

# Stellar® SR33 Series Basic Soft Starters

## SR33 Soft Starter Selection

### SR33 Sizing Guide

The SR33 is designed for general purpose applications and where a traditional Wye/Delta is currently used (or considered appropriate). Generally the motor will start off-load, and the time to accelerate to full speed will be in the range of a few seconds.

The standard SR33 range is suitable for the majority of applications, and conforms to Trip Class 5, which means it is capable of withstanding three times Full Load Current for 5-second starts. However, there are instances where a different start profile is required. To satisfy these applications, the SR33 has four other ratings; Class 10B, Class 10, Class 20, and Class 30. These ratings correspond to IEC thermal/electronic overload trip classes, and the SR33 must be used with an overload protection device that has a rating corresponding to the Trip Class selected.

When using the selection tables to select the most appropriate SR33 model, please note the following:

- The SR33 is not suitable for very high inertia loads, such as centrifuges or loaded crushers, with starts > 30 seconds.
- Do not use the Class 5 rating when there is a possibility of the motor starting with a significant load.
- 2-pole motors may take longer to start, so use a minimum of Trip Class 10B.

SR33 Soft Starters – O/L Trip Class ①			
Application	Trip Class	Start Time (s)	Notes
<b>Standard</b>	5	5	Suitable for Wye/Delta applications with < 5s start time, motor starts off-load
<b>Heavy</b>	20	12–19	Suitable for Wye/Delta with applications > 12s start time
<b>High Torque</b>	20	12	Requires more starting torque than a Wye/Delta
<b>Centrifugal Pump</b>	10B	10–15	Generally easy to start when pumping water
<b>Positive Displacement Pump (unloaded)</b>	10	5–10	Can be difficult to start
<b>Off-Load Conveyor</b>	5	5	Unloaded at start
<b>Heavy conveyor</b>	20	5–10	Loaded at start
<b>Low-Inertia Fan</b>	10	10–20	Generally fans less than or equal to 45kW (60hp)
<b>High-Inertia Fan</b>	30	30	Generally fans greater than or equal to 45kW (60hp)
<b>Off-Load Compressor</b>	5	5–10	Special circuits ensure motor starts off-load
<b>Loaded Compressor</b>	20	10–15	Some compressor systems can be difficult to start
<b>Off-Load Mixer</b>	5	5	No material in basin; off-load
<b>Heavy Mixer</b>	20	10–15	Material in basin

### SR33 Selection Steps

- ① Determine the required trip class based on the motor load and required start time.
- ② Select the applicable SR33 part number based on the required Trip Class and motor HP.

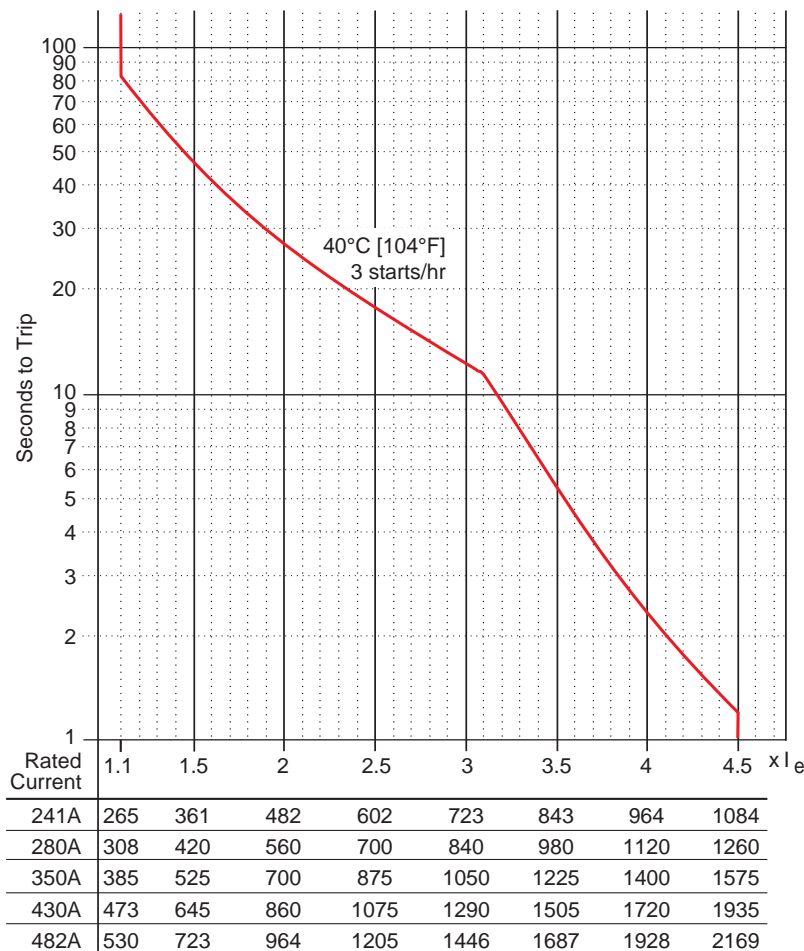
SR33 SELECTION – Selection Table ②							
I (A)	Motor		Soft Starter Application Trip Class				
	HP @ 230V	HP @ 460V	Class 5	Class 10B	Class 10	Class 20	Class 30
			10 starts/hr		5 starts/hr		
<b>22</b>	<b>7.5</b>	<b>15</b>	SR33-22	SR33-29	SR33-29	SR33-29	SR33-41
<b>29</b>	<b>10</b>	<b>20</b>	SR33-29	SR33-41	SR33-41	SR33-41	SR33-55
<b>41</b>	<b>10</b>	<b>30</b>	SR33-41	SR33-55	SR33-55	SR33-66	SR33-97
<b>55</b>	<b>20</b>	<b>40</b>	SR33-55	SR33-66	SR33-66	SR33-97	SR33-132
<b>66</b>	<b>20</b>	<b>50</b>	SR33-66	SR33-80	SR33-80	SR33-132	SR33-132
<b>80</b>	<b>30</b>	<b>60</b>	SR33-80	SR33-132	SR33-132	SR33-132	SR33-160
<b>97</b>	<b>30</b>	<b>75</b>	SR33-97	SR33-132	SR33-132	SR33-160	SR33-195
<b>132</b>	<b>50</b>	<b>100</b>	SR33-132	SR33-195	SR33-195	SR33-241	SR33-280
<b>160</b>	<b>60</b>	<b>125</b>	SR33-160	SR33-241	SR33-241	SR33-280	SR33-350
<b>195</b>	<b>75</b>	<b>150</b>	SR33-195	SR33-241	SR33-280	SR33-350	SR33-430
–	–	–	–	<b>3 starts/hr</b>			
<b>241</b>	<b>75</b>	<b>200</b>	SR33-241	SR33-280	SR33-350	SR33-430	SR33-482
<b>280</b>	<b>100</b>	<b>200</b>	SR33-280	SR33-350	SR33-430	SR33-482	–
<b>350</b>	<b>125</b>	<b>250</b>	SR33-350	SR33-482	SR33-482	–	–
<b>430</b>	<b>150</b>	<b>350</b>	SR33-430	–	–	–	–
<b>482</b>	<b>200</b>	<b>400</b>	SR33-482	–	–	–	–



**FOR MOTOR OVERLOAD PROTECTION, THE SR33 MUST BE USED WITH A SEPARATE CUSTOMER-SUPPLIED OVERLOAD PROTECTION DEVICE THAT HAS A RATING CORRESPONDING TO THE APPLICABLE TRIP CLASS.**

# Stellar® SR33 Series Basic Soft Starters

## SR33 Soft Starter Circuit Protection



Trip Level Current (Amps)

The SR33 can be used at ratings other than those stated. Use the above trip curves to determine the required unit for the duty.

As an example, the SR33-280 will run a 200hp motor (280 Amp) at the maximum continuous running current and will allow an overload of 3 x 280 Amp (840A) for 12 seconds, 3 times per hour. The unit would also allow a 3.5 x overload (980A) for approximately 5½ seconds, 3 times per hour.

Following an overload trip, subsequent restarts can be restricted due to a cooling time. The severity of overload determines the cooling time, which has a maximum value of 10 minutes.



***THE SOFT STARTER OVERLOAD TRIP CURVE SHOWN ON THIS PAGE APPLIES ONLY TO MODEL NUMBERS SR33-241 THROUGH SR33-482, AND IT PROVIDES PROTECTION ONLY FOR THE SOFT STARTER. FOR MOTOR OVERLOAD PROTECTION, A SEPARATE CUSTOMER-SUPPLIED OVERLOAD PROTECTION DEVICE MUST BE PROVIDED.***

UL Short Circuit Protection **			
SR33 Model Number *	Short Circuit Rating	Class J High-Speed or RK5 Time-Delay Current-Limiting Fuse *** Rated 600VAC	Circuit Breaker Rated 600VAC
SR33-22	5kA	35A	—
SR33-29	5kA	45A	—
SR33-41	5kA	60A	—
SR33-55	5kA	80A	—
SR33-66	10kA	125A	—
SR33-80	10kA	175A	—
SR33-97	10kA	200A	—
SR33-132	10kA	250A	350A
SR33-160	10kA	350A	450A
SR33-195	10kA	400A	500A
SR33-241	18kA	450A	—
SR33-280	18kA	450A	—

\* Soft starters SR33-350 to SR33-482 are NOT UL listed or recognized.  
\*\* Suitable for use on a circuit capable of delivering not more than the RMS symmetrical Amperes as indicated at 480VAC maximum, when protected by fuses or inverse-time circuit breakers with rated maximum Amperes as indicated.  
\*\*\* Fuse comparable to Edison type JHL (class J) or ECSR (class RK5).

RECOMMENDED FUSING for IEC Type 1 Coordination Short Circuit Protection				
SR33 Model Number	Rated Short Circuit Current	SIBA Semiconductor Fuse	Class J High-Speed or RK5 Time-Delay Current-Limiting Fuse* Rated 600VAC	
			Amp	Edison JHL Part #
SR33-22	5kA	2018920.50A	35A	JHL35
SR33-29		2018920.100A	45A	JHL45
SR33-41			60A	JHL60
SR33-55		80A	JHL80	
SR33-66	10kA	2018920.125A	125A	JHL125
SR33-80		2061032.200A	175A	JHL175
SR33-97			200A	JHL200
SR33-132		250A	JHL250	
SR33-160	2061032.250A	2061032.400A	350A	JHL350
SR33-195			400A	JHL400
SR33-241	18kA	2062032.630	450A	JHL450
SR33-280			2063032.1000	—
SR33-350		2063032.1000		—
SR33-430			—	—
SR33-482	—	—	—	—

\* Fuse comparable to Edison type JHL (class J) or ECSR (class RK5).