

3RW50746AB14
Siemens soft starter

GENERAL SPECIFICATIONS	
Specification	Value
product brand name	SIRIUS
product category	Hybrid switching devices
product designation	Soft starter

GENERAL TECHNICAL DATA	
Specification	Value
product type designation	3RW50
manufacturer's article number of standard HMI module usable	3RW5980-0HS00
manufacturer's article number of high feature HMI module usable	3RW5980-0HF00
manufacturer's article number of communication module PROFINET standard usable	3RW5980-0CS00
manufacturer's article number of communication module PROFIBUS usable	3RW5980-0CP00
manufacturer's article number of communication module Modbus TCP usable	3RW5980-0CT00
manufacturer's article number of communication module Modbus RTU usable	3RW5980-0CR00
manufacturer's article number of communication module Ethernet/IP	3RW5980-0CE00
manufacturer's article number of circuit breaker usable at 400 V	3VA2440-7MN32-0AA0; Type of assignment 1, Iq = 65 kA
manufacturer's article number of circuit breaker usable at 500 V	3VA2440-7MN32-0AA0; Type of assignment 1, Iq = 65 kA
manufacturer's article number of the gG fuse usable up to 690 V	2x3NA3365-6; Type of coordination 1, Iq = 65 kA
manufacturer's article number of full range R fuse link for semiconductor protection usable up to 690 V	3NE1 333-2; Type of coordination 2, Iq = 65 kA

GENERAL TECHNICAL DATA

Specification	Value
manufacturer's article number of back-up R fuse link for semiconductor protection usable up to 690 V	3NE3 335; Type of coordination 2, Iq = 65 kA
manufacturer's article number of line contactor usable up to 480 V	3RT1075
manufacturer's article number of line contactor usable up to 690 V	3RT1075
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
certificate of suitability UL approval	Yes
certificate of suitability CSA approval	Yes
product component HMI-High Feature	No
product component is supported HMI-Standard	Yes
product component 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
buffering time in the event of power failure 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 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; 2 g to 500 Hz
utilization category according to IEC 60947-4-2	AC-53a
reference code according to IEC 81346-2	Q
Substance Prohibitance (day/month/year)	09/23/2019
SVHC substance name	Lead CAS-No. 7439-92-1
SVHC substance name	Lead monoxide (lead oxide) CAS-No. 1317-36-8

GENERAL TECHNICAL DATA

Specification	Value
SVHC substance name	2-methyl-1-(4-methylthiophenyl)-2-morpholinopropan-1-one CAS-No. 71868-10-5
SVHC substance name	Melamine CAS-No. 108-78-1
SVHC substance name	6,6'-di-tert-butyl-2,2'-methylenedi-p-cresol CAS-No. 119-47-1
Net Weight	7.056 kg
product function ramp-up (soft starting)	Yes
product function soft stopping	Yes
product function Soft Torque	Yes
product function adjustable current limitation	Yes
product function pump stop	Yes
product function intrinsic device protection	Yes
product function motor overload protection	Yes; Electronic motor overload protection
product function evaluation of thermistor motor protection	No
product function auto-RESET	Yes
product function manual RESET	Yes
product function remote reset	Yes; By turning off the control supply voltage
product function communication function	Yes
product function operating measured value display	Yes; Only in conjunction with special accessories
product function error logbook	Yes; Only in conjunction with special accessories
product function via software parameterizable	No
product function via software configurable	Yes
product function PROFIenergy	Yes; in connection with the PROFINET Standard communication module
product function voltage ramp	Yes
product function torque control	No
product function analog output	Yes; 4 ... 20 mA (default) / 0 ... 10 V (parameterizable with High Feature HMI)

POWER ELECTRONICS

Specification	Value
operational current at 40 °C rated value	315 A
operational current at 50 °C rated value	279 A
operational current at 60 °C rated value	255 A
operating voltage rated value	200 ... 480 V

POWER ELECTRONICS

Specification	Value
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	90 kW
operating power for 3-phase motors 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
adjustable motor current at rotary coding switch on switch position 2	147 A
adjustable motor current at rotary coding switch on switch position 3	159 A
adjustable motor current at rotary coding switch on switch position 4	171 A
adjustable motor current at rotary coding switch on switch position 5	183 A
adjustable motor current at rotary coding switch on switch position 6	195 A
adjustable motor current at rotary coding switch on switch position 7	207 A
adjustable motor current at rotary coding switch on switch position 8	219 A
adjustable motor current at rotary coding switch on switch position 9	231 A
adjustable motor current at rotary coding switch on switch position 10	243 A
adjustable motor current at rotary coding switch on switch position 11	255 A
adjustable motor current at rotary coding switch on switch position 12	267 A
adjustable motor current at rotary coding switch on switch position 13	279 A
adjustable motor current at rotary coding switch on switch position 14	291 A
adjustable motor current at rotary coding switch on switch position 15	303 A
adjustable motor current at rotary coding switch on switch position 16	315 A
adjustable motor current minimum	135 A
minimum load [%]	15 %; Relative to smallest settable Ie
power loss [W] for rated value of the current at AC at 40 °C after startup	36 W
power loss [W] for rated value of the current at AC at 50 °C after startup	29 W
power loss [W] for rated value of the current at AC at 60 °C after startup	24 W
power loss [W] at AC at current limitation 350% at 40 °C during startup	3 368 W
power loss [W] at AC at current limitation 350% at 50 °C during startup	2 805 W
power loss [W] at AC at current limitation 350% 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

Specification	Value
type of voltage of the control supply voltage	AC

CONTROL CIRCUIT/ CONTROL

Specification	Value
control supply voltage at AC at 50 Hz	110 ... 250 V
control supply voltage at AC at 60 Hz	110 ... 250 V
relative negative tolerance of the control supply voltage at AC at 50 Hz	-15 %
relative positive tolerance of the control supply voltage at AC at 50 Hz	10 %
relative negative tolerance of the control supply voltage at AC at 60 Hz	-15 %
relative positive tolerance of the control supply voltage at AC at 60 Hz	10 %
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 current in standby mode rated value	30 mA
holding current in bypass operation rated value	105 mA
inrush current by closing the bypass contacts maximum	2.2 A
inrush current peak at application of control supply voltage maximum	12.2 A
duration of inrush current peak at application of control supply voltage	2.2 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

Specification	Value
number of digital inputs	1
number of digital outputs	3
number of digital outputs not parameterizable	2
digital output version	2 normally-open contacts (NO) / 1 changeover contact (CO)
number of analog outputs	1
switching capacity current of the relay outputs at AC-15 at 250 V rated value	3 A
switching capacity current of the relay outputs at DC-13 at 24 V rated value	1 A

INSTALLATION/ MOUNTING/ DIMENSIONS

Specification	Value
mounting position	with vertical mounting surface +/-90° rotatable, with vertical mounting surface +/- 22.5° tiltable to the front and back
fastening method	screw fixing

INSTALLATION/ MOUNTING/ DIMENSIONS

Specification	Value
height	230 mm
width	160 mm
depth	282 mm
required spacing with side-by-side mounting forwards	10 mm
required spacing with side-by-side mounting backwards	0 mm
required spacing with side-by-side mounting upwards	100 mm
required spacing with side-by-side mounting downwards	75 mm
required spacing with side-by-side mounting at the side	5 mm
weight without packaging	7.3 kg

CONNECTIONS/ TERMINALS

Specification	Value
type of electrical connection for main current circuit	busbar connection
type of electrical connection for control circuit	screw-type terminals
width of connection bar maximum	35 mm; with connection cover 3RT1966-4EA1 maximum length 45 mm
type of connectable conductor cross-sections for main contacts for box terminal using the front clamping point solid	95 ... 300 mm²
type of connectable conductor cross-sections for main contacts for box terminal using the front clamping point finely stranded with core end processing	70 ... 240 mm²
type of connectable conductor cross-sections for main contacts for box terminal using the front clamping point finely stranded without core end processing	70 ... 240 mm²
type of connectable conductor cross-sections for main contacts for box terminal using the front clamping point stranded	95 ... 300 mm²
type of connectable conductor cross-sections for main contacts for box terminal using the back clamping point solid	120 ... 240 mm²
type of connectable conductor cross-sections for main contacts for box terminal r box terminal using the back clamping point	250 ... 500 kcmil
type of connectable conductor cross-sections for main contacts for box terminal using both clamping points solid	min. 2x 70 mm² max. 2x 240 mm²
type of connectable conductor cross-sections for main contacts for box terminal using both clamping points finely stranded with core end processing	min. 2x 50 mm² max. 2x 185 mm²
type of connectable conductor cross-sections for main contacts for box terminal using both clamping points finely stranded without core end processing	min. 2x 50 mm² max. 2x 185 mm²
type of connectable conductor cross-sections for main contacts for box terminal using both clamping points stranded	min. 2x 70 mm² max. 2x 240 mm²
type of connectable conductor cross-sections for main contacts for box terminal using the back clamping point finely stranded with core end processing	120 ... 185 mm²
type of connectable conductor cross-sections for main contacts for box terminal using the back clamping point finely stranded without core end processing	120 ... 185 mm²

CONNECTIONS/ TERMINALS

Specification	Value
type of connectable conductor cross-sections for main contacts for box terminal 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
type of connectable conductor cross-sections for DIN cable lug for main contacts stranded	50 ... 240 mm²
type of connectable conductor cross-sections 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)
type of connectable conductor cross-sections for control circuit finely stranded with core end processing	1x (0.5 ... 2.5 mm²) 2x (0.5 ... 1.5 mm²)
type of connectable conductor cross-sections for AWG cables for control circuit solid	1x (20 ... 12) 2x (20 ... 14)
wire length between soft starter and motor maximum	800 m
wire length at the digital inputs at AC maximum	1 000 m
tightening torque for main contacts with screw-type terminals	14 ... 24 N.m
tightening torque 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
tightening torque [lbf.in] for auxiliary and control contacts with screw-type terminals	7 ... 10.3 lbf.in

AMBIENT CONDITIONS

Specification	Value
installation altitude at height above sea level maximum	5 000 m
ambient temperature during operation	-25 ... +60 °C; Please observe derating at temperatures of 40 °C or above
ambient temperature 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
environmental category during storage according to IEC 60721	1K6 (only occasional condensation), 1C2 (no salt mist), 1S2 (sand must not get inside the devices), 1M4
environmental category during transport according 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

Specification	Value
communication module is supported PROFINET standard	Yes
communication module is supported EtherNet/IP	Yes

COMMUNICATION/ PROTOCOL

Specification	Value
communication module is supported Modbus RTU	Yes
communication module is supported Modbus TCP	Yes
communication module is supported PROFIBUS	Yes

UL/CSA RATINGS

Specification	Value
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
manufacturer's article number of the fuse usable for Standard Faults up to 575/600 V according to UL	Type: Class L, max. 1000 A; Iq = 18 kA
manufacturer's article number of the fuse 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
operating power [hp] for 3-phase motors at 220/230 V at 50 °C rated value	100 hp
operating power [hp] for 3-phase motors at 460/480 V at 50 °C rated value	200 hp
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

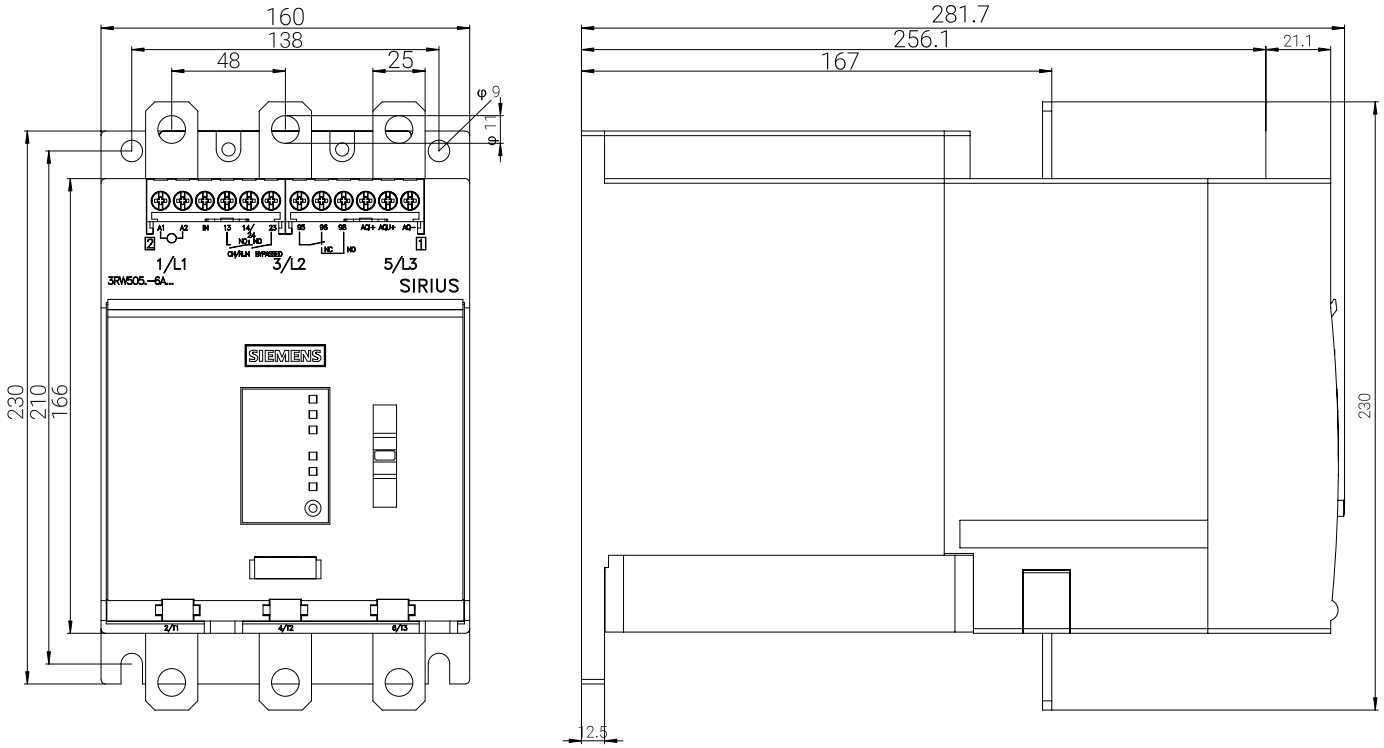
ATEX

Specification	Value
Safety Integrity Level (SIL) according to IEC 61508 relating to ATEX	SIL 1
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
certificate of suitability IECEx	Yes
certificate of suitability UKEX	Yes

ENVIRONMENTAL PRODUCT DECLARATION

Specification	Value
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
global warming potential [CO2 eq] / total	464 kg

DIMENSIONAL DRAWING



WIRING CIRCUIT

