Stellar® SR44 Full-Featured Soft Starters

SR44 Soft Starter Optional Accessories

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Name</th>
<th>Price</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SR44-RS485*</td>
<td>Communication Card</td>
<td>$95.00</td>
<td>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. 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.</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Model #</th>
<th>Ie (A)</th>
<th>Standard Operation AC-53a; X-Tx; F-S</th>
<th>Bypassed Operation AC-53b; X-Tx; OFF-time</th>
</tr>
</thead>
<tbody>
<tr>
<td>SR44-9 to SR44-30</td>
<td>9 to 30</td>
<td>AC-53a: 5-4; 99-10</td>
<td>AC-53b: 5-4; 120</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AC-53a: 3-35; 99-10</td>
<td>AC-53b: 3-35; 120</td>
</tr>
</tbody>
</table>

* Index ratings AC-53a and AC-53b are specified by IEC standard # 60947-4-2

IEC Index Ratings are comprised of Rated Operational Current (Ie), 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)

9 to 105 - AC-53a: 3-35; 99-10

- Duty Cycle (F-S)
  - 99-10 = 99% duty cycle - 10 cycles/hr
- Overload Current Profile (X-Tx)
  - 3-35 = 3 times rated current (Ie) for 35s
- Utilization Category
  - AC-53a = controller semiconductors provide squirrel-cage motor Start, Run, and Stop control
- Rated Operational Current (Ie)
  - 9 to 105 = controllers with Rated Operational Currents from 9A to 105A

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

9 to 105 - AC-53b: 5-4; 120

- OFF-time
  - 120 = 120s minimum OFF-time before restart
- Overload Current Profile (X-Tx)
  - 5-4 = 5 times rated current (Ie) for 4s
- Utilization Category
  - AC-53b = controller semiconductors provide squirrel-cage motor Start control only; bypassed for Run and Stop
- Rated Operational Current (Ie)
  - 9 to 105 = controllers with Rated Operational Currents from 9A to 105A
Stellar® SR44 Full-Featured Soft Starters

SR44 Soft Starter Selection

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

<table>
<thead>
<tr>
<th>Motor Size</th>
<th>Soft Starter Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>In-Line Connection</td>
<td>In-Delta Connection **</td>
</tr>
<tr>
<td>HP @ 208V*</td>
<td>HP @ 230V</td>
</tr>
<tr>
<td>9</td>
<td>2</td>
</tr>
<tr>
<td>16</td>
<td>3</td>
</tr>
<tr>
<td>30</td>
<td>7.5</td>
</tr>
</tbody>
</table>

* 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.
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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.

<table>
<thead>
<tr>
<th>Model Name</th>
<th>Ie (A)</th>
<th>S.C. Withstand</th>
<th>UL JFHR2 Fuses for UL Applications</th>
<th>Non-UL **</th>
</tr>
</thead>
<tbody>
<tr>
<td>SR44-9</td>
<td>9</td>
<td>5kA</td>
<td>170M3110 6.9 URD 30 D08A 0063</td>
<td>63</td>
</tr>
<tr>
<td>SR44-16</td>
<td>16</td>
<td></td>
<td>170M3112 6.9 URD 30 D08A 0100</td>
<td>100</td>
</tr>
<tr>
<td>SR44-30</td>
<td>30</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

‘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:

Overload Level = Motor FLC x 1.1(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.