

Stellar® SR44 Full-Featured Soft Starters

SR44 Soft Starter Optional Accessories

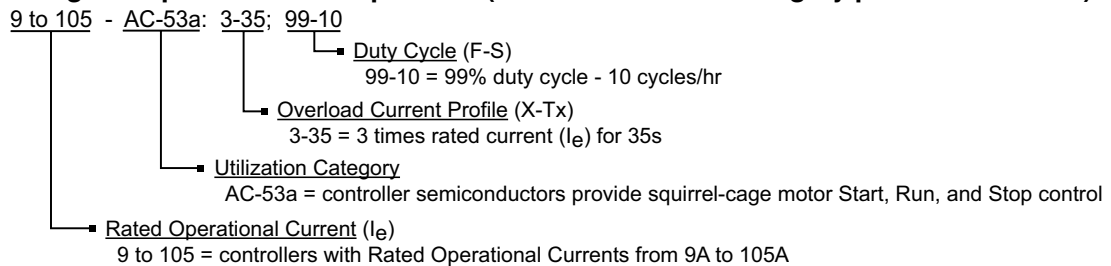
SR44 Series Full-Featured Soft Starters – Optional Accessories			
Part Number	Name	Price	Description
SR44-KPD	Remote Keypad	No Match!	Can be used to remotely monitor and/or program SR44 Soft Starters. Rated NEMA 4/4X. No external power wiring required. Works with all SR44 Soft Starters. Includes: Keypad, Cable (3m). NOTE: Optional SR44-RS485 communication card must be installed to use the SR44-KPD remote keypad. SR44-KPD can control multiple SR44 Soft Starters, but only one at a time.
SR44-RS485*	Communication Card *	\$95.00	Can be used to establish RS-485 communication between an SR44 Soft Starter and most Modbus masters. A PLC or PC is required to demux the data returned from the SR44. (See the User Manual for details and PLC sample ladder programs.) Plugs directly onto the control board of an SR44. No external power needed. Has both RJ45 connections and screw-type terminal strip connections; can be used with CAT5 RJ45-terminated Ethernet cable, or with twisted pair shielded wiring. Max # of networked SR44s: 8. Max network length: 25m [82 ft] for RJ45 connections; 1200m [3937 ft] for RS-485 screw-terminal connections. Can be used with an SR44-KPD to create an internal RS-485 network between SR44 Soft Starters (one remote keypad to control multiple SR44s, one at a time). Works with all SR44 Soft Starters. Includes: Circuit card, Remote/Local selector switch.
Communication cables for use with the SR44-RS485 communication card are available in our ZIPLink Wiring Solutions section: SR44-485HD15-CBL-2 for connection to certain PLCs; SR44-485RJ45-CBL-2 for connection to certain RS485 networks			

SR44 Index Ratings (per IEC 60947-4-2)

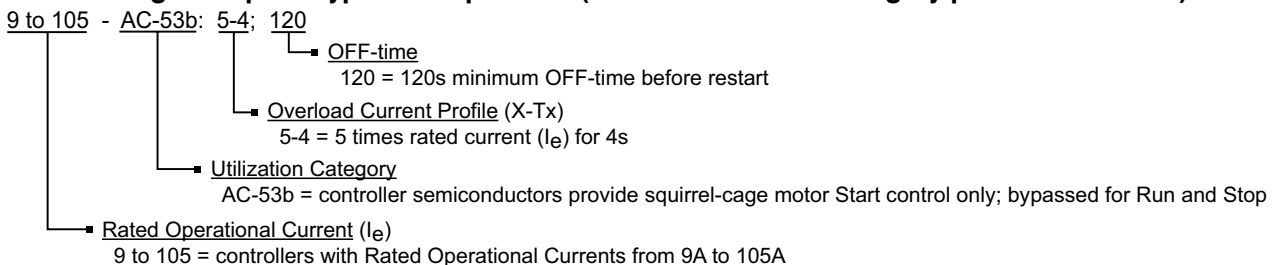
SR44 Index Ratings *			
Model #	I_e (A)	Standard Operation AC-53a; X-Tx; F-S	Bypassed Operation AC-53b; X-Tx; OFF-time
SR44-9 to SR44-105	9 to 105	AC-53a: 5-4; 99-10 AC-53a: 3-35; 99-10	AC-53b: 5-4; 120 AC-53b: 3-35; 120
SR44-146 to SR44-174	146 to 174	AC-53a: 4-6; 99-10 AC-53a: 3-35; 99-10	AC-53b: 4-6; 120 AC-53b: 3-35; 120
SR44-242	242	AC-53a: 4-6; 60-3 AC-53a: 3-35; 60-3	AC-53b: 4-6; 420 AC-53b: 3-35; 420
* Index ratings AC-53a and AC-53b are specified by IEC standard # 60947-4-2			

In line with the stated IEC starting duties, starters of 242 Amps and above have an enforced off period of seven minutes set as standard. During this period the display indicates “Stopped. Cooling”, and the starter will not respond to a start signal. IEC Index Ratings are comprised of Rated Operational Current (I_e), Utilization Category, Overload Current Profile (X-Tx), and Duty Cycle (F-S) or OFF-time.

Index Rating Example - Standard Operation (AC-53a Utilization Category per IEC 60947-4-2)



Index Rating Example - Bypassed Operation (AC-53b Utilization Category per IEC 60947-4-2)



Stellar[®] SR44 Full-Featured Soft Starters

SR44 Soft Starter Selection

SR44 Soft Starters – O/L Trip Classes ①	
Default	10
Heavy	20
Agitator	10
Air Compressor - Equalized	10B
Air Compressor - Loaded	20
Ball Mill	20
Centrifuge - extended start needed for sizing	
Chiller	10B
Conveyor - Unloaded	10B
* Conveyor - Loaded	20
Crusher	30
Escalator	10B
* Fan - Low Inertia < 85A	10
* Fan - High Inertia > 85A	30
Feeder - Screw	10
Grinder	20
Hammer Mill	20
Lathe Machine	10B
Mills - Flour, etc.	20
Mixer - Unloaded	10B
Mixer - Loaded	20
Pelletizer	20
Plastic and Textile Machines	10B
Press - Flywheel	20
* Pump - Centrifugal	10B
* Pump - Positive Displacement - Unloaded	10
Rolling Mill	20
Saw - Band	10
Saw - Circular	20
Screen - Vibrating	20
Transformer, Voltage Regulator	10B
Tumbler	10
Wood Chipper	30
* Commonly required applications	

SR44 Soft Starter Selection Steps

- ① Determine the required trip class based on the motor load and required start time.
- ② Select the applicable SR44 part number based on the required Trip Class, motor HP, and connection type.

SR44 Soft Starters – Selection Table ②											
Motor Size								Soft Starter Size			
In-Line Connection				In-Delta Connection **				Application Trip Class			
I (A)	HP @ 208V*	HP @ 230V	HP @ 460V	I (A)	HP @ 208V*	HP @ 230V	HP @ 460V	Class 10B	Class 10	Class 20	Class 30
9	2	3	5	15	2	3	7.5	SR44-9		SR44-16	SR44-23
16	3	5	10	27	3	5	15	SR44-16		SR44-23	SR44-30
23	5	7.5	15	39	5	7.5	25	SR44-23		SR44-30	SR44-44
30	7.5	10	20	51	7.5	10	30	SR44-30		SR44-44	SR44-59
44	10	15	30	76	10	15	50	SR44-44		SR44-59	SR44-72
59	15	20	40	102	15	20	60	SR44-59		SR44-72	SR44-85
72	20	25	50	124	20	25	75	SR44-72		SR44-85	SR44-105
85	25	30	60	147	25	30	100	SR44-85		SR44-105	SR44-146
105	30	40	75	181	30	40	125	SR44-105		SR44-146	SR44-174
146	50	60	100	252	50	60	150	SR44-146		SR44-174	SR44-242
174	60	75	150	301	60	75	250	SR44-174		SR44-242	n/a***
202	60	75	150	349	60	75	300	SR44-242			
242	75	100	200	419	75	100	300			n/a***	n/a***

* 208V applications are UL listed only as low as 196V.

** For In-Delta connections, all six motor wires must be available for connection, and it is critical to exactly follow the In-Delta wiring diagram in the SR44 User Manual or Quick-start Guide. (Nine-lead motors CANNOT be connected in the delta.) The Soft Starter will only sense the Phase Current, which is about 58% of the Line Current.

*** Please consider SR55 series soft starters for higher-current applications.

Stellar® SR44 Full-Featured Soft Starters

SR44 Max Overcurrent Protection

UL requires Recognized special purpose fuses (JFHR2) for the protection of semi-conductor devices (rated 700 VAC, as indicated in the Semiconductor Fuse Table) be used to obtain the short circuit ratings required by UL.

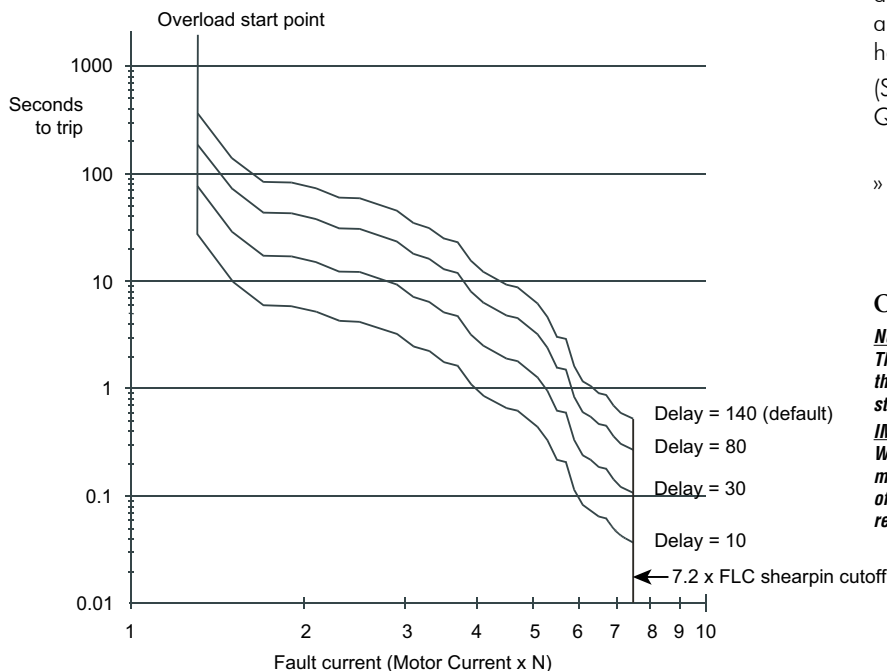
Suitable for use on a circuit capable of delivering not more than the indicated RMS Symmetrical Amperes at maximum rated operational voltage, when protected by Semiconductor Fuse type manufactured by Company and Model Number indicated in the table.

These fuses are for short circuit protection of the semiconductors and must be mounted externally by the user between the unit and the incoming main power source; not between the unit and the motor.

Semiconductor Fuse Types for SR44 Soft Starters								
Model Name	I _e (A)	S.C. With-stand	UL JFHR2 Fuses for UL Applications *			Non-UL **		
			Bussman Model # *	Mersen (formerly Ferraz) Model # *	Amps	Bussmann Model # **	Edison Model # **	Amps
SR44-9	9	5kA	170M3110	6.9 URD 30 D08A 0063	63	FWP-50B	E70S50	50
SR44-16	16							
SR44-23	23							
SR44-30	30							
SR44-44	44							
SR44-59	59	10 kA	170M3112	6.9 URD 30 D08A 0100	100	FWP-80B	E70S80	80
SR44-72	72							
SR44-85	85							
SR44-105	105							
SR44-146	146							
SR44-174	174							
SR44-242	242							

* Use these fuses with SR44 soft starters in UL applications.
 ** Use these fuses with SR44 soft starters only in NON-UL applications.

SR44 Internal Overload Trip



‘Current limit’, ‘Overload level’ and ‘Overload delay’ settings may be adjusted to limit overload currents in accordance with the trip curves shown here.

(See Menu Structure in User Manual or Quick-start Guide for default settings.)

» For motors with FLCs lower than the rated current of the SR44, the ‘Overload level’ may be adjusted using the following formula:

$$\text{Overload Level} = \text{Motor FLC} \times 1.1(\text{A})$$

Note:
 The overload monitors only one of the phases, and the ‘Current Limit’ level is active only during motor starting.

IMPORTANT:
 We recommend that the control supply is maintained between starts to ensure the integrity of the overload, which will reset on control power removal.