SIEMENS

product brand name

Data sheet 3RW5224-1TC05

SIRIUS



SIRIUS soft starter 200-600 V 47 A, 24 V AC/DC Screw terminals Thermistor input

3003
Hybrid switching devices
Soft starter
3RW52
3RW5980-0HS00
3RW5980-0HF00
3RW5980-0CS00
3RW5980-0CP00
3RW5980-0CT00
3RW5980-0CR00
3RW5980-0CE00
3RV2032-4JA10: Type of coordination 1, Iq = 65 kA, CLASS 10
3RV2032-4JA10; Type of coordination 1, Iq = 10 kA, CLASS 10
3RV2032-4RA10; Type of coordination 1, Iq = 65 kA, CLASS 10
3RV2032-4RA10; Type of coordination 1, Iq = 10 kA, CLASS 10
3NA3824-6: Type of coordination 1, Iq = 65 kA
3NA3824-6; Type of coordination 1, Iq = 65 kA
3NE1021-2; Type of coordination 2, Iq = 65 kA
3NE8024-1; Type of coordination 2, Iq = 65 kA
30 100 %
50 50 %
0 20 s
130 700 %
Yes
Yes
Yes
Yes
Yes
Yes

number of controlled phases	3
trip class	CLASS 10A (default) / 10E / 20E; acc. to IEC 60947-4-2
buffering time in the event of power failure	CLASS TOA (default) / TOE / 20E, acc. to TEC 00347-4-2
for main current circuit	100 ms
for control circuit	100 ms
	600 V
insulation voltage rated value	3, acc. to IEC 60947-4-2
degree of pollution	5, acc. to fee 60947-4-2
impulse voltage rated value	
blocking voltage of the thyristor maximum service factor	1 800 V 1
surge voltage resistance rated value	6 kV
maximum permissible voltage for safe isolation	ONV
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 acc. to IEC 60947-4-2	AC 53a
reference code acc. to IEC 81346-2	Q Q
Substance Prohibitance (Date)	15.02.2018 00:00:00
product function	.5.52.2510 00.00.00
• 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
 inside-delta circuit 	Yes
• 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
firmware update	Yes
removable terminal for control circuit	Yes
• torque control	No
analog output	No
Power Electronics	
operational current	
• at 40 °C rated value	47 A
at 50 °C rated value	42 A
at 60 °C rated value	36 A
operational current at inside-delta circuit	
• at 40 °C rated value	81.4 A
• at 50 °C rated value	72 A
at 60 °C rated value	62.7 A
operating voltage	000 000 1/
• rated value	200 600 V
at inside-delta circuit rated value	200 600 V
relative negative tolerance of the operating voltage	
relative positive tolerance of the operating voltage	10 %
relative negative tolerance of the operating voltage at inside-delta circuit	-15 %

relative positive tolerance of the operating voltage at	10 %
inside-delta circuit	10 /0
operating power for 3-phase motors	
 at 230 V at 40 °C rated value 	11 kW
 at 230 V at inside-delta circuit at 40 °C rated value 	22 kW
 at 400 V at 40 °C rated value 	22 kW
 at 400 V at inside-delta circuit at 40 °C rated value 	45 kW
 at 500 V at 40 °C rated value 	30 kW
at 500 V at inside-delta circuit at 40 °C rated value	45 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 	20 A
 at rotary coding switch on switch position 2 	21.8 A
 at rotary coding switch on switch position 3 	23.6 A
 at rotary coding switch on switch position 4 	25.4 A
 at rotary coding switch on switch position 5 	27.2 A
 at rotary coding switch on switch position 6 	29 A
 at rotary coding switch on switch position 7 	30.8 A
 at rotary coding switch on switch position 8 	32.6 A
 at rotary coding switch on switch position 9 	34.4 A
 at rotary coding switch on switch position 10 	36.2 A
 at rotary coding switch on switch position 11 	38 A
 at rotary coding switch on switch position 12 	39.8 A
 at rotary coding switch on switch position 13 	41.6 A
 at rotary coding switch on switch position 14 	43.4 A
 at rotary coding switch on switch position 15 	45.2 A
 at rotary coding switch on switch position 16 	47 A
• minimum	20 A
adjustable motor current	
 for inside-delta circuit at rotary coding switch on switch position 1 	34.6 A
 for inside-delta circuit at rotary coding switch on switch position 2 	37.8 A
 for inside-delta circuit at rotary coding switch on switch position 3 	40.9 A
 for inside-delta circuit at rotary coding switch on switch position 4 	44 A
 for inside-delta circuit at rotary coding switch on switch position 5 	47.1 A
 for inside-delta circuit at rotary coding switch on switch position 6 	50.2 A
 for inside-delta circuit at rotary coding switch on switch position 7 	53.3 A
 for inside-delta circuit at rotary coding switch on switch position 8 	56.5 A
for inside-delta circuit at rotary coding switch on switch position 9 for inside delta circuit at rotary coding switch on switch and the circuit at rotary coding switch on switch and switch are switched.	59.6 A
for inside-delta circuit at rotary coding switch on switch position 10 for inside delta circuit at rotary coding switch on switch on the circuit at rotary coding switch at	62.7 A
for inside-delta circuit at rotary coding switch on switch position 11 for inside-delta circuit at rotary coding switch on	65.8 A 68.9 A
 for inside-delta circuit at rotary coding switch on switch position 12 for inside-delta circuit at rotary coding switch on 	72.1 A
switch position 13 for inside-delta circuit at rotary coding switch on	75.2 A
switch position 14 for inside-delta circuit at rotary coding switch on	78.3 A
switch position 15	

 for inside-delta circuit at rotary coding switch on 	81.4 A
switch position 16	01.4 A
at inside-delta circuit minimum	34.6 A
minimum load [%]	15 %; Relative to smallest settable le
power loss [W] for rated value of the current at AC	10 70, Fidulito lo cinamos costable 10
• at 40 °C after startup	26 W
• at 50 °C after startup	24 W
• at 60 °C after startup	23 W
power loss [W] at AC at current limitation 350 %	25 VV
• at 40 °C during startup	606 W
3 1	522 W
• at 50 °C during startup	
at 60 °C during startup	438 W
Control circuit/ Control	10/20
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 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	380 mA
locked-rotor current at close of bypass contact	7.6 A
inrush current peak at application of control supply voltage	3.3 A
maximum	40.4
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 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	+/- 10° rotation possible and can be tilted forward or backward on
fastening method	vertical mounting surface
iasterning method	screw fixing

height	306 mm
width	185 mm
depth	203 mm
required spacing with side-by-side mounting	200 11111
• forwards	10 mm
backwards	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	box terminal
for control circuit	screw-type terminals
width of connection bar maximum	25 mm
wire length for thermistor connection	20 11111
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	1x (2.5 16 mm²)
 for main contacts for box terminal using the front clamping point finely stranded with core end processing 	1x (2.5 50 mm²)
 for main contacts for box terminal using the front clamping point stranded 	1x (10 70 mm²)
 at AWG cables for main contacts for box terminal using the front clamping point 	1x (10 2/0)
 for main contacts for box terminal using the back clamping point solid 	1x (2.5 16 mm²)
 at AWG cables for main contacts for box terminal using the back clamping point 	1x (10 2/0)
for main contacts for box terminal using both clamping points solid	2x (2.5 16 mm²)
 for main contacts for box terminal using both clamping points finely stranded with core end processing 	2x (2.5 35 mm²)
 for main contacts for box terminal using both clamping points stranded 	2x (6 16 mm²), 2x (10 50 mm²)
 for main contacts for box terminal using the back clamping point finely stranded with core end processing 	1x (2.5 50 mm²)
 for main contacts for box terminal using the back clamping point stranded 	1x (10 70 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	1x (0.5 2.5 mm²), 2x (0.5 1.5 mm²)
processing	4v (20 42) 2v (20 44)
at AWG cables for control circuit solid wire length	1x (20 12), 2x (20 14)
wire length	800 m
at the digital inputs at AC maximum	100 m
at the digital inputs at AC maximum at the digital inputs at DC maximum	1 000 m
tightening torque	1 000 111
for main contacts with screw-type terminals	4.5 6 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	40 53 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 catalog
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 	1 K6 (only occasional condensation), 1C2 (no salt mist), 1S2 (sand must not get inside the devices), $1 M4$
 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	
PROFINET standard	Yes
EtherNet/IP	Yes
Modbus RTU	Yes
Modbus TCP	Yes
PROFIBUS	Yes
JL/CSA ratings	
manufacturer's article number	
of circuit breaker	
usable for Standard Faults at 460/480 V according to UL	Siemens type: 3RV2742, max. 70 A or 3VA51, max. 90 A; Iq = 5 kA
— usable for High Faults at 460/480 V according to UL	Siemens type: 3VA51, max. 60 A; Iq max = 65 kA
 usable for Standard Faults at 460/480 V at inside-delta circuit according to UL 	Siemens type: 3VA51, max. 90 A; Iq = 5 kA
 usable for High Faults at 460/480 V at inside- delta circuit according to UL 	Siemens type: 3VA51, max. 60 A; Iq max = 65 kA
 usable for Standard Faults at 575/600 V according to UL 	Siemens type: 3RV2742, max. 70 A or 3VA51, max. 90 A; Iq = 5 kA
 usable for Standard Faults at 575/600 V at inside-delta circuit according to UL 	Siemens type: 3VA51, max. 90 A; Iq = 5 kA
of the fuse	
 usable for Standard Faults up to 575/600 V according to UL 	Type: Class RK5 / K5, max. 175 A; Iq = 5 kA
 usable for High Faults up to 575/600 V according to UL 	Type: Class J / L, max. 175 A; Iq = 100 kA
 usable for Standard Faults at inside-delta circuit up to 575/600 V according to UL 	Type: Class RK5 / K5, max. 175 A; Iq = 5 kA
 usable for High Faults at inside-delta circuit up to 575/600 V according to UL 	Type: Class J / L, max. 175 A; Iq = 100 kA
operating power [hp] for 3-phase motors	
at 200/208 V at 50 °C rated value	10 hp
 at 220/230 V at 50 °C rated value 	10 hp
 at 460/480 V at 50 °C rated value 	30 hp
 at 575/600 V at 50 °C rated value 	40 hp
 at 200/208 V at inside-delta circuit at 50 °C rated value 	20 hp
• at 220/230 V at inside-delta circuit at 50 °C rated value	25 hp
 at 460/480 V at inside-delta circuit at 50 °C rated value 	50 hp
at 575/600 V at inside-delta circuit at 50 °C rated value	60 hp
contact rating of auxiliary contacts according to UL	R300-B300
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
electromagnetic compatibility	in accordance with IEC 60947-4-2

Certificates/ approvals

General Product Approval

EMC

Declaration of Conformity













Test Certificates

Marine / Shipping

Type Test Certificates/Test Report











other

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=3RW5224-1TC05

Cax online generator

 $\underline{http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en\&mlfb=3RW5224-1TC05}$

 ${\bf Service \& Support \ (Manuals, \ Certificates, \ Characteristics, \ FAQs, ...)}$

https://support.industry.siemens.com/cs/ww/en/ps/3RW5224-1TC05

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

http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5224-1TC05&lang=en

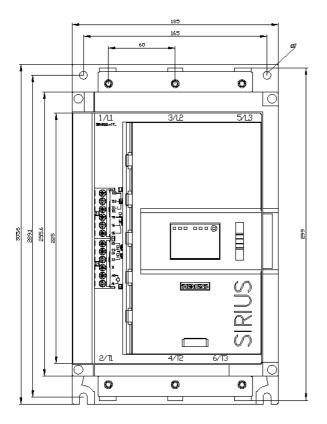
Characteristic: Tripping characteristics, I2t, Let-through current

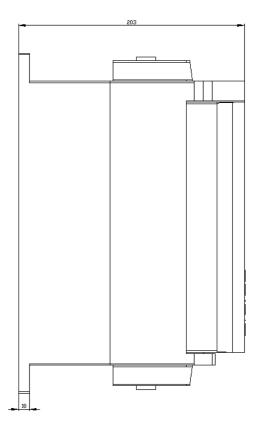
https://support.industry.siemens.com/cs/ww/en/ps/3RW5224-1TC05/char

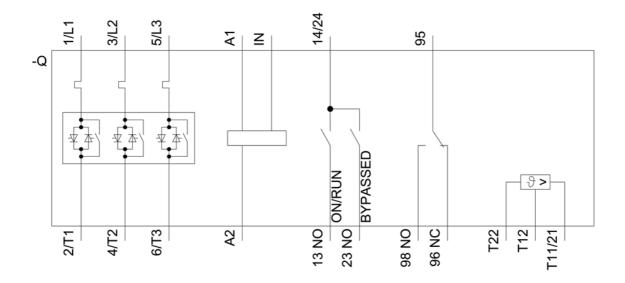
Characteristic: Installation altitude

Simulation Tool for Soft Starters (STS)

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







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