SIEMENS

product brand name

Data sheet 3RW5055-2TB04

SIRIUS



SIRIUS soft starter 200-480 V 143 A, 24 V AC/DC Spring-loaded 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 	3VA2220-7MN32-0AA0; Type of assignment 1, Iq = 20 kA
 of circuit breaker usable at 500 V 	3VA2220-7MN32-0AA0; Type of assignment 1, Iq = 20 kA
 of the gG fuse usable up to 690 V 	3NA3244-6; Type of coordination 1, Iq = 65 kA
 of full range R fuse link for semiconductor protection usable up to 690 V 	3NE1 227-0; Type of coordination 2, Iq = 65 kA
 of back-up R fuse link for semiconductor protection usable up to 690 V 	3NE3 334 -0B; Type of coordination 2, Iq = 65 kA
 of line contactor usable up to 480 V 	<u>3RT1055</u>
 of line contactor usable up to 690 V 	<u>3RT1055</u>
Seneral 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	

a for main ourrent aircuit	400 ma
for main current circuit for control 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 6W
surge voltage resistance rated value	6 kV
maximum permissible voltage for protective separation	600 V
between main and auxiliary circuit Sheek registance.	600 V
shock resistance	15 g / 11 ms, from 12 g / 11 ms with potential contact lifting AC-53a
utilization category according to IEC 60947-4-2	
reference code according to IEC 81346-2	Q 00/23/2010
Substance Prohibitance (Date) SVHC substance name	09/23/2019 Lead - 7439-92-1
SVIIC Substance name	Lead - 7439-32-1 Lead monoxide (lead oxide) - 1317-36-8 2-methyl-1-(4-methylthiophenyl)-2-morpholinopropan-1-one - 71868-10-5 2,2',6,6'-tetrabromo-4,4'-isopropylidenediphenol - 79-94-7 1,6,7,8,9,14,15,16,17,17,18,18- Dodecachloropentacyclo[12.2.1.16,9.02,13.05,10]octadeca-7,15-diene ("Dechlorane Plus"™) covering any of its individual anti- and syn-isomers or any combination thereof
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	143 A
• at 50 °C rated value	128 A
• at 60 °C rated value	118 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	
• at 230 V at 40 °C rated value	37 kW
at 400 V at 40 °C rated value	75 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 telerance of the energting frequency	-10 70
relative positive tolerance of the operating frequency	10 %
adjustable motor current	

 at rotary coding switch on switch position 3 	78 A
 at rotary coding switch on switch position 4 	83 A
 at rotary coding switch on switch position 5 	88 A
 at rotary coding switch on switch position 6 	93 A
 at rotary coding switch on switch position 7 	98 A
 at rotary coding switch on switch position 8 	103 A
 at rotary coding switch on switch position 9 	108 A
 at rotary coding switch on switch position 10 	113 A
at rotary coding switch on switch position 11	118 A
at rotary coding switch on switch position 12	123 A
at rotary coding switch on switch position 13	128 A
	133 A
at rotary coding switch on switch position 14	
at rotary coding switch on switch position 15	138 A
 at rotary coding switch on switch position 16 	143 A
• minimum	68 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	23 W
• at 50 °C after startup	19 W
• at 60 °C after startup	16 W
power loss [W] at AC at current limitation 350 %	
at 40 °C during startup	1 336 W
at 50 °C during startup	1 134 W
at 60 °C during startup	1 007 W
type of the motor protection	Electronic, tripping in the event of thermal overload of the motor
Control circuit/ Control	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
type of voltage of the control supply voltage	AC/DC
control supply voltage at AC	
at 50 Hz rated value	24 V
at 60 Hz rated value	24 V
relative negative tolerance of the control supply voltage at	-20 %
AC at 50 Hz	20 /0
relative positive tolerance of the control supply voltage at	20 %
AC at 50 Hz relative negative tolerance of the control supply voltage at	-20 %
AC at 60 Hz	
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	-10 %
frequency	10 70
relative positive tolerance of the control supply voltage	10 %
frequency	
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
	360 mA
holding current in bypass operation rated value	
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
	12.1 ms Varistor
voltage	Varistor 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
voltage design of the overvoltage protection design of short-circuit protection for control circuit	Varistor 4 A gG fuse (Icu=1 kA), 6 A quick-acting fuse (Icu=1 kA), C1 miniature circuit
voltage design of the overvoltage protection design of short-circuit protection for control circuit Inputs/ Outputs	Varistor 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
voltage design of the overvoltage protection design of short-circuit protection for control circuit Inputs/ Outputs number of digital inputs	Varistor 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
voltage design of the overvoltage protection design of short-circuit protection for control circuit Inputs/ Outputs	Varistor 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

digital output version	2 normally-open contacts (NO) / 1 changeover contact (CO)
number of analog outputs	2 normally-open contacts (NO) / 1 changeover contact (CO)
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
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	198 mm
width	120 mm
depth	249 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	3.2 kg
Connections/ Terminals	
type of electrical connection	hard an annual an
• for main current circuit	busbar connection
• for control circuit	spring-loaded terminals
width of connection bar maximum	25 mm
wire length for thermistor connection	FO
with conductor cross-section = 0.5 mm² maximum with conductor cross-section = 4.5 mm² maximum	50 m
with conductor cross-section = 1.5 mm² maximum with conductor cross-section = 2.5 mm² maximum	150 m 250 m
with conductor cross-section = 2.5 mm² maximum tune of connectable conductor cross sections for main.	250 111
type of connectable conductor cross-sections for main contacts for box terminal	
using the front clamping point solid	16 120 mm²
using the front clamping point finely stranded with core end processing	16 120 mm²
 using the front clamping point finely stranded without core end processing 	10 120 mm²
 using the front clamping point stranded 	16 70 mm²
 using the back clamping point solid 	16 120 mm²
 r box terminal using the back clamping point 	6 250 kcmil
 using both clamping points solid 	max. 1x 95 mm², 1x 120 mm²
 using both clamping points finely stranded with core end processing 	max. 1x 95 mm², 1x 120 mm²
 using both clamping points finely stranded without core end processing 	max. 1x 95 mm², 1x 120 mm²
 using both clamping points stranded 	max. 2x 120 mm²
 using the back clamping point finely stranded with core end processing 	16 120 mm ²
using the back clamping point finely stranded without core end processing	10 120 mm ²
using the back clamping point stranded	16 120 mm²
type of connectable conductor cross-sections	4 0501 1
for AWG cables for main current circuit solid	4 250 kcmil
for DIN cable lug for main contacts stranded	16 95 mm²
for DIN cable lug for main contacts finely stranded	25 120 mm²
type of connectable conductor cross-sections	0 (0.05 4.5
for control circuit solid	2x (0.25 1.5 mm²)
for control circuit finely stranded with core end processing	2x (0.25 1.5 mm²)
for AWG cables for control circuit solid	2x (24 16)
 for AWG cables for control circuit finely stranded with core end processing 	2x (24 16)
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 	10 14 N·m
 for auxiliary and control contacts with screw-type 	0.8 1.2 N·m
terminals	
tightening torque [lbf·in]	
for main contacts with screw-type terminals	89 124 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, daraang as or root ni, see manaar
during operation	-25 +60 °C; Please observe derating at temperatures of 40 °C or above
during storage and transport	-40 +80 °C
environmental category	40 · · · · · ·
during operation according to IEC 60721	3K6 (no ice formation, only occasional condensation), 3C3 (no salt mist), 3S2
adming operation according to 120 00721	(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	
Siemens Eco Profile (SEP)	Siemens EcoTech
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 Standard Faults at 460/480 V according to UL	Siemens type: 3VA5225, max. 250 A; Iq = 10 kA
of the fuse	
 — usable for Standard Faults up to 575/600 V according to UL 	Type: Class RK5 / K5, max. 350 A; Iq = 10 kA
 usable for High Faults up to 575/600 V according to 	Type: Class J, max. 350 A; Iq = 100 kA
UL	
operating power [hp] for 3-phase motors	
• at 200/208 V at 50 °C rated value	40 hp
• at 220/230 V at 50 °C rated value	40 hp
at 460/480 V at 50 °C rated value Floatrical Cofety	100 hp
Electrical Safety	IDOO IDOO with cours
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
Safety Integrity Level (SIL) according to IEC 61508 relating	SIL1
to ATEX 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	
σοποιαι τ τουμοι Αρβτοναι	













General Product Approval

EMV

For use in hazardous locations

Test Certificates



<u>KC</u>



(Ex)

Miscellaneous

Type Test Certificates/Test Report

Marine / Shipping







Confirmation

other



Environment





Environment

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=3RW5055-2TB04

Cax online generator

 $\underline{\text{http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en\&mlfb=3RW5055-2TB04}$

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

https://support.industry.siemens.com/cs/ww/en/ps/3RW5055-2TB04

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

http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5055-2TB04&lang=en

Characteristic: Tripping characteristics, I²t, Let-through current

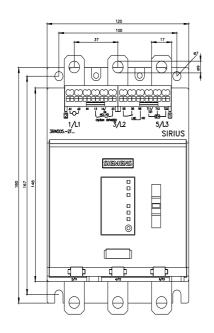
https://support.industry.siemens.com/cs/ww/en/ps/3RW5055-2TB04/char

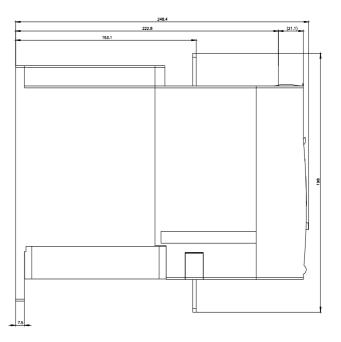
Characteristic: Installation altitude

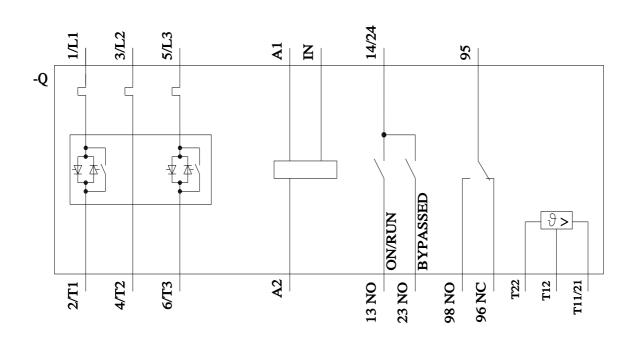
 $\underline{\text{http://www.automation.siemens.com/bilddb/index.aspx?view=Search\&mlfb=3RW5055-2TB04\&objecttype=14\&gridview=view1}$

Simulation Tool for Soft Starters (STS)

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







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