

Selecting reduced voltage soft starters based on NEMA standard starter ratings



Application

Reduced voltage solid-state soft starters may be selected based on NEMA®-sized starters for motor applications at various voltages.

Overview

Soft starter sizing is determined by the horsepower or kW rating of the motor, coupled with the mains operating voltage. In an established installation that uses a NEMA-rated starter, a replacement soft starter may be selected based on the NEMA size of the starter. This method will not directly reflect criteria such as full load amperage (FLA) of the motor, motor service factors, and the maximum allowable number of starts per hour of the system, which are key factors when selecting a suitable soft starter or soft start controller. Please note that this method may not necessarily take into account severe-duty applications or other extenuating circumstances such as the specific operating characteristics of the motor or motors that are of higher efficiencies.

Note: Selection based solely on NEMA horsepower starter sizing may result in selection of a soft starter with a maximum current capacity that is lower than the NEMA-rated starter.

EATON

Powering Business Worldwide

Table 1. 200V Soft Starter or Soft Start Controller Selection

NEMA Size	NEMA Continuous Amp Rating	Max. hp Full Voltage Starter	S811+ Series	DS6 Series
00	9	1.5	Not Available	DS6-34DSX041NO-N
0	18	3	S811+N37xxx	DS6-34DSX041NO-N
1	27	7.5	S811+N37xxx	DS6-34DSX041NO-N
2	45	10	S811+N37xxx	DS6-34DSX041NO-N
3	90	25	S811+R10xxx	DS6-34DSX081NO-N
4	135	40	S811+T18xxx	DS6-34DSX134NO-N
5	270	75	S811+T30xxx	Not Available
6	540	150	S811+V50xxx	Not Available

Note: Conversion chart is based on a motor service factor of 1.15.

Table 2. 230V Soft Starter or Soft Start Controller Selection

NEMA Size	NEMA Continuous Amp Rating	Max. hp Full Voltage Starter	S811+ Series	DS6 Series
00	9	1.5	Not Available	DS6-34DSX041NO-N
0	18	3	Not Available	DS6-34DSX041NO-N
1	27	7.5	S811+N37xxx	DS6-34DSX041NO-N
2	45	15	S811+N66xxx	DS6-34DSX068NO-N
3	90	30	S811+R10xxx	DS6-34DSX099NO-N
4	135	50	S811+T18xxx	DS6-34DSX134NO-N
5	270	100	S811+T30xxx	Not Available
6	540	200	S811+V65xxx	Not Available
7	810	300	S811+V85xxx	Not Available

Note: Conversion chart is based on a motor service factor of 1.15.

Table 3. 460V Soft Starter or Soft Start Controller Selection

NEMA Size	NEMA Continuous Amp Rating	Max. hp Full Voltage Starter	S811+ Series	DS6 Series
00	9	2	Not Available	DS6-34DSX041NO-N
0	18	5	Not Available	DS6-34DSX041NO-N
1	27	10	S811+N37xxx	DS6-34DSX041NO-N
2	45	25	S811+N66xxx	DS6-34DSX041NO-N
3	90	50	S811+R10xxx	DS6-34DSX068NO-N
4	135	100	S811+T18xxx	DS6-34DSX134NO-N
5	270	200	S811+T30xxx	Not Available
6	540	400	S811+V65xxx	Not Available
7	810	600	S811+V85xxx	Not Available

Note: Conversion chart is based on a motor service factor of 1.15.

Table 4. Supporting Documentation

Manuals	Reference Number
S811+ User Manual	MN03900001E
DS6 Catalog	CA03901001E
DS6 Instructional Leaflet	IL03901001E
Program files	None
Outline drawings	None

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.

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

© 2012 Eaton Corporation
All Rights Reserved
Printed in USA
Publication No. AP03902010E / Z12533
July 2012

Eaton is a registered trademark
of Eaton Corporation.

All other trademarks are property
of their respective owners.