Overview

The advantages of the SIRIUS soft starters at a glance:

- Soft starting and smooth ramp-down[1)]
- 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 Standard applications	SIRIUS 3RW40 Standard applications	SIRIUS 3RW44 High-Feature applications
Rated current up to 50 °C	A	3 ... 98	11 ... 385	26 ... 1076
Rated operational voltage	V	200 ... 480	200 ... 600	200 ... 690
Motor rating at 460 V				
• Inline circuit	Hp	1.5 ... 75	7.5 ... 300	15 ... 900
• Inside-delta circuit	Hp	--	--	22 ... 1600
Ambient temperature	°C	-25 ... +60	-25 ... +60	0 ... +60
Soft starting/ramp-down		✔[1)]	✔	✔
Voltage ramp		✔	✔	✔
Starting/stopping voltage	%	40 ... 100	40 ... 100	20 ... 100
Starting and ramp-down time[7)]	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		✔	✔	✔
Intrinsic device protection		--	✔	✔
Motor overload protection		--	✔	✔
Thermistor motor protection		--	✔[2)]	✔
Integrated remote RESET		--	✔[3)]	✔
Adjustable current limiting		--	✔	✔
Inside-delta circuit		--	--	✔
Breakaway pulse		--	--	✔
Creep speed in both directions of rotation		--	--	✔
Pump ramp-down		--	--	✔[4)]
DC braking		--	--	✔[4) 5)]
Combined braking		--	--	✔[4) 5)]
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		--	--	✔[6)]
Programmable control inputs and outputs		--	--	✔
Number of parameter sets		1	1	3
Parameterization software (Soft Starter ES)		--	--	✔
Power semiconductors (thyristors)		2 controlled phases	2 controlled phases	3 controlled phases
Screw terminals		✔	✔	✔
Spring-type terminals		✔	✔	✔
UL/CSA		✔	✔	✔
CE marking		✔	✔	✔
Soft starting under heavy starting conditions		--	--	✔[4)]
Configuring support		Win-Soft Starter, Electronic Application Selector, Technical Assistance Tel.: 1-800-333-7421		

✔ 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) Actual motor start times are load dependent.

You can find further information on the Internet at:
www.usa.siemens.com/softstarters

3RW30 for standard applications

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.[1)]

The SIRIUS 3RW30 soft starters are characterized above all by their small space requirements. Integrated bypass contacts mean that minimal power loss is used 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 75 Hp (at 460 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 this soft starter.

1) Actual motor start times are load dependent.

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, current and torque peaks, which are unavoidable in the case of wye-delta starters, for instance, do not occur.

Application areas

- Pumps
- Heat pumps
- Hydraulic pumps
- Presses
- Conveyors
- Roller conveyor
- Screw conveyors

3RW44 for high-feature applications

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 900 Hp (at 460 V) in the inline circuit and up to 1600Hp (at 460 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. Whether it's 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 reduction in the heat loss occuring during operation of the soft starter.

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 graphical 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

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.

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, e. g.

- Pumps
- Fans
- Compressors
- Water transport
- Conveying systems and lifts
- Hydraulics
- Machine tools
- Mills
- Saws
- Crushers
- Mixers
- Centrifuges
- Industrial cooling and refrigerating systems

Ambient temperature 50 °C Rated operational current I_e	Rated power of induction motors for rated operational voltage U_e				Order No.	List Price $ per PU	PS*	Weight per PU approx.
	200 V	230 V	460 V	575 V				
A	hp	hp	hp	hp				kg
Inline circuits[2], rated operational voltage 400 ... 600 V								
26	--	--	15	**20**	**3RW44 22-□BC□5**		1 unit	6.500
32	--	--	20	**25**	**3RW44 23-□BC□5**		1 unit	6.500
42	--	--	25	**30**	**3RW44 24-□BC□5**		1 unit	6.500
51	--	--	30	**40**	**3RW44 25-□BC□5**		1 unit	6.500
68	--	--	50	**50**	**3RW44 26-□BC□5**		1 unit	6.500
82	--	--	60	**75**	**3RW44 27-□BC□5**		1 unit	6.500
Order No. supplement for connection types								
• With spring-type terminals					**3**			
• With screw terminals					**1**			
100	--	--	75	**75**	**3RW44 34-□BC□5**		1 unit	7.900
117	--	--	75	**100**	**3RW44 35-□BC□5**		1 unit	7.900
145	--	--	100	**125**	**3RW44 36-□BC□5**		1 unit	7.900
180	--	--	125	**150**	**3RW44 43-□BC□5**		1 unit	11.500
215	--	--	150	**200**	**3RW44 44-□BC□5**		1 unit	11.500
280	--	--	200	**250**	**3RW44 45-□BC□5**		1 unit	11.500
315	--	--	250	**300**	**3RW44 46-□BC□5**		1 unit	11.500
385	--	--	300	**400**	**3RW44 47-□BC□5**		1 unit	11.500
494	--	--	400	**500**	**3RW44 53-□BC□5**		1 unit	50.000
551	--	--	450	**550**	**3RW44 54-□BC□5**		1 unit	50.000
615	--	--	500	**600**	**3RW44 55-□BC□5**		1 unit	50.000
693	--	--	550	**700**	**3RW44 56-□BC□5**		1 unit	50.000
780	--	--	600	**800**	**3RW44 57-□BC□5**		1 unit	50.000
850	--	--	700	**850**	**3RW44 58-□BC□5**		1 unit	50.000
970	--	--	800	**1000**	**3RW44 65-□BC□5**		1 unit	78.000
1076	--	--	900	**1100**	**3RW44 66-□BC□5**		1 unit	78.000
Order No. supplement for connection types								
• With spring-type terminals					**2**			
• With screw terminals					**6**			
Order No. supplement for the rated control supply voltage U_s[1]								
• 115 V AC						**3**		
• 230 V AC						**4**		

[1] Control by way of the internal 24 V DC supply and direct control by means of PLC possible.

[2] For inside delta selection, see page 7/76.

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

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