

Instructions for S811+ Soft Starter, S811+T..., S811+U..., and S811+V...

DANGER HIGH VOLTAGE

MAKE SURE ALL POWER IS OFF BEFORE WIRING. FAILURE TO DO SO WILL RESULT IN PERSONAL INJURY, DEATH OR SUBSTANTIAL PROPERTY DAMAGE.

The Soft Starter features an electronic motor overload protection feature. This protects the motor and power wiring against overheating caused by excessive current for extended periods of time.

Note: Short circuit protection must be applied on the line side of the soft starter. Entering the motor full load current rating, using the Mtr Nameplate FLA parameter programs trip current. It is programmable in amps from 32% - 100% of the unit's rated current.

Table 1. Overload - Adjustment Settings

Catalog No.	Current Range	Catalog No.	Current Range
S811+T18...	56 - 180	S811+V36...	112 - 360
S811+T24...	75 - 240	S811+V42...	131 - 420
S811+T30...	95 - 304	S811+V50...	156 - 500
		S811+V65...	203 - 650
S811+U36...	112 - 360	S811+V72...	250 - 720
S811+U42...	131 - 420	S811+V85...	265 - 850
S811+U50...	156 - 500	S811+V10...	320 - 1000

Note: Mtr Nameplate FLA parameter is settable to any point within its range. The thermal overload is designed to protect the motor from heating caused by drawing too much current. If the motor is overloaded, the current drawn rises and heats the motor. The Mtr Nameplate FLA sets the trip threshold and the trip class (5 to 30) is set with the Overload Trip Class parameter.

IMPORTANT: Note the following items before you begin

- P and Hand inputs must be energized (24V DC) to enable starting of the soft starter from the terminal block.
- To Start: Apply 24V DC to Input 1 while the P input is energized.
- To initiate a Stop, remove the P input.
- For 2-wire control, jumper P and Input 1 together.
- After an Overload Trip, the S811+ Soft Starter cannot be restarted until the prescribed cool-down time has elapsed.** Cycling power does not reset the timers. If 24V DC power is removed, the soft starter will remember the remaining time and will resume the cool-down timing when power is again re-applied.
- When the S811+ goes into bypass, a sound similar to contactor chatter can be heard. This sound is the result of multiple contactors closing one after the other in a very short period. It is normal operation intended to reduce the surge current requirements of your power supply.

Initial Configuration

- Before applying the Line voltage, apply 24V DC to the + and - connections of the S811+'s terminal block. "Eaton" will be displayed by the DIM while the S811+ is powering up. When power-up is complete the DIM should be displaying "3 Ø Line Currents".
- Using the DIM, review the parameter settings in the "Soft Start Config" and "Protections" menus. The following setup procedures will use the factory default settings unless changed by you.
- In the Soft Start Config menu, set the Mtr Nameplate FLA parameter to the motor's nameplate rated current. This setting assumes the motor has a 1.15 Service Factor.
- Set Overload Trip Class parameter for the desired overload trip characteristic (curve).
- In the Protections menu set the Motor Rated Volt parameter to the motor's operating voltage.
- If auto fault reset is required, set the Reset Mode parameter to Auto (and Start Control to Level - default). Note: Auto Reset is intended for unattended installations where there is no danger to personnel or other equipment when the motor starts without warning. If Auto Reset is enabled, **CAUTION must be exercised to assure that any restart occurs in a safe manner.**
- Apply the Mains voltage and verify that no fault is present. If a fault is indicated, display the Motor Control menu's Active Faults parameter to determine the source of the fault.
 - A Phase Reversal Fault can be remedied by either changing the Phase Sequence parameter from ABC to ACB or removing Mains power and switching the incoming line connections at L1 and L2 of the S811+.
- Using the S811+ Jog Input, jog the motor just enough to verify that the direction of rotation is correct.

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- The S811+ should now function properly for most applications. Adjust other parameters as necessary to meet your application needs.

Table 2. Line and Load Power Wiring

(Qty.)Lug Kit	Number of Conductors	Wire Sizes Cu 75°C Only	Torque Req.
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S811+T..., S811+U...

(2) EML22	2	4 - 1/0 MCM (21.2 - 53.5 mm ²)	250 Lb-in (28.3 N-m)
(2) EML23 (2) EML24	1 2 ⊕	4/0 - 500 MCM (107 - 240 mm ²)	250 Lb-in (28.3 N-m)
(2) EML25 (2) EML26	1 2	2/0 - 300 MCM (70 - 150 mm ²)	225 Lb-in (25.5 N-m)

S811+V...

(2) EML28	2 ⊕	4/0 - 500 MCM (107 - 240 mm ²)	250 Lb-in (28.3 N-m)
(2) EML30 (2) EML32	4 ⊕ 6 ⊕ ⊕	4/0 - 500 MCM (107 - 240 mm ²)	250 Lb-in (28.3 N-m)
(2) EML33	4	2/0 - 300 MCM (70 - 150 mm ²)	225 Lb-in (25.5 N-m)

⊕ Requires special lug cover. Check with Eaton for availability.

⊕ CSA approved 350 MCM - 500 MCM.

Table 3. Control Wiring

Wire Size	Number of Conductor	Torque Req.
22 - 14 AWG (0.33 - 2.5 mm ²)	2	3.5 Lb-in (0.4 N-m)
12 AWG (4.0 mm ²)	1	

Table 4. Short Circuit Rating

Soft Starter Catalog Number	Three-Phase Short Circuit Rating			
	240V	480V	600V	690V
S811+T...	18 kA	18 kA	18 kA	⊕
S811+U...	30 kA	30 kA	30 kA	
S811+V...	42 kA	42 kA	42 kA	⊕

⊕ Contact Eaton.

Suitable for use in a circuit capable of delivering not more than 30,000 rms symmetrical amperes, 600 volts maximum when protected by Class L fuses or inverse time circuit breaker rated 600V, 1500 amperes, maximum.

Table 5. MOV Kit Options

Catalog Number	Description
EMS39	600V (max) MOV for S811+... Soft Starters
EMS41	690V (max) MOV for S811+... Soft Starters

Note: LOAD WIRES MUST BE 75° C STRANDED COPPER CONDUCTORS ONLY WHEN USING THE PROTECTIVE MODULE [EMS39]

Table 6. 24V Power Supply Kits

Catalog Number	Steady State Wattage	Inrush Wattage	Input Voltage
PSG240E	240W	360W	85 - 264 VAC
PSG240F	240W	360W	320 - 575 VAC

Table 7. Control Circuit Fuseholder Kit

Catalog Number	Fuse Type
C320FBR	Class CC

Note: The ground-fault protection system shall be performance tested when first installed on site. The test shall be conducted in accordance with instructions that shall be provided with the equipment. A written record of this test shall be made and shall be available to the authority having jurisdiction.