Type S801+, Soft Starters

Contents

Type S801+, Soft Starters

Product Description

Eaton's S801+ line of reduced voltage soft starters is very compact, multi-functional, easy to install and easy to program. Designed to control acceleration and deceleration of three-phase motors, the line is available for current ranges from 11A all the way through 1000A applications, and is suitable for mounting in motor control centers or in enclosed control (NEMA 1, 4, 4X and 12) applications.

Application Description

The S801+ line of soft starters is designed to be the smallest, most compact soft starter in the market today. With this small size, it can easily fit in place of existing soft starter designs, wye-delta starters or across-the-line NEMA and IEC starters. This feature allows easy retrofits of existing motor control centers or enclosures, and saves the expense of replacing existing structure or adding a new one to house a soft starter.

The product is designed to work with three-phase motors in a delta (three-lead) configuration. The S801+ works with all motors from fractional horsepower up to motors requiring 1000A of steady-state current. The built-in overload (in ranges from 11–1000A) and run bypass contactor make installation and setup quick and easy. The overload also offers some advanced protective functions to give additional motor protection.

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Operation

Overload Functionality

Overtemperature
Protects the device from overheating. Starter will shut down at 100°C.

Stall
Selectable protective feature, unit trips to protect system in event motor can not get to rated speed in the defined ramp period.

Jam
Selectable protective feature, unit trips to prevent damage to motor during normal run.

Phase Loss
Selectable protective feature, trips under voltage loss condition to any phase.

Phase Reversal
Selectable protective feature, trips when phase rotation is something other than A-B-C.

Kick Start
Selectable feature that provides a current "kick" of up to 550% of full load current for 0 to 2.0 seconds. This provides the additional torque required at startup to break free a motor.

Ramp Start
Provides a constant increase in torque to the motor.

Current Limit Start
Limits the maximum current available to the motor during the startup phase.

Soft Stop
Allows for a controlled stopping of a frictional load.

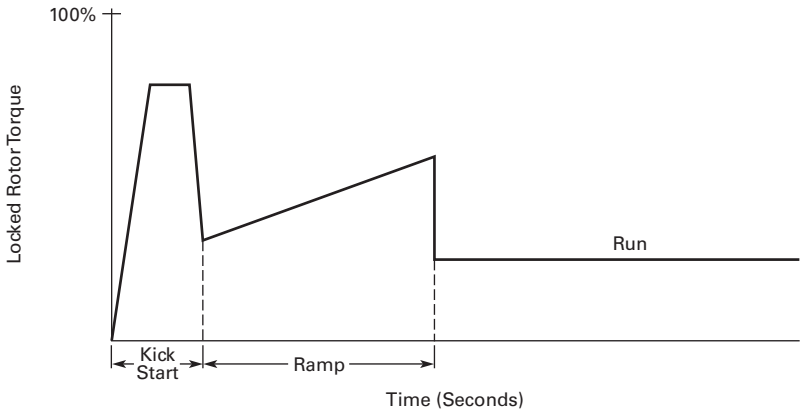
Shorted SCR Detection
Monitors for shorted SCR in the power poles.

Starting Characteristics

Kick Start
Provides an initial boost of current to the motor to help overcome motor inertia and begin motor rotation.

- 0–85% of locked rotor torque
- 0–2.0 seconds duration

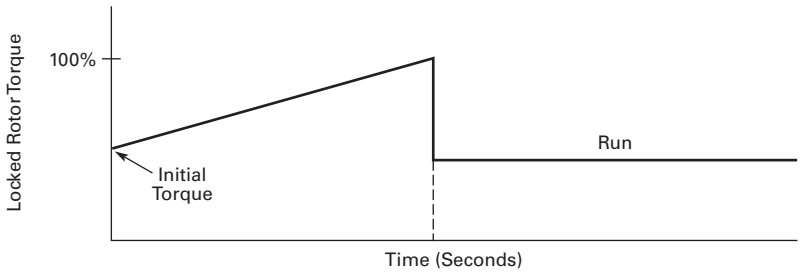
Starting Characteristics—Kick Start



Ramp Start
The most commonly used form of soft start. This allows you to set the initial torque value (of the ramp) and then raises it to full voltage conditions.

- Adjustable initial torque = 0–85% of locked rotor torque
- Adjustable ramp time = 0.5–180 seconds

Starting Characteristics—Ramp Start

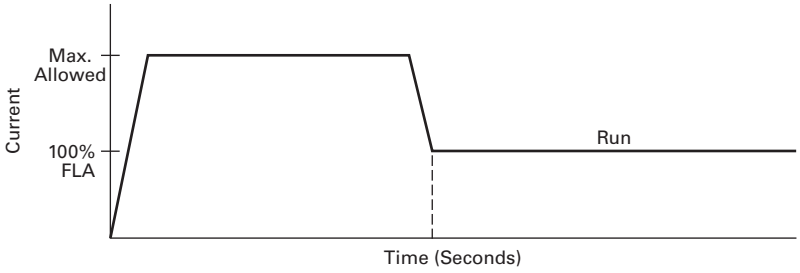


Current Limit

This mode of soft starting is used when it becomes necessary to limit the maximum starting current due to long start times or to protect the motor.

- Maximum current of 0–85% locked rotor current
- Adjustable ramp time = 0.5–180 seconds

Starting Characteristics—Current Limit

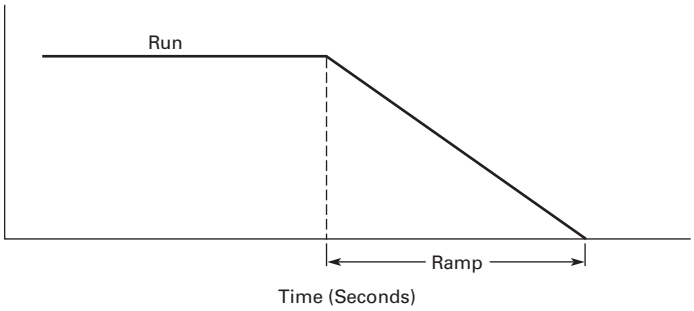


Soft Stop

Used when an extended coast-to-rest period is desired. Often used with high friction loads where a sudden stop may cause system or product damage.

- Stop time = 0–60 seconds

Starting Characteristics—Soft Stop



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Features

- Built-in overload protection
- Built-in run bypass contactor
- Adjustable ramp times
- Adjustable torque control
- Adjustable kick start control
- Programmable overload settings, 31–100% (3.2:1) of rated current for the unit
- Physically fits in place of most NEMA and IEC starters
- Easy to use control interface module
- Soft stop control
- Multiple trip class settings (5, 10, 20 and 30)
- Six SCR control
- Optional CIM door mount kit for safety
- Optional IP20 protection

Benefits

- Reduced wear on belts, gears, chains, clutches, shafts and bearings
- Allows for controlling the inrush current to the motor
- Reduced inrush current leads to more stable power grid and can lower peak demand charges
- Less shock to product on conveyor lines and material handling gear
- 24 Vdc control enhances personnel and equipment safety

Standards and Certifications

- IEC 947 compliant
- EN 60947-4-2
- CSA certification
- cULus listed (File No. E202571)
- CE marked
- CSA elevator (2411 01)

Listed

User Manuals

A comprehensive user manual is available and can be downloaded free of charge from www.eaton.com by performing a document search for MN03900002E.

Catalog Number Selection

S801+ Open Soft Starters ①②

S 801+ N 66 N 3 S

S = Soft starter

801+ = Non-combination soft starter

Frame Size
- **N** = 65 mm
- **R** = 110 mm
- **T** = 200 mm
- **U** = 200 mm
- **V** = 290 mm

Options
- **N** = Standard

Number of Poles
- **3** = Three-pole device

S = Standard soft starter

Ampere Rating

37 = 37A	**24** = 240A	**65** = 650A
66 = 66A	**30** = 304A	**72** = 720A
10 = 105A	**36** = 360A	**85** = 850A
13 = 135A	**42** = 420A	**10** = 1000A
18 = 180A	**50** = 500A ③	

Notes

① S801+T…, S801+U… and S801+V… units require lug kits found on **Page V6-T1-65**.
② All units require a 24 Vdc power supply found on catalog **Page V6-T1-65**, or equivalent.
③ S801+U50N35 unit does not have IEC certification.

Product Selection

Standard Duty Ratings

The table below is the base ratings for the soft starter. The tables included in this catalog are meant to be a reference table for different applications, but to match a unit to your exact application, consult with your local Eaton representative or call our Technical Resource Center.

Standard Duty Ratings

Starting Method	Ramp Current % of FLA	Ramp Time Seconds	Starts per Hour	Ambient Temperature
Soft start	300%	30 sec.	3	50°C
Full voltage	500%	10 sec.	3	50°C
Wye-delta	350%	20 sec.	3	50°C
80% RVAT	480%	20 sec.	2	50°C
65% RVAT	390%	20 sec.	3	50°C
50% RVAT	300%	20 sec.	4	50°C

Motor applications and customer needs come in many different varieties. With the standard and severe duty rating tables, we have attempted to provide guidelines on what the soft starter is capable of. If the application falls under these categories, you can use these charts. For other applications, or when a question arises, consult with your local Eaton representative or call our Technical Resource Center.

S801+

Standard Duty—15 Second Ramp, 300% Current Limit at 40°C, Inline Connection

	Three-Phase Motors											
	kW Rating (50 Hz)			hp Rating (60 Hz)								
				200V		230V		460V		575–600V		
Rated Current	230V	380–400V	440V	1.0SF	1.15SF	1.0SF	1.15SF	1.0SF	1.15SF	1.0SF	1.15SF	Catalog Number
Frame Size N												
37	10	18.5	18.5	10	10	10	10	25	20	30	30	**S801+N37N3S**
66	18.5	30	37	20	15	20	20	50	40	60	50	**S801+N66N3S**
Frame Size R												
105	30	55	59	30	25	40	30	75	60	100	75	**S801+R10N3S**
135	40	63	80	40	30	50	40	100	75	125	100	**S801+R13N3S**
Frame Size T												
180	51	90	110	60	50	60	60	150	125	150	150	**S801+T18N3S**
240	75	110	147	75	60	75	75	200	150	200	200	**S801+T24N3S**
304	90	160	185	100	75	100	100	250	200	300	250	**S801+T30N3S**
Frame Size U												
360	110	185	220	125	100	150	125	300	250	350	300	**S801+U36N3S**
420	129	220	257	150	125	175	150	350	300	450	350	**S801+U42N3S**
500	150	257	300	150	150	200	150	400	350	500	450	**S801+U50N3S** ①
Frame Size V												
360	110	185	220	125	100	150	125	300	250	350	300	**S801+V36N3S**
420	129	220	257	150	125	175	150	350	300	450	350	**S801+V42N3S**
500	150	257	300	150	150	200	150	400	350	500	450	**S801+V50N3S**
650	200	355	425	250	200	250	200	500	450	600	500	**S801+V65N3S**
720	220	400	450	—	—	300	250	600	500	700	600	**S801+V72N3S**
850	257	475	500	—	—	350	300	700	600	900	700	**S801+V85N3S**
1000	277	525	550	—	—	400	350	800	700	900	800	**S801+V10N3S**

Note

① S801+U50N3S does not have IEC certification.

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Severe Duty Ratings

The table below is the base ratings for the soft starter. The tables included in this catalog are meant to be a reference table for different applications, but to match a unit to your exact application, consult with your local Eaton representative or call our Technical Resource Center.

Severe Duty Ratings

Starting Method	Ramp Current % of FLA	Ramp Time Seconds	Starts per Hour	Ambient Temperature
Soft start	450%	30 sec.	4	50°C
Full voltage	500%	10 sec.	10	50°C
Wye-delta	350%	65 sec.	3	50°C
80% RVAT	480%	25 sec.	4	50°C
65% RVAT	390%	40 sec.	4	50°C
50% RVAT	300%	60 sec.	4	50°C

Severe duty ratings are defined as any combination of parameters that exceed the standard duty ratings where the ramp time is over 30 seconds, and/or the number of starts per hour exceeds 4, and/or the current limit set is over 300%. *Example:* 35-second ramp, 5 starts per hour, 350% current limit at 40°C ambient.

S801+

Severe Duty—>30 Second Ramp, >300% Current Limit

Rated Current	Three-Phase Motor kW Rating (50 Hz) 230V	380–400V	440V	hp Rating (60 Hz) 200V 1.0SF	200V 1.15SF	230V 1.0SF	230V 1.15SF	460V 1.0SF	460V 1.15SF	575V 1.0SF	575V 1.15SF	Catalog Number
Frame Size N												
22	5.5	10	11	5	5	7-1/2	5	15	10	20	15	**S801+N37N3S**
42	11	18.5	22	10	10	15	10	30	25	40	30	**S801+N66N3S**
Frame Size R												
65	15	30	33	15	15	20	15	50	40	50	50	**S801+R10N3S**
80	22	40	45	25	20	30	25	60	50	75	60	**S801+R13N3S**
Frame Size T												
115	33	59	63	30	30	40	30	75	75	100	100	**S801+T18N3S**
150	45	80	90	50	40	50	50	100	100	150	125	**S801+T24N3S**
192	55	100	110	60	50	75	60	150	125	200	150	**S801+T30N3S**
Frame Size U												
240	75	110	147	75	60	75	75	200	150	200	200	**S801+U36N3S**
305	90	160	185	100	75	100	100	250	200	300	250	**S801+U42N3S**
365	110	185	220	125	100	150	125	300	250	350	300	**S801+U50N3S** ①
Frame Size V												
240	75	110	147	75	60	75	75	200	150	200	200	**S801+V36N3S**
305	90	160	185	100	75	100	100	250	200	300	250	**S801+V42N3S**
365	110	185	220	125	100	150	125	300	250	350	300	**S801+V50N3S**
420	129	220	257	150	125	150	150	350	300	450	350	**S801+V65N3S**
480	147	257	295	150	150	200	150	400	350	500	450	**S801+V72N3S**
525	160	280	335	150	150	200	150	450	350	500	450	**S801+V85N3S**
600	185	315	375	200	150	250	200	500	450	600	500	**S801+V10N3S**

Note

① S801+U50N3S unit does not have IEC certification.

Accessories

Lug Kits

S801+T…, S801+U… and S801+V… soft starters each have different lug options based on your wiring needs.

Each lug kit contains three lugs that can be mounted on either the load or line side.

Lug Kit

Lug Kits

S801+ Catalog Number	Description	Kits Required	Catalog Number
S801+T…, S801+U…	2 cable connections, 4 AWG to 1/0 cable	2	**EML22**
	1 cable connection, 4/0 to 500 kcmil cable		**EML23**
	2 cable connections, 4/0 to 500 kcmil cable		**EML24**
	1 cable connection, 2/0 to 300 kcmil cable		**EML25**
	2 cable connections, 2/0 to 300 kcmil cable		**EML26**
S801+V…	2 cable connections, 4/0 to 500 kcmil cable	2	**EML28**
	4 cable connections, 4/0 to 500 kcmil cable		**EML30**
	6 cable connections, 4/0 to 500 kcmil cable		**EML32**
	4 cable connections, 2/0 to 300 kcmil cable		**EML33**

Power Supplies

24 Vdc power supply that can be used with the S801+ SSRV or as a stand-alone device.

Power Supplies

Description	Catalog Number
85–264 Vac input 24 Vdc output	**PSG240E**
360–575 Vac input 24 Vdc output	**PSG240F**
600 Vac input 24 Vdc output	**PSS55D**

Lug Cover Kits

Replacement covers for the S801+T… and S801+U… soft starters are available in case of damage to the existing covers.

Lug Cover Kits

Description	Catalog Number
Lug cover S801+T…, S801+U…	**EML27**
Lug cover S801+V…	**EML34**

IP20 Kits

IP20 Kits

Description	Catalog Number
S801+N…	**SS-IP20-N**
S801+R…	**SS-IP20-R**
S801+T… and S801+U…	**SS-IP20-TU**
S801+V…	**SS-IP20-V**

Surge Suppressors

The surge suppressor can mount on either the line or load side of the soft starter. It is designed to clip the line voltage (or load side induced voltage).

Surge Suppressor

Surge Suppressors

Description	Catalog Number
600 V MOV for S801+… units	**EMS39**
690 V MOV for S801+… units	**EMS41**

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Mounting Plates

The mounting plates are designed to help make it easy to install or retrofit the soft starter into enclosures and MCCs. The soft starter can be mounted onto the plate prior to installation. The mounting plate is designed with tear drop mounting holes for easier installation.

Mounting Plates

Description	Catalog Number
S801+N…	**EMM13N**
S801+R…	**EMM13R**
S801+T… and S801+U…	**EMM13T**
S801+V…	**EMM13V**

Vibration Plates

The vibration plates allow the soft starter to be applied in high shock and vibration applications. The vibration plate allows vibration up to 5g and shock in up to 40g. The soft starter is mounted onto the vibration plate prior to installation in the panel.

Vibration Plates

Description	Catalog Number
S801+N…	**EMM14N**
S801+R…	**EMM14R**
S801+T… and S801+U…	**EMM14T**
S801+V…	**EMM14V**

Adapter Plates

The adapter plate allows customers to retrofit a S801+V… soft starter with the S801+U… soft starter.

Adapter Plates

Description	Catalog Number
Adapter plates	**EMM13U**

Control Wire Connector

Control Wire Connector

Description	Catalog Number
12-pin, 5 mm pitch connector for control wiring	**EMA75**

Control Interface Module

The Control Interface Module (CIM) is available as a replacement part.

CIM

Description	Catalog Number
Blank cover (filler)	**EMA68**
CIM for standard unit	**EMA71**
Panel mounting kit	
3 ft cable	**EMA69A**
5 ft cable	**EMA69B**
8 ft cable	**EMA69C**
10 ft cable	**EMA69D**

Options

Cooling Fan Kit

The EMM18 cooling fan kit mounts on either side of any frame size S801+ soft starter to provide additional printed circuit board cooling in high ambient operating temperatures.

Cooling Fan Kit

Description	Catalog Number
Fan kit	**EMM18**

Technical Data and Specifications

Soft Starters—S801+

Description	S801+N37N3S	S801+N66N3S	S801+R10N3S	S801+R13N3S
Max. current capacity	37	66	105	135
General Information				
Bypass mechanical lifespan	10M	10M	10M	10M
Insulating voltage Ui	660 V	660 V	660 V	660 V
Ramp time range	0.5–180 seconds	0.5–180 seconds	0.5–180 seconds	0.5–180 seconds
Resistance to vibration	3g	3g	3g	3g
Resistance to shock	15g	15g	15g	15g
Electrical Information				
Operating voltage	200–600 V	200–600 V	200–600 V	200–600 V
Operating frequency	47–63 Hz	47–63 Hz	47–63 Hz	47–63 Hz
Overload setting	30–100%	30–100%	30–100%	30–100%
Trip class	5, 10, 20 and 30	5, 10, 20 and 30	5, 10, 20 and 30	5, 10, 20 and 30
Cabling Capacity (IEC 947)				
Number of conductors	1	1	1	1
Wire sizes	14–2	14–2	14–4/0	14–4/0
Type of connectors	Box lug	Box lug	Box lug	Box lug
Control Wiring (12-Pin)				
Wire sizes in AWG	22–14	22–14	22–14	22–14
Number of conductors (stranded)	2 (or one AWG 12)	2 (or one AWG 12)	2 (or one AWG 12)	2 (or one AWG 12)
Torque requirements in lb-in	3.5	3.5	3.5	3.5
Solid, stranded or flexible max. size in mm^2	3.31	3.31	3.31	3.31
Control Power Requirements				
Voltage range (24V ±10%)	21.6–26.4	21.6–26.4	21.6–26.4	21.6–26.4
Steady-state current amps	1.0	1.0	1.0	1.0
Inrush current amps	10	10	10	10
Ripple	1%	1%	1%	1%
Relays (1) Class A and C				
Voltage AC—maximum	240	240	240	240
Voltage DC—maximum	120	120	120	120
Amps—maximum	3	3	3	3
Environment				
Temperature—operating	–30° to 50°C (no derating) consult factory for operation >50°C	–30° to 50°C (no derating) consult factory for operation >50°C	–30° to 50°C (no derating) consult factory for operation >50°C	–30° to 50°C (no derating) consult factory for operation >50°C
Temperature—storage	–50° to 70°C	–50° to 70°C	–50° to 70°C	–50° to 70°C
Altitude	<2000m—consult factory for operation >2000m	<2000m—consult factory for operation >2000m	<2000m—consult factory for operation >2000m	<2000m—consult factory for operation >2000m
Humidity	<95% noncondensing	<95% noncondensing	<95% noncondensing	<95% noncondensing
Operating position	Any	Any	Any	Any
Pollution degree IEC947-1	3	3	3	3
Impulse withstand voltage IEC947-4-1	6000 V	6000 V	6000 V	6000 V

Soft Starters—S801+, continued

Description	S801+T18N3S	S801+T24N3S	S801+T30N3S	S801+U36N3S ①②
Max. current capacity	180	240	304	360
General Information				
Bypass mechanical lifespan	10M	10M	10M	10M
Insulating voltage Ui	660 V	660 V	660 V	660 V
Ramp time range	0.5–180 seconds	0.5–180 seconds	0.5–180 seconds	0.5–180 seconds
Resistance to vibration	3g	3g	3g	3g
Resistance to shock	15g	15g	15g	15g
Electrical Information				
Operating voltage	200–600 V	200–600 V	200–600 V	200–600 V
Operating frequency	47–63 Hz	47–63 Hz	47–63 Hz	47–63 Hz
Overload setting	30–100%	30–100%	30–100%	30–100%
Trip class	5, 10, 20 and 30	5, 10, 20 and 30	5, 10, 20 and 30	5, 10, 20 and 30
Cabling Capacity (IEC 947)				
Number of conductors	1 or 2	1 or 2	1 or 2	1 or 2
Wire sizes	4 AWG to 500 kcmil	4 AWG to 500 kcmil	4 AWG to 500 kcmil	4 AWG to 500 kcmil
Type of connectors	Add-on lug kit	Add-on lug kit	Add-on lug kit	Add-on lug kit
Control Wiring (12-Pin)				
Wire sizes in AWG	22–14	22–14	22–14	22–14
Number of conductors (stranded)	2 (or one AWG 12)	2 (or one AWG 12)	2 (or one AWG 12)	2 (or one AWG 12)
Torque requirements in lb-in	3.5	3.5	3.5	3.5
Solid, stranded or flexible max. size in mm^2	3.31	3.31	3.31	3.31
Control Power Requirements				
Voltage range (24V ±10%)	21.6–26.4	21.6–26.4	21.6–26.4	21.6–26.4
Steady-state current amps	1.0	1.0	1.0	1.0
Inrush current amps	10	10	10	10
Ripple	1%	1%	1%	1%
Relays (1) Class A and C				
Voltage AC—maximum	240	240	240	240
Voltage DC—maximum	120	120	120	120
Amps—maximum	3	3	3	3
Environment				
Temperature—operating	–30° to 50°C (no derating) consult factory for operation >50°C	–30° to 50°C (no derating) consult factory for operation >50°C	–30° to 50°C (no derating) consult factory for operation >50°C	–30° to 50°C (no derating) consult factory for operation >50°C
Temperature—storage	–50° to 70°C	–50° to 70°C	–50° to 70°C	–50° to 70°C
Altitude	<2000m—consult factory for operation >2000m	<2000m—consult factory for operation >2000m	<2000m—consult factory for operation >2000m	<2000m—consult factory for operation >2000m
Humidity	<95% noncondensing	<95% noncondensing	<95% noncondensing	<95% noncondensing
Operating position	Any	Any	Any	Any
Pollution degree IEC947-1	3	3	3	3
Impulse withstand voltage IEC947-4-1	6000 V	6000 V	6000 V	6000 V

Notes

① 801+U50N3S unit does not have IEC certification.

② UL recognized component.

Soft Starters—S801+, continued

Description	S801+U42N3S	S801+U50N3S ①	S801+V36N3S	S801+V42N3S
Max. current capacity	420	500	360	420
General Information				
Bypass mechanical lifespan	10M	10M	10M	10M
Insulating voltage Ui	660 V	660 V	660 V	660 V
Ramp time range	0.5–180 seconds	0.5–180 seconds	0.5–180 seconds	0.5–180 seconds
Resistance to vibration	3g	3g	3g	3g
Resistance to shock	15g	15g	15g	15g
Electrical Information				
Operating voltage	200–600 V	200–600 V	200–600 V	200–600 V
Operating frequency	47–63 Hz	47–63 Hz	47–63 Hz	47–63 Hz
Overload setting	30–100%	30–100%	30–100%	30–100%
Trip class	5, 10, 20 and 30	5, 10, 20 and 30	5, 10, 20 and 30	5, 10, 20 and 30
Cabling Capacity (IEC 947)				
Number of conductors	1 or 2	1 or 2	2, 4 or 6	2, 4 or 6
Wire sizes	4 AWG to 500 kcmil	4 AWG to 500 kcmil	2/0 to 500 kcmil	2/0 to 500 kcmil
Type of connectors	Add-on lug kit	Add-on lug kit	Add-on lug kit	Add-on lug kit
Control Wiring (12-Pin)				
Wire sizes in AWG	22–14	22–14	22–14	22–14
Number of conductors (stranded)	2 (or one AWG 12)	2 (or one AWG 12)	2 (or one AWG 12)	2 (or one AWG 12)
Torque requirements in lb-in	3.5	3.5	3.5	3.5
Solid, stranded or flexible max. size in mm^2	3.31	3.31	3.31	3.31
Control Power Requirements				
Voltage range (24V ±10%)	21.6–26.4	21.6–26.4	21.6–26.4	21.6–26.4
Steady-state current amps	1.0	1.0	1.4	1.4
Inrush current amps	10	10	10	10
Ripple	1%	1%	1%	1%
Relays (1) Class A and C				
Voltage AC—maximum	240	240	240	240
Voltage DC—maximum	120	120	120	120
Amps—maximum	3	3	3	3
Environment				
Temperature—operating	–30° to 50°C (no derating) consult factory for operation >50°C	–30° to 50°C (no derating) consult factory for operation >50°C	–30° to 50°C (no derating) consult factory for operation >50°C	–30° to 50°C (no derating) consult factory for operation >50°C
Temperature—storage	–50° to 70°C	–50° to 70°C	–50° to 70°C	–50° to 70°C
Altitude	<2000m—consult factory for operation >2000m	<2000m—consult factory for operation >2000m	<2000m—consult factory for operation >2000m	<2000m—consult factory for operation >2000m
Humidity	<95% noncondensing	<95% noncondensing	<95% noncondensing	<95% noncondensing
Operating position	Any	Any	Any	Any
Pollution degree IEC947-1	3	3	3	3
Impulse withstand voltage IEC947-4-1	6000 V	6000 V	6000 V	6000 V

Note

① 801+U50N3S unit does not have IEC certification.

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Soft Starters—S801+, continued

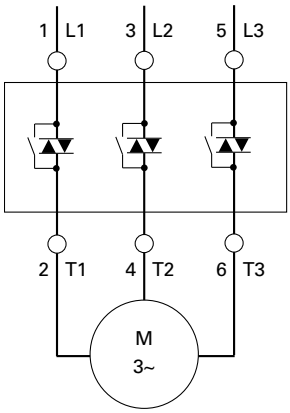
Description	S801+V50N3S	S801+V65N3S	S801+V72N3S	S801+V85N3S	S801+V10N3S ②
Max. current capacity	500	650	720	850	1000
Dimensions					
Width in inches (mm)	11.03 (280.2)	11.03 (280.2)	11.03 (280.2)	11.03 (280.2)	11.03 (280.2)
Height in inches (mm)	16.57 (420.8)	16.57 (420.8)	16.57 (420.8)	16.57 (420.8)	16.57 (420.8)
Depth in inches (mm)	7.23 (183.7)	7.23 (183.7)	7.23 (183.7)	7.23 (183.7)	7.23 (183.7)
Weight in lbs (kg)	103 (46.8) with lugs 91 (41.4) without lugs	103 (46.8) with lugs 91 (41.4) without lugs	103 (46.8) with lugs 91 (41.4) without lugs	103 (46.8) with lugs 91 (41.4) without lugs	103 (46.8) with lugs 91 (41.4) without lugs
General Information					
Bypass mechanical lifespan	10M	10M	10M	10M	10M
Insulating voltage Ui	660 V	660 V	660 V	660 V	660 V
Ramp time range	0.5–180 seconds	0.5–180 seconds	0.5–180 seconds	0.5–180 seconds	0.5–180 seconds
Resistance to vibration	3g	3g	3g	3g	3g
Resistance to shock	15g	15g	15g	15g	15g
Electrical Information					
Operating voltage	200–600 V	200–600 V	200–600 V	200–600 V	200–600 V
Operating frequency	47–63 Hz	47–63 Hz	47–63 Hz	47–63 Hz	47–63 Hz
Overload setting	30–100%	30–100%	30–100%	30–100%	30–100%
Trip class	5, 10, 20 and 30	5, 10, 20 and 30	5, 10, 20 and 30	5, 10, 20 and 30	5, 10, 20 and 30
Cabling Capacity (IEC 947)					
Number of conductors	2, 4 or 6	2, 4 or 6	2, 4 or 6	2, 4 or 6	2, 4 or 6
Wire sizes	2/0 to 500 kcmil	2/0 to 500 kcmil	2/0 to 500 kcmil	2/0 to 500 kcmil	2/0 to 500 kcmil
Type of connectors	Add-on lug kit	Add-on lug kit	Add-on lug kit	Add-on lug kit	Add-on lug kit
Control Wiring (12-Pin)					
Wire sizes in AWG	22–14	22–14	22–14	22–14	22–14
Number of conductors (stranded)	2 (or one AWG 12)	2 (or one AWG 12)	2 (or one AWG 12)	2 (or one AWG 12)	2 (or one AWG 12)
Torque requirements in lb-in	3.5	3.5	3.5	3.5	3.5
Solid, stranded or flexible max. size in mm^2	3.31	3.31	3.31	3.31	3.31
Control Power Requirements					
Voltage range (24V ±10%)	21.6–26.4	21.6–26.4	21.6–26.4	21.6–26.4	21.6–26.4
Steady-state current amps	1.4	1.4	1.4	1.4	1.4
Inrush current amps	10	10	10	10	10
Ripple	1%	1%	1%	1%	1%
Relays (1) Class A and C					
Voltage AC—maximum	240	240	240	240	240
Voltage DC—maximum	120	120	120	120	120
Amps—maximum	3	3	3	3	3
Environment					
Temperature—operating	–30° to 50°C (no derating) consult factory for operation >50°C	–30° to 50°C (no derating) consult factory for operation >50°C	–30° to 50°C (no derating) consult factory for operation >50°C	–30° to 50°C (no derating) consult factory for operation >50°C	–30° to 50°C (no derating) consult factory for operation >50°C
Temperature—storage	–50° to 70°C	–50° to 70°C	–50° to 70°C	–50° to 70°C	–50° to 70°C
Altitude	<2000m—consult factory for operation >2000m	<2000m—consult factory for operation >2000m	<2000m—consult factory for operation >2000m	<2000m—consult factory for operation >2000m	<2000m—consult factory for operation >2000m
Humidity	<95% noncondensing	<95% noncondensing	<95% noncondensing	<95% noncondensing	<95% noncondensing
Operating position	Any	Any	Any	Any	Any
Pollution degree IEC947-1	3	3	3	3	3
Impulse withstand voltage IEC947-4-1	6000 V	6000 V	6000 V	6000 V	6000 V

Note

① UL recognized component.

Wiring Diagram

Line Connected Soft Starter



Dimensions

Approximate Dimensions in Inches (mm)

Soft Starters—S801+

Catalog Number	W	H	D	Weight in Lbs (kg)
S801+N37N3S	2.66 (67.6)	7.37 (187.2)	6.45 (163.9)	5.8 (2.6)
S801+N66N3S	2.66 (67.6)	7.37 (187.2)	6.45 (163.9)	5.8 (2.6)
S801+R10N3S	4.38 (111.3)	7.92 (201.1)	6.64 (168.6)	10.5 (4.8)
S801+R13N3S	4.38 (111.3)	7.92 (201.1)	6.64 (168.6)	10.5 (4.8)
S801+T18N3S	7.65 (194.4)	12.71 (322.9)	6.47 (164.4)	48 (21.8) with lugs 41 (18.6) without lugs
S801+T24N3S	7.65 (194.4)	12.71 (322.9)	6.47 (164.4)	48 (21.8) with lugs 41 (18.6) without lugs
S801+T30N3S	7.65 (194.4)	12.71 (322.9)	6.47 (164.4)	48 (21.8) with lugs 41 (18.6) without lugs
S801+U36N3S	7.73 (196.3)	12.72 (323.1)	7.16 (181.8)	48 (21.8) with lugs 41 (18.6) without lugs
S801+U42N3S	7.73 (196.3)	12.72 (323.1)	7.16 (181.8)	48 (21.8) with lugs 41 (18.6) without lugs
S801+U50N3S	7.73 (196.3)	12.72 (323.1)	7.16 (181.8)	48 (21.8) with lugs 41 (18.6) without lugs
S801+V36N3S	11.05 (280.6)	16.57 (420.8)	7.39 (187.8)	103 (46.8) with lugs 91 (41.4) without lugs
S801+V42N3S	11.05 (280.6)	16.57 (420.8)	7.39 (187.8)	103 (46.8) with lugs 91 (41.4) without lugs
S801+V50N3S	11.05 (280.6)	16.57 (420.8)	7.39 (187.8)	103 (46.8) with lugs 91 (41.4) without lugs
S801+V65N3S	11.05 (280.6)	16.57 (420.8)	7.39 (187.8)	103 (46.8) with lugs 91 (41.4) without lugs
S801+V72N3S	11.05 (280.6)	16.57 (420.8)	7.39 (187.8)	103 (46.8) with lugs 91 (41.4) without lugs
S801+V85N3S	11.05 (280.6)	16.57 (420.8)	7.39 (187.8)	103 (46.8) with lugs 91 (41.4) without lugs
S801+V10N3S	11.05 (280.6)	16.57 (420.8)	7.39 (187.8)	103 (46.8) with lugs 91 (41.4) without lugs

Also refer to dimension drawings on **Pages V6-T1-72** through **V6-T1-74.**

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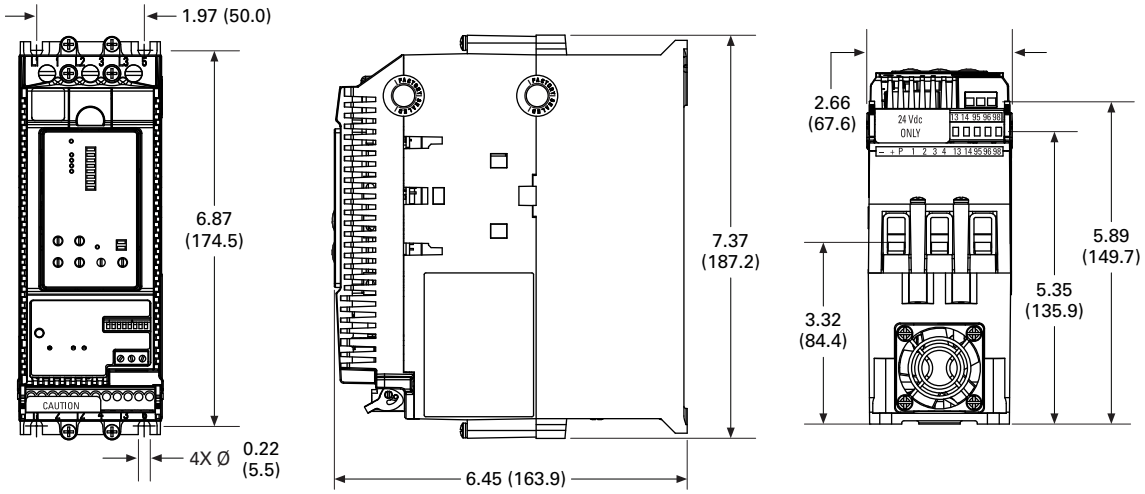
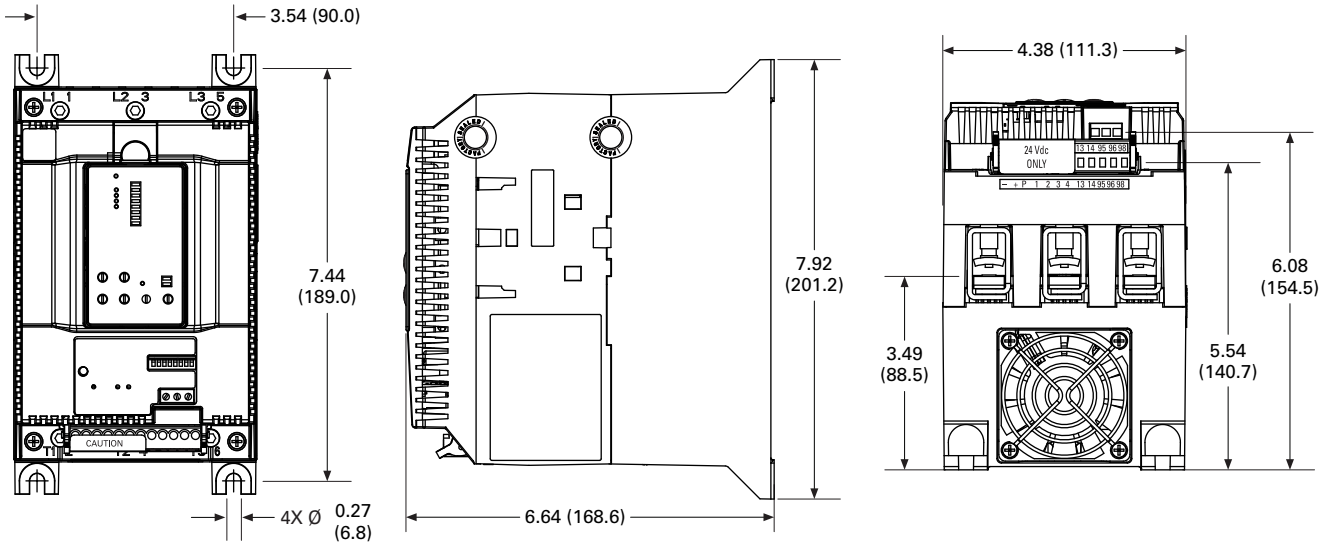
Approximate Dimensions in Inches (mm)

S801+N...

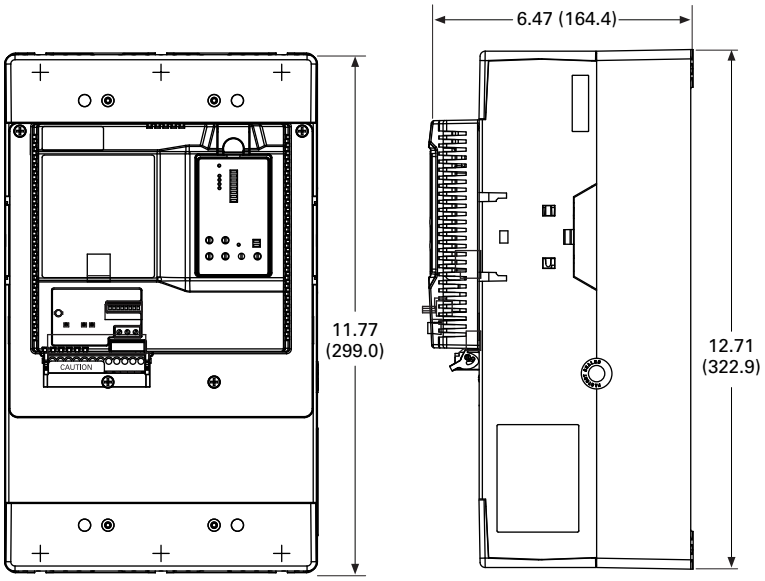


S801+R...

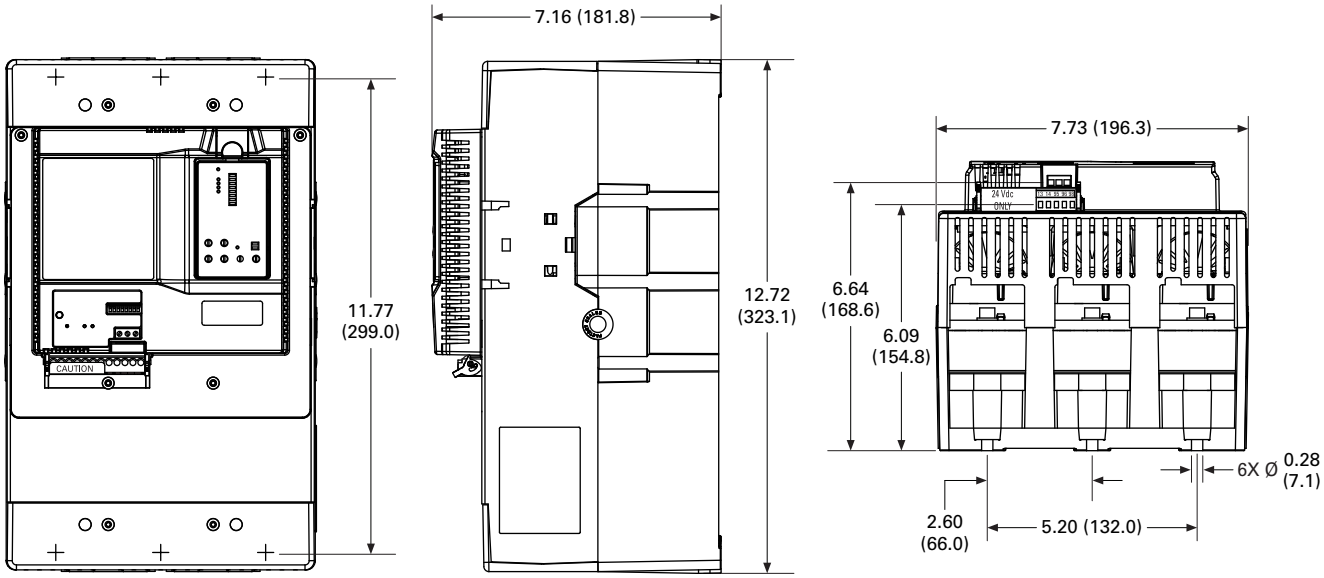


Approximate Dimensions in Inches (mm)

S801+T...



S801+U...



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Approximate Dimensions in Inches (mm)

S801+V...