

Progressive Industries

Instruction Manual

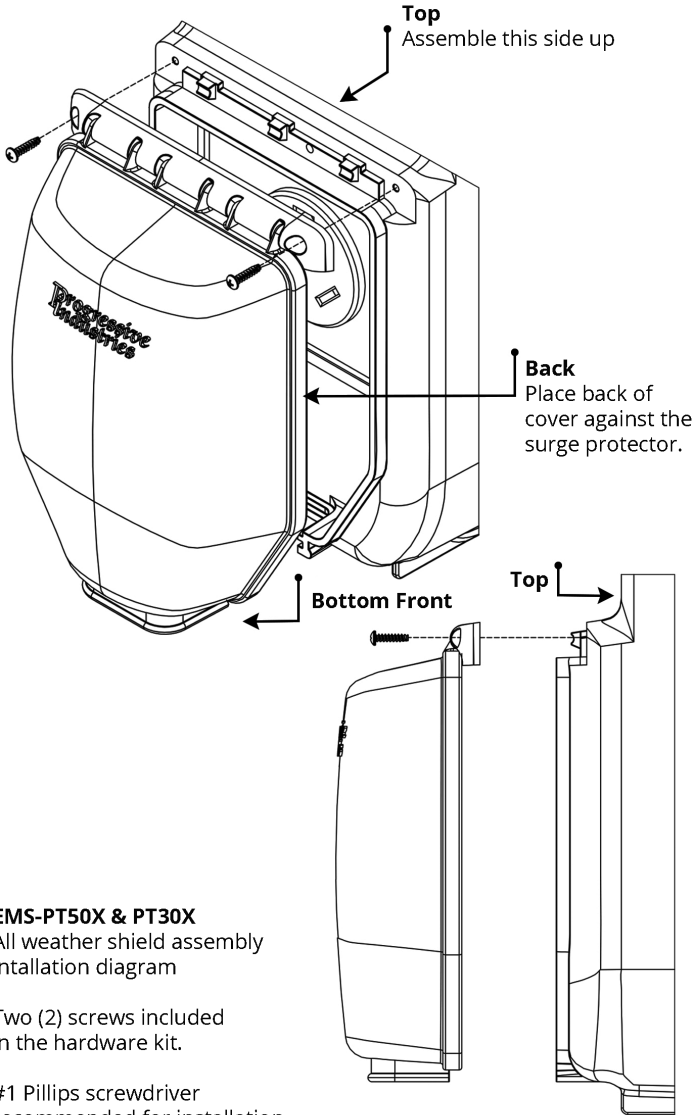
Electrical Management System (EMS) **EMS-PT30X & EMS-PT50X**



EMS-PT50X



EMS-PT30X



Features

- **High/Low Voltage Protection:** The EMS continuously monitors AC power. When AC power deviates below 104 volts, for more than six (6) seconds, or rises above 132 volts, the EMS automatically shuts down power to the RV. Once the AC power rises above 104 volts or drops below 132 volts, the 2 minute 16 second (136 seconds) time delay counts down and power is restored automatically.
- **Time Delay for A/C Compressor:** When first plugging in, if AC power is interrupted, or the EMS detects a fault, the 2 minute 16 seconds (136 seconds) time delay is activated.
- **3-Mode Surge Protection (EMS-PT30X):** This feature provides full surge protection L-N, L-G, and N-G. Rated 1,790J and 44,000A surge current. Response time <1 Nano second.
- **5-Mode Surge Protection (EMS-PT50X):** This feature provides full surge protection L-N, L-N, L-G, L-L, and N-G. Rated: 3,580J and 88,000A surge current. Response time <1 Nano second
- **Surge Indicator:** The EMS will indicate **E 10** if the surge protector is damaged within the EMS-L-N or L-G due to a power surge.
- **Reverse Polarity Protection:** If AC power has a reverse polarity condition, the EMS will not allow power to the RV and the error code will read **E 1**.
- **Open Neutral Protection:** If AC power has an open neutral, the display will not light and the EMS will not allow power to the RV.
- **Open Ground Protection:** If AC power has an open ground condition, the EMS will read an error code of **E 2**, and the EMS will not allow power to the RV.
- **AC Frequency Protection:** If AC power frequency deviates plus/minus 9 Hz from 60 Hz, the EMS will shut down AC power. An Error code of **E 7** will be displayed when the frequency is high; and an Error code of **E 8** will be displayed when frequency is low.
- **Accidental 240V Protection:** If 240 volts is detected when plugging into AC power the EMS will NOT allow power to the RV. Should this condition occurs while power is applied to the RV, the EMS will shut down power instantly. The EMS will indicate an **E 3** error code and display the voltage. (SHOULD THIS OCCUR NEVER BYPASS THE EMS).
- **Display:** Display continuously scrolls, at 2 second intervals, all AC power information: voltage(s), current(s), frequency, error code, previous error code (if applicable).
- **Previous Error Code:** Previous error code (PE) indicates what error occurred and why power was interrupted. To delete code, disconnect power from EMS.

- **Weather Resistant:** Unit can be exposed to outside weather elements; however, the unit may not be submerged. Unit is designed to be mounted or used vertically.
- **Microprocessor Controlled:** The EMS utilizes a state-of-the-art microprocessor with proprietary software.
- **Built-in Locking Bracket:** Helps prevent theft by securing the EMS to the power source pedestal using a lock, such as a bicycle cable lock.

NOTE: *Provided you have the proper adapter the EMS may be used with 15A, 20A or 30A service and will provide full protection; however, reduced power will be available so you should limit your power consumption*

Warnings

- RV wiring is different than house wiring. In an RV, neutral and ground conductors are isolated whereas in a house they are bonded at the service panel. Therefore; never connect neutral and ground as this can result in a ground fault condition, electric shock, and/or a fire hazard. This does not stop you from using a “generator plug” that ties together neutral and ground as this is perfectly safe when using a generator.
- Do not exceed the rating on the EMS for any reason. These devices are designed to be reduced down to 120V/15A and maintain full protection.
- Do not modify the EMS in any way as this will void the warranty, could result in possible shock, and/or a fire hazard or compromise protection.
- It is important to always check the pedestal power outlet for charring; this condition means the AC receptacle is providing a weak connection. Should this condition exists, DO NOT USE as it could result in possible melting of the RV power plug.
- When running an extension cord from the RV to the pedestal power always use a 6 gauge cable for your 240 Volt, 50Amp device and/or a 10 gauge cable for your 120 Volt, 30Amp device. Ensure your cable is rated for outdoor use and we recommend the length not to exceed 20-25'. Taking these preventative measure can help to reduce the risk of electrical shock and/or fire.
- Whenever servicing or installing the EMS, or any other AC powered device, make sure AC power is disconnected.
- NEVER plug the EMS into an inverter. This does not preclude using inverter-generator.

Operating Instructions

- 1) Plug RV power cord in to the EMS-PT50X (EMS) then plug EMS in to park power. If no Error Code of **E 1** through **E 9** then wait 136 seconds Time Delay to cycle power to RV.
- 2) The digital display will flash 888 for one (1) second and then begin scrolling through voltage(s), amps, line frequency, error code, and previous error code (if applicable.) In addition, the time delay will count down and the delay light (located in the bottom right corner of the display) will flash for 2 minutes 16 seconds (136 seconds). If an Error Code of **E 1** through **E 9** is displayed the flashing dot will not be displayed.
- 3) Verify **E 0** is displayed (Normal Operating Condition).
- 4) Setup is complete. The digital display should indicate the following:
 - Voltage reading (between 78 and 255 volts only)
 - Current amps should read between 0A-30A (EMS-PT30X) or 0A-50A (EMSPT50X).
Note: 0A will display until the 2 minute 16 second (136 seconds) time delay is completed.
 - Line frequency 60Hz (plus/minus 1 or 2 Hz)
 - Error codes (refer to Error Code Chart on page 9)

NOTE: If the display indicates an error code other than **E 0** or **E 10**, the EMS will not allow power to the RV. We then recommend moving to a different AC power source or using your generator. The time delay indication dot will not be visible if an Error Code **E 1** through **E 9** is present.

Error Code Chart

- E 0** = Normal Operating Condition
- E 1** = Reverse Polarity (hot and neutral wires reversed)
- E 2** = Open Ground (no ground wire connection)
- E 3** = Line 1 High Voltage (line 1 voltage above 132V)
- E 4** = Line 1 Low Voltage (line 1 voltage below 104V)
- E 5*** = Line 2 Voltage High (line 2 voltage above 132V)
- E 6*** = Line 2 Voltage Low (line 2 voltage below 104V)

** Codes only apply to EMS-PT50X models*

You should report an **E 1**, **E 2**, **E 3**, **E 4**, **E 5** or **E 6** Error Code directly to the Campground Management. Our Tech Support Team will not be able to assist you if you receive one of these Error Codes.

- E 7** = Line Frequency High (line frequency above 69 Hz)
- E 8** = Line Frequency Low (line frequency below 51 Hz)
- E 9** = Data Link Down (does not apply to EMS-PT models)
- E 10** = Replace Surge Protector Module (call technical support)

Contact Progressive Industries Tech Support for an **E 7**, **E 8**, **E 9** or **E 10** Error Code.

NOTE: If the EMS shuts down power to the RV it will indicate a PE Code (Previous Error) following the Error Code. This indicates why the unit shut down. To determine the meaning of a PE code, ignore the letter P (i.e. PE4 actually indicates an **E 4** Error Code or Line 1 Low Voltage (line 1 voltage below 104V). See above Error Codes.

Example: The EMS shuts down power for low voltage on Line-1 and then power is restored. The Error Code reads **E 0** with a previous error code PE4 indicating low voltage which is why the unit shut down previously. The PE code will clear when power is disconnected from the EMS.

Troubleshooting Guide

In order for the on-call Progressive Industries Technical Support Team Member to properly diagnose the issue you are experiencing with your unit and render the best possible solution, it is necessary for you **TO BE AT YOUR RV** when you place a Tech Support call.

- If the digital display is illuminated and scrolling through information, **RECORD ALL DATA CODES DISPLAYED**. If the digital display indicates an error code other than **E 0** or **E 10** the EMS will not allow power to the RV. This indicates a problem with the power and the EMS is working properly and protecting your RV.
- If the digital display is illuminated, reading an **E 0** error code, yet you have no power in the RV, please contact Progressive Industries Tech Support. Please remember you must wait the 2 minutes 16 seconds (136 seconds) for the time delay countdown.
- If the digital display is **NOT** illuminated, but power is present in the coach, there is a connection issue between the digital display and the main control module. Please contact Progressive Industries Tech Support.