

Smart Energy Management System - 50 Amp

Intellitec's Smart Energy Management System - 50 Amp (Smart EMS) is designed to be used in RVs equipped with 50 Amp electrical service. The System senses when the coach is connected to a 50 Amp service or operating from the generator and allows simultaneous operation of all the 120 volt loads. When 50 Amp service is not available and the coach is connected to a smaller electrical service, such as 30 or 20 Amp, the system automatically takes control of the loads to practically eliminate circuit breaker tripping. It constantly monitors the total amount of current drawn in the RV and controls the loads, as necessary, to keep the total current to a value less than, or equal to, the available power service.

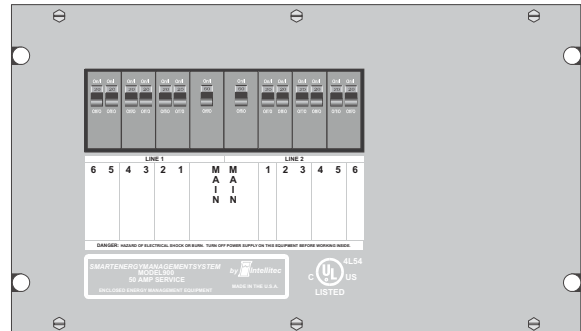
There is no programming necessary and the unit will work with any load within the circuit breaker limits. The Smart EMS automatically "learns" the amount of current drawn by each of the controlled loads as it turns them on and off. In this way, it automatically adapts to differing loads or loads whose current changes with line voltage or temperature.

FEATURES

- Limits total current to 30 Amps.
- Minimizes circuit breaker tripping when connected to 20, or 30 Amp service.
- Eliminates manual appliance select switches.
- Senses current of owner added loads.
- Owner selectable 20 Amp operation (From optional remote panel).
- Protects air conditioners with two minute restart delay.
- "Learns" controlled appliance current draw.
- Optional remote panel with Load Status indicators and a digital AC line amp meter.

SMART EMS OPERATION

In larger RV's, equipped with 50 Amp electrical service, over-load is typically not a problem. However, 50 Amp service is often not available at camp sites. It is then that an energy management system is needed. The Smart EMS controls certain electrical loads to limit the peak demand, thereby almost eliminating nuisance circuit breaker tripping.

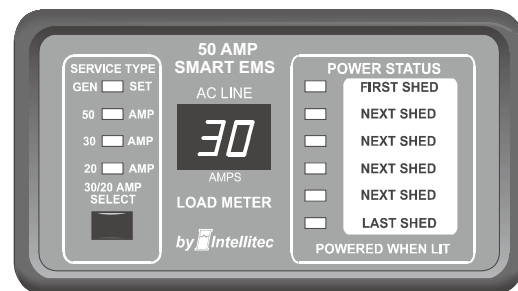


50 Amp EMS Distribution Panel
P/N 00-00683-000

Large appliances, such as air conditioners, water heater, washer/dryer, coffee maker, etc., whose use can be temporarily postponed, are automatically controlled. Temporarily postponing their use leaves enough power to operate the "on demand" appliances, such as the microwave, hair dryer, or toaster.

Smart EMS turns off each controlled appliance when the total current in the RV exceeds 30 amps. It will restore appliance power when the total current drops below a level that allows it to operate again.

OPTIONAL REMOTE MONITOR PANEL



50 Amp EMS Display Panel
P/N 00-00684-100

The optional remote monitor panel displays a digital readout of the total amount of current being drawn by all the loads in the coach. A series of LED's indicate the loads that have power applied. When the power is available, the LED will be on. The panel includes a switch to select operation from 30 amp or 20 amp service. This panel is easily connected with a small four conductor harness.

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P/N 53-00683-000 Rev. D 040519

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HOW DOES IT WORK?

The **Smart EMS - 50 Amp** senses that the coach is connected to a 50 Amp source by measuring the line to line voltage. This is normally 240 volts. When the coach is plugged into 50 Amp service the system "goes to sleep". If the coach is "dog-boned down" to connect to a smaller service, the line to line voltage will be zero. When it senses the smaller service, it automatically takes control of loads. These are typically those whose function can be postponed until there is enough power available to operate them.

When the shore cord is first plugged in to a smaller service, **Smart EMS - 50 Amp** turns on power to the controlled loads, in order, as long as the total current doesn't exceed 30 Amps. This happens within seconds, so it is transparent to the owner. If the total current exceeds 30 Amps, the **Smart EMS - 50 Amp** senses this over-load and turns off the next controlled load in order. The system notes the amount of current "decrease" and puts that amount in memory as the amount of current that appliance was drawing. The system continues to monitor the total current and when it drops to a level that is the amount of the controlled load, it will turn that load back on. At least two minutes must have passed before power will be re-applied.

In this way, the actual current of the specific appliance operating at that particular line voltage, temperature, and load will be learned and used by the system. This current will be "re-learned" each time the controlled load is turned off. This assures that the system will operate the appliances when the exact amount of power is available and will not unnecessarily cycle the appliances. A receptacle can also be one of the controlled loads, and **Smart EMS - 50 Amp** will learn what the owner plugs in.

An optional monitor panel is available that offers a digital display of the total current being drawn and status indication of which appliances have power applied to them. This panel keeps the owner informed as to how much current is being drawn, and helps them understand how current is being drawn by each appliance.

SPECIFICATIONS

Part Number:	00-00683-000 50 Amp EMS Distribution Panel 00-00684-100 50 Amp EMS Display Panel
Ambient Temperature Range:	-40C to +85C
Operating Environment:	Out of direct weather
Delay before reapplying power:	Two minutes (all loads)
Maximum Controllable Loads:	Six, OEM selectable from six relays
Relay Rating:	(2) DC or Thermostat - 1.0 A, 24VDC (4) AC - 1 HP, 15A, 120 VAC 60 HZ
U.S. Patents:	4499385, 4617472

INSTALLATION Smart EMS - 50 Amp is designed to be mounted in a standard Westinghouse circuit breaker box, model number X-X-X-X, inside of the RV. The Smart EMS - 50 Amp uses existing holes in this box for mounting.



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