



# Installation



## HAZARDOUS VOLTAGE

- Disconnect and lock out all power before installing or servicing equipment.
- This equipment may require locking out multiple power sources prior to service
- Install and wire in accordance with all applicable local & national electrical and construction codes

## FAILURE TO FOLLOW THESE INSTRUCTIONS MAY RESULT IN DEATH OR SERIOUS INJURY

### Mounting

Mount the starter on a vertical surface, with the line terminals facing up.

### CE compliant Installations

To conform to the EMC directive a ferrite core is required on the input of the starter module. Consult the factory for the recommended part number.

For a CE compliant installation, all electrical connections must be made by a qualified electrical technician.



- To maintain overcurrent and short-circuit protection, the manufacturer's instructions for selecting current elements and setting the instantaneous-trip circuit breaker must be followed.
- Tripping of the instantaneous-trip circuit breaker is an indication that a fault current has been interrupted. Current-carrying components of the magnetic motor controller should be examined and replaced if damaged to reduce the risk of fire or electric shock.
- Do not locate starter in an environment subject to flammable gases, dusts or materials. Contact arcing can induce explosion or fire.
- Locate starter in a location appropriate to enclosure ratings and operational ratings.  
(e.g. NEMA 1 should only be located in a dry, protected environment).
- Do not allow any metal shavings or debris from installation to enter enclosure.

### Wiring

Wire main power input and motor leads to the appropriate terminals tightened to specified torques indicated in the Torque Table below. Use only copper conductors rated at least 60°C for applications less than 100A and at least 75°C ≥ 100A. Maintain proper clearances and verify that no possibility of an electrical short exists between the power conductors or enclosure. Ensure that wires are not under stress and all insulation is intact.

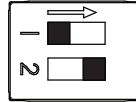
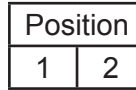
### Low Voltage Wiring

Automation system control wiring should be run in a separate conduit. The control terminals accept 26-14AWG wire torqued to 3.5 lb-in.

### Torque Table

Starter	Input (lb-in)		Output (lb-in)
	Terminal Blocks	Motor Leads	
SSP1-S1P-32	10.6	20	
SSP1-S2-50	10.6	35	

# Program Switches



<b>SWITCH 1</b> Default = Position 1	<b>Phase Unbalance</b>  (Position 1) - Trips in the event of phase loss or if any 1 phase deviates by more than 25% from average. (Position 2) - Trips in the event of phase loss or if any 1 phase deviates by more than 80% of average.
<b>SWITCH 2</b> Default = Position 2	<b>Power Fail Modes</b>  (Position 1) - In the event of a power failure, the starter will return to OFF mode. (Position 2) - In the event of a power failure, the starter will return the last mode it was in (Hand, Off, or Auto) within 10 seconds.

# Protective Features

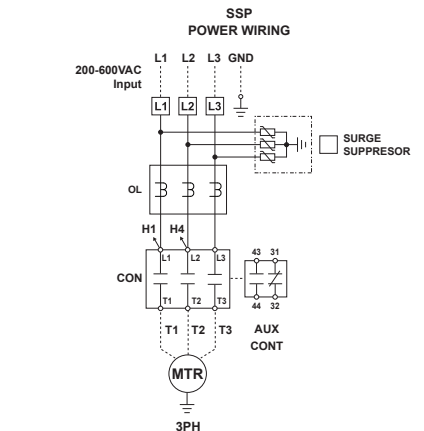
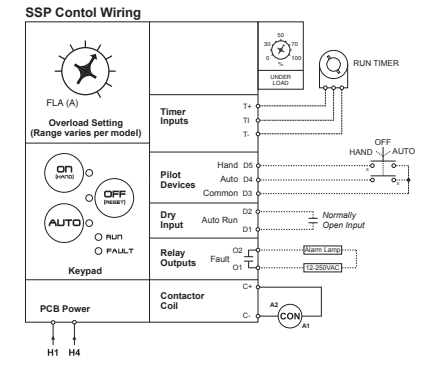
Cycle Fault	Trips when the starter is activated at a rate exceeding 20 starts per minute.
Hardware Fault	Trips if the starter's current drawn from the 24V contactor terminals exceeds the rating of the contactor. Also trips if the wrong size contactor is installed, or in the event of a circuit board failure. <b>Note: Contactor terminals C+ &amp; C- are for use with a Franklin Control Systems contactor only. Do not connect to any other devices.</b>
Locked Rotor	Trips when a locked rotor condition is detected for 0.5 seconds. (Smartstart Feature)
Max Start Time	Trips if the motor takes more than 10 seconds to start. (Smartstart Feature)
No Current Fault	Trips if no current is detected 10 seconds after a run command has been received.
Stall	Trips if a STALL condition is detected. (0.5 sec @ 300% overload setting and current slope not decreasing) Disabled during startup.
Overload	Trip current = 115% of dial setting. Trips when the load is greater than the trip current. (I <sup>2</sup> t trip curve)
Underload	Trips if the current falls below the user selected % threshold of the overload dial setting for 0.5 seconds and if the current is not increasing. (0-100% of overload setting)
Current Phase Unbalance	Trips the in the event of a phase failure or if any phase deviates by more than 25% from the average when switch in position 1. If switch is in position 2, the starter will trip if any phase deviates more than 80% of the average (phase loss).

# Electronic Overload Operation

When a fault trip occurs, the fault LED will illuminate. The type of fault will be indicated by flashing a combination of the HAND/OFF/AUTO/RUN/FAULT LEDs as indicated in the table below.

FAULT	FLASHING LED
Cycle Fault	NONE
Hardware Fault	RUN & FAULT LEDs
Locked Rotor	OFF LED
Max Start Time	OFF & AUTO LEDs
No Current Fault	HAND LED
Stall	HAND & AUTO LEDs
Overload	HAND & OFF LEDs
Underload	AUTO LED
Phase Unbalance	HAND, OFF, & AUTO LEDs

# Wiring Schematic\*



NOTES:  
1) DASHED LINES INDICATE FIELD WIRING  
2) CHECKED BOXES INDICATE FACTORY INSTALLED OPTIONS

\*Standard product wiring diagram shown. As-built product wiring may vary. Product wiring diagram located on starter enclosure.