

# 3RW Soft Starters

## General data

### Overview

The advantages of the SIRIUS soft starters at a glance:

- Soft starting and smooth ramp-down<sup>1)</sup>
- 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 3RW30/31 Standard applications	SIRIUS 3RW40 Standard applications	SIRIUS 3RW44 High-Feature applications
Rated current up to 40 °C	A	3 ... 100	12.5 ... 432	29 ... 1214
Rated operational voltage	V	200 ... 575	200 ... 600	200 ... 690
Motor rating at 400 V				
• Inline circuit	kW	1.1 ... 55	5.5 ... 250	15 ... 710
• Inside-delta circuit	kW	--	--	22 ... 1200
Temperature range	°C	-25 ... +60	-25 ... +60	0 ... +60
Soft starting/ramp-down		✓ <sup>1)</sup>	✓	✓
Voltage ramp		✓	✓	✓
Starting/stopping voltage	%	40 ... 100	40 ... 100	20 ... 100
Starting and ramp-down time	s	0 ... 20	0 ... 20	1 ... 360
Torque control		--	--	✓
Starting/stopping torque	%	--	--	20 ... 100
Torque limit	%	--	--	20 ... 200
Ramp time	s	--	--	1 ... 360
Integral bypass contact system		✓ <sup>2)</sup>	✓	✓
Intrinsic device protection		--	✓	✓
Motor overload protection		--	✓	✓
Thermistor motor protection		--	✓ <sup>3)</sup>	✓
Integrated remote RESET		--	✓ <sup>4)</sup>	✓
Adjustable current limiting		--	✓	✓
Inside-delta circuit		--	--	✓
Breakaway pulse		--	--	✓
Creep speed in both directions		--	--	✓
Pump ramp-down		--	--	✓ <sup>5)</sup>
DC braking		--	--	✓ <sup>5)</sup> 6)
Combined braking		--	--	✓ <sup>5)</sup> 6)
Motor heating		--	--	✓
Communication		--	--	with PROFIBUS DP (optional)
External display and operator module		--	--	(optional)
Operating measured value display		--	--	✓
Error logbook		--	--	✓
Event list		--	--	✓
Slave pointer function		--	--	✓
Trace function		--	--	✓ <sup>7)</sup>
Programmable control inputs and outputs		--	--	✓
Number of parameter sets		1 (2 with 3RW31)	1	3
Parameterization software (Soft Starter ES)		--	--	✓
Power semiconductors (thyristors)		2 controlled phases	2 controlled phases	3 controlled phases
Spring-loaded terminals		✓ (only 3RW30 03)	✓	✓
Screw terminals		✓	✓	✓
UL/CSA		✓ <sup>8)</sup>	✓	✓
CE marking		✓	✓	✓
Soft starting under heavy starting conditions		--	--	✓ <sup>5)</sup>

#### Configuring support

Win-Soft Starter, electronic selection slider ruler, Technical Assistance ++49 911 895 5900

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

<sup>1)</sup> Only soft starting available for 3RW30 ..-1AA12 and 3RW31.

<sup>2)</sup> Not available for 3RW30 03.

<sup>3)</sup> Optional up to size S3 (device variant).

<sup>4)</sup> Available for 3RW40 2. to 3RW40 4.; optional for 3RW40 5. and 3RW40 7..

<sup>5)</sup> Calculate soft starter and motor with size allowance where required.

<sup>6)</sup> Not possible in inside-delta circuit.

<sup>7)</sup> Trace function with Soft Starter ES software.

<sup>8)</sup> For 3RW30 03 up to 230 V.

More information can be found on the Internet at

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

# 3RW Soft Starters

## 3RW40 for standard applications

### Overview

SIRIUS 3RW40 soft starters offer all the same advantages as the 3RW30 soft starters. This also applies to the integrated bypass contact system. At the same time they come with additional functions, e.g. solid-state motor overload and intrinsic device protection and adjustable current limiting, optional thermistor motor protection (up to size S3), integrated remote RESET (up to size S3), as well as a two-phase control method (Polarity Balancing) that is unique in this performance range.

SIRIUS 3RW40 soft starters are part of the SIRIUS modular system. This results in advantages such as identical sizes and a uniform connection method. Thanks to their particularly compact design, SIRIUS 3RW40 soft starters are only half as big as comparable wye-delta starters. Hence, they can be mounted in minimum space in the control cabinet. Configuring and mounting are carried out quickly and easily thanks to the 3-wire connection.

### *SIRIUS 3RW40 for three-phase motors*

Soft starters rated up to 250 kW (at 400 V) for standard applications in three-phase networks. Extremely small sizes, low power losses and simple commissioning 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 starters size S6, S10 and S12 are suitable for starting explosion-proof motors with "increased safety" type of protection EEx e;

see "Appendix" -> "Standards and approvals" -> "Type overview of approved devices for explosion-protected areas (ATEX Explosion Protection)".

### Application

The SIRIUS 3RW40 solid-state soft starters are suitable for 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*

- Fans
- Pumps
- Building/construction machines
- Presses
- Escalators
- Transport systems
- Air conditioning systems
- Fans
- Assembly lines
- Compressors and coolers
- Operating mechanisms

## Selection and ordering data



3RW40 28-1BB14



3RW40 38-1BB14



3RW40 47-1BB14

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. 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	A	200 V hp	230 V hp	460 V hp	575 V hp							
<b>Inline circuit, rated operational voltage 200 ... 480 V<sup>1)</sup></b>															
12.5	3	5.5	--	11	3	3	7.5	--	S0 <sup>2)</sup>	B	3RW40 24-□BB□4	1	1 unit	131	0.770
25	5.5	11	--	23	5	5	15	--	B	3RW40 26-□BB□4	1	1 unit	131	0.770	
32	7.5	15	--	29	7.5	7.5	20	--	B	3RW40 27-□BB□4	1	1 unit	131	0.770	
38	11	18.5	--	34	10	10	25	--	B	3RW40 28-□BB□4	1	1 unit	131	0.770	
45	11	22	--	42	10	15	30	--	S2	B	3RW40 36-□BB□4	1	1 unit	131	1.350
63	18.5	30	--	58	15	20	40	--	B	3RW40 37-□BB□4	1	1 unit	131	1.350	
72	22	37	--	62	20	20	40	--	B	3RW40 38-□BB□4	1	1 unit	131	1.350	
80	22	45	--	73	20	25	50	--	S3	B	3RW40 46-□BB□4	1	1 unit	131	1.900
106	30	55	--	98	30	30	75	--	B	3RW40 47-□BB□4	1	1 unit	131	1.900	
<b>Inline circuit, rated operational voltage 400 ... 600 V</b>															
12.5	--	5.5	7.5	11	--	--	7.5	10	S0 <sup>2)</sup>	B	3RW40 24-□BB□5	1	1 unit	131	0.770
25	--	11	15	23	--	--	15	20	B	3RW40 26-□BB□5	1	1 unit	131	0.770	
32	--	15	18.5	29	--	--	20	25	B	3RW40 27-□BB□5	1	1 unit	131	0.770	
38	--	18.5	22	34	--	--	25	30	B	3RW40 28-□BB□5	1	1 unit	131	0.770	
45	--	22	30	42	--	--	30	40	S2	B	3RW40 36-□BB□5	1	1 unit	131	1.350
63	--	30	37	58	--	--	40	50	B	3RW40 37-□BB□5	1	1 unit	131	1.350	
72	--	37	45	62	--	--	40	60	B	3RW40 38-□BB□5	1	1 unit	131	1.350	
80	--	45	55	73	--	--	50	60	S3	B	3RW40 46-□BB□5	1	1 unit	131	1.900
106	--	55	75	98	--	--	75	75	B	3RW40 47-□BB□5	1	1 unit	131	1.900	

## Order No. supplement for connection types

- With spring-loaded terminals<sup>2)</sup>
- With screw terminals

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

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

<sup>1)</sup> Soft starter with screw terminals: Delivery time class ▶ (preferred type). Except delivery time class A for rated operational current 12.5 A at 40 °C.

<sup>2)</sup> Soft starters in size S0 with spring-loaded terminals: Price on request.

**Note:**

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

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 (see Technical Information LV 1 T).

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# 3RW Soft Starters

## 3RW40 for standard applications



3RW40 28-1TB04



3RW40 38-1TB04



3RW40 47-1TB04

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. 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	A	200 V	230 V	460 V	575 V							
	kW	kW	kW		hp	hp	hp	hp							
<b>Inline circuit, rated operational voltage 200 ... 480 V<sup>1)</sup>, with thermistor motor protection, rated control supply voltage 24 V AC/DC</b>															
12.5	3	<b>5.5</b>	--	11	3	3	<b>7.5</b>	--	<b>S0<sup>2)</sup></b>	B	<b>3RW40 24-□TB04</b>	1	1 unit	131	0.770
25	5.5	<b>11</b>	--	23	5	5	<b>15</b>	--		B	<b>3RW40 26-□TB04</b>	1	1 unit	131	0.770
32	7.5	<b>15</b>	--	29	7.5	7.5	<b>20</b>	--		B	<b>3RW40 27-□TB04</b>	1	1 unit	131	0.770
38	11	<b>18.5</b>	--	34	10	10	<b>25</b>	--		B	<b>3RW40 28-□TB04</b>	1	1 unit	131	0.770
45	11	<b>22</b>	--	42	10	15	<b>30</b>	--	<b>S2</b>	B	<b>3RW40 36-□TB04</b>	1	1 unit	131	1.350
63	18.5	<b>30</b>	--	58	15	20	<b>40</b>	--		B	<b>3RW40 37-□TB04</b>	1	1 unit	131	1.350
72	22	<b>37</b>	--	62	20	20	<b>40</b>	--		B	<b>3RW40 38-□TB04</b>	1	1 unit	131	1.350
80	22	<b>45</b>	--	73	20	25	<b>50</b>	--	<b>S3</b>	B	<b>3RW40 46-□TB04</b>	1	1 unit	131	1.900
106	30	<b>55</b>	--	98	30	30	<b>75</b>	--		B	<b>3RW40 47-□TB04</b>	1	1 unit	131	1.900
<b>Inline circuit, rated operational voltage 400 ... 600 V, with thermistor motor protection, rated control supply voltage 24 V AC/DC</b>															
12.5	--	5.5	<b>7.5</b>	11	--	--	7.5	<b>10</b>	<b>S0<sup>2)</sup></b>	B	<b>3RW40 24-□TB05</b>	1	1 unit	131	0.770
25	--	11	<b>15</b>	23	--	--	15	<b>20</b>		B	<b>3RW40 26-□TB05</b>	1	1 unit	131	0.770
32	--	15	<b>18.5</b>	29	--	--	20	<b>25</b>		B	<b>3RW40 27-□TB05</b>	1	1 unit	131	0.770
38	--	18.5	<b>22</b>	34	--	--	25	<b>30</b>		B	<b>3RW40 28-□TB05</b>	1	1 unit	131	0.770
45	--	22	<b>30</b>	42	--	--	30	<b>40</b>	<b>S2</b>	B	<b>3RW40 36-□TB05</b>	1	1 unit	131	1.350
63	--	30	<b>37</b>	58	--	--	40	<b>50</b>		B	<b>3RW40 37-□TB05</b>	1	1 unit	131	1.350
72	--	37	<b>45</b>	62	--	--	40	<b>60</b>		B	<b>3RW40 38-□TB05</b>	1	1 unit	131	1.350
80	--	45	<b>55</b>	73	--	--	50	<b>60</b>	<b>S3</b>	B	<b>3RW40 46-□TB05</b>	1	1 unit	131	1.900
106	--	55	<b>75</b>	98	--	--	75	<b>75</b>		B	<b>3RW40 47-□TB05</b>	1	1 unit	131	1.900

### Order No. supplement for connection types

- With spring-loaded terminals<sup>2)</sup>
- With screw terminals

<sup>1)</sup> Soft starter with screw terminals: delivery time class ► (preferred type).

<sup>2)</sup> Soft starter in size S0 with spring-loaded terminals: Price on request.

### Note:

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

*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 (see Technical Information LV 1 T).*

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## 3RW Soft Starters

3RW40  
for standard applications

3RW40 56-6BB4



3RW40 76-6BB4

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 $I_e$	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	A	200 V hp	230 V hp	460 V hp	575 V hp	kg				
<b>Inline circuit, rated operational voltage 200 ... 460 V<sup>1)</sup></b>															
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
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>Inline circuit, rated operational voltage 400 ... 600 V<sup>2)</sup></b>															
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
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**

- With spring-loaded terminals
- With screw terminals

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

- 115 V AC
- 230 V AC

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

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

3) 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.

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 (see Technical Information LV 1 T).








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# 3RW Soft Starters

## 3RW40 for standard applications



### Accessories

For soft starters		Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Type	Size								
<b>Box terminal blocks for soft starters</b>									
<b>For round and ribbon cables</b>									
	3RW40 5.	<b>S6</b>	<ul style="list-style-type: none"> <li>Up to 70 mm<sup>2</sup></li> <li>Up to 120 mm<sup>2</sup></li> </ul>	▶	<b>3RT19 55-4G</b>	1	1 unit	101	0.230
	3RW40 7.	<b>S12</b>	<ul style="list-style-type: none"> <li>Up to 240 mm<sup>2</sup></li> </ul>	▶	<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 covers for cable lugs and busbar connection</b>									
	3RW30 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
<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>	<ul style="list-style-type: none"> <li>24 V ... 30 V AC/DC</li> <li>110 V ... 127 V AC/DC</li> <li>220 V ... 250 V AC/DC</li> </ul>	▶	<b>3RU19 00-2AB71</b>	1	1 unit	101	0.066
				▶	<b>3RU19 00-2AF71</b>	1	1 unit	101	0.067
				▶	<b>3RU19 00-2AM71</b>	1	1 unit	101	0.066
<b>Mechanical RESET comprising</b>									
	3RW40 5. and 3RW40 7.	<b>S6, S12</b>	<ul style="list-style-type: none"> <li>Resetting plunger, holder and former</li> <li>Suitable pushbutton IP65, Ø 22 mm, 12 mm stroke</li> <li>Extension plunger</li> </ul>	▶	<b>3RU19 00-1A</b>	1	1 unit	101	0.038
				B	<b>3SB30 00-0EA11</b>	1	1 unit	102	0.020
				A	<b>3SX13 35</b>	1	1 unit	102	0.004
<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>	<ul style="list-style-type: none"> <li>Length 400 mm</li> <li>Length 600 mm</li> </ul>	▶	<b>3RU19 00-1B</b>	1	1 unit	101	0.063
				▶	<b>3RU19 00-1C</b>	1	1 unit	101	0.073

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


## 3RW Soft Starters

3RW40  
for standard applications

For soft starters		Motor starter protector		DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Type	Size	Size	Size							
<b>Link modules for motor starter protectors</b>										
	3RW40 24, 3RW40 26	<b>S0</b>	<b>S0</b>	▶	<b>3RA19 21-1A</b>		1	10 units	101	0.028
	3RW40 27, 3RW40 28		<b>S2</b>	D	<b>3RA19 31-1D</b>		1	5 units	101	0.041
	3RW40 36	<b>S2</b>	<b>S2</b>	▶	<b>3RA19 31-1A</b>		1	5 units	101	0.033
	3RW40 37, 3RW40 38		<b>S3</b>	D	<b>3RA19 41-1D</b>		1	5 units	101	0.042
	3RW40 46, 3RW40 47	<b>S3</b>	<b>S3</b>	▶	<b>3RA19 41-1A</b>		1	5 units	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</b> , <b>S3</b>		▶	<b>3RW49 47-8VB00</b>		1	1 unit	131	0.020
	<b>Operating instructions<sup>1)</sup></b>									
For soft starters										
3RW40 2.	<b>S0</b>				<b>3ZX10 12-0RW40-1AA1</b>					on req.
3RW40 3.	<b>S2</b>									
3RW40 4.	<b>S3</b>									
3RW40 5.	<b>S6</b>				<b>3ZX10 12-0RW40-2DA1</b>					on req.
3RW40 7.	<b>S12</b>									

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

**Spare parts**

For soft starters		Version		DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Type	Size	Rated control supply voltage $U_s$	Rated control supply voltage $U_s$							
<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

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

# 3RW Soft Starters

## 3RW40 for standard applications

### More information

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

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

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 fan	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

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

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

The soft starter has to be selected one rating 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.



### 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.

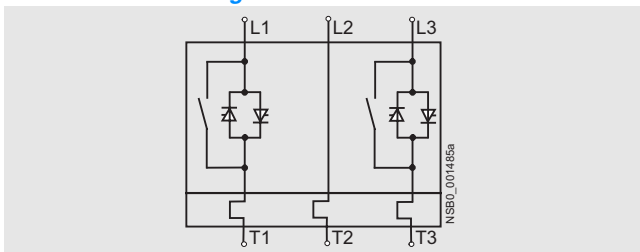
In the motor feeder between the SIRIUS 3RW soft starter and the motor, no capacitive elements are permitted (e.g. no reactive-power compensation equipment). In addition, neither static systems for reactive-power compensation nor dynamic PFC (Power Factor Correction) must be operated in parallel during 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:

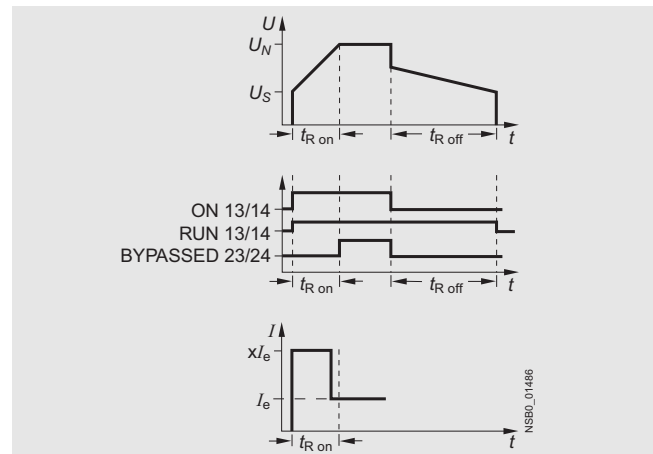
*When induction motors are switched on, voltage drops occur as a rule on starters of all types (direct starters, wye-delta starters, soft starters). The infeed transformer must always be dimensioned such that the voltage dip when starting the motor remains within the permissible tolerance. If the infeed 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.*

### 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



### 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.

You can order the CD-ROM under the following order number: Order No.: E20001-D1020-P302-V2-7400.

You can find more information on the Internet at: <http://www.siemens.com/softstarter>