SIEMENS

Data sheet 3RW5224-3TC04



SIRIUS soft starter 200-480 V 47 A, 24 V AC/DC spring-type terminals Thermistor input

product brand name	SIRIUS
product category	Hybrid switching devices
product designation	Soft starter
product type designation	3RW52
manufacturer's article number	
 of standard HMI module usable 	3RW5980-0HS00
 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 	3RV2032-4JA10; Type of coordination 1, Iq = 65 kA, CLASS 10
 of circuit breaker usable at 500 V 	3RV2032-4JA10; Type of coordination 1, Iq = 10 kA, CLASS 10
 of circuit breaker usable at 400 V at inside-delta circuit 	3RV2032-4RA10: Type of coordination 1, Iq = 65 kA, CLASS 10
 of circuit breaker usable at 500 V at inside-delta circuit 	3RV2032-4RA10; Type of coordination 1, Iq = 10 kA, CLASS 10
 of the gG fuse usable up to 690 V 	3NA3824-6; Type of coordination 1, Iq = 65 kA
 of the gG fuse usable at inside-delta circuit up to 500 V 	3NA3824-6; Type of coordination 1, Iq = 65 kA
 of full range R fuse link for semiconductor protection usable up to 690 V 	3NE1021-2: Type of coordination 2, Iq = 65 kA
 of back-up R fuse link for semiconductor protection usable up to 690 V 	3NE8024-1; Type of coordination 2, Iq = 65 kA

General technical data			
starting voltage [%]	30 100 %		
stopping voltage [%]	50 50 %		
start-up ramp 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 is supported			
HMI-Standard	Yes		
HMI-High Feature	Yes		
product feature integrated bypass contact system	Yes		
number of controlled phases	3		
trip class	CLASS 10A (default) / 10E / 20E; acc. to IEC 60947-4-2		

For main current circuit 100 ms 1					
For control circuit	buffering time in the event of power failure				
Insulation vollage rated value GoO V	for main current circuit	100 ms			
Impulse voltage rated value SIV		100 ms			
Impulse voltage rated value 6 kV 1 k0 to V 1 k		600 V			
blocking voltage of the thyristor maximum 1 400 V 1	degree of pollution	3, acc. to IEC 60947-4-2			
service factor 1 surge voltage resistance rated value 6 kV we between main and auxiliary circuit 6 bot ween main and auxiliary circuit 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 uitization category ace, to IEC 60947-42 Ac 53a reference code ace, to IEC 81348-2 Q Substance Prohibitance (Date) 15 02 2018 00:00:00 ramp-drow (soft stop) Yes * any-drow (soft stop) Yes * adjustable current limitation Yes * pump ramp down Yes * intrinsic device protection Yes * evaluation of themistor motor protection Yes, Full motor protection (thermistor motor protection and electronic motor overload protection) * evaluation of themistor motor protection Yes, Full motor protection (thermistor motor protection and electronic motor overload protection) * evaluation of themistor motor protection Yes, Full motor protection (thermistor motor protection and electronic motor overload protection) * evaluation of themistor motor protection Yes, Full motor protection (thermistor motor protection (thermistor motor protection (thermistor motor protection (thermistor motor protection (thermisto		6 kV			
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Spok 15 g / 11 ms with potential contact lifting 15 mm to 6 Hz; 2g to 500 Hz 15 mm to 6					
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 Substance Prohibitance (Date) To 22018 00:00:00 product function Yes • ramp-down (soft starting) Yes • soft Torque Yes • adjustable current limitation Yes • pump ramp down Yes • intrinsic device protection Yes • notor overload protection Yes • evaluation of thermistor motor protection Yes, Full motor protection (thermistor motor protection and electronic motor overload protection) • evaluation of thermistor motor protection Yes, Full motor protection (thermistor motor protection and electronic motor overload protection) • auto-RESET Yes • remote reset Yes Yes • remote reset Yes Yes Yes • remote reset Yes Yes Yes Yes • remote reset Yes <	between main and auxiliary circuit				
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reference code acc. to IEC 81346-2 Substance Prohibitance (Date) 15.02.2018 00:00.00					
Substance Prohibitance (Date) 15.02.2018 00:00:00 product function Famp-up (soft starting) Yes • ramp-up (soft starting) Yes • Soft Torque Yes • Soft Torque Yes • adjustable current limitation Yes • pump ramp down Yes • intrinsic devee 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 • evaluation of thermistor motor protection Yes; Type A PTC or Klixon / Thermoclick • evaluation of thermistor motor protection Yes; Type A PTC or Klixon / Thermoclick • evaluation of thermistor motor protection Yes • analoc ARESET Yes Pea PTC or Klixon / Thermoclick • remote reset Yes Yes yuming off the control supply voltage • communication function Yes Yes Yes yes uning off the control supply voltage • error logbook Yes (a) yii in conjunction with special accessories Yes Yes (n) yii in conjunction with special accessories • PROFinerry Yes Yes Yes Yes		AC 53a			
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relative positive tolerance of the operating voltage at inside-delta circuit operating power for 3-phase motors					
inside-delta circuit operating power for 3-phase motors		-13 /0			
		10 %			
at 230 V at 40 °C rated value 11 kW	at 230 V at 40 °C rated value	11 kW			

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at 230 V at inside-delta circuit at 40 °C rated value t 400 V 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			
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	20.4			
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			
• for inside-delta circuit at rotary coding switch on switch position 4.	34.6 A			
 switch position 1 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	59.6 A			
for inside-delta circuit at rotary coding switch on switch position 10 for inside delta circuit at rotary coding switch on	62.7 A			
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ior 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 • 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	,			
• at 40 °C after startup	26 W			
• at 50 °C after startup	24 W			
at 60 °C after startup	23 W			
at 00 Gaiter startup	20 11			

power loss [W] at AC at current limitation 350 %			
 at 40 °C during startup 	606 W		
 at 50 °C during startup 	522 W		
 at 60 °C during startup 	438 W		
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 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 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 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 vertical mounting surface		
fastening method	screw fixing		
height	306 mm		
width	185 mm		
depth	203 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	5.2 kg		
Connections/ Terminals			
type of electrical connection			
for main current circuit	box terminal		
• for control circuit	spring-loaded 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			
 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 for main contacts for box terminal using both	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 	2x (0.25 1.5 mm²)		
 for control circuit finely stranded with core end processing 	2x (0.25 1.5 mm²)		
 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)		
wire length			
between soft starter and motor maximum	800 m		
at the digital inputs at AC maximum	100 m		
at the digital inputs at DC maximum	1 000 m		
tightening torque			
 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		
a during otorogo and transport	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			
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			
ommunication/ Protocol				
communication module is supported				
 PROFINET standard 	Yes			
EtherNet/IP	Yes			
Modbus RTU	Yes			
Modbus TCP	Yes			
PROFIBUS	Yes			
L/CSA ratings				
nanufacturer'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; lq = 5 kA			
• of the fuse	T 01 DIVE / IVE	475 A L 5 L A		
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. 1	75 A; Iq = 100 KA		
perating power [hp] for 3-phase motors	40			
 at 200/208 V at 50 °C rated value at 220/230 V at 50 °C rated value 	10 hp			
	10 hp			
• at 460/480 V at 50 °C rated value	30 hp			
at 200/208 V at inside-delta circuit at 50 °C rated value at 220/220 V at inside delta circuit at 50 °C rated	20 hp			
 at 220/230 V at inside-delta circuit at 50 °C rated value at 460/480 V at inside-delta circuit at 50 °C rated 	25 np 50 hp	25 hp		
• at 450/450 V at inside-delta circuit at 50 C rated value	30 TIP			
contact rating of auxiliary contacts according to UL	R300-B300			
fety related data				
protection class IP on the front acc. to IEC 60529	IP00; IP20 with cover			
ouch protection on the front acc. to IEC 60529	finger-safe, for vertical contact from the front with cover			
electromagnetic compatibility	in accordance with IEC 6			
ertificates/ 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=3RW5224-3TC04

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RW5224-3TC04

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

https://support.industry.siemens.com/cs/ww/en/ps/3RW5224-3TC04

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

http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5224-3TC04&lang=en

Characteristic: Tripping characteristics, I2t, Let-through current

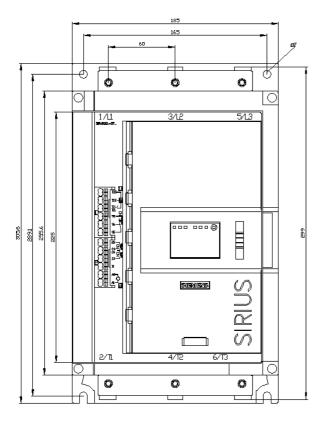
https://support.industry.siemens.com/cs/ww/en/ps/3RW5224-3TC04/char

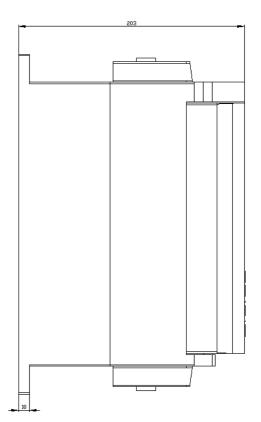
Characteristic: Installation altitude

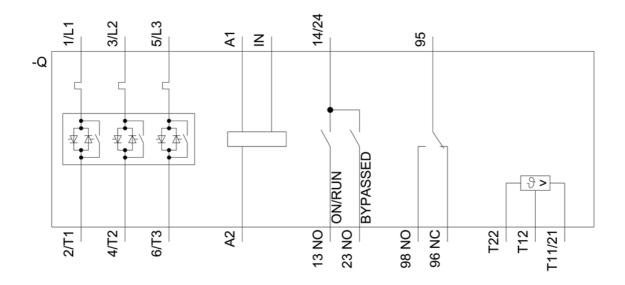
http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RW5224-3TC04&objecttype=14&gridview=view1

Simulation Tool for Soft Starters (STS)

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







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