

# SIRIUS 3RW Soft Starters

## General data

### Overview



		SIRIUS 3RW30 Standard applications	SIRIUS 3RW40 Standard applications	SIRIUS 3RW44 High-feature applications
<b>Rated current at 40 °C</b>	A	3 ... 106	12.5 ... 432	29 ... 1214
<b>Rated operational voltage</b>	V	200 ... 480	200 ... 600	200 ... 690
<b>Motor rating at 400 V</b>				
• Inline circuit	kW	1.5 ... 55	5.5 ... 250	15 ... 710
• Inside-delta circuit	kW	--	--	22 ... 1200
<b>Ambient temperature</b>	°C	-25 ... +60	-25 ... +60	0 ... +60
<b>Soft starting/ramp-down</b>		✓ <sup>1)</sup>	✓	✓
<b>Voltage ramp</b>		✓	✓	✓
<b>Starting/stopping voltage</b>	%	40 ... 100	40 ... 100	20 ... 100
<b>Starting and ramp-down time</b>	s	0 ... 20	0 ... 20	1 ... 360
<b>Torque control</b>		--	--	✓
<b>Starting/stopping torque</b>	%	--	--	20 ... 100
<b>Torque limit</b>	%	--	--	20 ... 200
<b>Ramp time</b>	s	--	--	1 ... 360
<b>Integral bypass contact system</b>		✓	✓	✓
<b>Intrinsic device protection</b>		--	✓	✓
<b>Motor overload protection</b>		--	✓	✓
<b>Thermistor motor protection</b>		--	✓ <sup>2)</sup>	✓
<b>Integrated remote RESET</b>		--	✓ <sup>3)</sup>	✓
<b>Adjustable current limiting</b>		--	✓	✓
<b>Inside-delta circuit</b>		--	--	✓
<b>Breakaway pulse</b>		--	--	✓
<b>Creep speed in both directions of rotation</b>		--	--	✓
<b>Pump ramp-down</b>		--	--	✓ <sup>4)</sup>
<b>DC braking</b>		--	--	✓ <sup>4) 5)</sup>
<b>Combined braking</b>		--	--	✓ <sup>4) 5)</sup>
<b>Motor heating</b>		--	--	✓
<b>Communication</b>		--	--	With PROFIBUS DP (optional)
<b>External display and operator module</b>		--	--	(optional)
<b>Operating measured value display</b>		--	--	✓
<b>Error logbook</b>		--	--	✓
<b>Event list</b>		--	--	✓
<b>Slave pointer function</b>		--	--	✓
<b>Trace function</b>		--	--	✓ <sup>6)</sup>
<b>Programmable control inputs and outputs</b>		--	--	✓
<b>Number of parameter sets</b>		1	1	3
<b>Parameterization software (Soft Starter ES)</b>		--	--	✓
<b>Power semiconductors (thyristors)</b>		2 controlled phases	2 controlled phases	3 controlled phases
<b>Screw terminals</b>		✓	✓	✓
<b>Spring-type terminals</b>		✓	✓	✓
<b>UL/CSA</b>		✓	✓	✓
<b>CE marking</b>		✓	✓	✓
<b>ATEX explosion protection</b>		--	✓ <sup>7)</sup>	--
<b>Soft starting under heavy starting conditions</b>		--	--	✓ <sup>4)</sup>
<b>Configuring support</b>		Win-Soft Starter, electronic selection slider ruler, Technical Assistance +49 911 895 5900		

✓ Function is available; -- Function is not available.

- 1) Only soft starting available for 3RW30.
- 2) Optional up to size S3 (device variant).
- 3) Available for 3RW40 2. to 3RW40 4.; optional for 3RW40 5. and 3RW40 7..
- 4) Calculate soft starter and motor with size allowance where required.
- 5) Not possible in inside-delta circuit.
- 6) Trace function with Soft Starter ES software.

- 7) Use upstream disconnect mechanism

You can find further information on the Internet at:  
[www.siemens.com/softstarter](http://www.siemens.com/softstarter)

## Selection aid for soft starters

Application	SIRIUS 3RW30 Standard applications	SIRIUS 3RW40 Standard applications	SIRIUS 3RW44 High-feature applications
<b>Normal starting (CLASS 10)</b>			
Pumps	●	●	●
Pumps with special pump ramp-down (to prevent water hammer)			●
Heat pumps	●	●	●
Hydraulic pumps	○	●	●
Presses	○	●	●
Conveyor belts	○	●	●
Roller conveyors	○	●	●
Screw conveyors	○	●	●
Escalators		●	●
Piston compressors		●	●
Screw compressors		●	●
Small fans <sup>1)</sup>		●	●
Centrifugal blowers		●	●
Bow thrusters		●	●
<b>Heavy starting (CLASS 20)</b>			
Stirrer		○	●
Extruders		○	●
Lathes		○	●
Milling machines		○	●
<b>Very heavy starting (CLASS 30)</b>			
Large fans <sup>2)</sup>			●
Circular saws/bandsaws			●
Centrifuges			●
Mills			●
Breakers			●

● recommended soft starter, ○ possible soft starter

<sup>1)</sup> The mass inertia of the fan is <10 times the mass inertia of the motor

<sup>2)</sup> The mass inertia of the fan is ≥ 10 times the mass inertia of the motor

## Boundary conditions

Type	Maximum starting time s	Current limiting %	Starts per hour 1/h
<b>Normal starting (CLASS 10)</b>			
• 3RW30	3	300	20
• 3RW40/44	10	300	5
<b>Heavy starting (CLASS 20)</b>			
• 3RW40 2., 3RW40 3., 3RW40 4.	20	300	5
• 3RW40 5., 3RW40 7., 3RW44	40	350	1
<b>Very heavy starting (CLASS 30)</b>			
• 3RW44	60	350	1

The quoted motor ratings are only approximate values. The soft starter should always be designed on the basis of the motor current (rated operational current). In the event of deviating conditions, it may be necessary to choose a larger device.

Motor rating data are based on DIN 42973 (kW) and NEC 96/UL 508 (hp).

## Benefits

- The advantages of the SIRIUS soft starters at a glance:
- Soft starting and smooth ramp-down (only soft starting available for 3RW30)
- Stepless starting
- Reduction of current peaks
- Avoidance of mains voltage fluctuations during starting
- Reduced load on the power supply network

- Reduction of the mechanical load in the operating mechanism
- Considerable space savings and reduced wiring compared with conventional starters
- Maintenance-free switching
- Very easy handling
- Fits perfectly in the SIRIUS modular system

# SIRIUS 3RW Soft Starters

## 3RW30, 3RW40 for Standard Applications

### 3RW30

#### Overview

The SIRIUS 3RW30 soft starters reduce the motor voltage through variable phase control and increase it in ramp-like mode from a selectable starting voltage up to mains voltage. During starting, these devices limit the torque as well as the current and prevent the shocks which arise during direct starts or wye-delta starts. In this way, mechanical loads and mains voltage dips can be reliably reduced.

Soft starting reduces the stress on the connected equipment and results in lower wear and therefore longer periods of trouble-free production. The selectable start value means that the soft starters can be adjusted individually to the requirements of the application in question and unlike wye-delta starters are not restricted to two-stage starting with fixed voltage ratios.

The SIRIUS 3RW30 soft starters are characterized above all by their small space requirements. Integrated bypass contacts mean that no power loss has to be taken into the bargain at the power semiconductors (thyristors) after the motor has started up. This cuts down on heat losses, enabling a more compact design and making external bypass circuits superfluous.

Various versions of the SIRIUS 3RW30 soft starters are available:

- Standard version for fixed-speed three-phase motors, sizes S00, S0, S2 and S3, with integrated bypass contact system
- Version for fixed-speed three-phase motors in a 22.5 mm enclosure without bypass

Soft starters rated up to 55 kW (at 400 V) for standard applications in three-phase networks are available. Extremely small sizes, low power losses and simple commissioning are just three of the many advantages of this soft starter.

#### Functionality

The space required by the compact SIRIUS 3RW30 soft starter is often only about one third of that required by a contactor assembly for wye-delta starting of comparable rating. This not only saves space in the control cabinet and on the standard mounting rail but also does away completely with the wiring work needed for wye-delta starters. This is notable in particular for higher motor ratings which are only rarely available as fully wired solutions.

At the same time the number of cables from the starter to the motor is reduced from six to three. Compact dimensions, short start-up times, easy wiring and fast commissioning make themselves felt as clear-cut cost advantages.

The bypass contacts of these soft starters are protected during operation by an integrated solid-state arc quenching system. This prevents damage to the bypass contacts in the event of a fault, e.g. brief disconnection of the control voltage, mechanical shocks or life-related component defects on the coil operating mechanism or main contact spring.

The new series of devices comes with the "polarity balancing control method", which is designed to prevent direct current components in two-phase controlled soft starters. On two-phase controlled soft starters the current resulting from superimposition of the two controlled phases flows in the uncontrolled phase. This results for physical reasons in an asymmetric distribution of the three phase currents during the motor ramp-up. This phenomenon cannot be influenced, but in most applications it is non-critical.

Controlling the power semiconductors results not only in this asymmetry, however, but also in the previously mentioned direct current components which can cause severe noise generation on the motor at starting voltages of less than 50 %. The control method used for these soft starters eliminates these direct current components during the ramp-up phase and prevents the braking torque which they can cause.

It creates a motor ramp-up that is uniform in speed, torque and current rise, thus permitting a particularly gentle, two-phase starting of the motors. At the same time the acoustic quality of the starting operation comes close to the quality of a three-phase controlled soft starter. This is made possible by the on-going dynamic harmonizing and balancing of current half-waves of different polarity during the motor ramp-up. Hence the name "polarity balancing".

- Soft starting with voltage ramp; the starting voltage setting range  $U_s$  is 40 % to 100 % and the ramp time  $t_R$  can be set from 0 s to 20 s
- Integrated bypass contact system to minimize power loss
- Setting with two potentiometers
- Simple mounting and commissioning
- Mains voltages 50/60 Hz, 200 to 480 V
- Two control voltage versions 24 V AC/DC and 110 to 230 V AC/DC
- Wide temperature range from -25 °C to +60 °C
- The built-in auxiliary contact ensures user-friendly control and possible further processing within the system ([for status graphs see Page 4/12](#))

#### Application

The 3RW30 soft starters are suitable for soft starting of three-phase asynchronous motors.

Due to two-phase control, the current is kept at minimum values in all three phases throughout the entire starting time. Due to continuous voltage influencing, the current and torque peaks which are unavoidable in the case of wye-delta starters for instance do not occur.

#### Application areas

See "[Selection aid for soft starters](#)" on Page 4/7.

# SIRIUS 3RW Soft Starters

## 3RW30, 3RW40 for Standard Applications

3RW30



3RW30 18-1BB14



3RW30 28-1BB14



3RW30 38-1BB14



3RW30 47-1BB14



3RW30 03-2CB54

Ambient temperature 40 °C				Ambient temperature 50 °C				Size	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
Rated operational current $I_e^{1)}$	Rated power of induction motors for rated operational voltage $U_e$			Rated operational current $I_e^{1)}$	Rated power of induction motors for rated operational voltage $U_e$										
A	230 V	400 V	500 V	A	200 V	230 V	460 V	575 V							
	kW	kW	kW		hp	hp	hp	hp							
<b>Rated operational voltage <math>U_e</math> 200 ... 480 V<sup>2)</sup></b>															
• With screw terminals															
3.6	0.75	1.5	--	3	0.5	0.5	1.5	--	S00	▶	3RW30 13-1BB□4	1	1 unit	131	0.580
6.5	1.5	3	--	4.8	1	1	3	--	S00	▶	3RW30 14-1BB□4	1	1 unit	131	0.580
9	2.2	4	--	7.8	2	2	5	--	S00	▶	3RW30 16-1BB□4	1	1 unit	131	0.580
12.5	3	5.5	--	11	3	3	7.5	--	S00	▶	3RW30 17-1BB□4	1	1 unit	131	0.580
17.6	4	7.5	--	17	3	3	10	--	S00	▶	3RW30 18-1BB□4	1	1 unit	131	0.580
• With spring-type terminals															
3.6	0.75	1.5	--	3	0.5	0.5	1.5	--	S00	B	3RW30 13-2BB□4	1	1 unit	131	0.580
6.5	1.5	3	--	4.8	1	1	3	--	S00	B	3RW30 14-2BB□4	1	1 unit	131	0.580
9	2.2	4	--	7.8	2	2	5	--	S00	B	3RW30 16-2BB□4	1	1 unit	131	0.580
12.5	3	5.5	--	11	3	3	7.5	--	S00	B	3RW30 17-2BB□4	1	1 unit	131	0.580
17.6	4	7.5	--	17	3	3	10	--	S00	B	3RW30 18-2BB□4	1	1 unit	131	0.580
• With screw terminals															
25	5.5	11	--	23	5	5	15	--	S0	▶	3RW30 26-1BB□4	1	1 unit	131	0.690
32	7.5	15	--	29	7.5	7.5	20	--	S0	▶	3RW30 27-1BB□4	1	1 unit	131	0.690
38	11	18.5	--	34	10	10	25	--	S0	▶	3RW30 28-1BB□4	1	1 unit	131	0.690
• With spring-type terminals															
25	5.5	11	--	23	5	5	15	--	S0	B	3RW30 26-2BB□4	1	1 unit	131	0.690
32	7.5	15	--	29	7.5	7.5	20	--	S0	B	3RW30 27-2BB□4	1	1 unit	131	0.690
38	11	18.5	--	34	10	10	25	--	S0	B	3RW30 28-2BB□4	1	1 unit	131	0.690
• With screw or spring-type terminals															
45	11	22	--	42	10	15	30	--	S2	▶	3RW30 36-□BB□4	1	1 unit	131	1.200
63	18.5	30	--	58	15	20	40	--	S2	▶	3RW30 37-□BB□4	1	1 unit	131	1.200
72	22	37	--	62	20	20	40	--	S2	▶	3RW30 38-□BB□4	1	1 unit	131	1.200
• With screw or spring-type terminals															
80	22	45	--	73	20	25	50	--	S3	▶	3RW30 46-□BB□4	1	1 unit	131	1.710
106	30	55	--	98	30	30	75	--	S3	▶	3RW30 47-□BB□4	1	1 unit	131	1.710
<b>Order No. supplement for connection types</b>															
• With screw terminals															
• With spring-type terminals <sup>3)</sup>															
<b>Order No. supplement for rated control supply voltage <math>U_s</math></b>															
• 24 V AC/DC															
• 110 ... 230 V AC/DC															

### Soft starters for easy starting conditions and high switching frequency, rated operational voltage $U_e$ 200 ... 400 V, Rated control supply voltage $U_s$ 24 ... 230 V AC/DC

3	0.55	1.1	--	2.6	0.5	0.5	--	--	22.5 mm						
• With screw terminals															
• With spring-type terminals															
										▶	3RW30 03-1CB54	1	1 unit	131	0.207
										A	3RW30 03-2CB54	1	1 unit	131	0.188

<sup>1)</sup> Stand-alone installation.

<sup>2)</sup> Soft starter with screw terminals: delivery time class } (preferred type).

<sup>3)</sup> Main circuit connection: screw terminals.

#### Note:

Selection of the soft starter depends on the rated motor current.

Please observe the notes for the selection of soft starters on Page 4/7.

The SIRIUS 3RW30 solid-state soft starters are designed for easy starting conditions.  $J_{Load} < 10 \times J_{Motor}$ . In the event of deviating conditions or increased switching frequency, it may be necessary to choose a larger device.

Siemens recommends the use of the selection and simulation program Win-Soft Starter. For information about rated currents for ambient temperatures  $> 40$  °C, see "Technical specifications".

\* You can order this quantity or a multiple thereof.

# SIRIUS 3RW Soft Starters

## 3RW30, 3RW40 for Standard Applications

### 3RW30

#### Accessories

Conductor cross-section			Tightening torque	For motor starter protectors Size	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
Solid or stranded	Finely stranded with end sleeve	AWG cables, solid or stranded									
mm <sup>2</sup>	mm <sup>2</sup>	AWG	Nm								kg

#### Three-phase feeder terminals



3RV19 25-5AB

2.5 ... 25	4 ... 16	12-4	4	S00 (3RW30 1.) S0 (3RW30 2.)	X	<b>3RV29 25-5AB</b>		1	1 unit	101	0.043
------------	----------	------	---	---------------------------------	---	---------------------	--	---	--------	-----	-------

For soft starters		Circuit breakers		DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
Type	Size	Size	Size							

#### Auxiliary terminals

##### Auxiliary terminals, 3-pole

3RW30 4.	<b>S3</b>				B	<b>3RT19 46-4F</b>		1	1 unit	101	0.035
----------	-----------	--	--	--	---	--------------------	--	---	--------	-----	-------

#### Covers for soft starters



##### Terminal covers for box terminals

Additional touch protection to be fitted at the box terminals (2 units required per device)

3RW30 3.	<b>S2</b>				▶	<b>3RT19 36-4EA2</b>		1	1 unit	101	0.020
3RW30 4.	<b>S3</b>				▶	<b>3RT19 46-4EA2</b>		1	1 unit	101	0.025

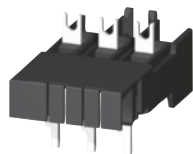


##### Terminal cover for cable lugs and busbar connections

For complying with the phase clearances and as touch protection if box terminal is removed (2 units required per contactor)

3RW30 4.	<b>S3</b>				▶	<b>3RT19 46-4EA1</b>		1	1 unit	101	0.040
----------	-----------	--	--	--	---	----------------------	--	---	--------	-----	-------

#### Link modules to motor starter protectors<sup>1)</sup>



##### • With screw terminals

3RW30 1.	<b>S00</b>	<b>S00</b>			A	<b>3RA29 21-1BA00</b>		1	1 unit	101	0.001
3RW30 2.	<b>S0</b>	<b>S0</b>			A	<b>3RA29 21-1BA00</b>		1	1 unit	101	0.001
3RW30 36.	<b>S2</b>	<b>S2</b>			▶	<b>3RA19 31-1AA00</b>		1	1 unit	101	0.042
3RW30 46., 3RW30 47.	<b>S3</b>	<b>S3</b>			▶	<b>3RA19 41-1AA00</b>		1	1 unit	101	0.090

##### • With spring-type terminals

3RW30 1.	<b>S00</b>	<b>S00</b>			A	<b>3RA29 11-2GA00</b>		1	1 unit	101	0.038
3RW30 2.	<b>S0</b>	<b>S0</b>			A	<b>3RA29 21-2GA00</b>		1	1 unit	101	0.072

#### Operating instructions<sup>2)</sup>

For soft starters

3RW30 1.	<b>S00</b>					<b>3ZX10 12-0RW30-2DA1</b>					
3RW30 2.	<b>S0</b>										
3RW30 3.	<b>S2</b>										
3RW30 4.	<b>S3</b>										

<sup>1)</sup> Can be used in size S0 up to maximum 32 A.




Can be used in size S00/S0 only for 3RV2 motor starter protectors.

<sup>2)</sup> The operating instructions are included in the scope of supply.

# SIRIUS 3RW Soft Starters

## 3RW30, 3RW40 for Standard Applications

3RW30

Version	Functionality Functions	Use	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
<b>Covers and push-in lugs (only for 3RW30 03)</b>									
	<b>Sealable covers</b>	For securing against unauthorized adjustment of setting knobs	▶	<b>3RP1 902</b>		1	5 units	101	0.004
3RP1 902	<b>Push-in lugs</b>	for screw fixing	▶	<b>3RP1 903</b>		1	10 units	101	0.002
									
3RP1 903									
<b>Operating device for spring-type terminals for size S00 and S0</b>									
				<b>Spring-type terminals</b>					
	<b>Screwdrivers</b>	Also suitable for the TE terminals	A	<b>3RA29 08-1A</b>		1	1 unit	101	0.045

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\* You can order this quantity or a multiple thereof.

# SIRIUS 3RW Soft Starters

## 3RW30, 3RW40 for Standard Applications

3RW30

### More information

#### Application examples for normal starting (Class 10)

**Normal starting Class 10** (up to 20 s with 300 %  $I_{n \text{ motor}}$ ).

The soft starter rating can be selected to be as high as the rating of the motor used

Application	Conveyor belt	Roller conveyor	Compressor	Small fans <sup>1)</sup>	Pump	Hydraulic pump
<b>Starting parameters</b>						
• Voltage ramp and current limiting						
- Starting voltage	%	70	60	50	40	40
- Starting time	s	10	10	20	10	10

<sup>1)</sup> The mass inertia of the fan is <10 times the mass inertia of the motor

#### Note:

These tables present sample set values and device sizes. They are intended only for the purposes of information and are not binding. The set values depend on the application in question and must be optimized during commissioning.

The soft starter dimensions should be checked where necessary with the Win-Soft Starter software or with the help of Technical Assistance.

#### Configuration

The 3RW solid-state motor controllers are designed for easy starting conditions. In the event of deviating conditions or increased switching frequency, it may be necessary to choose a larger device. For accurate dimensioning, use the Win-Soft Starter selection and simulation program.

If necessary, an overload relay for heavy starting must be selected where long starting times are involved. PTC sensors are recommended.

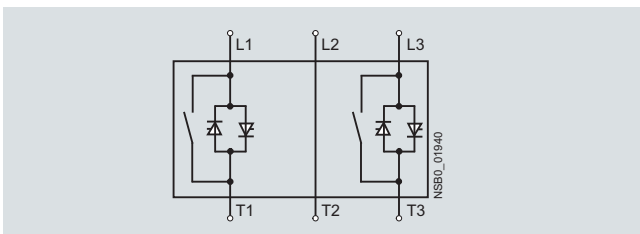
No capacitive elements are permitted in the motor feeder between the SIRIUS 3RW soft starter and the motor (e. g. no reactive-power compensation equipment). In addition, neither static systems for reactive-power compensation nor dynamic PFC (Power Factor Correction) must be operated in parallel during starting and ramp-down of the soft starter. This is important to prevent faults arising on the compensation equipment and/or the soft starter.

All elements of the main circuit (such as fuses, controls and overload relays) should be dimensioned for direct starting, following the local short-circuit conditions. Fuses, controls and overload relays must be ordered separately. Please observe the maximum switching frequencies specified in the technical specifications.

#### Note:

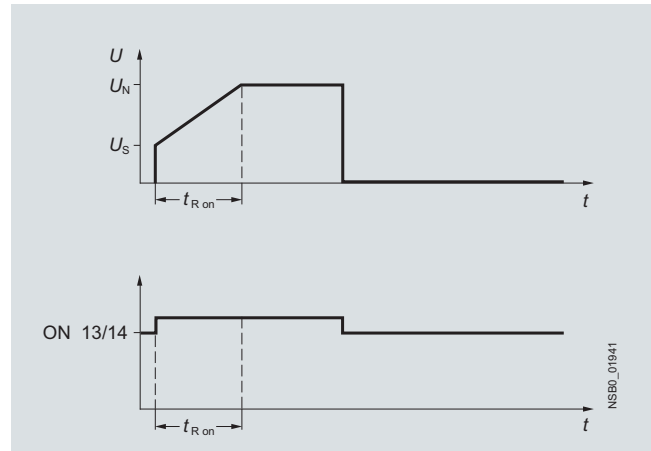
When induction motors are switched on, voltage drops occur as a rule on starters of all types (direct starters, wye-delta starters, soft starters). The infeed transformer must always be dimensioned such that the voltage dip when starting the motor remains within the permissible tolerance. If the infeed transformer is dimensioned with only a small margin, it is best for the control voltage to be supplied from a separate circuit (independently of the main voltage) in order to avoid the potential switching off of the soft starter.

#### Power electronics schematic circuit diagram



A bypass contact system is already integrated in the 3RW30 soft starter and therefore does not have to be ordered separately.

#### Status graphs



#### Manual for SIRIUS 3RW30/40

Besides containing all important information on configuring, commissioning and servicing, the manual also contains example circuits and the technical specifications for all devices.

#### Win-Soft Starter selection and simulation program

With this software, you can simulate and select all Siemens soft starters, taking into account various parameters such as mains properties, motor and load data, and special application requirements.

The software is a valuable tool, which makes complicated, lengthy manual calculations for determining the required soft starters superfluous.

The Win-Soft Starter selection and simulation program can be downloaded from:

[www.siemens.com/softstarter](http://www.siemens.com/softstarter) > Software

You can find more information about soft starters on the Internet likewise at:

[www.siemens.com/softstarter](http://www.siemens.com/softstarter)

#### Training course for SIRIUS soft starters (SD-SIRIUSO)

Siemens offers a 2-day training course on the SIRIUS solid-state soft starters to keep customers and own personnel up-to-date on configuring, commissioning and maintenance issues.

Please direct enquiries and applications to:

Training Center for Automation and Industrial Solution  
 Gleiwitzer Strasse 555  
 D-90475 Nürnberg  
 Telephone: +49 911 895 3202  
 Telefax: +49 911 895 3275  
 E-mail: [ingeborg.hoier@siemens.com](mailto:ingeborg.hoier@siemens.com)  
[www.siemens.com/sitrain-cd](http://www.siemens.com/sitrain-cd)



# SIRIUS 3RW Soft Starters

## 3RW30, 3RW40 for Standard Applications

3RW40

### Overview

SIRIUS 3RW40 soft starters have all the same advantages as the 3RW30 soft starters.

The SIRIUS 3RW40 soft starters are characterized above all by their small space requirements. Integrated bypass contacts mean that no power loss has to be taken into the bargain at the power semiconductors (thyristors) after the motor has started up. This cuts down on heat losses, enabling a more compact design and making external bypass circuits superfluous.

At the same time this soft starter comes with additional integrated functions such as adjustable current limiting, motor overload and intrinsic device protection, and optional thermistor motor protection. The higher the motor rating, the more important these functions because they make it unnecessary to purchase and install protection equipment such as overload relays.

Internal intrinsic device protection prevents the thermal overloading of the thyristors and the power section defects this can cause. As an option the thyristors can also be protected by semiconductor fuses from short-circuiting.

Thanks to integrated status monitoring and fault monitoring, this compact soft starter offers many different diagnostics options. Up to four LEDs and relay outputs permit differentiated monitoring and diagnostics of the operating mechanism by indicating the operating state as well as for example mains or phase failure, missing load, non-permissible tripping time/class setting, thermal overloading or device faults.

Soft starters rated up to 250 kW (at 400 V) for standard applications in three-phase networks are available. Extremely small sizes, low power losses and simple start-up are just three of the many advantages of the SIRIUS 3RW40 soft starters.

#### **"Increased safety" type of protection EEx e according to ATEX directive 94/9/EC**

The 3RW40 soft starter sizes S0 to S12 are suitable for the starting of explosion-proof motors with "increased safety" type of protection EEx e.

See "Appendix" -> "Standards and approvals"-> "Type overview of approved devices for potentially explosive areas (ATEX explosion protection)".

#### **Functionality**

The space required by the compact SIRIUS 3RW40 soft starter is often only about one third of that required by a contactor assembly for wye-delta starting of comparable rating. This not only saves space in the control cabinet and on the standard mounting rail but also does away completely with the wiring work needed for wye-delta starters. This is notable in particular for higher motor ratings which are only rarely available as fully wired solutions.

At the same time the number of cables from the starter to the motor is reduced from six to three. Compact dimensions, short start-up times, easy wiring and fast commissioning make themselves felt as clear-cut cost advantages.

The bypass contacts of these soft starters are protected during operation by an integrated solid-state arc quenching system. This prevents damage to the bypass contacts in the event of a fault, e.g. brief disconnection of the control voltage, mechanical shocks or life-related component defects on the coil operating mechanism or main contact spring.

The starting current of particularly powerful operating mechanisms can place an unjustifiable load on the local supply system. Soft starters reduce this starting current by means of their voltage ramp. Thanks to the adjustable current limiting, the SIRIUS 3RW40 soft starter takes even more pressure off the supply system. It leaves the set start ramp during the ramp-up – the ramp gradient is fixed by the starting voltage and the ramp time – as soon as the selected current limit is reached. From this moment the voltage of the soft starter is controlled so that the current supplied to the motor remains constant. This process is ended either by completion of the motor ramp-up or by tripping by the intrinsic

device protection or the motor overload protection. As the result of this function the actual motor ramp-up can well take longer than the ramp time selected on the soft starter.

Thanks to the integrated motor overload protection according to IEC 60947-4-2 there is no need of an additional overload relay on the new soft starters. The rated motor current, the setting of the overload tripping time (Class times) and the reset of the motor overload protection function can be adjusted easily and quickly. Using a 4-step rotary potentiometer it is possible to set different overload tripping times on the soft starter. In addition to Class 10, 15 and 20 it is also possible to switch off the motor overload protection if a different motor management control device is to be used for this function, e.g. with connection to PROFIBUS.

Device versions with thermistor motor protection evaluation are available up to a rating of 55 kW (at 400 V). A "Thermoclick" measuring probe can be connected directly, as can a PTC of type A. Thermal overloading of the motor, open-circuits and short-circuits in the sensor circuit all result in the direct disconnection of the soft starter. And if ever the soft starter trips, various reset options are available the same as with intrinsic device protection and motor load protection: manually with the reset button, automatically or remotely through brief disconnection of the control voltage.

The new series of devices comes with the "polarity balancing" control method, which is designed to prevent direct current components in two-phase controlled soft starters. On two-phase controlled soft starters the current resulting from superimposition of the two controlled phases flows in the uncontrolled phase. This results for physical reasons in an asymmetric distribution of the three phase currents during the motor ramp-up. This phenomenon cannot be influenced, but in most applications it is non-critical.

Controlling the power semiconductors results not only in this asymmetry, however, but also in the previously mentioned direct current components which can cause severe noise generation on the motor at starting voltages of less than 50 %.

The control method used for these soft starters eliminates these direct current components during the ramp-up phase and prevents the braking torque which they can cause. It creates a motor ramp-up that is uniform in speed, torque and current rise, thus permitting a particularly gentle, two-phase starting of the motors. At the same time the acoustic quality of the starting operation comes close to the quality of a three-phase controlled soft starter. This is made possible by the on-going dynamic harmonizing and balancing of current half-waves of different polarity during the motor ramp-up. Hence the name "polarity balancing".

### Application

The SIRIUS 3RW40 solid-state soft starters are used for the soft starting and stopping of three-phase asynchronous motors.

Due to two-phase control, the current is kept at minimum values in all three phases throughout the entire starting time and disturbing direct current components are eliminated in addition. This not only enables the two-phase starting of motors up to 250 kW (at 400 V) but also avoids the current and torque peaks which occur e. g. with wye-delta starters.

#### **Application areas**

See "Selection aid for soft starters" on Page 4/7.



# SIRIUS 3RW Soft Starters

## 3RW30, 3RW40 for Standard Applications

### 3RW40

#### Selection and ordering data

##### SIRIUS 3RW40 for normal starting (CLASS 10)



3RW40 28-1BB14



3RW40 38-1BB14



3RW40 47-1BB14

Ambient temperature 40 °C				Ambient temperature 50 °C				Size	DT	Normal starting (CLASS 10)	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg	
Rated opera- tional cur- rent $I_e^{(1)}$	Rated power of induction motors for rated opera- tional voltage $U_e$			Rated opera- tional cur- rent $I_e^{(1)}$	Rated power of induction motors for rated opera- tional voltage $U_e$										
A	230 V	400 V	500 V	A	200 V	230 V	460 V	575 V	Order No.	Price per PU					
	kW	kW	kW		hp	hp	hp	hp							
<b>Rated operational voltage <math>U_e</math> 200 ... 480 V<sup>2)</sup></b>															
• With screw terminals															
12.5	3	5.5	--	11	3	3	7.5	--	S0	▶	3RW40 24-1BB□4	1	1 unit	131	0.770
25	5.5	11	--	23	5	5	15	--	S0	▶	3RW40 26-1BB□4	1	1 unit	131	0.770
32	7.5	15	--	29	7.5	7.5	20	--	S0	▶	3RW40 27-1BB□4	1	1 unit	131	0.770
38	11	18.5	--	34	10	10	25	--	S0	▶	3RW40 28-1BB□4	1	1 unit	131	0.770
• With spring-type terminals															
12.5	3	5.5	--	11	3	3	7.5	--	S0	B	3RW40 24-2BB□4	1	1 unit	131	0.770
25	5.5	11	--	23	5	5	15	--	S0	B	3RW40 26-2BB□4	1	1 unit	131	0.770
32	7.5	15	--	29	7.5	7.5	20	--	S0	B	3RW40 27-2BB□4	1	1 unit	131	0.770
38	11	18.5	--	34	10	10	25	--	S0	B	3RW40 28-2BB□4	1	1 unit	131	0.770
• With screw or spring-type terminals															
45	11	22	--	42	10	15	30	--	S2	▶	3RW40 36-□BB□4	1	1 unit	131	1.350
63	18.5	30	--	58	15	20	40	--	S2	▶	3RW40 37-□BB□4	1	1 unit	131	1.350
72	22	37	--	62	20	20	40	--	S2	▶	3RW40 38-□BB□4	1	1 unit	131	1.350
• With screw or spring-type terminals															
80	22	45	--	73	20	25	50	--	S3	▶	3RW40 46-□BB□4	1	1 unit	131	1.900
106	30	55	--	98	30	30	75	--	S3	▶	3RW40 47-□BB□4	1	1 unit	131	1.900
<b>Rated operational voltage <math>U_e</math> 400 ... 600 V</b>															
• With screw terminals															
12.5	--	5.5	7.5	11	--	--	7.5	10	S0	B	3RW40 24-1BB□5	1	1 unit	131	0.770
25	--	11	15	23	--	--	15	20	S0	B	3RW40 26-1BB□5	1	1 unit	131	0.770
32	--	15	18.5	29	--	--	20	25	S0	B	3RW40 27-1BB□5	1	1 unit	131	0.770
38	--	18.5	22	34	--	--	25	30	S0	B	3RW40 28-1BB□5	1	1 unit	131	0.770
• With spring-type terminals															
12.5	--	5.5	7.5	11	--	--	7.5	10	S0	B	3RW40 24-2BB□5	1	1 unit	131	0.770
25	--	11	15	23	--	--	15	20	S0	B	3RW40 26-2BB□5	1	1 unit	131	0.770
32	--	15	18.5	29	--	--	20	25	S0	B	3RW40 27-2BB□5	1	1 unit	131	0.770
38	--	18.5	22	34	--	--	25	30	S0	B	3RW40 28-2BB□5	1	1 unit	131	0.770
• With screw or spring-type terminals															
45	--	22	30	42	--	--	30	40	S2	B	3RW40 36-□BB□5	1	1 unit	131	1.350
63	--	30	37	58	--	--	40	50	S2	B	3RW40 37-□BB□5	1	1 unit	131	1.350
72	--	37	45	62	--	--	40	60	S2	B	3RW40 38-□BB□5	1	1 unit	131	1.350
• With screw or spring-type terminals															
80	--	45	55	73	--	--	50	60	S3	B	3RW40 46-□BB□5	1	1 unit	131	1.900
106	--	55	75	98	--	--	75	75	S3	B	3RW40 47-□BB□5	1	1 unit	131	1.900

#### Order No. supplement for connection types

- With screw terminals
- With spring-type terminals<sup>3)</sup>

#### Order No. supplement for rated control supply voltage $U_c$

- 24 V AC/DC
- 110 ... 230 V AC/DC

<sup>1)</sup> Stand-alone installation without auxiliary fan.

<sup>2)</sup> Soft starter with screw terminals: delivery time class ▶ (preferred type).

#### Note:

Selection of the soft starter depends on the rated motor current.

Please observe the notes for the selection of soft starters on Page 4/7.

The SIRIUS 3RW40 solid-state soft starters are designed for easy starting conditions.  $J_{Load} < 10 \times J_{Motor}$ . In the event of deviating conditions or increased switching frequency, it may be

<sup>3)</sup> Main circuit connection: screw terminals.

necessary to choose a larger device. Siemens recommends the use of the selection and simulation program Win-Soft Starter. For information about rated currents for ambient temperatures > 40 °C, see "Technical specifications".

# SIRIUS 3RW Soft Starters

## 3RW30, 3RW40 for Standard Applications

3RW40



3RW40 28-1TB04



3RW40 38-1TB04



3RW40 47-1TB04

Ambient temperature 40 °C				Ambient temperature 50 °C				Size	DT	Normal starting (CLASS 10)	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg	
Rated operational current $I_e^{(1)}$	Rated power of induction motors for rated operational voltage $U_e$			Rated operational current $I_e^{(1)}$	Rated power of induction motors for rated operational voltage $U_e$										
A	230 V kW	400 V kW	500 V kW	A	200 V hp	230 V hp	460 V hp	575 V hp	Order No.	Price per PU					
<b>Rated operational voltage <math>U_e</math> 200 ... 480 V<sup>(2)</sup>, with thermistor motor protection, rated control supply voltage <math>U_s</math> 24 V AC/DC</b>															
• With screw terminals															
12.5	3	5.5	--	11	3	3	7.5	--	S0	▶	3RW40 24-1TB04	1	1 unit	131	0.770
25	5.5	11	--	23	5	5	15	--	S0	▶	3RW40 26-1TB04	1	1 unit	131	0.770
32	7.5	15	--	29	7.5	7.5	20	--	S0	▶	3RW40 27-1TB04	1	1 unit	131	0.770
38	11	18.5	--	34	10	10	25	--	S0	▶	3RW40 28-1TB04	1	1 unit	131	0.770
• With spring-type terminals															
12.5	3	5.5	--	11	3	3	7.5	--	S0	B	3RW40 24-2TB04	1	1 unit	131	0.770
25	5.5	11	--	23	5	5	15	--	S0	B	3RW40 26-2TB04	1	1 unit	131	0.770
32	7.5	15	--	29	7.5	7.5	20	--	S0	B	3RW40 27-2TB04	1	1 unit	131	0.770
38	11	18.5	--	34	10	10	25	--	S0	B	3RW40 28-2TB04	1	1 unit	131	0.770
• With screw or spring-type terminals															
45	11	22	--	42	10	15	30	--	S2	▶	3RW40 36-□TB04	1	1 unit	131	1.350
63	18.5	30	--	58	15	20	40	--	S2	▶	3RW40 37-□TB04	1	1 unit	131	1.350
72	22	37	--	62	20	20	40	--	S2	▶	3RW40 38-□TB04	1	1 unit	131	1.350
• With screw or spring-type terminals															
80	22	45	--	73	20	25	50	--	S3	▶	3RW40 46-□TB04	1	1 unit	131	1.900
106	30	55	--	98	30	30	75	--	S3	▶	3RW40 47-□TB04	1	1 unit	131	1.900
<b>Rated operational voltage <math>U_e</math> 400 ... 600 V with thermistor motor protection, rated control supply voltage <math>U_s</math> 24 V AC/DC</b>															
• With screw terminals															
12.5	--	5.5	7.5	11	--	--	7.5	10	S0	B	3RW40 24-1TB05	1	1 unit	131	0.770
25	--	11	15	23	--	--	15	20	S0	B	3RW40 26-1TB05	1	1 unit	131	0.770
32	--	15	18.5	29	--	--	20	25	S0	B	3RW40 27-1TB05	1	1 unit	131	0.770
38	--	18.5	22	34	--	--	25	30	S0	B	3RW40 28-1TB05	1	1 unit	131	0.770
• With spring-type terminals															
12.5	--	5.5	7.5	11	--	--	7.5	10	S0	B	3RW40 24-2TB05	1	1 unit	131	0.770
25	--	11	15	23	--	--	15	20	S0	B	3RW40 26-2TB05	1	1 unit	131	0.770
32	--	15	18.5	29	--	--	20	25	S0	B	3RW40 27-2TB05	1	1 unit	131	0.770
38	--	18.5	22	34	--	--	25	30	S0	B	3RW40 28-2TB05	1	1 unit	131	0.770
• With screw or spring-type terminals															
45	--	22	30	42	--	--	30	40	S2	B	3RW40 36-□TB05	1	1 unit	131	1.350
63	--	30	37	58	--	--	40	50	S2	B	3RW40 37-□TB05	1	1 unit	131	1.350
72	--	37	45	62	--	--	40	60	S2	B	3RW40 38-□TB05	1	1 unit	131	1.350
• With screw or spring-type terminals															
80	--	45	55	73	--	--	50	60	S3	B	3RW40 46-□TB05	1	1 unit	131	1.900
106	--	55	75	98	--	--	75	75	S3	B	3RW40 47-□TB05	1	1 unit	131	1.900

**Order No. supplement for connection types**

- With screw terminals
- With spring-type terminals<sup>3)</sup>

<sup>1)</sup> Stand-alone installation without auxiliary fan.

<sup>2)</sup> Soft starter with screw terminals: delivery time class ▶ (preferred type).

**Note:**

Selection of the soft starter depends on the rated motor current.

Please observe the notes for the selection of soft starters on Page 4/7.

The SIRIUS 3RW40 solid-state soft starters are designed for easy starting conditions.  $J_{Load} < 10 \times J_{Motor}$ . In the event of deviating conditions or increased switching frequency, it may be necessary to choose a larger device. Siemens recommends the

<sup>3)</sup> Main circuit connection: screw terminals.

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use of the selection and simulation program Win-Soft Starter. For information about rated currents for ambient temperatures > 40 °C, see "Technical specifications".

# SIRIUS 3RW Soft Starters

## 3RW30, 3RW40 for Standard Applications

### 3RW40



3RW40 56-6BB4



3RW40 76-6BB4

Ambient temperature 40 °C				Ambient temperature 50 °C				Size	DT	Normal starting (CLASS 10)	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.	
Rated operational current $I_e^{1)}$	Rated power of induction motors for rated operational voltage $U_e$			Rated operational current $I_e^{1)}$	Rated power of induction motors for rated operational voltage $U_e$										
A	230 V kW	400 V kW	500 V kW	A	200 V hp	230 V hp	460 V hp	575 V hp	Order No.	Price per PU			kg		
<b>Rated operational voltage <math>U_e</math> 200 ... 460 V<sup>2)</sup></b>															
• With screw or spring-type terminals															
134	37	<b>75</b>	--	117	30	40	<b>75</b>	--	<b>S6</b>	B	<b>3RW40 55-□BB□4</b>	1	1 unit	131	4.900
162	45	<b>90</b>	--	145	40	50	<b>100</b>	--		B	<b>3RW40 56-□BB□4</b>	1	1 unit	131	6.900
• With screw or spring-type terminals															
230	75	<b>132</b>	--	205	60	75	<b>150</b>	--	<b>S12</b>	B	<b>3RW40 73-□BB□4</b>	1	1 unit	131	8.900
280	90	<b>160</b>	--	248	75	100	<b>200</b>	--		B	<b>3RW40 74-□BB□4</b>	1	1 unit	131	8.900
356	110	<b>200</b>	--	315	100	125	<b>250</b>	--		B	<b>3RW40 75-□BB□4</b>	1	1 unit	131	8.900
432	132	<b>250</b>	--	385	125	150	<b>300</b>	--		B	<b>3RW40 76-□BB□4</b>	1	1 unit	131	8.900
<b>Rated operational voltage <math>U_e</math> 400 ... 600 V<sup>3)</sup></b>															
• With screw or spring-type terminals															
134	--	75	<b>90</b>	117	--	--	75	<b>100</b>	<b>S6</b>	B	<b>3RW40 55-□BB□5</b>	1	1 unit	131	4.900
162	--	90	<b>110</b>	145	--	--	100	<b>150</b>		B	<b>3RW40 56-□BB□5</b>	1	1 unit	131	6.900
• With screw or spring-type terminals															
230	--	132	<b>160</b>	205	--	--	150	<b>200</b>	<b>S12</b>	B	<b>3RW40 73-□BB□5</b>	1	1 unit	131	8.900
280	--	160	<b>200</b>	248	--	--	200	<b>250</b>		B	<b>3RW40 74-□BB□5</b>	1	1 unit	131	8.900
356	--	200	<b>250</b>	315	--	--	250	<b>300</b>		B	<b>3RW40 75-□BB□5</b>	1	1 unit	131	8.900
432	--	250	<b>315</b>	385	--	--	300	<b>400</b>		B	<b>3RW40 76-□BB□5</b>	1	1 unit	131	8.900

#### Order No. supplement for connection types<sup>4)</sup>

- With spring-type terminals
- With screw terminals

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#### Order No. supplement for the rated control supply voltage $U_s$ <sup>5)</sup>

- 115 V AC
- 230 V AC

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1) Stand-alone installation.

2) Soft starter with screw terminals: delivery time class ► (preferred type).

3) Soft starter with screw terminals: delivery time class A.

4) Main circuit connection: busbar connection.

5) Control by way of the internal 24 V DC supply and direct control by means of PLC possible.

#### Note:

Selection of the soft starter depends on the rated motor current.

Please observe the notes for the selection of soft starters on Page 4/7.

The SIRIUS 3RW40 solid-state soft starters are designed for easy starting conditions.  $J_{Load} < 10 \times J_{Motor}$ . In the event of deviating conditions or increased switching frequency, it may be necessary to choose a larger device. Siemens recommends the use of the selection and simulation program Win-Soft Starter. For information about rated currents for ambient temperatures > 40 °C, see "Technical specifications".

# SIRIUS 3RW Soft Starters

## 3RW30, 3RW40 for Standard Applications

3RW40

### SIRIUS 3RW40 for heavy starting (CLASS 20)



Ambient temperature 40 °C				Ambient temperature 50 °C				Size	DT	Heavy starting (CLASS 20)	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
Rated opera- tional cur- rent $I_e^{(1)}$	Rated power of induction motors for rated opera- tional voltage $U_e$			Rated opera- tional cur- rent $I_e^{(1)}$	Rated power of induction motors for rated operational voltage $U_e$									
	230 V	400 V	500 V		200 V	230 V	460 V	575 V	Order No.	Price per PU			kg	
A	kW	kW	kW	A	hp	hp	hp	hp						

#### Rated operational voltage $U_e$ 200 ... 480 V<sup>2)</sup>

- With screw or spring-type terminals

12.5	3	<b>5.5</b>	--	11	3	3	<b>7.5</b>	--	<b>S0</b>	<b>3RW40 26-□□B□4</b>	For DT etc. for the corresponding Order No. see Selection and ordering data for normal starting
25	5.5	<b>11</b>	--	23	5	5	<b>15</b>	--	<b>S0</b>	<b>3RW40 27-□□B□4</b>	
32	7.5	<b>15</b>	--	29	7.5	7.5	<b>20</b>	--	<b>S2</b>	<b>3RW40 36-□□B□4</b>	
38	11	<b>18.5</b>	--	34	10	10	<b>25</b>	--	<b>S2</b>	<b>3RW40 37-□□B□4</b>	
45	11	<b>22</b>	--	42	10	15	<b>30</b>	--	<b>S2</b>	<b>3RW40 37-□□B□4</b>	
63	18.5	<b>30</b>	--	58	15	20	<b>40</b>	--	<b>S3</b>	<b>3RW40 47-□□B□4</b>	
72	22	<b>37</b>	--	62	20	20	<b>40</b>	--	<b>S3</b>	<b>3RW40 47-□□B□4</b>	

#### Rated operational voltage $U_e$ 400 ... 600 V

- With screw or spring-type terminals

12.5	--	5.5	<b>7.5</b>	11	--	--	7.5	<b>10</b>	<b>S0</b>	<b>3RW40 26-□□B□5</b>
25	--	11	<b>15</b>	23	--	--	15	<b>20</b>	<b>S0</b>	<b>3RW40 27-□□B□5</b>
32	--	15	<b>18.5</b>	29	--	--	20	<b>25</b>	<b>S2</b>	<b>3RW40 36-□□B□5</b>
38	--	18.5	<b>22</b>	34	--	--	25	<b>30</b>	<b>S2</b>	<b>3RW40 37-□□B□5</b>
45	--	22	<b>30</b>	42	--	--	30	<b>40</b>	<b>S2</b>	<b>3RW40 37-□□B□5</b>
63	--	30	<b>37</b>	58	--	--	40	<b>50</b>	<b>S3</b>	<b>3RW40 47-□□B□5</b>
72	--	37	<b>45</b>	62	--	--	40	<b>60</b>	<b>S3</b>	<b>3RW40 47-□□B□5</b>

#### Order No. supplement for connection types

- With screw terminals
- With spring-type terminals<sup>3)</sup>

#### Order No. supplement for thermistor motor protection

- Standard function
- Thermistor motor protection only with rated control supply voltage  $U_s$  24 V AC/DC

#### Order No. supplement for rated control supply voltage $U_s$

- 24 V AC/DC
- 110 ... 230 V AC/DC

- 1) Stand-alone installation without auxiliary fan.  
 2) Soft starter with screw terminals: delivery time class ▶ (preferred type).  
 3) Main circuit connection: screw terminals.

#### Note:

Selection of the soft starter depends on the rated motor current.

Please observe the notes for the selection of soft starters on Page 4/7.

The SIRIUS 3RW40 solid-state soft starters are designed for easy starting conditions.  $J_{Load} < 10 \times J_{Motor}$ . In the event of deviating conditions or increased switching frequency, it may be necessary to choose a larger device. Siemens recommends the use of the selection and simulation program Win-Soft Starter. For information about rated currents for ambient temperatures > 40 °C, see "Technical specifications".

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# SIRIUS 3RW Soft Starters

## 3RW30, 3RW40 for Standard Applications

### 3RW40



3RW40 56-6BB44



3RW40 76-6BB44

Ambient temperature 40 °C				Ambient temperature 50 °C				Size	DT	Heavy starting (CLASS 20)	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
Rated operational current $I_e^{1)}$	Rated power of induction motors for rated operational voltage $U_e$			Rated operational current $I_e^{1)}$	Rated power of induction motors for rated operational voltage $U_e$									
A	230 V kW	400 V kW	500 V kW	A	200 V hp	230 V hp	460 V hp	575 V hp	Order No.	Price per PU				kg
<b>Rated operational voltage <math>U_e</math> 200 ... 460 V<sup>2)</sup></b>														
• With screw or spring-type terminals														
80	22	<b>45</b>	--	73	20	25	<b>50</b>	--	<b>S6</b>	<b>3RW40 55-□BB□4</b>	For DT etc. for the corresponding Order No. see Selection and ordering data for normal starting			
106	30	<b>55</b>	--	98	25	30	<b>60</b>	--	<b>S6</b>	<b>3RW40 55-□BB□4</b>				
134	37	<b>75</b>	--	117	30	40	<b>75</b>	--	<b>S6</b>	<b>3RW40 56-□BB□4</b>				
162	45	<b>90</b>	--	145	40	50	<b>100</b>	--	<b>S12</b>	<b>3RW40 73-□BB□4</b>				
230	75	<b>132</b>	--	205	60	75	<b>150</b>	--	<b>S12</b>	<b>3RW40 74-□BB□4</b>				
280	90	<b>160</b>	--	248	75	100	<b>200</b>	--	<b>S12</b>	<b>3RW40 75-□BB□4</b>				
356	110	<b>200</b>	--	315	100	125	<b>250</b>	--	<b>S12</b>	<b>3RW40 76-□BB□4</b>				
<b>Rated operational voltage <math>U_e</math> 400 ... 600 V<sup>3)</sup></b>														
• With screw or spring-type terminals														
80	--	45	<b>55</b>	73	--	--	50	<b>60</b>	<b>S6</b>	<b>3RW40 55-□BB□5</b>				
106	--	55	<b>75</b>	98	--	--	60	<b>75</b>	<b>S6</b>	<b>3RW40 55-□BB□5</b>				
134	--	75	<b>90</b>	117	--	--	75	<b>100</b>	<b>S6</b>	<b>3RW40 56-□BB□5</b>				
162	--	90	<b>110</b>	145	--	--	100	<b>150</b>	<b>S12</b>	<b>3RW40 73-□BB□5</b>				
230	--	132	<b>160</b>	205	--	--	150	<b>200</b>	<b>S12</b>	<b>3RW40 74-□BB□5</b>				
280	--	160	<b>200</b>	248	--	--	200	<b>250</b>	<b>S12</b>	<b>3RW40 75-□BB□5</b>				
356	--	200	<b>250</b>	315	--	--	250	<b>300</b>	<b>S12</b>	<b>3RW40 76-□BB□5</b>				
<b>Order No. supplement for connection types<sup>4)</sup></b>														
• With spring-type terminals														
• With screw terminals														
<b>Order No. supplement for the rated control supply voltage <math>U_s</math><sup>5)</sup></b>														
• 115 V AC														
• 230 V AC														

1) Stand-alone installation.

2) Soft starter with screw terminals: delivery time class ► (preferred type).

3) Soft starter with screw terminals: delivery time class A.

4) Main circuit connection: busbar connection.

5) Control by way of the internal 24 V DC supply and direct control by means of PLC possible.

#### Note:

Selection of the soft starter depends on the rated motor current.

Please observe the notes for the selection of soft starters on Page 4/7.


The SIRIUS 3RW40 solid-state soft starters are designed for easy starting conditions.  $J_{Load} < 10 \times J_{Motor}$ . In the event of deviating conditions or increased switching frequency, it may be necessary to choose a larger device. Siemens recommends the use of the selection and simulation program Win-Soft Starter. For information about rated currents for ambient temperatures > 40 °C, see "Technical specifications".

# SIRIUS 3RW Soft Starters

## 3RW30, 3RW40 for Standard Applications

3RW40

### Accessories

Conductor cross-section		Tightening torque	For motor starter protectors Size	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.		
Solid or stranded	Finely stranded with end sleeve										AWG cables, solid or stranded	
mm <sup>2</sup>	mm <sup>2</sup>	AWG	Nm							kg		
<b>Three-phase feeder terminals</b>												
		2.5 ... 25	4 ... 16	12-4	4	S00 (3RW30 1.) S0 (3RW30 2.)	X	<b>3RW29 25-5AB</b>	1	1 unit	101	0.043
3RW19 25-5AB												
For soft starters Type		Version Size			DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.	
kg												
<b>Box terminal blocks for soft starters</b>												
<b>For round and ribbon cables</b>												
3RW40 5.	<b>S6</b>	• Up to 70 mm <sup>2</sup> • Up to 120 mm <sup>2</sup>	▶	<b>3RT19 55-4G</b>	1	1 unit	101	0.230				
3RW40 7.	<b>S12</b>	• Up to 240 mm <sup>2</sup>	▶	<b>3RT19 56-4G</b>	1	1 unit	101	0.260				
			▶	<b>3RT19 66-4G</b>	1	1 unit	101	0.676				
<b>Auxiliary terminals</b>												
<b>Auxiliary terminals, 3-pole</b>												
3RW40 4.	<b>S3</b>		B	<b>3RT19 46-4F</b>	1	1 unit	101	0.035				
<b>Covers for soft starters</b>												
<b>Terminal covers for box terminals</b>												
Additional touch protection to be fitted at the box terminals (2 units required per device)												
3RW40 3.	<b>S2</b>		▶	<b>3RT19 36-4EA2</b>	1	1 unit	101	0.020				
3RW40 4.	<b>S3</b>		▶	<b>3RT19 46-4EA2</b>	1	1 unit	101	0.025				
3RW40 5.	<b>S6</b>		▶	<b>3RT19 56-4EA2</b>	1	1 unit	101	0.030				
3RW40 7.	<b>S12</b>		▶	<b>3RT19 66-4EA2</b>	1	1 unit	101	0.040				
<b>Terminal cover for cable lugs and busbar connections</b>												
3RW40 4.	<b>S3</b>	For complying with the phase clearances and as touch protection if box terminal is removed (2 units required per contactor)	▶	<b>3RT19 46-4EA1</b>	1	1 unit	101	0.040				
3RW40 5.	<b>S6</b>		▶	<b>3RT19 56-4EA1</b>	1	1 unit	101	0.070				
3RW40 7.	<b>S12</b>		▶	<b>3RT19 66-4EA1</b>	1	1 unit	101	0.130				
<b>Sealing covers</b>												
3RW40 2. to 3RW40 4.	<b>S0, S2, S3</b>		▶	<b>3RW49 00-0PB10</b>	1	1 unit	131	0.005				
3RW40 5. and 3RW40 7.	<b>S6, S12</b>		▶	<b>3RW49 00-0PB00</b>	1	1 unit	131	0.010				




\* You can order this quantity or a multiple thereof.



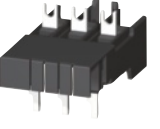

# SIRIUS 3RW Soft Starters

## 3RW30, 3RW40 for Standard Applications

3RW40

For soft starters		Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
Type	Size								kg
<b>Modules for RESET<sup>1)</sup></b>									
<b>Modules for remote RESET, electrical</b>									
Operating range 0.85 ... 1.1 x U <sub>s</sub> , power consumption AC 80 VA, DC 70 W, ON period 0.2 s ... 4 s, switching frequency 60/h									
	3RW40 5. and 3RW40 7.	<b>S6, S12</b>		▶		1	1 unit	101	0.066
			• 24 ... 30 V AC/DC	▶	<b>3RU19 00-2AB71</b>	1	1 unit	101	0.067
			• 110 V ... 127 V AC/DC	▶	<b>3RU19 00-2AF71</b>	1	1 unit	101	0.066
			• 220 ... 250 V AC/DC	▶	<b>3RU19 00-2AM71</b>				
<b>Mechanical RESET comprising</b>									
	3RW40 5. and 3RW40 7.	<b>S6, S12</b>		▶	<b>3RU19 00-1A</b>	1	1 unit	101	0.038
			• Resetting plungers, holders and formers	B	<b>3SB30 00-0EA11</b>	1	1 unit	102	0.020
			• Suitable pushbutton IP65, Ø 22 mm, 12 mm stroke	A	<b>3SX13 35</b>	1	1 unit	102	0.004
			• Extension plungers						
<b>Cable releases with holder for RESET</b>									
For Ø 6.5 mm holes in the control panel; max. control panel thickness 8 mm									
	3RW40 5. and 3RW40 7.	<b>S6, S12</b>		▶	<b>3RU19 00-1B</b>	1	1 unit	101	0.063
			• Length 400 mm	▶	<b>3RU19 00-1C</b>	1	1 unit	101	0.073
			• Length 600 mm						

<sup>1)</sup> Remote RESET already integrated in the 3RW40 2. to 3RW40 4. soft starters.

For soft starters		Circuit breakers	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
Type	Size	Size							kg
<b>Link modules to motor starter protectors<sup>1)</sup></b>									
• With screw terminals									
	3RW40 2.	<b>S0 S0</b>	A	<b>3RA29 21-1BA00</b>		1	1 unit	101	0.001
	3RW40 36.	<b>S2 S2</b>	▶	<b>3RA19 31-1AA00</b>		1	1 unit	101	0.042
	3RW40 46., 3RW40 47.	<b>S3 S3</b>	▶	<b>3RA19 41-1AA00</b>		1	1 unit	101	0.090
• With spring-type terminals									
3RW40 2.	<b>S0 S0</b>		A	<b>3RA29 21-2GA00</b>		1	1 unit	101	0.072
<b>Fans (to increase switching frequency and for device mounting in positions different from the normal position)</b>									
	3RW40 2.	<b>S0</b>	▶	<b>3RW49 28-8VB00</b>		1	1 unit	131	0.010
	3RW40 3., 3RW40 4.	<b>S2, S3</b>	▶	<b>3RW49 47-8VB00</b>		1	1 unit	131	0.020

**Operating instructions<sup>2)</sup>**

For soft starters

3RW40 2.	<b>S0</b>	<b>3ZX10 12-0RW40-1AA1</b>
3RW40 3.	<b>S2</b>	
3RW40 4.	<b>S3</b>	
3RW40 5.	<b>S6</b>	<b>3ZX10 12-0RW40-2DA1</b>
3RW40 7.	<b>S12</b>	

<sup>1)</sup> Can be used in size S0 up to maximum 32 A.

<sup>2)</sup> Can be used in size S0 only for 3RV2 motor starter protectors.



<sup>2)</sup> The operating instructions are included in the scope of supply.

# SIRIUS 3RW Soft Starters

## 3RW30, 3RW40 for Standard Applications

3RW40

## Spare parts

For soft starters Type	Size	Version Rated control supply voltage $U_s$	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
<b>Fans</b>									
	<b>Fans</b>								
3RW40 5.-.BB3.	<b>S6</b>	115 V AC	▶	<b>3RW49 36-8VX30</b>		1	1 unit	131	0.300
3RW40 5.-.BB4.	<b>S6</b>	230 V AC	▶	<b>3RW49 36-8VX40</b>		1	1 unit	131	0.300
3RW40 7.-.BB3.	<b>S12</b>	115 V AC	▶	<b>3RW49 47-8VX30</b>		1	1 unit	131	0.500
3RW40 7.-.BB4.	<b>S12</b>	230 V AC	▶	<b>3RW49 47-8VX40</b>		1	1 unit	131	0.500
<b>Operating device for spring-type terminals for size S00 and S0</b>									
				<b>Spring-type terminals</b>					
<b>Screwdrivers</b> Also suitable for the TE terminals			A	<b>3RA29 08-1A</b>		1	1 unit	101	0.045

# SIRIUS 3RW Soft Starters

## 3RW30, 3RW40 for Standard Applications

### 3RW40

#### More information

##### Application examples for normal starting (Class 10)

**Normal starting Class 10** (up to 20 s with 350 %  $I_{n, motor}$ ).

The soft starter rating can be selected to be as high as the rating of the motor used.

Application		Conveyor belt	Roller conveyor	Compressor	Small fans <sup>1)</sup>	Pump	Hydraulic pump
<b>Starting parameters</b>							
• Voltage ramp and current limiting							
- Starting voltage	%	70	60	50	40	40	40
- Starting time	s	10	10	10	10	10	10
- Current limit value		$5 \times I_M$	$5 \times I_M$	$4 \times I_M$	$4 \times I_M$	$4 \times I_M$	$4 \times I_M$
<b>Ramp-down time</b>	s	5	5	0	0	10	0

<sup>1)</sup> The mass inertia of the fan is <10 times the mass inertia of the motor

##### Application examples for heavy starting (Class 20)

**Heavy starting Class 20** (up to 40 s with 350 %  $I_{n, motor}$ ).

The soft starter has to be selected at least one performance class higher than the motor used.

Application		Stirrer	Centrifuge
<b>Starting parameters</b>			
• Voltage ramp and current limiting			
- Starting voltage	%	40	40
- Starting time	s	20	20
- Current limit value		$4 \times I_M$	$4 \times I_M$
<b>Ramp-down time</b>		0	0

#### Note:

These tables present sample set values and device sizes. They are intended only for the purposes of information and are not binding. The set values depend on the application in question and must be optimized during commissioning.

The soft starter dimensions should be checked where necessary with the Win-Soft Starter software or with the help of Technical Assistance.

# SIRIUS 3RW Soft Starters

## 3RW30, 3RW40 for Standard Applications

3RW40

### Configuration

The 3RW solid-state soft starters are designed for easy starting conditions. In the event of deviating conditions or increased switching frequency, it may be necessary to choose a larger device. For accurate dimensioning, use the Win-Soft Starter selection and simulation program.

Where long starting times are involved, the integrated solid-state overload relay for heavy starting should not be disconnected. PTC sensors are recommended. This also applies for the smooth ramp-down because during the ramp-down time an additional current loading applies in contrast to free ramp-down.

In the case of high switching frequencies in S4 mode, Siemens recommends the use of PTC sensors. For corresponding device versions with integrated thermistor motor protection or separate thermistor evaluation devices see Catalog LV 1.

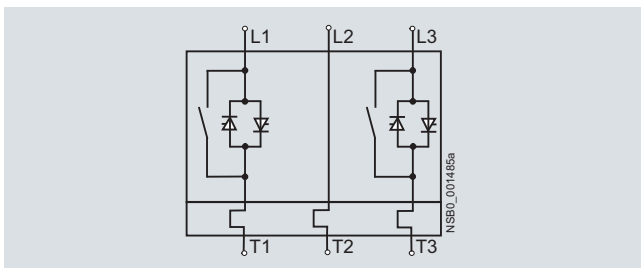
No capacitive elements are permitted in the motor feeder between the SIRIUS 3RW soft starter and the motor (e. g. no reactive-power compensation equipment). In addition, neither static systems for reactive-power compensation nor dynamic PFC (Power Factor Correction) must be operated in parallel during starting and ramp-down of the soft starter. This is important to prevent faults arising on the compensation equipment and/or the soft starter.

All elements of the main circuit (such as fuses and controls) should be dimensioned for direct starting, following the local short-circuit conditions. Fuses, controls and overload relays must be ordered separately. Please observe the maximum switching frequencies specified in the technical specifications.

#### Note:

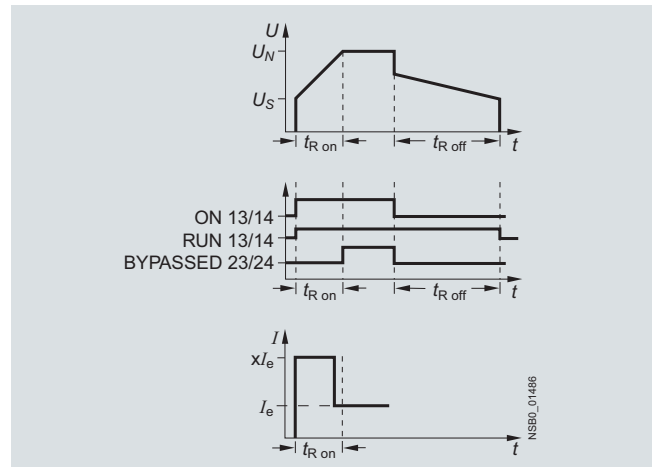
*When induction motors are switched on, voltage drops occur as a rule on starters of all types (direct starters, wye-delta starters, soft starters). The infeed transformer must always be dimensioned such that the voltage dip when starting the motor remains within the permissible tolerance. If the infeed transformer is dimensioned with only a small margin, it is best for the control voltage to be supplied from a separate circuit (independently of the main voltage) in order to avoid the potential switching off of the soft starter.*

### Power electronics schematic circuit diagram



A bypass contact system and solid-state overload relay are already integrated in the 3RW40 soft starter and therefore do not have to be ordered separately.

### Status graphs



### Manual for SIRIUS 3RW30/40

Besides containing all important information on configuring, commissioning and servicing, the manual also contains example circuits and the technical specifications for all devices.

### Win-Soft Starter selection and simulation program

With this software, you can simulate and select all Siemens soft starters, taking into account various parameters such as mains properties, motor and load data, and special application requirements.

The software is a valuable tool, which makes complicated, lengthy manual calculations for determining the required soft starters superfluous.

The Win-Soft Starter selection and simulation program can be downloaded from:

<http://www.siemens.com/softstarter> > Software

More information can be found on the Internet at:

<http://www.siemens.com/softstarter>

### Training course for SIRIUS soft starters (SD-SIRIUSO)

Siemens offers a 2-day training course on the SIRIUS solid-state soft starters to keep customers and own personnel up-to-date on configuring, commissioning and maintenance issues.

Please direct enquiries and applications to:

Training Center for Automation and Industrial Solution  
Gleiwitzer Strasse 555  
D-90475 Nürnberg  
Telephone: +49 911 895 3202  
Telefax: +49 911 895 3275

E-mail: [ingeborg.hoier@siemens.com](mailto:ingeborg.hoier@siemens.com)

[www.siemens.com/sitrain-cd](http://www.siemens.com/sitrain-cd)

# SIRIUS 3RW Soft Starters

## 3RW44 Soft Starters for High-Feature Applications

### 3RW44

#### Overview

In addition to soft starting and soft ramp-down, the solid-state SIRIUS 3RW44 soft starters provide numerous functions for higher-level requirements. They cover a performance range up to 710 kW (at 400 V) in the inline circuit and up to 1200 kW (at 400 V) in the inside-delta circuit.

The SIRIUS 3RW44 soft starters are characterized by a compact design for space-saving and clearly arranged control cabinet layouts. For optimized motor starting and stopping the innovative SIRIUS 3RW44 soft starters are an attractive alternative with considerable savings potential compared to applications with a frequency converter. The new torque control and adjustable current limiting enable the High-Feature soft starters to be used in nearly every conceivable task. They guarantee the reliable avoidance of sudden torque applications and current peaks during motor starting and stopping. This creates savings potential when calculating the size of the switchgear and when servicing the machinery installed. Be it for inline circuits or inside-delta circuits – the SIRIUS 3RW44 soft starter offers savings especially in terms of size and equipment costs.

The bypass contacts already integrated in the soft starter bypass the thyristors after a motor ramp-up is detected. This results in a further great reduction in the heat loss occurring during operation of the soft starter at rated value.

Combinations of various starting, operating and ramp-down possibilities ensure an optimum adaptation to the application-specific requirements. Operation and commissioning can be performed with the menu-controlled keypad and a menu-prompted, multi-line graphic display with background lighting. The optimized motor ramp-up and ramp-down can be effected quickly, easily and reliably by means of just a few settings with a previously selected language. Four-key operation and plain-text displays for each menu point guarantee full clarity at every moment of the parameterization and operation.

#### Applicable standards

- IEC 60947-4-2
- UL/CSA

#### Functionality

Equipped with modern, ergonomic user prompting the SIRIUS 3RW44 soft starters can be commissioned quickly and easily using a keypad and a menu-prompted, multi-line graphic display with background lighting. The optimized motor ramp-up and ramp-down can be effected quickly, easily and reliably by means of just a few settings with a selectable language. Four-key operation and plain-text displays for each menu point guarantee full clarity at every moment of the parameterization and operation. During operation and when control voltage is applied, the display field continuously presents measured values and operating values as well as warnings and fault messages. An external display and operator module can be connected by means of a connection cable to the soft starter, thus enabling active indications and the like to be read directly from the control cabinet door.

The SIRIUS 3RW44 soft starters are equipped with optimum functionality. An integral bypass contact system reduces the power loss of the soft starter during operation. This reliably prevents heating of the switchgear environment. The SIRIUS 3RW44 soft starters have internal intrinsic device protection. This prevents thermal overloading of the power section's thyristors, e. g. due to unacceptably high closing operations.

Wiring outlay for installing an additional motor overload relay is no longer needed as the SIRIUS 3RW44 soft starters perform this function too. In addition they offer adjustable trip classes and a thermistor motor protection function. As an option the thyristors can also be protected by SITOR semiconductor fuses from short-circuiting so that the soft starter is still functional after a short-circuit (coordination type 2). And even inrush current peaks are reliably avoided thanks to adjustable current limiting.

As a further option the SIRIUS 3RW44 soft starters can be upgraded with a PROFIBUS DP module. Thanks to their communication capability and their programmable control inputs and relay outputs the SIRIUS 3RW44 soft starters can be very easily and quickly integrated in higher-level controllers.

In addition a creep speed function is available for positioning and setting jobs. With this function the motor can be controlled in both directions of rotation with reduced torque and an adjustable, low speed.

On the other hand the SIRIUS 3RW44 soft starters offer a new, combined DC braking function for the fast stopping of driving loads.

#### Highlights

- Soft starting with breakaway pulse, torque control or voltage ramp, adjustable torque or current limiting as well as any combination of these, depending on load type
- Integrated bypass contact system to minimize power loss
- Various setting options for the starting parameters such as starting torque, starting voltage, ramp-up and ramp-down time, and much more in three separate parameter sets
- Start-up detection
- Inside-delta circuit for savings in terms of size and equipment costs
- Various ramp-down modes selectable: free ramp-down, torque-controlled pump ramp-down, combined DC braking
- Solid-state motor overload and intrinsic device protection
- Thermistor motor protection
- Keypad with a menu-prompted, multi-line graphic display with background lighting
- Interface for communication with the PC for more accurate setting of the parameters as well as for control and monitoring
- Simple adaptation to the motor feeder
- Simple mounting and commissioning
- Display of operating states and fault messages
- Connection to PROFIBUS with optional PROFIBUS DP module
- External display and operator module
- Mains voltages from 200 to 690 V, 50 to 60 Hz
- Can be used up to 60 °C (derating from 40 °C).

#### Soft Starter ES parameterization software

Soft Starter ES software is used for the parameterization, monitoring and service diagnostics of SIRIUS 3RW44 High Feature soft starters.

See [Chapter "Planning and Configuration with SIRIUS"](#).

#### Application

The SIRIUS 3RW44 solid-state soft starters are suitable for the torque-controlled soft starting and smooth ramp-down as well as braking of three-phase asynchronous motors.

#### Application areas

See ["Selection aid for soft starters" on Page 4/7](#).

# SIRIUS 3RW Soft Starters

## 3RW44 Soft Starters for High-Feature Applications

3RW44

### Selection and ordering data

SIRIUS 3RW44 for normal starting (CLASS 10) in inline circuit



Ambient temperature 40 °C					Ambient temperature 50 °C				DT	Normal starting (CLASS 10) in inline circuit	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Rated operational current $I_e$	Rated power of induction motors for rated operational voltage $U_e$				Rated operational current $I_e$	Rated power of induction motors for rated operational voltage $U_e$								
A	230 V kW	400 V kW	500 V kW	690 V kW	1000 V kW	A	200 V hp	230 V hp	460 V hp	575 V hp	Order No.	Price per PU		

Inline circuit, rated operational voltage 200 ... 460 V <sup>1)</sup>																
29	5.5	15	--	--	--	26	7.5	7.5	15	--	▶	3RW44 22-□BC□4	1	1 unit	131	6.500
36	7.5	18.5	--	--	--	32	10	10	20	--	▶	3RW44 23-□BC□4	1	1 unit	131	6.500
47	11	22	--	--	--	42	10	15	25	--	▶	3RW44 24-□BC□4	1	1 unit	131	6.500
57	15	30	--	--	--	51	15	15	30	--	▶	3RW44 25-□BC□4	1	1 unit	131	6.500
77	18.5	37	--	--	--	68	20	20	50	--	▶	3RW44 26-□BC□4	1	1 unit	131	6.500
93	22	45	--	--	--	82	25	25	60	--	▶	3RW44 27-□BC□4	1	1 unit	131	6.500

#### Order No. supplement for connection types

- With screw terminals
- With spring-type terminals

113	30	55	--	--	--	100	30	30	75	--	B	3RW44 34-□BC□4	1	1 unit	131	7.900
134	37	75	--	--	--	117	30	40	75	--	B	3RW44 35-□BC□4	1	1 unit	131	7.900
162	45	90	--	--	--	145	40	50	100	--	B	3RW44 36-□BC□4	1	1 unit	131	7.900
203	55	110	--	--	--	180	50	60	125	--	B	3RW44 43-□BC□4	1	1 unit	131	11.500
250	75	132	--	--	--	215	60	75	150	--	B	3RW44 44-□BC□4	1	1 unit	131	11.500
313	90	160	--	--	--	280	75	100	200	--	B	3RW44 45-□BC□4	1	1 unit	131	11.500
356	110	200	--	--	--	315	100	125	250	--	B	3RW44 46-□BC□4	1	1 unit	131	11.500
432	132	250	--	--	--	385	125	150	300	--	B	3RW44 47-□BC□4	1	1 unit	131	11.500
551	160	315	--	--	--	494	150	200	400	--	C	3RW44 53-□BC□4	1	1 unit	131	50.000
615	200	355	--	--	--	551	150	200	450	--	C	3RW44 54-□BC□4	1	1 unit	131	50.000
693	200	400	--	--	--	615	200	250	500	--	C	3RW44 55-□BC□4	1	1 unit	131	50.000
780	250	450	--	--	--	693	200	250	600	--	C	3RW44 56-□BC□4	1	1 unit	131	50.000
880	250	500	--	--	--	780	250	300	700	--	C	3RW44 57-□BC□4	1	1 unit	131	50.000
970	315	560	--	--	--	850	300	350	750	--	C	3RW44 58-□BC□4	1	1 unit	131	50.000
1076	355	630	--	--	--	970	350	400	850	--	C	3RW44 65-□BC□4	1	1 unit	131	78.000
1214	400	710	--	--	--	1076	350	450	950	--	C	3RW44 66-□BC□4	1	1 unit	131	78.000

#### Order No. supplement for connection types

- With spring-type terminals
- With screw terminals

#### Order No. supplement for the rated control supply voltage $U_s$ <sup>2)</sup>

- 115 V AC
- 230 V AC

<sup>1)</sup> 3RW44 2 soft starters. ... 3RW44 4. with screw terminals: delivery time class ▶ (preferred type).

<sup>2)</sup> Control by way of the internal 24 V DC supply and direct control by means of PLC possible.

#### Note:

Soft starter selection depends on the rated motor current.

Please observe the notes for the selection of soft starters on Page 4/7.

The 3RW44 solid-state soft starters are designed for normal starting (Class 10). (Inertia load of the overall operating mechanism  $J_{Load} < 10 \times J_{Motor}$ ; starting current 350 %  $\times I_e$  for 20 s or similar load). For any other conditions of use, the devices should be selected using the Win-Soft Starter selection and simulation program. For information about rated currents for ambient temperatures  $> 40$  °C and switching frequency, see "Technical specifications".

\* You can order this quantity or a multiple thereof.



# SIRIUS 3RW Soft Starters

## 3RW44 Soft Starters for High-Feature Applications

### 3RW44

Ambient temperature 40 °C					Ambient temperature 50 °C				DT	Normal starting (CLASS 10) in inline circuit	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.			
Rated operational current $I_e$	Rated power of induction motors for rated operational voltage $U_e$				Rated operational current $I_e$	Rated power of induction motors for rated operational voltage $U_e$											
A	230 V kW	400 V kW	500 V kW	690 V kW	1000 V kW	A	200 V hp	230 V hp	460 V hp	575 V hp	Order No.	Price per PU			kg		
<b>Inline circuit, rated operational voltage 400 ... 600 V<sup>1)</sup></b>																	
29	--	15	<b>18.5</b>	--	--	26	--	--	15	<b>20</b>	A	<b>3RW44 22-□BC□5</b>		1	1 unit	131	6.500
36	--	18.5	<b>22</b>	--	--	32	--	--	20	<b>25</b>	A	<b>3RW44 23-□BC□5</b>		1	1 unit	131	6.500
47	--	22	<b>30</b>	--	--	42	--	--	25	<b>30</b>	A	<b>3RW44 24-□BC□5</b>		1	1 unit	131	6.500
57	--	30	<b>37</b>	--	--	51	--	--	30	<b>40</b>	A	<b>3RW44 25-□BC□5</b>		1	1 unit	131	6.500
77	--	37	<b>45</b>	--	--	68	--	--	50	<b>50</b>	A	<b>3RW44 26-□BC□5</b>		1	1 unit	131	6.500
93	--	45	<b>55</b>	--	--	82	--	--	60	<b>75</b>	A	<b>3RW44 27-□BC□5</b>		1	1 unit	131	6.500
<b>Order No. supplement for connection types</b>																	
<ul style="list-style-type: none"> <li>• With screw terminals</li> <li>• With spring-type terminals</li> </ul>																	
113	--	55	<b>75</b>	--	--	100	--	--	75	<b>75</b>	B	<b>3RW44 34-□BC□5</b>		1	1 unit	131	7.900
134	--	75	<b>90</b>	--	--	117	--	--	75	<b>100</b>	B	<b>3RW44 35-□BC□5</b>		1	1 unit	131	7.900
162	--	90	<b>110</b>	--	--	145	--	--	100	<b>125</b>	B	<b>3RW44 36-□BC□5</b>		1	1 unit	131	7.900
203	--	110	<b>132</b>	--	--	180	--	--	125	<b>150</b>	B	<b>3RW44 43-□BC□5</b>		1	1 unit	131	11.500
250	--	132	<b>160</b>	--	--	215	--	--	150	<b>200</b>	B	<b>3RW44 44-□BC□5</b>		1	1 unit	131	11.500
313	--	160	<b>200</b>	--	--	280	--	--	200	<b>250</b>	B	<b>3RW44 45-□BC□5</b>		1	1 unit	131	11.500
356	--	200	<b>250</b>	--	--	315	--	--	250	<b>300</b>	B	<b>3RW44 46-□BC□5</b>		1	1 unit	131	11.500
432	--	250	<b>315</b>	--	--	385	--	--	300	<b>400</b>	B	<b>3RW44 47-□BC□5</b>		1	1 unit	131	11.500
551	--	315	<b>355</b>	--	--	494	--	--	400	<b>500</b>	C	<b>3RW44 53-□BC□5</b>		1	1 unit	131	50.000
615	--	355	<b>400</b>	--	--	551	--	--	450	<b>600</b>	C	<b>3RW44 54-□BC□5</b>		1	1 unit	131	50.000
693	--	400	<b>500</b>	--	--	615	--	--	500	<b>700</b>	C	<b>3RW44 55-□BC□5</b>		1	1 unit	131	50.000
780	--	450	<b>560</b>	--	--	693	--	--	600	<b>750</b>	C	<b>3RW44 56-□BC□5</b>		1	1 unit	131	50.000
880	--	500	<b>630</b>	--	--	780	--	--	700	<b>850</b>	C	<b>3RW44 57-□BC□5</b>		1	1 unit	131	50.000
970	--	560	<b>710</b>	--	--	850	--	--	750	<b>900</b>	C	<b>3RW44 58-□BC□5</b>		1	1 unit	131	50.000
1076	--	630	<b>800</b>	--	--	970	--	--	850	<b>1100</b>	C	<b>3RW44 65-□BC□5</b>		1	1 unit	131	78.000
1214	--	710	<b>900</b>	--	--	1076	--	--	950	<b>1200</b>	C	<b>3RW44 66-□BC□5</b>		1	1 unit	131	78.000

#### Order No. supplement for connection types

- With spring-type terminals
- With screw terminals

#### Order No. supplement for the rated control supply voltage $U_s$ <sup>2)</sup>

- 115 V AC
- 230 V AC

<sup>1)</sup> Soft starter with screw terminals:

3RW44 2. ... 3RW44 4. Delivery time class A,  
3RW44 5. ... 3RW44 6. Delivery time class B.

<sup>2)</sup> Control by way of the internal 24 V DC supply and direct control by means of PLC possible.

#### Note:

Soft starter selection depends on the rated motor current.

Please observe the notes for the selection of soft starters on Page 4/7.

The 3RW44 solid-state soft starters are designed for normal starting (Class 10). (Inertia load of the overall operating mechanism  $J_{Load} < 10 \times J_{Motor}$ ; starting current  $350 \% \times I_e$  for 20 s or similar load). For any other conditions of use, the devices should be selected using the Win-Soft Starter selection and simulation program. For information about rated currents for ambient temperatures  $> 40$  °C and switching frequency, see "Technical specifications".

# SIRIUS 3RW Soft Starters

## 3RW44 Soft Starters for High-Feature Applications

3RW44

Ambient temperature 40 °C						Ambient temperature 50 °C				DT	Normal starting (CLASS 10) in inline circuit	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.		
Rated operational current $I_e$	Rated power of induction motors for rated operational voltage $U_e$					Rated operational current $I_e$	Rated power of induction motors for rated operational voltage $U_e$										
	230 V	400 V	500 V	690 V	1000 V		200 V	230 V	460 V	575 V	Order No.	Price per PU				kg	
A	kW	kW	kW	kW	kW	A	hp	hp	hp	hp							
<b>Inline circuit, rated operational voltage 400 ... 690 V</b>																	
29	--	15	18.5	<b>30</b>	--	26	--	--	15	<b>20</b>	B	<b>3RW44 22-□BC□6</b>		1	1 unit	131	6.500
36	--	18.5	22	<b>37</b>	--	32	--	--	20	<b>25</b>	B	<b>3RW44 23-□BC□6</b>		1	1 unit	131	6.500
47	--	22	30	<b>45</b>	--	42	--	--	25	<b>30</b>	B	<b>3RW44 24-□BC□6</b>		1	1 unit	131	6.500
57	--	30	37	<b>55</b>	--	51	--	--	30	<b>40</b>	B	<b>3RW44 25-□BC□6</b>		1	1 unit	131	6.500
77	--	37	45	<b>75</b>	--	68	--	--	50	<b>50</b>	B	<b>3RW44 26-□BC□6</b>		1	1 unit	131	6.500
93	--	45	55	<b>90</b>	--	82	--	--	60	<b>75</b>	B	<b>3RW44 27-□BC□6</b>		1	1 unit	131	6.500
<b>Order No. supplement for connection types</b>																	
• With screw terminals																	
• With spring-type terminals																	
113	--	55	75	<b>110</b>	--	100	--	--	75	<b>75</b>	B	<b>3RW44 34-□BC□6</b>		1	1 unit	131	7.900
134	--	75	90	<b>132</b>	--	117	--	--	75	<b>100</b>	B	<b>3RW44 35-□BC□6</b>		1	1 unit	131	7.900
162	--	90	110	<b>160</b>	--	145	--	--	100	<b>125</b>	B	<b>3RW44 36-□BC□6</b>		1	1 unit	131	7.900
203	--	110	132	<b>200</b>	--	180	--	--	125	<b>150</b>	B	<b>3RW44 43-□BC□6</b>		1	1 unit	131	11.500
250	--	132	160	<b>250</b>	--	215	--	--	150	<b>200</b>	B	<b>3RW44 44-□BC□6</b>		1	1 unit	131	11.500
313	--	160	200	<b>315</b>	--	280	--	--	200	<b>250</b>	B	<b>3RW44 45-□BC□6</b>		1	1 unit	131	11.500
356	--	200	250	<b>355</b>	--	315	--	--	250	<b>300</b>	B	<b>3RW44 46-□BC□6</b>		1	1 unit	131	11.500
432	--	250	315	<b>400</b>	--	385	--	--	300	<b>400</b>	B	<b>3RW44 47-□BC□6</b>		1	1 unit	131	11.500
551	--	315	355	<b>560</b>	--	494	--	--	400	<b>500</b>	C	<b>3RW44 53-□BC□6</b>		1	1 unit	131	50.000
615	--	355	400	<b>630</b>	--	551	--	--	450	<b>600</b>	C	<b>3RW44 54-□BC□6</b>		1	1 unit	131	50.000
693	--	400	500	<b>710</b>	--	615	--	--	500	<b>700</b>	C	<b>3RW44 55-□BC□6</b>		1	1 unit	131	50.000
780	--	450	560	<b>800</b>	--	693	--	--	600	<b>750</b>	C	<b>3RW44 56-□BC□6</b>		1	1 unit	131	50.000
880	--	500	630	<b>900</b>	--	780	--	--	700	<b>850</b>	C	<b>3RW44 57-□BC□6</b>		1	1 unit	131	50.000
970	--	560	710	<b>1000</b>	--	850	--	--	750	<b>900</b>	C	<b>3RW44 58-□BC□6</b>		1	1 unit	131	50.000
1076	--	630	800	<b>1100</b>	--	970	--	--	850	<b>1100</b>	C	<b>3RW44 65-□BC□6</b>		1	1 unit	131	78.000
1214	--	710	900	<b>1200</b>	--	1076	--	--	950	<b>1200</b>	C	<b>3RW44 66-□BC□6</b>		1	1 unit	131	78.000

**Order No. supplement for connection types**

- With spring-type terminals
- With screw terminals

**Order No. supplement for the rated control supply voltage  $U_s$ <sup>1)</sup>**

- 115 V AC
- 230 V AC

<sup>1)</sup> Control by way of the internal 24 V DC supply and direct control by means of PLC possible.

**Note:**

Soft starter selection depends on the rated motor current.

Please observe the notes for the selection of soft starters on Page 4/7.

The 3RW44 solid-state soft starters are designed for normal starting (Class 10). (Inertia load of the overall operating mechanism  $J_{Load} < 10 \times J_{Motor}$ ; starting current  $350 \% \times I_e$  for 20 s or similar load). For any other conditions of use, the devices should be selected using the Win-Soft Starter selection and simulation program. For information about rated currents for ambient temperatures  $> 40$  °C and switching frequency, see "Technical specifications".

# SIRIUS 3RW Soft Starters

## 3RW44 Soft Starters for High-Feature Applications

### 3RW44

SIRIUS 3RW44 for heavy starting (CLASS 20) in inline circuit



3RW44 27-1BC44



3RW44 36-6BC44



3RW44 47-6BC44

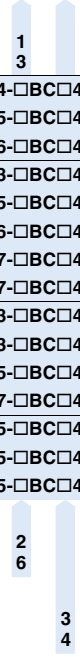


3RW44 58-6BC44



3RW44 66-6BC44

Ambient temperature 40 °C						Ambient temperature 50 °C				DT	Heavy starting (CLASS 20) in inline circuit	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg		
Rated operational current $I_e$	Rated power of induction motors for rated operational voltage $U_e$					Rated operational current $I_e$	Rated power of induction motors for rated operational voltage $U_e$										
A	230 V	400 V	500 V	690 V	1000 V	A	200 V	230 V	460 V	575 V	Order No.	Price per PU					
	kW	kW	kW	kW	kW		hp	hp	hp	hp							
<b>Inline circuit, rated operational voltage 200 ... 460 V<sup>1)</sup></b>																	
29	5.5	15	--	--	--	26	7.5	7.5	15	--	▶	3RW44 22-□BC□4		1	1 unit	131	6.500
36	7.5	18.5	--	--	--	32	10	10	20	--	▶	3RW44 23-□BC□4		1	1 unit	131	6.500
47	11	22	--	--	--	42	10	15	25	--	▶	3RW44 24-□BC□4		1	1 unit	131	6.500
57	15	30	--	--	--	51	15	15	30	--	▶	3RW44 25-□BC□4		1	1 unit	131	6.500
77	18.5	37	--	--	--	68	20	20	50	--	▶	3RW44 27-□BC□4		1	1 unit	131	6.500
<b>Order No. supplement for connection types</b>																	
<ul style="list-style-type: none"> <li>• With screw terminals</li> <li>• With spring-type terminals</li> </ul>																	
93	22	45	--	--	--	82	25	25	60	--	B	3RW44 34-□BC□4		1	1 unit	131	7.900
113	30	55	--	--	--	100	30	30	75	--	B	3RW44 35-□BC□4		1	1 unit	131	7.900
134	37	75	--	--	--	117	30	40	75	--	B	3RW44 36-□BC□4		1	1 unit	131	7.900
162	45	90	--	--	--	145	40	50	100	--	B	3RW44 43-□BC□4		1	1 unit	131	11.500
203	55	110	--	--	--	180	50	60	125	--	B	3RW44 45-□BC□4		1	1 unit	131	11.500
250	75	132	--	--	--	215	60	75	150	--	B	3RW44 46-□BC□4		1	1 unit	131	11.500
313	90	160	--	--	--	280	75	100	200	--	B	3RW44 47-□BC□4		1	1 unit	131	11.500
356	110	200	--	--	--	315	100	125	250	--	B	3RW44 47-□BC□4		1	1 unit	131	11.500
432	132	250	--	--	--	385	125	150	300	--	C	3RW44 53-□BC□4		1	1 unit	131	50.000
551	160	315	--	--	--	494	150	200	400	--	C	3RW44 53-□BC□4		1	1 unit	131	50.000
615	200	355	--	--	--	551	150	200	450	--	C	3RW44 55-□BC□4		1	1 unit	131	50.000
693	200	400	--	--	--	615	200	250	500	--	C	3RW44 57-□BC□4		1	1 unit	131	50.000
780	250	450	--	--	--	693	200	250	600	--	C	3RW44 65-□BC□4		1	1 unit	131	78.000
880	250	500	--	--	--	780	250	300	700	--	C	3RW44 65-□BC□4		1	1 unit	131	78.000
970	315	560	--	--	--	850	300	350	750	--	C	3RW44 65-□BC□4		1	1 unit	131	78.000
<b>Order No. supplement for connection types</b>																	
<ul style="list-style-type: none"> <li>• With spring-type terminals</li> <li>• With screw terminals</li> </ul>																	
<b>Order No. supplement for the rated control supply voltage <math>U_s</math><sup>2)</sup></b>																	
<ul style="list-style-type: none"> <li>• 115 V AC</li> <li>• 230 V AC</li> </ul>																	



<sup>1)</sup> 3RW44 2 soft starters, ... 3RW44 4, with screw terminals: delivery time class ▶ (preferred type).

<sup>2)</sup> Control by way of the internal 24 V DC supply and direct control by means of PLC possible.

**Note:**  
Soft starter selection depends on the rated motor current.

Please observe the notes for the selection of soft starters on Page 4/7.

The 3RW44 solid-state soft starters are designed for normal starting (Class 10). (Inertia load of the overall operating mechanism  $J_{Load} < 10 \times J_{Motor}$ ; starting current  $350 \% \times I_e$  for 20 s or similar load). For any other conditions of use, the devices should be selected using the Win-Soft Starter selection and simulation program. For information about rated currents for ambient temperatures > 40 °C and switching frequency, see "Technical specifications".

# SIRIUS 3RW Soft Starters

## 3RW44 Soft Starters for High-Feature Applications

3RW44

Ambient temperature 40 °C						Ambient temperature 50 °C				DT	Heavy starting (CLASS 20) in inline circuit	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.	
Rated operational current $I_e$	Rated power of induction motors for rated operational voltage $U_e$					Rated operational current $I_e$	Rated power of induction motors for rated operational voltage $U_e$									
	230 V	400 V	500 V	690 V	1000 V		200 V	230 V	460 V	575 V	Order No.	Price per PU	kg			
A	kW	kW	kW	kW	kW	A	hp	hp	hp	hp						
<b>Inline circuit, rated operational voltage 400 ... 600 V<sup>1)</sup></b>																
29	--	15	<b>18.5</b>	--	--	26	--	--	15	<b>20</b>	A	<b>3RW44 22-□BC□5</b>	1	1 unit	131	6.500
36	--	18.5	<b>22</b>	--	--	32	--	--	20	<b>25</b>	A	<b>3RW44 23-□BC□5</b>	1	1 unit	131	6.500
47	--	22	<b>30</b>	--	--	42	--	--	25	<b>30</b>	A	<b>3RW44 24-□BC□5</b>	1	1 unit	131	6.500
57	--	30	<b>37</b>	--	--	51	--	--	30	<b>40</b>	A	<b>3RW44 25-□BC□5</b>	1	1 unit	131	6.500
77	--	37	<b>45</b>	--	--	68	--	--	50	<b>50</b>	A	<b>3RW44 27-□BC□5</b>	1	1 unit	131	6.500
<b>Order No. supplement for connection types</b>																
<ul style="list-style-type: none"> <li>• With screw terminals</li> <li>• With spring-type terminals</li> </ul>																
93	--	45	<b>55</b>	--	--	82	--	--	60	<b>75</b>	B	<b>3RW44 34-□BC□5</b>	1	1 unit	131	7.900
113	--	55	<b>75</b>	--	--	100	--	--	75	<b>75</b>	B	<b>3RW44 35-□BC□5</b>	1	1 unit	131	7.900
134	--	75	<b>90</b>	--	--	117	--	--	75	<b>100</b>	B	<b>3RW44 36-□BC□5</b>	1	1 unit	131	7.900
162	--	90	<b>110</b>	--	--	145	--	--	100	<b>125</b>	B	<b>3RW44 43-□BC□5</b>	1	1 unit	131	11.500
203	--	110	<b>132</b>	--	--	180	--	--	125	<b>150</b>	B	<b>3RW44 45-□BC□5</b>	1	1 unit	131	11.500
250	--	132	<b>160</b>	--	--	215	--	--	150	<b>200</b>	B	<b>3RW44 46-□BC□5</b>	1	1 unit	131	11.500
313	--	160	<b>200</b>	--	--	280	--	--	200	<b>250</b>	B	<b>3RW44 47-□BC□5</b>	1	1 unit	131	11.500
356	--	200	<b>250</b>	--	--	315	--	--	250	<b>300</b>	B	<b>3RW44 47-□BC□5</b>	1	1 unit	131	11.500
432	--	250	<b>315</b>	--	--	385	--	--	300	<b>400</b>	C	<b>3RW44 53-□BC□5</b>	1	1 unit	131	50.000
551	--	315	<b>355</b>	--	--	494	--	--	400	<b>500</b>	C	<b>3RW44 53-□BC□5</b>	1	1 unit	131	50.000
615	--	355	<b>400</b>	--	--	551	--	--	450	<b>600</b>	C	<b>3RW44 54-□BC□5</b>	1	1 unit	131	50.000
693	--	400	<b>500</b>	--	--	615	--	--	500	<b>700</b>	C	<b>3RW44 57-□BC□5</b>	1	1 unit	131	50.000
780	--	450	<b>560</b>	--	--	693	--	--	600	<b>750</b>	C	<b>3RW44 65-□BC□5</b>	1	1 unit	131	78.000
880	--	500	<b>630</b>	--	--	780	--	--	700	<b>850</b>	C	<b>3RW44 65-□BC□5</b>	1	1 unit	131	78.000
970	--	560	<b>710</b>	--	--	850	--	--	750	<b>900</b>	C	<b>3RW44 65-□BC□5</b>	1	1 unit	131	78.000

**Order No. supplement for connection types**

- With spring-type terminals
- With screw terminals

**Order No. supplement for the rated control supply voltage  $U_c$ <sup>2)</sup>**

- 115 V AC
- 230 V AC

<sup>1)</sup> Soft starter with screw terminals:  
3RW44 2... 3RW44 4: Delivery time class A,  
3RW44 5... 3RW44 6: Delivery time class B.

<sup>2)</sup> Control by way of the internal 24 V DC supply and direct control by means of PLC possible.

**Note:**

Soft starter selection depends on the rated motor current.

Please observe the notes for the selection of soft starters on Page 4/7.

The 3RW44 solid-state soft starters are designed for normal starting (Class 10). (Inertia load of the overall operating mechanism  $J_{Load} < 10 \times J_{Motor}$ ; starting current  $350 \% \times I_e$  for 20 s or similar load). For any other conditions of use, the devices should be selected using the Win-Soft Starter selection and simulation program. For information about rated currents for ambient temperatures  $> 40$  °C and switching frequency, see "Technical specifications".

# SIRIUS 3RW Soft Starters

## 3RW44 Soft Starters for High-Feature Applications

### 3RW44

Ambient temperature 40 °C						Ambient temperature 50 °C				DT	Heavy starting (CLASS 20) in inline circuit	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.		
Rated operational current $I_e$	Rated power of induction motors for rated operational voltage $U_e$					Rated operational current $I_e$	Rated power of induction motors for rated operational voltage $U_e$										
A	230 V kW	400 V kW	500 V kW	690 V kW	1000 V kW	A	200 V hp	230 V hp	460 V hp	575 V hp	Order No.	Price per PU				kg	
<b>Inline circuit, rated operational voltage 400 ... 690 V</b>																	
29	--	15	18.5	<b>30</b>	--	26	--	--	15	<b>20</b>	B	<b>3RW44 22-□BC□6</b>		1	1 unit	131	6.500
36	--	18.5	22	<b>37</b>	--	32	--	--	20	<b>25</b>	B	<b>3RW44 23-□BC□6</b>		1	1 unit	131	6.500
47	--	22	30	<b>45</b>	--	42	--	--	25	<b>30</b>	B	<b>3RW44 24-□BC□6</b>		1	1 unit	131	6.500
57	--	30	37	<b>55</b>	--	51	--	--	30	<b>40</b>	B	<b>3RW44 25-□BC□6</b>		1	1 unit	131	6.500
77	--	37	45	<b>75</b>	--	68	--	--	50	<b>50</b>	B	<b>3RW44 27-□BC□6</b>		1	1 unit	131	6.500
<b>Order No. supplement for connection types</b>																	
<ul style="list-style-type: none"> <li>With screw terminals</li> <li>With spring-type terminals</li> </ul>											1						
											3						
93	--	45	55	<b>90</b>	--	82	--	--	60	<b>75</b>	B	<b>3RW44 34-□BC□6</b>		1	1 unit	131	7.900
113	--	55	75	<b>110</b>	--	100	--	--	75	<b>75</b>	B	<b>3RW44 35-□BC□6</b>		1	1 unit	131	7.900
134	--	75	90	<b>132</b>	--	117	--	--	75	<b>100</b>	B	<b>3RW44 36-□BC□6</b>		1	1 unit	131	7.900
162	--	90	110	<b>160</b>	--	145	--	--	100	<b>125</b>	B	<b>3RW44 43-□BC□6</b>		1	1 unit	131	11.500
203	--	110	132	<b>200</b>	--	180	--	--	125	<b>150</b>	B	<b>3RW44 45-□BC□6</b>		1	1 unit	131	11.500
250	--	132	160	<b>250</b>	--	215	--	--	150	<b>200</b>	B	<b>3RW44 46-□BC□6</b>		1	1 unit	131	11.500
313	--	160	200	<b>315</b>	--	280	--	--	200	<b>250</b>	B	<b>3RW44 47-□BC□6</b>		1	1 unit	131	11.500
356	--	200	250	<b>355</b>	--	315	--	--	250	<b>300</b>	B	<b>3RW44 47-□BC□6</b>		1	1 unit	131	11.500
432	--	250	315	<b>400</b>	--	385	--	--	300	<b>400</b>	C	<b>3RW44 53-□BC□6</b>		1	1 unit	131	50.000
551	--	315	355	<b>560</b>	--	494	--	--	400	<b>500</b>	C	<b>3RW44 53-□BC□6</b>		1	1 unit	131	50.000
615	--	355	400	<b>630</b>	--	551	--	--	450	<b>600</b>	C	<b>3RW44 55-□BC□6</b>		1	1 unit	131	50.000
693	--	400	500	<b>710</b>	--	615	--	--	500	<b>700</b>	C	<b>3RW44 57-□BC□6</b>		1	1 unit	131	50.000
780	--	450	560	<b>800</b>	--	693	--	--	600	<b>750</b>	C	<b>3RW44 65-□BC□6</b>		1	1 unit	131	78.000
880	--	500	630	<b>900</b>	--	780	--	--	700	<b>850</b>	C	<b>3RW44 65-□BC□6</b>		1	1 unit	131	78.000
970	--	560	710	<b>1000</b>	--	850	--	--	750	<b>900</b>	C	<b>3RW44 65-□BC□6</b>		1	1 unit	131	78.000

#### Order No. supplement for connection types

- With spring-type terminals
- With screw terminals

2  
6

#### Order No. supplement for the rated control supply voltage $U_s$ <sup>1)</sup>

- 115 V AC
- 230 V AC

3  
4

<sup>1)</sup> Control by way of the internal 24 V DC supply and direct control by means of PLC possible.

#### Note:

Soft starter selection depends on the rated motor current.

Please observe the notes for the selection of soft starters on Page 4/7.

The 3RW44 solid-state soft starters are designed for normal starting (Class 10). (Inertia load of the overall operating mechanism  $J_{Load} < 10 \times J_{Motor}$ ; starting current  $350 \% \times I_e$  for 20 s or similar load). For any other conditions of use, the devices should be selected using the Win-Soft Starter selection and simulation program. For information about rated currents for ambient temperatures  $> 40$  °C and switching frequency, see "Technical specifications".

# SIRIUS 3RW Soft Starters

## 3RW44 Soft Starters for High-Feature Applications

3RW44

SIRIUS 3RW44 for very heavy starting (CLASS 30) in inline circuit



Ambient temperature 40 °C						Ambient temperature 50 °C				DT	Very heavy starting (CLASS 30) in inline circuit	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg		
Rated operational current $I_e$	Rated power of induction motors for rated operational voltage $U_e$					Rated operational current $I_e$	Rated power of induction motors for rated operational voltage $U_e$										
A	230 V	400 V	500 V	690 V	1000 V	A	200 V	230 V	460 V	575 V	Order No.	Price per PU					
	kW	kW	kW	kW	kW		hp	hp	hp	hp							
<b>Inline circuit, rated operational voltage 200 ... 460 V<sup>1)</sup></b>																	
29	5.5	15	--	--	--	26	7.5	7.5	15	--	▶	3RW44 22-□BC□4		1	1 unit	131	6.500
36	7.5	18.5	--	--	--	32	10	10	20	--	▶	3RW44 24-□BC□4		1	1 unit	131	6.500
47	11	22	--	--	--	42	10	15	25	--	▶	3RW44 25-□BC□4		1	1 unit	131	6.500
57	15	30	--	--	--	51	15	15	30	--	▶	3RW44 25-□BC□4		1	1 unit	131	6.500
<b>Order No. supplement for connection types</b>																	
• With screw terminals																	
• With spring-type terminals																	
77	18.5	37	--	--	--	68	20	20	50	--	B	3RW44 34-□BC□4		1	1 unit	131	7.900
93	22	45	--	--	--	82	25	25	60	--	B	3RW44 35-□BC□4		1	1 unit	131	7.900
113	30	55	--	--	--	100	30	30	75	--	B	3RW44 43-□BC□4		1	1 unit	131	11.500
134	37	75	--	--	--	117	30	40	75	--	B	3RW44 43-□BC□4		1	1 unit	131	11.500
162	45	90	--	--	--	145	40	50	100	--	B	3RW44 43-□BC□4		1	1 unit	131	11.500
203	55	110	--	--	--	180	50	60	125	--	B	3RW44 46-□BC□4		1	1 unit	131	11.500
250	75	132	--	--	--	215	60	75	150	--	B	3RW44 47-□BC□4		1	1 unit	131	11.500
313	90	160	--	--	--	280	75	100	200	--	C	3RW44 53-□BC□4		1	1 unit	131	50.000
356	110	200	--	--	--	315	100	125	250	--	C	3RW44 53-□BC□4		1	1 unit	131	50.000
432	132	250	--	--	--	385	125	150	300	--	C	3RW44 53-□BC□4		1	1 unit	131	50.000
551	160	315	--	--	--	494	150	200	400	--	C	3RW44 55-□BC□4		1	1 unit	131	50.000
615	200	355	--	--	--	551	150	200	450	--	C	3RW44 58-□BC□4		1	1 unit	131	50.000
693	200	400	--	--	--	615	200	250	500	--	C	3RW44 65-□BC□4		1	1 unit	131	78.000
780	250	450	--	--	--	693	200	250	600	--	C	3RW44 65-□BC□4		1	1 unit	131	78.000
880	250	500	--	--	--	780	250	300	700	--	C	3RW44 65-□BC□4		1	1 unit	131	78.000
970	315	560	--	--	--	850	300	350	750	--	C	3RW44 66-□BC□4		1	1 unit	131	78.000

Order No. supplement for connection types

- With spring-type terminals
- With screw terminals

Order No. supplement for the rated control supply voltage  $U_s$ <sup>2)</sup>

- 115 V AC
- 230 V AC

<sup>1)</sup> 3RW44 2 soft starters, ... 3RW44 4, with screw terminals: delivery time class ▶ (preferred type).

<sup>2)</sup> Control by way of the internal 24 V DC supply and direct control by means of PLC possible.

**Note:**

Soft starter selection depends on the rated motor current.

Please observe the notes for the selection of soft starters on Page 4/7.

The 3RW44 solid-state soft starters are designed for normal starting (Class 10). (Inertia load of the overall operating mechanism  $J_{Load} < 10 \times J_{Motor}$ ; starting current  $350 \% \times I_e$  for 20 s or similar load). For any other conditions of use, the devices should be selected using the Win-Soft Starter selection and simulation program. For information about rated currents for ambient temperatures > 40 °C and switching frequency, see "Technical specifications".



# SIRIUS 3RW Soft Starters

## 3RW44 Soft Starters for High-Feature Applications

### 3RW44

Ambient temperature 40 °C					Ambient temperature 50 °C				DT	Very heavy starting (CLASS 30) in inline circuit	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.  kg		
Rated operational current $I_e$	Rated power of induction motors for rated operational voltage $U_e$				Rated operational current $I_e$	Rated power of induction motors for rated operational voltage $U_e$									Order No.	Price per PU
A	230 V kW	400 V kW	500 V kW	690 V kW	1000 V kW	A	200 V hp	230 V hp	460 V hp	575 V hp						
<b>Inline circuit, rated operational voltage 400 ... 600 V<sup>1)</sup></b>																
29	--	15	<b>18.5</b>	--	--	26	--	--	15	<b>20</b>	A	<b>3RW44 22-□BC□5</b>	1	1 unit	131	6.500
36	--	18.5	<b>22</b>	--	--	32	--	--	20	<b>25</b>	A	<b>3RW44 24-□BC□5</b>	1	1 unit	131	6.500
47	--	22	<b>30</b>	--	--	42	--	--	25	<b>30</b>	A	<b>3RW44 25-□BC□5</b>	1	1 unit	131	6.500
57	--	30	<b>37</b>	--	--	51	--	--	30	<b>40</b>	A	<b>3RW44 25-□BC□5</b>	1	1 unit	131	6.500
<b>Order No. supplement for connection types</b>																
• With screw terminals																
• With spring-type terminals																
77	--	37	<b>45</b>	--	--	68	--	--	50	<b>50</b>	B	<b>3RW44 34-□BC□5</b>	1	1 unit	131	7.900
93	--	45	<b>55</b>	--	--	82	--	--	60	<b>75</b>	B	<b>3RW44 35-□BC□5</b>	1	1 unit	131	7.900
113	--	55	<b>75</b>	--	--	100	--	--	75	<b>75</b>	B	<b>3RW44 43-□BC□5</b>	1	1 unit	131	11.500
134	--	75	<b>90</b>	--	--	117	--	--	75	<b>100</b>	B	<b>3RW44 43-□BC□5</b>	1	1 unit	131	11.500
162	--	90	<b>110</b>	--	--	145	--	--	100	<b>125</b>	B	<b>3RW44 43-□BC□5</b>	1	1 unit	131	11.500
203	--	110	<b>132</b>	--	--	180	--	--	125	<b>150</b>	B	<b>3RW44 46-□BC□5</b>	1	1 unit	131	11.500
250	--	132	<b>160</b>	--	--	215	--	--	150	<b>200</b>	B	<b>3RW44 47-□BC□5</b>	1	1 unit	131	11.500
313	--	160	<b>200</b>	--	--	280	--	--	200	<b>250</b>	C	<b>3RW44 53-□BC□5</b>	1	1 unit	131	50.000
356	--	200	<b>250</b>	--	--	315	--	--	250	<b>300</b>	C	<b>3RW44 53-□BC□5</b>	1	1 unit	131	50.000
432	--	250	<b>315</b>	--	--	385	--	--	300	<b>400</b>	C	<b>3RW44 53-□BC□5</b>	1	1 unit	131	50.000
551	--	315	<b>355</b>	--	--	494	--	--	400	<b>500</b>	C	<b>3RW44 55-□BC□5</b>	1	1 unit	131	50.000
615	--	355	<b>400</b>	--	--	551	--	--	450	<b>600</b>	C	<b>3RW44 58-□BC□5</b>	1	1 unit	131	50.000
693	--	400	<b>500</b>	--	--	615	--	--	500	<b>700</b>	C	<b>3RW44 65-□BC□5</b>	1	1 unit	131	78.000
780	--	450	<b>560</b>	--	--	693	--	--	600	<b>750</b>	C	<b>3RW44 65-□BC□5</b>	1	1 unit	131	78.000
880	--	500	<b>630</b>	--	--	780	--	--	700	<b>850</b>	C	<b>3RW44 65-□BC□5</b>	1	1 unit	131	78.000
--	--	--	--	--	--	850	--	--	750	<b>900</b>	C	<b>3RW44 66-□BC□5</b>	1	1 unit	131	78.000

#### Order No. supplement for connection types

- With spring-type terminals
- With screw terminals

#### Order No. supplement for the rated control supply voltage $U_c$ <sup>2)</sup>

- 115 V AC
- 230 V AC

<sup>1)</sup> Soft starter with screw terminals:  
3RW44 2... 3RW44 4: Delivery time class A,  
3RW44 5... 3RW44 6: Delivery time class B.

<sup>2)</sup> Control by way of the internal 24 V DC supply and direct control by means of PLC possible.

#### Note:

Soft starter selection depends on the rated motor current.

Please observe the notes for the selection of soft starters on Page 4/7.

The 3RW44 solid-state soft starters are designed for normal starting (Class 10). (Inertia load of the overall operating mechanism  $J_{Load} < 10 \times J_{Motor}$ ; starting current  $350 \% \times I_e$  for 20 s or similar load). For any other conditions of use, the devices should be selected using the Win-Soft Starter selection and simulation program. For information about rated currents for ambient temperatures  $> 40^\circ\text{C}$  and switching frequency, see "Technical specifications".

# SIRIUS 3RW Soft Starters

## 3RW44 Soft Starters for High-Feature Applications

3RW44

Ambient temperature 40 °C						Ambient temperature 50 °C				DT	Very heavy starting (CLASS 30) in inline circuit	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.	
Rated operational current $I_e$	Rated power of induction motors for rated operational voltage $U_e$					Rated operational current $I_e$	Rated power of induction motors for rated operational voltage $U_e$									
A	230 V	400 V	500 V	690 V	1000 V	A	200 V	230 V	460 V	575 V	Order No.	Price per PU			kg	
	kW	kW	kW	kW	kW		hp	hp	hp	hp						
<b>Inline circuit, rated operational voltage 400 ... 690 V</b>																
29	--	15	18,5	<b>30</b>	--	26	--	--	15	<b>20</b>	B	<b>3RW44 22-□BC□6</b>	1	1 unit	131	6.500
36	--	18,5	22	<b>37</b>	--	32	--	--	20	<b>25</b>	B	<b>3RW44 24-□BC□6</b>	1	1 unit	131	6.500
47	--	22	30	<b>45</b>	--	42	--	--	25	<b>30</b>	B	<b>3RW44 25-□BC□6</b>	1	1 unit	131	6.500
57	--	30	37	<b>55</b>	--	51	--	--	30	<b>40</b>	B	<b>3RW44 25-□BC□6</b>	1	1 unit	131	6.500
<b>Order No. supplement for connection types</b>																
• With screw terminals																
• With spring-type terminals																
77	--	37	45	<b>75</b>	--	68	--	--	50	<b>50</b>	B	<b>3RW44 34-□BC□6</b>	1	1 unit	131	7.900
93	--	45	55	<b>90</b>	--	82	--	--	60	<b>75</b>	B	<b>3RW44 35-□BC□6</b>	1	1 unit	131	7.900
113	--	55	75	<b>110</b>	--	100	--	--	75	<b>75</b>	B	<b>3RW44 43-□BC□6</b>	1	1 unit	131	11.500
134	--	75	90	<b>132</b>	--	117	--	--	75	<b>100</b>	B	<b>3RW44 43-□BC□6</b>	1	1 unit	131	11.500
162	--	90	110	<b>160</b>	--	145	--	--	100	<b>125</b>	B	<b>3RW44 43-□BC□6</b>	1	1 unit	131	11.500
203	--	110	132	<b>200</b>	--	180	--	--	125	<b>150</b>	B	<b>3RW44 46-□BC□6</b>	1	1 unit	131	11.500
250	--	132	160	<b>250</b>	--	215	--	--	150	<b>200</b>	B	<b>3RW44 47-□BC□6</b>	1	1 unit	131	11.500
313	--	160	200	<b>315</b>	--	280	--	--	200	<b>250</b>	C	<b>3RW44 53-□BC□6</b>	1	1 unit	131	50.000
356	--	200	250	<b>355</b>	--	315	--	--	250	<b>300</b>	C	<b>3RW44 53-□BC□6</b>	1	1 unit	131	50.000
432	--	250	315	<b>400</b>	--	385	--	--	300	<b>400</b>	C	<b>3RW44 53-□BC□6</b>	1	1 unit	131	50.000
551	--	315	355	<b>560</b>	--	494	--	--	400	<b>500</b>	C	<b>3RW44 55-□BC□6</b>	1	1 unit	131	50.000
615	--	355	400	<b>630</b>	--	551	--	--	450	<b>600</b>	C	<b>3RW44 58-□BC□6</b>	1	1 unit	131	50.000
693	--	400	500	<b>710</b>	--	615	--	--	500	<b>700</b>	C	<b>3RW44 65-□BC□6</b>	1	1 unit	131	78.000
780	--	450	560	<b>800</b>	--	693	--	--	600	<b>750</b>	C	<b>3RW44 65-□BC□6</b>	1	1 unit	131	78.000
880	--	500	630	<b>900</b>	--	780	--	--	700	<b>850</b>	C	<b>3RW44 65-□BC□6</b>	1	1 unit	131	78.000
--	--	--	--	--	--	850	--	--	750	<b>900</b>	C	<b>3RW44 66-□BC□6</b>	1	1 unit	131	78.000

**Order No. supplement for connection types**

- With spring-type terminals
- With screw terminals

**Order No. supplement for the rated control supply voltage  $U_s$ <sup>1)</sup>**

- 115 V AC
- 230 V AC

<sup>1)</sup> Control by way of the internal 24 V DC supply and direct control by means of PLC possible.

**Note:**

Soft starter selection depends on the rated motor current.

Please observe the notes for the selection of soft starters on Page 4/7.

The 3RW44 solid-state soft starters are designed for normal starting (Class 10). (Inertia load of the overall operating mechanism  $J_{Load} < 10 \times J_{Motor}$ ; starting current  $350 \% \times I_e$  for 20 s or similar load). For any other conditions of use, the devices should be selected using the Win-Soft Starter selection and simulation program. For information about rated currents for ambient temperatures  $> 40$  °C and switching frequency, see "Technical specifications".

# SIRIUS 3RW Soft Starters

## 3RW44 Soft Starters for High-Feature Applications

### 3RW44

SIRIUS 3RW44 for normal starting (CLASS 10) in inside-delta circuit



3RW44 27-1BC44

3RW44 36-6BC44

3RW44 47-6BC44

3RW44 58-6BC44

3RW44 66-6BC44

Ambient temperature 40 °C						Ambient temperature 50 °C				DT	Normal starting (CLASS 10) in inside-delta circuit	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg	
Rated operational current $I_e^{1)}$	Rated power of induction motors for rated operational voltage $U_e$					Rated operational current $I_e$	Rated power of induction motors for rated operational voltage $U_e$									Order No.
A	230 V	400 V	500 V	690 V	1000 V	A	200 V	230 V	460 V	575 V						
	kW	kW	kW	kW	kW		hp	hp	hp	hp						
<b>Inside-delta circuit, rated operational voltage 200 ... 460 V<sup>2)</sup></b>																
50	15	22	--	--	--	45	10	15	30	--	▶	3RW44 22-□BC□4	1	1 unit	131	6.500
62	18.5	30	--	--	--	55	15	20	40	--	▶	3RW44 23-□BC□4	1	1 unit	131	6.500
81	22	45	--	--	--	73	20	25	50	--	▶	3RW44 24-□BC□4	1	1 unit	131	6.500
99	30	55	--	--	--	88	25	30	60	--	▶	3RW44 25-□BC□4	1	1 unit	131	6.500
133	37	75	--	--	--	118	30	40	75	--	▶	3RW44 26-□BC□4	1	1 unit	131	6.500
161	45	90	--	--	--	142	40	50	100	--	▶	3RW44 27-□BC□4	1	1 unit	131	6.500
<b>Order No. supplement for connection types</b>																
• With screw terminals																
• With spring-type terminals																
196	55	110	--	--	--	173	50	60	125	--	B	3RW44 34-□BC□4	1	1 unit	131	7.900
232	75	132	--	--	--	203	60	75	150	--	B	3RW44 35-□BC□4	1	1 unit	131	7.900
281	90	160	--	--	--	251	75	100	200	--	B	3RW44 36-□BC□4	1	1 unit	131	7.900
352	110	200	--	--	--	312	100	125	250	--	B	3RW44 43-□BC□4	1	1 unit	131	11.500
433	132	250	--	--	--	372	125	150	300	--	B	3RW44 44-□BC□4	1	1 unit	131	11.500
542	160	315	--	--	--	485	150	200	400	--	B	3RW44 45-□BC□4	1	1 unit	131	11.500
617	200	355	--	--	--	546	150	200	450	--	B	3RW44 46-□BC□4	1	1 unit	131	11.500
748	250	400	--	--	--	667	200	250	600	--	B	3RW44 47-□BC□4	1	1 unit	131	11.500
954	315	560	--	--	--	856	300	350	750	--	C	3RW44 53-□BC□4	1	1 unit	131	50.000
1065	355	630	--	--	--	954	350	400	850	--	C	3RW44 54-□BC□4	1	1 unit	131	50.000
1200	400	710	--	--	--	1065	350	450	950	--	C	3RW44 55-□BC□4	1	1 unit	131	50.000
1351	450	800	--	--	--	1200	450	500	1050	--	C	3RW44 56-□BC□4	1	1 unit	131	50.000
1524	500	900	--	--	--	1351	450	600	1200	--	C	3RW44 57-□BC□4	1	1 unit	131	50.000
1680	560	1000	--	--	--	1472	550	650	1300	--	C	3RW44 58-□BC□4	1	1 unit	131	50.000
1864	630	1100	--	--	--	1680	650	750	1500	--	C	3RW44 65-□BC□4	1	1 unit	131	78.000
2103	710	1200	--	--	--	1864	700	850	1700	--	C	3RW44 66-□BC□4	1	1 unit	131	78.000
<b>Order No. supplement for connection types</b>																
• With spring-type terminals																
• With screw terminals																
<b>Order No. supplement for the rated control supply voltage <math>U_s^{3)}</math></b>																
• 115 V AC																
• 230 V AC																

1) In the selection table, the unit rated current  $I_e$  refers to the induction motor's rated operational current in the inside-delta circuit. The actual current of the device is approx. 58 % of this value.

2) 3RW44 2 soft starters. ... 3RW44 4. with screw terminals: delivery time class ▶ (preferred type).

3) Control by way of the internal 24 V DC supply and direct control by means of PLC possible.

Note:  
Soft starter selection depends on the rated motor current.

Please observe the notes for the selection of soft starters on Page 4/7.

The 3RW44 solid-state soft starters are designed for normal starting (Class 10). (Inertia load of the overall operating mechanism  $J_{Load} < 10 \times J_{Motor}$ ; starting current 350 %  $\times I_e$  for 20 s or similar load). For any other conditions of use, the devices should be selected using the Win-Soft Starter selection and simulation program. For information about rated currents for ambient temperatures > 40 °C and switching frequency, see "Technical specifications".

# SIRIUS 3RW Soft Starters

## 3RW44 Soft Starters for High-Feature Applications

3RW44

Ambient temperature 40 °C					Ambient temperature 50 °C				DT	Normal starting (CLASS 10) in inside-delta circuit	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.			
Rated operational current $I_e$ <sup>1)</sup>	Rated power of induction motors for rated operational voltage $U_e$				Rated operational current $I_e$	Rated power of induction motors for rated operational voltage $U_e$											
	230 V	400 V	500 V	690 V	1000 V		200 V	230 V	460 V	575 V	Order No.	Price per PU			kg		
A	kW	kW	kW	kW	kW	A	hp	hp	hp	hp							
<b>Inside-delta circuit, rated operational voltage 400 ... 600 V<sup>2)</sup></b>																	
50	--	22	<b>30</b>	--	--	45	--	--	30	<b>40</b>	A	<b>3RW44 22-□BC□5</b>		1	1 unit	131	6.500
62	--	30	<b>37</b>	--	--	55	--	--	40	<b>50</b>	A	<b>3RW44 23-□BC□5</b>		1	1 unit	131	6.500
81	--	45	<b>45</b>	--	--	73	--	--	50	<b>60</b>	A	<b>3RW44 24-□BC□5</b>		1	1 unit	131	6.500
99	--	55	<b>55</b>	--	--	88	--	--	60	<b>75</b>	A	<b>3RW44 25-□BC□5</b>		1	1 unit	131	6.500
133	--	75	<b>90</b>	--	--	118	--	--	75	<b>100</b>	A	<b>3RW44 26-□BC□5</b>		1	1 unit	131	6.500
161	--	90	<b>110</b>	--	--	142	--	--	100	<b>125</b>	A	<b>3RW44 27-□BC□5</b>		1	1 unit	131	6.500
<b>Order No. supplement for connection types</b>																	
• With screw terminals																	
• With spring-type terminals																	
196	--	110	<b>132</b>	--	--	173	--	--	125	<b>150</b>	B	<b>3RW44 34-□BC□5</b>		1	1 unit	131	7.900
232	--	132	<b>160</b>	--	--	203	--	--	150	<b>200</b>	B	<b>3RW44 35-□BC□5</b>		1	1 unit	131	7.900
281	--	160	<b>200</b>	--	--	251	--	--	200	<b>250</b>	B	<b>3RW44 36-□BC□5</b>		1	1 unit	131	7.900
352	--	200	<b>250</b>	--	--	312	--	--	250	<b>300</b>	B	<b>3RW44 43-□BC□5</b>		1	1 unit	131	11.500
433	--	250	<b>315</b>	--	--	372	--	--	300	<b>350</b>	B	<b>3RW44 44-□BC□5</b>		1	1 unit	131	11.500
542	--	315	<b>355</b>	--	--	485	--	--	400	<b>500</b>	B	<b>3RW44 45-□BC□5</b>		1	1 unit	131	11.500
617	--	355	<b>450</b>	--	--	546	--	--	450	<b>600</b>	B	<b>3RW44 46-□BC□5</b>		1	1 unit	131	11.500
748	--	400	<b>500</b>	--	--	667	--	--	600	<b>750</b>	B	<b>3RW44 47-□BC□5</b>		1	1 unit	131	11.500
954	--	560	<b>630</b>	--	--	856	--	--	750	<b>950</b>	C	<b>3RW44 53-□BC□5</b>		1	1 unit	131	50.000
1065	--	630	<b>710</b>	--	--	954	--	--	850	<b>1050</b>	C	<b>3RW44 54-□BC□5</b>		1	1 unit	131	50.000
1200	--	710	<b>800</b>	--	--	1065	--	--	950	<b>1200</b>	C	<b>3RW44 55-□BC□5</b>		1	1 unit	131	50.000
1351	--	800	<b>900</b>	--	--	1200	--	--	1050	<b>1350</b>	C	<b>3RW44 56-□BC□5</b>		1	1 unit	131	50.000
1524	--	900	<b>1000</b>	--	--	1351	--	--	1200	<b>1500</b>	C	<b>3RW44 57-□BC□5</b>		1	1 unit	131	50.000
1680	--	1000	<b>1200</b>	--	--	1472	--	--	1300	<b>1650</b>	C	<b>3RW44 58-□BC□5</b>		1	1 unit	131	50.000
1864	--	1100	<b>1350</b>	--	--	1680	--	--	1500	<b>1900</b>	C	<b>3RW44 65-□BC□5</b>		1	1 unit	131	78.000
2103	--	1200	<b>1500</b>	--	--	1864	--	--	1700	<b>2100</b>	C	<b>3RW44 66-□BC□5</b>		1	1 unit	131	78.000

**Order No. supplement for connection types**

- With spring-type terminals
- With screw terminals

**Order No. supplement for the rated control supply voltage  $U_c$ <sup>3)</sup>**

- 115 V AC
- 230 V AC

<sup>1)</sup> In the selection table, the unit rated current  $I_e$  refers to the induction motor's rated operational current in the inside-delta circuit. The actual current of the device is approx. 58 % of this value.

<sup>2)</sup> Soft starter with screw terminals:  
3RW44 2. ... 3RW44 4. Delivery time class A  
3RW44 5. ... 3RW44 6. Delivery time class B.

<sup>3)</sup> Control by way of the internal 24 V DC supply and direct control by means of PLC possible.

**Note:**

Soft starter selection depends on the rated motor current.

Please observe the notes for the selection of soft starters on Page 4/7.

The 3RW44 solid-state soft starters are designed for normal starting (Class 10). (Inertia load of the overall operating mechanism  $J_{Load} < 10 \times J_{Motor}$ ; starting current  $350 \% \times I_e$  for 20 s or similar load). For any other conditions of use, the devices should be selected using the Win-Soft Starter selection and simulation program. For information about rated currents for ambient temperatures  $> 40$  °C and switching frequency, see "Technical specifications".

# SIRIUS 3RW Soft Starters

## 3RW44 Soft Starters for High-Feature Applications

### 3RW44

SIRIUS 3RW44 for heavy starting (CLASS 20) in inside-delta circuit



3RW44 27-1BC44



3RW44 36-6BC44



3RW44 47-6BC44



3RW44 58-6BC44



3RW44 66-6BC44

Ambient temperature 40 °C						Ambient temperature 50 °C				DT	Heavy starting (CLASS 20) in inside-delta circuit	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg		
Rated operational current $I_e^{1)}$	Rated power of induction motors for rated operational voltage $U_e$					Rated operational current $I_e$	Rated power of induction motors for rated operational voltage $U_e$										
A	230 V	400 V	500 V	690 V	1000 V	A	200 V	230 V	460 V	575 V	Order No.	Price per PU					
	kW	kW	kW	kW	kW		hp	hp	hp	hp							
<b>Inside-delta circuit, rated operational voltage 200 ... 460 V<sup>2)</sup></b>																	
50	15	22	--	--	--	45	10	15	30	--	▶	3RW44 23-□BC□4		1	1 unit	131	6.500
62	18.5	30	--	--	--	55	15	20	40	--	▶	3RW44 24-□BC□4		1	1 unit	131	6.500
81	22	45	--	--	--	73	20	25	50	--	▶	3RW44 25-□BC□4		1	1 unit	131	6.500
99	30	55	--	--	--	88	25	30	60	--	▶	3RW44 25-□BC□4		1	1 unit	131	6.500
133	37	75	--	--	--	118	30	40	75	--	▶	3RW44 27-□BC□4		1	1 unit	131	6.500
<b>Order No. supplement for connection types</b>																	
<ul style="list-style-type: none"> <li>• With screw terminals</li> <li>• With spring-type terminals</li> </ul>																	
161	45	90	--	--	--	142	40	50	100	--	B	3RW44 34-□BC□4		1	1 unit	131	7.900
196	55	110	--	--	--	173	50	60	125	--	B	3RW44 35-□BC□4		1	1 unit	131	7.900
232	75	132	--	--	--	203	60	75	150	--	B	3RW44 36-□BC□4		1	1 unit	131	7.900
281	90	160	--	--	--	251	75	100	200	--	B	3RW44 43-□BC□4		1	1 unit	131	11.500
352	110	200	--	--	--	312	100	125	250	--	B	3RW44 44-□BC□4		1	1 unit	131	11.500
433	132	250	--	--	--	372	125	150	300	--	B	3RW44 45-□BC□4		1	1 unit	131	11.500
542	160	315	--	--	--	485	150	200	400	--	B	3RW44 47-□BC□4		1	1 unit	131	11.500
617	200	355	--	--	--	546	150	200	450	--	B	3RW44 47-□BC□4		1	1 unit	131	11.500
748	250	400	--	--	--	667	200	250	600	--	C	3RW44 53-□BC□4		1	1 unit	131	50.000
954	315	560	--	--	--	856	300	350	750	--	C	3RW44 53-□BC□4		1	1 unit	131	50.000
1065	355	630	--	--	--	954	350	400	850	--	C	3RW44 55-□BC□4		1	1 unit	131	50.000
1200	400	710	--	--	--	1065	350	450	950	--	C	3RW44 57-□BC□4		1	1 unit	131	50.000
1351	450	800	--	--	--	1200	450	500	1050	--	C	3RW44 65-□BC□4		1	1 unit	131	78.000
1524	500	900	--	--	--	1351	450	600	1200	--	C	3RW44 65-□BC□4		1	1 unit	131	78.000
1680	560	1000	--	--	--	1472	550	650	1300	--	C	3RW44 65-□BC□4		1	1 unit	131	78.000
--	--	--	--	--	--	1680	650	750	1500	--	C	3RW44 66-□BC□4		1	1 unit	131	78.000

**Order No. supplement for connection types**

- With spring-type terminals
- With screw terminals

**Order No. supplement for the rated control supply voltage  $U_s^{3)}$**

- 115 V AC
- 230 V AC

<sup>1)</sup> In the selection table, the unit rated current  $I_e$  refers to the induction motor's rated operational current in the inside-delta circuit. The actual current of the device is approx. 58 % of this value.

<sup>2)</sup> 3RW44 2 soft starters. ... 3RW44 4, with screw terminals: delivery time class ▶ (preferred type).

<sup>3)</sup> Control by way of the internal 24 V DC supply and direct control by means of PLC possible.

**Note:**

Soft starter selection depends on the rated motor current.

Please observe the notes for the selection of soft starters on Page 4/7.

The 3RW44 solid-state soft starters are designed for normal starting (Class 10). (Inertia load of the overall operating mechanism  $J_{Load} < 10 \times J_{Motor}$ ; starting current 350 %  $\times I_e$  for 20 s or similar load). For any other conditions of use, the devices should be selected using the Win-Soft Starter selection and simulation program. For information about rated currents for ambient tem-

peratures  $> 40 \text{ °C}$  and switching frequency, see "Technical specifications".

# SIRIUS 3RW Soft Starters

## 3RW44 Soft Starters for High-Feature Applications

3RW44

Ambient temperature 40 °C						Ambient temperature 50 °C				DT	Heavy starting (CLASS 20) in inside-delta circuit	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.	
Rated operational current $I_e^{1)}$	Rated power of induction motors for rated operational voltage $U_e$					Rated operational current $I_e$	Rated power of induction motors for rated operational voltage $U_e$									
A	230 V	400 V	500 V	690 V	1000 V	A	200 V	230 V	460 V	575 V	Order No.	Price per PU			kg	
	kW	kW	kW	kW	kW		hp	hp	hp	hp						
<b>Inside-delta circuit, rated operational voltage 400 ... 600 V<sup>2)</sup></b>																
50	--	22	<b>30</b>	--	--	45	--	--	30	<b>40</b>	A	<b>3RW44 23-□BC□5</b>	1	1 unit	131	6.500
62	--	30	<b>37</b>	--	--	55	--	--	40	<b>50</b>	A	<b>3RW44 24-□BC□5</b>	1	1 unit	131	6.500
81	--	45	<b>45</b>	--	--	73	--	--	50	<b>60</b>	A	<b>3RW44 25-□BC□5</b>	1	1 unit	131	6.500
99	--	55	<b>55</b>	--	--	88	--	--	60	<b>75</b>	A	<b>3RW44 25-□BC□5</b>	1	1 unit	131	6.500
133	--	75	<b>90</b>	--	--	118	--	--	75	<b>100</b>	A	<b>3RW44 27-□BC□5</b>	1	1 unit	131	6.500
<b>Order No. supplement for connection types</b>																
<ul style="list-style-type: none"> <li>• With screw terminals</li> <li>• With spring-type terminals</li> </ul>																
161	--	90	<b>110</b>	--	--	142	--	--	100	<b>125</b>	B	<b>3RW44 34-□BC□5</b>	1	1 unit	131	7.900
196	--	110	<b>132</b>	--	--	173	--	--	125	<b>150</b>	B	<b>3RW44 35-□BC□5</b>	1	1 unit	131	7.900
232	--	132	<b>160</b>	--	--	203	--	--	150	<b>200</b>	B	<b>3RW44 36-□BC□5</b>	1	1 unit	131	7.900
281	--	160	<b>200</b>	--	--	251	--	--	200	<b>250</b>	B	<b>3RW44 43-□BC□5</b>	1	1 unit	131	11.500
352	--	200	<b>250</b>	--	--	312	--	--	250	<b>300</b>	B	<b>3RW44 44-□BC□5</b>	1	1 unit	131	11.500
433	--	250	<b>315</b>	--	--	372	--	--	300	<b>350</b>	B	<b>3RW44 45-□BC□5</b>	1	1 unit	131	11.500
542	--	315	<b>355</b>	--	--	485	--	--	400	<b>500</b>	B	<b>3RW44 47-□BC□5</b>	1	1 unit	131	11.500
617	--	355	<b>450</b>	--	--	546	--	--	450	<b>600</b>	B	<b>3RW44 47-□BC□5</b>	1	1 unit	131	11.500
748	--	400	<b>500</b>	--	--	667	--	--	600	<b>750</b>	C	<b>3RW44 53-□BC□5</b>	1	1 unit	131	50.000
954	--	560	<b>630</b>	--	--	856	--	--	750	<b>950</b>	C	<b>3RW44 53-□BC□5</b>	1	1 unit	131	50.000
1065	--	630	<b>710</b>	--	--	954	--	--	850	<b>1050</b>	C	<b>3RW44 55-□BC□5</b>	1	1 unit	131	50.000
1200	--	710	<b>800</b>	--	--	1065	--	--	950	<b>1200</b>	C	<b>3RW44 57-□BC□5</b>	1	1 unit	131	50.000
1351	--	800	<b>900</b>	--	--	1200	--	--	1050	<b>1350</b>	C	<b>3RW44 65-□BC□5</b>	1	1 unit	131	78.000
1524	--	900	<b>1000</b>	--	--	1351	--	--	1200	<b>1500</b>	C	<b>3RW44 65-□BC□5</b>	1	1 unit	131	78.000
1680	--	1000	<b>1200</b>	--	--	1472	--	--	1300	<b>1650</b>	C	<b>3RW44 65-□BC□5</b>	1	1 unit	131	78.000
--	--	--	--	--	--	1680	--	--	1500	<b>1900</b>	C	<b>3RW44 66-□BC□5</b>	1	1 unit	131	78.000
<b>Order No. supplement for connection types</b>																
<ul style="list-style-type: none"> <li>• With spring-type terminals</li> <li>• With screw terminals</li> </ul>																
<b>Order No. supplement for the rated control supply voltage <math>U_s^{3)}</math></b>																
<ul style="list-style-type: none"> <li>• 115 V AC</li> <li>• 230 V AC</li> </ul>																

1) In the selection table, the unit rated current  $I_e$  refers to the induction motor's rated operational current in the inside-delta circuit. The actual current of the device is approx. 58 % of this value.

2) Soft starter with screw terminals:  
 3RW44 2. ... 3RW44 4. Delivery time class A  
 3RW44 5. ... 3RW44 6. Delivery time class B.

3) Control by way of the internal 24 V DC supply and direct control by means of PLC possible.

### Note:

Soft starter selection depends on the rated motor current.

Please observe the notes for the selection of soft starters on Page 4/7.

The 3RW44 solid-state soft starters are designed for normal starting (Class 10). (Inertia load of the overall operating mechanism  $J_{Load} < 10 \times J_{Motor}$ ; starting current 350 %  $\times I_e$  for 20 s or similar load). For any other conditions of use, the devices should be selected using the Win-Soft Starter selection and simulation program. For information about rated currents for ambient temperatures > 40 °C and switching frequency, see "Technical specifications".



# SIRIUS 3RW Soft Starters

## 3RW44 Soft Starters for High-Feature Applications

### 3RW44

*SIRIUS 3RW44 for very heavy starting (CLASS 30) in inside-delta circuit*



3RW44 27-1BC44

3RW44 36-6BC44

3RW44 47-6BC44

3RW44 58-6BC44

3RW44 66-6BC44

Ambient temperature 40 °C						Ambient temperature 50 °C				DT	Very heavy starting (CLASS 30) in inside-delta circuit	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg	
Rated operational current $I_e^{1)}$	Rated power of induction motors for rated operational voltage $U_e$					Rated operational current $I_e$	Rated power of induction motors for rated operational voltage $U_e$									Order No.
A	230 V	400 V	500 V	690 V	1000 V	A	200 V	230 V	460 V	575 V						
	kW	kW	kW	kW	kW		hp	hp	hp	hp						
<b>Inside-delta circuit, rated operational voltage 200 ... 460 V<sup>2)</sup></b>																
50	15	22	--	--	--	45	10	15	30	--	▶	3RW44 23-□BC□4	1	1 unit	131	6.500
62	18.5	30	--	--	--	55	15	20	40	--	▶	3RW44 24-□BC□4	1	1 unit	131	6.500
81	22	45	--	--	--	73	20	25	50	--	▶	3RW44 25-□BC□4	1	1 unit	131	6.500
99	30	55	--	--	--	88	25	30	60	--	▶	3RW44 25-□BC□4	1	1 unit	131	6.500
133	37	75	--	--	--	118	30	40	75	--	▶	3RW44 27-□BC□4	1	1 unit	131	6.500
<b>Order No. supplement for connection types</b>																
<ul style="list-style-type: none"> <li>• With screw terminals</li> <li>• With spring-type terminals</li> </ul>																
161	45	90	--	--	--	142	40	50	100	--	B	3RW44 35-□BC□4	1	1 unit	131	7.900
196	55	110	--	--	--	173	50	60	125	--	B	3RW44 36-□BC□4	1	1 unit	131	7.900
232	75	132	--	--	--	203	60	75	150	--	B	3RW44 43-□BC□4	1	1 unit	131	11.500
281	90	160	--	--	--	251	75	100	200	--	B	3RW44 43-□BC□4	1	1 unit	131	11.500
352	110	200	--	--	--	312	100	125	250	--	B	3RW44 45-□BC□4	1	1 unit	131	11.500
433	132	250	--	--	--	372	125	150	300	--	B	3RW44 47-□BC□4	1	1 unit	131	11.500
542	160	315	--	--	--	485	150	200	400	--	C	3RW44 53-□BC□4	1	1 unit	131	50.000
617	200	355	--	--	--	546	150	200	450	--	C	3RW44 53-□BC□4	1	1 unit	131	50.000
748	250	400	--	--	--	667	200	250	600	--	C	3RW44 53-□BC□4	1	1 unit	131	50.000
954	315	560	--	--	--	856	300	350	750	--	C	3RW44 55-□BC□4	1	1 unit	131	50.000
1065	355	630	--	--	--	954	350	400	850	--	C	3RW44 58-□BC□4	1	1 unit	131	50.000
1200	400	710	--	--	--	1065	350	450	950	--	C	3RW44 65-□BC□4	1	1 unit	131	78.000
1351	450	800	--	--	--	1200	450	500	1050	--	C	3RW44 65-□BC□4	1	1 unit	131	78.000
1524	500	900	--	--	--	1351	450	600	1200	--	C	3RW44 65-□BC□4	1	1 unit	131	78.000
--	--	--	--	--	--	1472	550	650	1300	--	C	3RW44 66-□BC□4	1	1 unit	131	78.000
<b>Order No. supplement for connection types</b>																
<ul style="list-style-type: none"> <li>• With spring-type terminals</li> <li>• With screw terminals</li> </ul>																
<b>Order No. supplement for the rated control supply voltage <math>U_s^{3)}</math></b>																
<ul style="list-style-type: none"> <li>• 115 V AC</li> <li>• 230 V AC</li> </ul>																

**Order No. supplement for connection types**

- With spring-type terminals
- With screw terminals

**Order No. supplement for the rated control supply voltage  $U_s^{3)}$**

- 115 V AC
- 230 V AC

<sup>1)</sup> In the selection table, the unit rated current  $I_e$  refers to the induction motor's rated operational current in the inside-delta circuit. The actual current of the device is approx. 58 % of this value.

<sup>2)</sup> 3RW44 2 soft starters. ... 3RW44 4. with screw terminals: delivery time class ▶ (preferred type).  
<sup>3)</sup> Control by way of the internal 24 V DC supply and direct control by means of PLC possible.

**Note:**  
 Soft starter selection depends on the rated motor current.  
 Please observe the notes for the selection of soft starters on Page 4/7.

The 3RW44 solid-state soft starters are designed for normal starting (Class 10). (Inertia load of the overall operating mechanism  $J_{Load} < 10 \times J_{Motor}$ ; starting current 350 %  $\times I_e$  for 20 s or similar load). For any other conditions of use, the devices should be selected using the Win-Soft Starter selection and simulation program. For information about rated currents for ambient tem-

peratures > 40 °C and switching frequency, see "Technical specifications".

# SIRIUS 3RW Soft Starters

## 3RW44 Soft Starters for High-Feature Applications

3RW44

Ambient temperature 40 °C						Ambient temperature 50 °C				DT	Very heavy starting (CLASS 30) in inside-delta circuit	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg	
Rated operational current $I_e^{1)}$	Rated power of induction motors for rated operational voltage $U_e$					Rated operational current $I_e$	Rated power of induction motors for rated operational voltage $U_e$									
A	230 V kW	400 V kW	500 V kW	690 V kW	1000 V kW	A	200 V hp	230 V hp	460 V hp	575 V hp	Order No.	Price per PU				
<b>Inside-delta circuit, rated operational voltage 400 ... 600 V<sup>2)</sup></b>																
50	--	22	<b>30</b>	--	--	45	--	--	30	<b>40</b>	A	<b>3RW44 23-□BC□5</b>	1	1 unit	131	6.500
62	--	30	<b>37</b>	--	--	55	--	--	40	<b>50</b>	A	<b>3RW44 24-□BC□5</b>	1	1 unit	131	6.500
81	--	45	<b>45</b>	--	--	73	--	--	50	<b>60</b>	A	<b>3RW44 25-□BC□5</b>	1	1 unit	131	6.500
99	--	55	<b>55</b>	--	--	88	--	--	60	<b>75</b>	A	<b>3RW44 25-□BC□5</b>	1	1 unit	131	6.500
133	--	75	<b>90</b>	--	--	118	--	--	75	<b>100</b>	A	<b>3RW44 27-□BC□5</b>	1	1 unit	131	6.500
<b>Order No. supplement for connection types</b>																
<ul style="list-style-type: none"> <li>• With screw terminals</li> <li>• With spring-type terminals</li> </ul>																
161	--	90	<b>110</b>	--	--	142	--	--	100	<b>125</b>	B	<b>3RW44 35-□BC□5</b>	1	1 unit	131	7.900
196	--	110	<b>132</b>	--	--	173	--	--	125	<b>150</b>	B	<b>3RW44 36-□BC□5</b>	1	1 unit	131	7.900
232	--	132	<b>160</b>	--	--	203	--	--	150	<b>200</b>	B	<b>3RW44 43-□BC□5</b>	1	1 unit	131	11.500
281	--	160	<b>200</b>	--	--	251	--	--	200	<b>250</b>	B	<b>3RW44 43-□BC□5</b>	1	1 unit	131	11.500
352	--	200	<b>250</b>	--	--	312	--	--	250	<b>300</b>	B	<b>3RW44 45-□BC□5</b>	1	1 unit	131	11.500
433	--	250	<b>315</b>	--	--	372	--	--	300	<b>350</b>	B	<b>3RW44 47-□BC□5</b>	1	1 unit	131	11.500
542	--	315	<b>355</b>	--	--	485	--	--	400	<b>500</b>	C	<b>3RW44 53-□BC□5</b>	1	1 unit	131	50.000
617	--	355	<b>450</b>	--	--	546	--	--	450	<b>600</b>	C	<b>3RW44 53-□BC□5</b>	1	1 unit	131	50.000
748	--	400	<b>500</b>	--	--	667	--	--	600	<b>750</b>	C	<b>3RW44 53-□BC□5</b>	1	1 unit	131	50.000
954	--	560	<b>630</b>	--	--	856	--	--	750	<b>950</b>	C	<b>3RW44 55-□BC□5</b>	1	1 unit	131	50.000
1065	--	630	<b>710</b>	--	--	954	--	--	850	<b>1050</b>	C	<b>3RW44 58-□BC□5</b>	1	1 unit	131	50.000
1200	--	710	<b>800</b>	--	--	1065	--	--	950	<b>1200</b>	C	<b>3RW44 65-□BC□5</b>	1	1 unit	131	78.000
1351	--	800	<b>900</b>	--	--	1200	--	--	1050	<b>1350</b>	C	<b>3RW44 65-□BC□5</b>	1	1 unit	131	78.000
1524	--	900	<b>1000</b>	--	--	1351	--	--	1200	<b>1500</b>	C	<b>3RW44 65-□BC□5</b>	1	1 unit	131	78.000
--	--	--	--	--	--	1472	--	--	1300	<b>1650</b>	C	<b>3RW44 66-□BC□5</b>	1	1 unit	131	78.000

**Order No. supplement for connection types**

- With spring-type terminals
- With screw terminals

**Order No. supplement for the rated control supply voltage  $U_c^{3)}$** 

- 115 V AC
- 230 V AC

<sup>1)</sup> In the selection table, the unit rated current  $I_e$  refers to the induction motor's rated operational current in the inside-delta circuit. The actual current of the device is approx. 58 % of this value.

<sup>2)</sup> Soft starter with screw terminals:  
3RW44 2. ... 3RW44 4. Delivery time class A  
3RW44 5. ... 3RW44 6. Delivery time class B.

<sup>3)</sup> Control by way of the internal 24 V DC supply and direct control by means of PLC possible.

**Note:**

Soft starter selection depends on the rated motor current.

Please observe the notes for the selection of soft starters on Page 4/7.

The 3RW44 solid-state soft starters are designed for normal starting (Class 10). (Inertia load of the overall operating mechanism  $J_{Load} < 10 \times J_{Motor}$ ; starting current  $350 \% \times I_e$  for 20 s or similar load). For any other conditions of use, the devices should be selected using the Win-Soft Starter selection and simulation program. For information about rated currents for ambient temperatures  $> 40 °C$  and switching frequency, see "Technical specifications".

# SIRIUS 3RW Soft Starters

## 3RW44 Soft Starters for High-Feature Applications

3RW44

## Accessories

	For soft starters	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Type								kg
<b>Soft Starter ES 2007 PC communication program<sup>2)</sup></b>									
	<b>Soft Starter ES 2007 Basic</b>								
	Floating license for one user E-SW, software and documentation on CD, 3 languages (German/English/French), communication through system interface • License key on USB stick, Class A, including CD		B	<b>3ZS1 313-4CC10-0YA5</b>		1	1 unit	131	0.230
	<b>Soft Starter ES 2007 Standard</b>								
	Floating license for one user E-SW, software and documentation on CD, 3 languages (German/English/French), communication through system interface • License key on USB stick, Class A, including CD		B	<b>3ZS1 313-5CC10-0YA5</b>		1	1 unit	131	0.230
	<b>Soft Starter ES 2007 Premium</b>								
	Floating license for one user E-SW, software and documentation on CD, 3 languages (German/English/French), communication through system interface or PROFIBUS • License key on USB stick, Class A, including CD		B	<b>3ZS1 313-6CC10-0YA5</b>		1	1 unit	131	0.230
<b>PC cables</b>									
	<b>For PC/PG communication with SIRIUS 3RW44 soft starters</b>		A	<b>3UF7 940-0AA00-0</b>		1	1 unit	131	0.150
	through the system interface, for connecting to the serial interface of the PC/PG								
3UF7 940-0AA00-0									
<b>USB/serial adapters</b>									
	<b>For connecting the PC cable to the USB interface of a PC</b>		B	<b>3UF7 946-0AA00-0</b>		1	1 unit	131	0.150
	We recommend, in conjunction with 3RW44 soft starter, using SIMOCODE pro 3UF7, 3RK3 modular safety system, ET 200S/ECOFASST/ET 200pro motor starters, AS-i safety monitor, AS-i analyzer								
<b>PROFIBUS communication modules</b>									
	Modules can be plugged into the soft starters for integrating the starters in the PROFIBUS network with DPV1 slave functionality. On Y-link the soft starter has only DPV0 slave functionality.		A	<b>3RW49 00-0KC00</b>		1	1 unit	131	0.320
3RW49 00-0KC00									
<b>External display and operator module</b>									
	For indicating and operating the functions provided by the soft starter using an externally mounted display and operator module in degree of protection IP54 (e. g. in the control cabinet door)		▶	<b>3RW49 00-0AC00</b>		1	1 unit	131	0.320
3RW49 00-0AC00									
	<b>Connection cable</b>								
	From the device interface (serial) of the 3RW44 soft starter to the external display and operator module								
		• Length 0.5 m, flat	A	<b>3UF7 932-0AA00-0</b>		1	1 unit	131	0.020
		• Length 0.5 m, round	A	<b>3UF7 932-0BA00-0</b>		1	1 unit	131	0.050
		• Length 1.0 m, round	A	<b>3UF7 937-0BA00-0</b>		1	1 unit	131	0.100
		• Length 2.5 m, round	A	<b>3UF7 933-0BA00-0</b>		1	1 unit	131	0.150
<b>Box terminal blocks for soft starters</b>									
	<b>Box terminal blocks</b>								
	3RW44 2.	Included in the scope of supply							
	3RW44 3.	• Up to 70 mm <sup>2</sup> • Up to 120 mm <sup>2</sup>	▶	<b>3RT19 55-4G</b>		1	1 unit	101	0.230
	3RW44 4.	• Up to 240 mm <sup>2</sup>	▶	<b>3RT19 56-4G</b>		1	1 unit	101	0.260
			▶	<b>3RT19 66-4G</b>		1	1 unit	101	0.676
3RT19									

\* You can order this quantity or a multiple thereof.

# SIRIUS 3RW Soft Starters

## 3RW44 Soft Starters for High-Feature Applications

3RW44

For soft starters	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.	
Type									kg
<b>Covers for soft starters</b>									
<b>Terminal covers for box terminals</b>									
Additional touch protection to be fitted at the box terminals (2 units required per device)									
3RW44 2. and 3RW44 3.		▶	<b>3RT19 56-4EA2</b>		1	1 unit	101	0.030	
3RW44 4.		▶	<b>3RT19 66-4EA2</b>		1	1 unit	101	0.040	
<b>Terminal covers for cable lugs and busbar connections</b>									
3RW44 2. and 3RW44 3.		▶	<b>3RT19 56-4EA1</b>		1	1 unit	101	0.070	
3RW44 4.		▶	<b>3RT19 66-4EA1</b>		1	1 unit	101	0.130	



3RT19.6-4EA1

**Operating instructions<sup>1)</sup>**

for 3RW44 soft starters

**3ZX10 12-0RW44-1AA1**

<sup>1)</sup> The operating instructions are included in the scope of supply.

<sup>2)</sup> For more information on the Soft Starter ES software see Chapter "Planning and Configuration with SIRIUS"

**Spare parts**

For soft starters	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.	
Type									kg
<b>Fans</b>									
3RW44 2. and 3RW44 3.	115 V AC 230 V AC	▶	<b>3RW49 36-8VX30</b>		1	1 unit	131	0.300	
3RW44 4.	115 V AC 230 V AC	▶	<b>3RW49 36-8VX40</b>		1	1 unit	131	0.300	
3RW49	3RW44 5. and 3RW44 6. <sup>1)</sup>	▶	<b>3RW49 47-8VX30</b>		1	1 unit	131	0.500	
			<b>3RW49 47-8VX40</b>		1	1 unit	131	0.500	
3RW49	3RW44 6. <sup>2)</sup>	▶	<b>3RW49 57-8VX30</b>		1	1 unit	131	0.800	
			<b>3RW49 57-8VX40</b>		1	1 unit	131	0.800	
			<b>3RW49 66-8VX30</b>		1	1 unit	131	0.300	
		▶	<b>3RW49 66-8VX40</b>		1	1 unit	131	0.300	

<sup>1)</sup> 3RW44 6. mounting on output side.

<sup>2)</sup> For mounting on front side.

# SIRIUS 3RW Soft Starters

## 3RW44 Soft Starters for High-Feature Applications

### 3RW44

#### More information

##### Application examples for normal starting (Class 10)

**Normal starting Class 10** (up to 20 s with 350 %  $I_{n, motor}$ ).

The soft starter rating can be selected to be as high as the rating of the motor used

Application	Conveyor belt	Roller conveyor	Compressor	Small fans <sup>1)</sup>	Pump	Hydraulic pump
<b>Starting parameters</b>						
• Voltage ramp and current limiting						
- Starting voltage	%	70	60	50	30	30
- Starting time	s	10	10	10	10	10
- Current limit value		Deactivated	Deactivated	$4 \times I_M$	$4 \times I_M$	Deactivated
• Torque ramp						
- Starting torque		60	50	40	20	10
- End torque		150	150	150	150	150
- Starting time		10	10	10	10	10
• Breakaway pulse						
		Deactivated (0 ms)	Deactivated (0 ms)	Deactivated (0 ms)	Deactivated (0 ms)	Deactivated (0 ms)
<b>Ramp-down mode</b>						
		Smooth ramp-down	Smooth ramp-down	Free ramp-down	Free ramp-down	Pump ramp-down

##### Application examples for heavy starting (Class 20)

**Heavy starting Class 20** (up to 40 s with 350 %  $I_{n, motor}$ ).

The soft starter has to be selected one performance class higher than the motor used

Application	Stirrer	Centrifuge	Milling machine
<b>Starting parameters</b>			
• Voltage ramp and current limiting			
- Starting voltage	%	30	30
- Starting time	s	30	30
- Current limit value		$4 \times I_M$	$4 \times I_M$
• Torque ramp			
- Starting torque		30	30
- End torque		150	150
- Starting time		30	30
• Breakaway pulse			
		Deactivated (0 ms)	Deactivated (0 ms)
<b>Ramp-down mode</b>			
		Free ramp-down	Free ramp-down or DC braking

##### Application examples for very heavy starting (Class 30)

**Very heavy starting Class 30** (up to 60 s with 350 %  $I_{n, motor}$ ).

The soft starter has to be selected two performance classes higher than the motor used

Application	Large fans <sup>2)</sup>	Mill	Breakers	Circular saw/bandsaw
<b>Starting parameters</b>				
• Voltage ramp and current limiting				
- Starting voltage	%	30	50	30
- Starting time	s	60	60	60
- Current limit value		$4 \times I_M$	$4 \times I_M$	$4 \times I_M$
• Torque ramp				
- Starting torque		20	50	20
- End torque		150	150	150
- Starting time		60	60	60
• Breakaway pulse				
		Deactivated (0 ms)	80 %; 300 ms	Deactivated (0 ms)
<b>Ramp-down mode</b>				
		Free ramp-down	Free ramp-down	Free ramp-down

<sup>1)</sup> The mass inertia of the fan is <10 times the mass inertia of the motor

<sup>2)</sup> The mass inertia of the fan is  $\geq 10$  times the mass inertia of the motor

#### Note:

These tables present sample set values and device sizes. They are intended only for the purposes of information and are not binding. The set values depend on the application in question and must be optimized during commissioning.

The soft starter dimensions should be checked where necessary with the Win-Soft Starter software or with the help of Technical Assistance.

# SIRIUS 3RW Soft Starters

## 3RW44 Soft Starters for High-Feature Applications

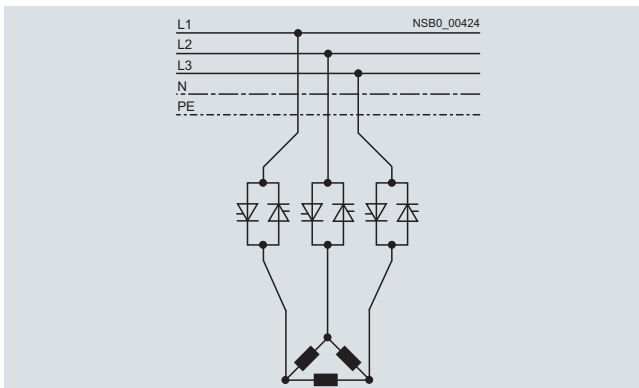
3RW44

### Circuit concept

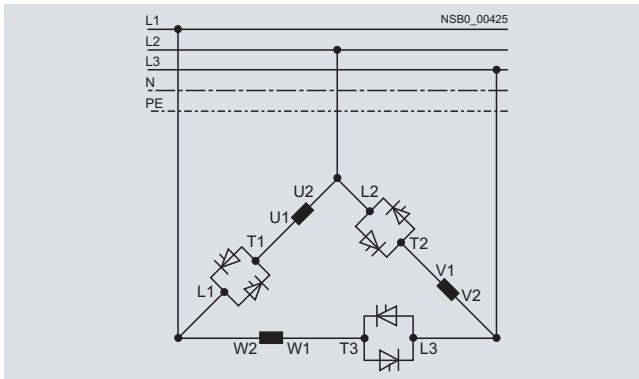
The SIRIUS 3RW44 soft starters can be operated in two different types of circuit.

- **Inline circuit**  
The controls for isolating and protecting the motor are simply connected in series with the soft starter. The motor is connected to the soft starter with three cables.
- **Inside-delta circuit**  
The wiring is similar to that of wye-delta starters. The phases of the soft starter are connected in series with the individual motor windings. The soft starter then only has to carry the phase current, amounting to about 58 % of the rated motor current (conductor current).

Comparison of the types of circuit



Inline circuit:  
Rated current  $I_e$  corresponds to the rated motor current  $I_n$ ,  
3 cables to the motor



Inside-delta circuit:  
Rated current  $I_e$  corresponds to approx. 58 % of the rated motor current  $I_n$ ,  
6 cables to the motor (as with wye-delta starters)

### Which circuit?

Using the inline circuit involves the lowest wiring outlay. If the soft starter to motor connections are long, this circuit is preferable. With the inside-delta circuit there is double the wiring complexity but a smaller size of device can be used at the same rating.

Thanks to the choice of operating mode between the inline circuit and inside-delta circuit, it is always possible to select the most favorable solution.

The braking function is possible only in the inline circuit.

### Configuration

The 3RW44 solid-state soft starters are designed for normal starting. In case of heavy starting or increased starting frequency, a larger device must be selected.

For long starting times it is recommended to have a PTC sensor in the motor. This also applies for the ramp-down modes smooth ramp-down, pump ramp-down and DC braking, because during the ramp-down time in these modes, an additional current loading applies in contrast to free ramp-down.

No capacitive elements are permitted in the motor feeder between the SIRIUS 3RW soft starter and the motor (e. g. no reactive-power compensation equipment). In addition, neither static systems for reactive-power compensation nor dynamic PFC (Power Factor Correction) must be operated in parallel during starting and ramp-down of the soft starter. This is important to prevent faults arising on the compensation equipment and/or the soft starter.

All elements of the main circuit (such as fuses and controls) should be dimensioned for direct starting, following the local short-circuit conditions. Fuses, controls and overload relays must be ordered separately.

A bypass contact system and solid-state overload relay are already integrated in the 3RW44 soft starter and therefore do not have to be ordered separately.

The harmonic component load for starting currents must be taken into consideration for the selection of motor starter protectors (selection of release).

### Note:

*When induction motors are switched on, voltage drops occur as a rule on starters of all types (direct starters, wye-delta starters, soft starters). The infeed transformer must always be dimensioned such that the voltage dip when starting the motor remains within the permissible tolerance. If the infeed transformer is dimensioned with only a small margin, it is best for the control voltage to be supplied from a separate circuit (independently of the main voltage) in order to avoid the potential switching off of the soft starter.*

### Device interface, PROFIBUS DP communication module, Soft Starter ES parameterizing and operating software

The 3RW44 electronic soft starters have a PC interface for communicating with the Soft Starter ES software or for connecting the external display and operator module. If the optional PROFIBUS communication module is used, the 3RW44 soft starter can be integrated in the PROFIBUS network and communicate using the GSD file or Soft Starter ES Premium software.



# SIRIUS 3RW Soft Starters

## 3RW44 Soft Starters for High-Feature Applications

### 3RW44

#### *Manual for SIRIUS 3RW44*

Besides containing all important information on configuring, commissioning and servicing, the manual also contains example circuits and the technical specifications for all devices.

#### *Win-Soft Starter selection and simulation program*

With this software, you can simulate and select all Siemens soft starters, taking into account various parameters such as mains properties, motor and load data, and special application requirements.

The software is a valuable tool, which makes complicated, lengthy manual calculations for determining the required soft starters superfluous.

The Win-Soft Starter selection and simulation program can be downloaded from:

[www.siemens.com/softstarter](http://www.siemens.com/softstarter) > Software

You can find more information about soft starters on the Internet likewise at:

[www.siemens.com/softstarter](http://www.siemens.com/softstarter)

#### *Training course for SIRIUS soft starters (SD-SIRIUSO)*

Siemens offers a 2-day training course on the SIRIUS solid-state soft starters to keep customers and own personnel up-to-date on configuring, commissioning and maintenance issues.

Please direct enquiries and applications to:

Training Center for Automation and Industrial Solution  
Gleiwitzer Strasse 555  
D-90475 Nürnberg  
Telephone: +49 911 895 3202  
Telefax: +49 911 895 3275  
E-mail: [ingeborg.hoier@siemens.com](mailto:ingeborg.hoier@siemens.com)  
[www.siemens.com/sitrain-cd](http://www.siemens.com/sitrain-cd)