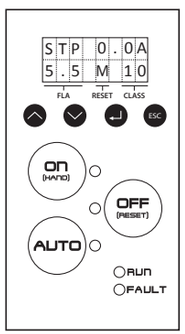
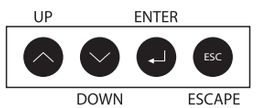
Operation

⚠⚠ DANGER

- Ensure that all connections are properly torqued and enclosure is closed prior to applying power to the device.
- Ensure all mechanical equipment operated by the starter is clear for safe operation in case of starter activation.
- When in AUTO mode, starter may be activated remotely by the control system

Keypad Interface





Operation Modes

ON (HAND)
Press the ON mode button to manually engage motor.

OFF (RESET)
Pressing the OFF mode button manually disengages the motor. Additionally, the OFF button serves as a manual Reset. Press and hold OFF for 5 seconds to Reset the starter after a fault trip.

AUTO
When utilizing AUTO mode, the starter is controlled by a remote Start/Stop command.

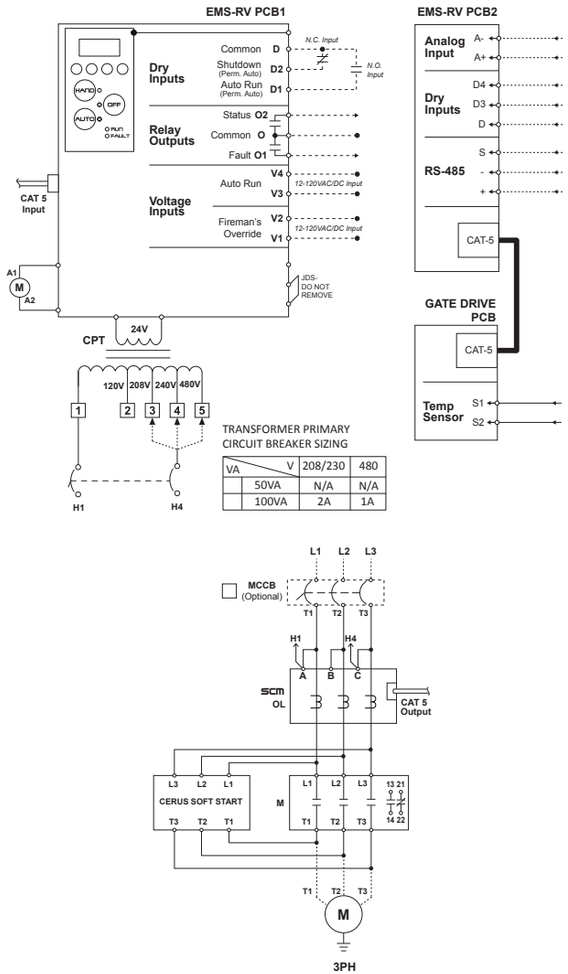
LED Status Indicators

MODE LEDs
Illuminates with corresponding mode selection (HAND/OFF/AUTO). Flashing mode LED signals a fault trip during the last operating mode. All 3 mode LEDs will flash simultaneously during Shutdown or Fireman's Override operation.

RUN LED
Illuminates when starter is given a Run signal and proof of power is detected. LED will flash when Run signal is present without proof of power to the motor.

FAULT LED
Illuminates upon a fault condition or overload trip. Starter must be returned to the OFF mode in order to Reset. A 180 second minimum cool down period must elapse prior to further operation.

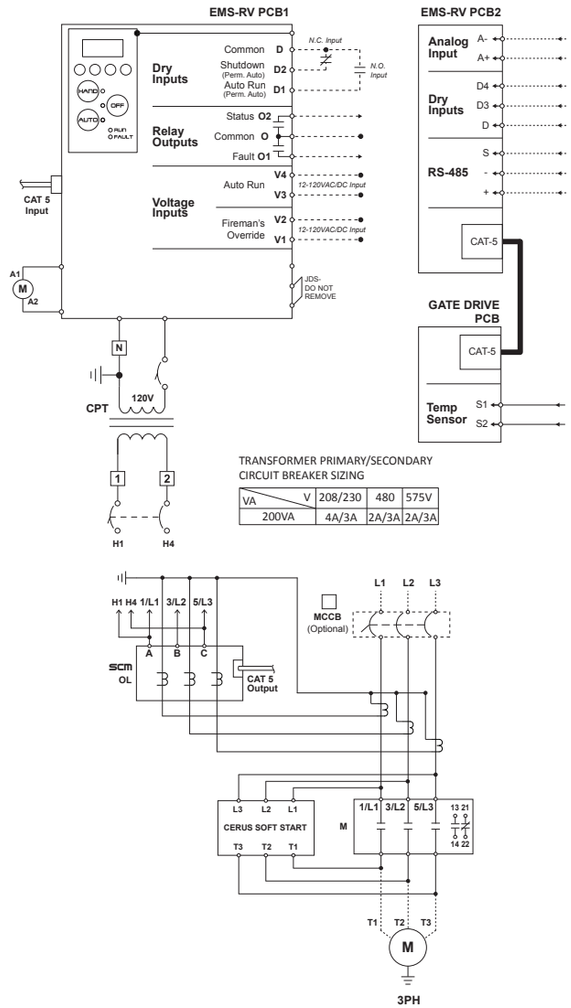
Wiring Schematic (RV-9~RV-100)



NOTE: DASHED LINES INDICATE FIELD WIRING

SCHM-EMS-RV-V1

Wiring Schematic (RV-150 and above)



NOTE: DASHED LINES INDICATE FIELD WIRING

SCHM-EMS-RV-V2

FRANKLIN CONTROL SYSTEMS

EMS-RV

ENERGY MANAGEMENT SOFT STARTER

Quick-Start Guide

The complete manual is available for download at www.franklin-controls.com or call 800.962.3787.

c UL us LISTED

Precautions

To prevent injury and property damage, follow these instructions. Failure to adhere to installation/operation procedures and all applicable codes may result in hazards as indicated by warning codes outlined below:

⚠ DANGER

indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury. This signal word is to be limited to the most extreme situations.

⚠ WARNING

indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

⚠ CAUTION

indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

⚠

This is the safety alert symbol. Read and follow instructions carefully to avoid a dangerous situation.

⚠

This symbol alerts the user to the presence of "dangerous voltage" inside the product that might cause harm or electrical shock.

Safety Instructions

⚠ DANGER

Equipment can start automatically. Lockout/tagout before servicing.

⚠ CAUTION

As with all electrical products, read manual thoroughly. Only qualified, expert personnel should perform maintenance and installation. Contact the nearest authorized service facility for examination, repair, or adjustment. Do not disassemble or repair unit unless described in this manual; death or injury to electrical shock or fire hazard may result. Specifications and manual data subject to change. Consult factory for additional information.

Installation

⚠⚠ DANGER

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.

⚠ WARNING

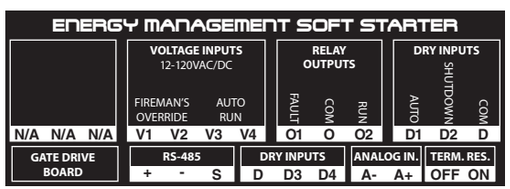
- To maintain overcurrent, short-circuit, and ground-fault protection, the manufacturer's instructions for selecting current elements and setting the instantaneous-trip circuit breaker must be followed.
- Tripping of the instantaneous-trip circuit breaker is an indication that a fault current has been 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 on the ennclosure of the starter. 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. Verify voltage input matches label and the control power is tapped per schematic.

Low Voltage Wiring
Control wiring should be run in a separate conduit. The control terminals accept 26~14AWG wire torqued to 3.5 in-lbs.

Power Wiring
Terminals should be torqued to in-lbs. specified on the starter

Control Terminals
Automations inputs are provided for customer use (see below).
For additional detail see the full manual.



Startup

1. Before applying power, ensure that the transformer is tapped to the appropriate voltage terminal block (208/230/480V).
2. Connect input power to terminals L1-L2-L3, located on the circuit breaker or input terminal blocks if no circuit breaker is present.
3. Connect motor leads to terminals T1-T2-T3, located on the contactor or output terminal blocks.
4. Apply power to the starter
   (display screen will be illuminated).
5. Adjust the overload FLA to match the nameplate of the motor. (Standard lockout feature must be disabled, see below)

Standard Lockout Feature
In order to make adjustments to the overload, voltage and HP setting, the standardlockout feature must first be disabled. See below for instructions.

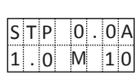
Default Display Screen

Press and hold the UP and DOWN buttons for 2 seconds until the display screen matches the display at left.

Press the ENTER button to change the menu from "LOCKED" to "UNLOCKED."

The lockout feature is now disabled.Press the ESC key to return to the Default Display screen.

Adjustments may now be made to the overload, voltage and HP settings (see below). The standard lockout feature will automatically re-enable itself after 2 minutes.

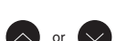


Default Display Screen

Press the DOWN arrow once

Edit FLA Screen

Press ENTER



Use the UP and DOWN keys to make adjustments

Press ENTER to save setting.

6. Adjust the nominal voltage setting to match the incoming voltage
   (Standard lockout feature must be disabled).

Edit FLA Screen

Press the DOWN arrow 2 times

Edit VLT Screen

Press ENTER

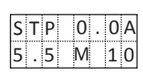
Use the UP and DOWN keys to make adjustments

Press ENTER to save setting.

Press ESC key to return to the Default Display screen.

7. Adjust soft starter features to desired settings (Advanced lockout feature must be disabled, see below).

Advanced Lockout Feature
In order to make adjustments to the soft starter settings, the advanced lockout feature must first be disabled. See below for instructions.



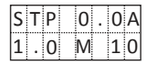
Default Display Screen

Press and hold the UP and DOWN buttons for 8 seconds until the display screen matches the display at left.

Press the ENTER button to change the menu from "LOCKED" to "UNLOCKED."

The lockout feature is now disabled.Press the ESC key to return to the Default Display screen.

Adjustments may now be made to the soft starter settings. The advanced lockout feature will automatically re-enable itself after 2 minutes.



Default Display Screen

Press ENTER

Advanced Settings Scree

Press ENTER. Press DOWN 2 times

Edit Soft Start Screen

Press ENTER

Adjustments to soft starter features are located here. Use the UP and DOWN keys to make adjustments. Press enter to save a parameter setting.

Soft Starter Defaults

Start Mode	Voltage Ramp
Start Voltage	50%
Start Current	300%
Start Time	10 seconds
Stop Mode	Coast to Stop
Stop Voltage	50%
Stop Time	10 seconds

Soft Starter is rated for 6 starts/hour, 20 seconds max start time @ 400% FLA and 6 starts/hour, 30 seconds max start time @ 300% FLA.

8. Motor rotation verification: Apply power to the starter and place the starter in hand mode using the HOA keypad located on the door. If rotation is opposite of desired, two of the motor leads connected to the contactor will need to be switched.