

How to use an S811+ soft starter to start multiple motors simultaneously



Application

The S811+ soft starter can be used as a single unit to control the start of several motors. This document relates to starting several similar motors simultaneously.

Overview

A single S811+ soft starter may be used to start several motors simultaneously. Several considerations must be kept in mind when selecting the capacity of the soft starter:

1. The motors should be identical or within a narrow range (5 percent) of FLA currents and should have very similar loads that would result in closely matched starting characteristics for all the motors.
2. The soft starter amperage capacity will be based on the sum total of all the individual motors' FLA currents. Do not select the soft starter based on an average value or an average expected running current. Please be aware that the soft starter will provide total circuit overload protection only in this configuration. If overload protection is required for each motor individually, then additional external devices will be required.

Motors are to be wired in compliance with recognized NEMA® standards. The motor wiring diagrams may be found in NEMA Standards Publication Number ICS 2-2000.

EAT•N

Powering Business Worldwide

Detailed procedure

The procedures referred to in this document represent simple functional circuits used to control motor starting in motor circuits used to start several motors at one time. Circuits using overload relays, isolation contactors, additional bypass contactors, or components used to control motor speed are not shown, but are able to be used with the appropriate changes to the wiring configuration.

Connecting the S811+ to multiple motors for simultaneous starting

1. Verify that the motors have FLA ratings within 5 percent of each other.
2. Verify that the motors have starting loads that are as identical as is practical. Loads should consist of identical devices, processes, and materials on each motor.
3. Add the FLA values of all the motors to determine the total FLA of the applications.
4. Determine the service factor of each motor. All motors should have the same service factor.
5. Select the amperage capacity of the soft starter according to the required FLA, the anticipated number of starts per hour, and the maximum current rise during the start ramp.

Supporting documentation

Manuals	Reference Number
S811+ User Manual	MN03900001E
NEMA Industrial Control and Systems	ICS 2-2000

Additional help

In the event that additional help is needed, please contact the Technical Resource Center at 1-877-ETN-CARE, Option 2, Sub Option 2.

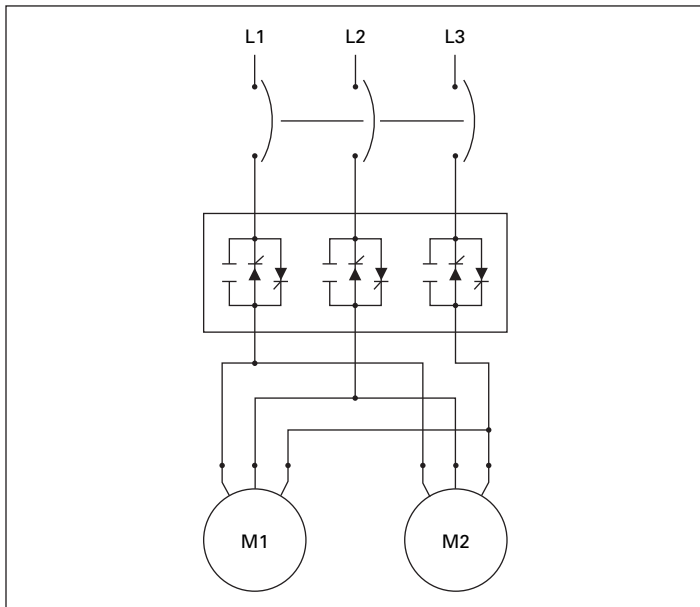


Figure 1. Sample Wiring Diagram of Two Motors Started Simultaneously

Notes: Additional overload relays are required if individual protection is necessary. Additional motors may be added in parallel (mains). Set start ramp and initial torque parameters. The motors may accelerate at different rates depending on loads.

Eaton Corporation
Electrical Sector
1111 Superior Avenue
Cleveland, OH 44114 USA
Eaton.com

© 2012 Eaton Corporation
All Rights Reserved
Printed in USA
Publication No. AP03902008E / Z12534
July 2012