, aaraang aa ar roos ni, aasa manaan
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 according 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 according to IEC 60721 	1K6 (only occasional condensation), 1C2 (no salt mist), 1S2 (sand must not get inside the devices), 1M4
during transport according to IEC 60721	2K2, 2C1, 2S1, 2M2 (max. fall height 0.3 m)
Environmental footprint	
Global Warming Potential [CO2 eq] total	464 kg
Global Warming Potential [CO2 eq] during manufacturing	87.4 kg
global warming potential [CO2 eq] during sales	2.05 kg
Global Warming Potential [CO2 eq] during operation	407 kg
Global Warming Potential [CO2 eq] after end of life	-32.4 kg
Siemens Eco Profile (SEP)	Siemens EcoTech
Electromagnetic compatibility	
EMC emitted interference	acc. to IEC 60947-4-2: Class A
Communication/ Protocol	
communication module is supported	
PROFINET standard	Yes
EtherNet/IP	Yes
Modbus RTU	Yes
Modbus TCP	Yes
PROFIBUS	Yes
UL/CSA ratings	
manufacturer's article number	
of circuit breaker	
— usable for High Faults at 460/480 V according to UL	Siemens type: 3VA54, max. 600 A; Iq max = 65 kA
• of the fuse	00.000 () por 0 17 to 1, mark 000 7 (14 mark 00 to 1.
— usable for Standard Faults up to 575/600 V according to UL	Type: Class L, max. 1000 A; Iq = 18 kA
 usable for High Faults up to 575/600 V according to UL 	Type: Class L, max. 1000 A; Iq = 100 kA
operating power [hp] for 3-phase motors	
 at 200/208 V at 50 °C rated value 	75 hp
 at 220/230 V at 50 °C rated value 	100 hp
 at 460/480 V at 50 °C rated value 	200 hp
Electrical Safety	
protection class IP on the front according to IEC 60529	IP00; IP20 with cover
touch protection on the front according to IEC 60529	finger-safe, for vertical contact from the front with cover
ATEX	
Safety Integrity Level (SIL) according to IEC 61508 relating to ATEX	SIL1
PFHD with high demand rate according to IEC 61508 relating to ATEX	9E-6 1/h
PFDavg with low demand rate according to IEC 61508 relating to ATEX	0.09
hardware fault tolerance according to IEC 61508 relating to ATEX	0
T1 value for proof test interval or service life according to IEC 61508 relating to ATEX	3 a
certificate of suitability	
• ATEX	Yes
• IECEx	Yes
• UKEX	Yes
Approvals Certificates	
General Product Approval	
•	



Confirmation









EMV For use in hazardous locations Test Certificates Marine / Shipping

<u>KC</u>





Miscellaneous

Type Test Certificates/Test Report



Marine / Shipping other Environment





Confirmation



Siemens EcoTech



Environmental Confirmations

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=3RW5074-6TB04

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RW5074-6TB04

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

https://support.industry.siemens.com/cs/ww/en/ps/3RW5074-6TB04

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

 $\underline{\text{http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5074-6TB04\&lang=en}}$

Characteristic: Tripping characteristics, I2t, Let-through current

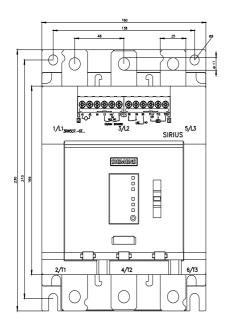
https://support.industry.siemens.com/cs/ww/en/ps/3RW5074-6TB04/char

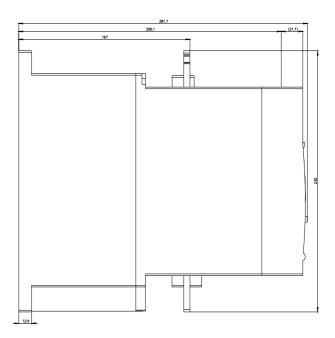
Characteristic: Installation altitude

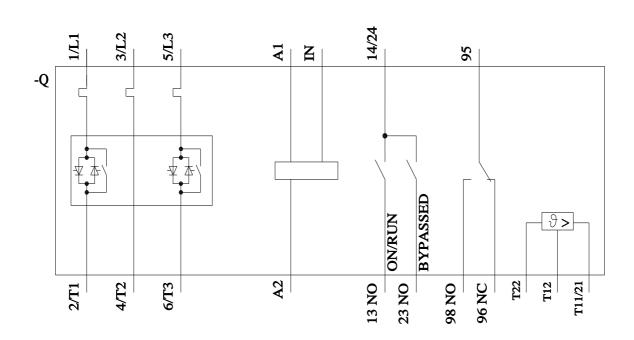
http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RW5074-6TB04&objecttype=14&gridview=view1

Simulation Tool for Soft Starters (STS)

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







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