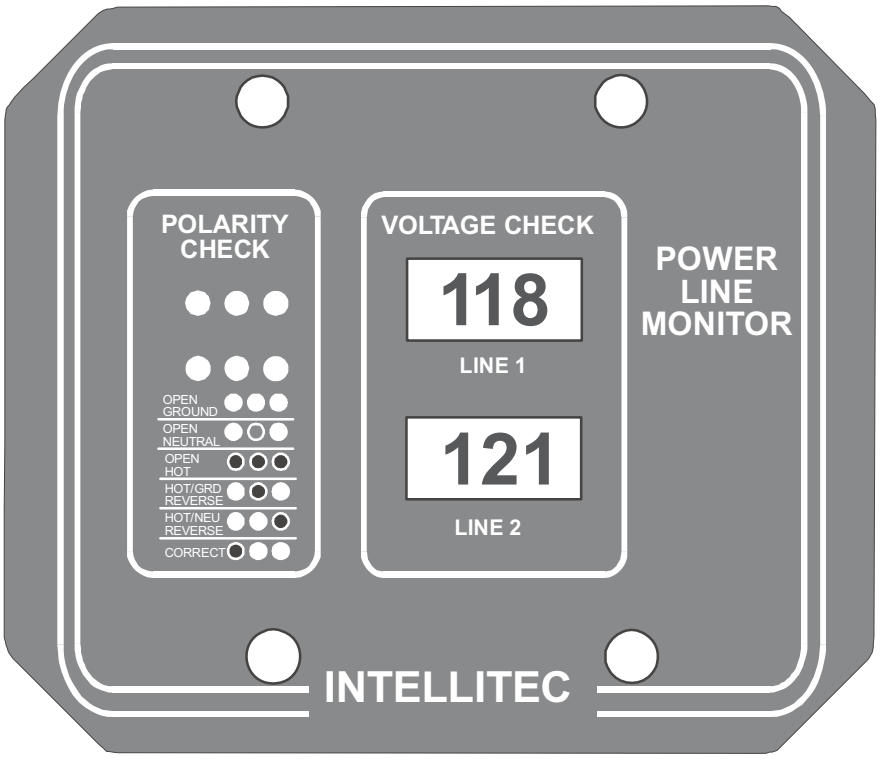
System Voltage Monitor

Installation and Users Guide



PANEL LAYOUT

CAUTION: There are no servicable items accessible to the user. All servicing of the System Voltage Monitor should be done only by a qualified Service Technician at Intellitec. Because two power sources are available to the unit during normal operation, both of the sources should be unpugged prior to installing or uninstalling the unit.

TOOLS REQUIRED FOR INSTALLATION : Phillips screwdriver.

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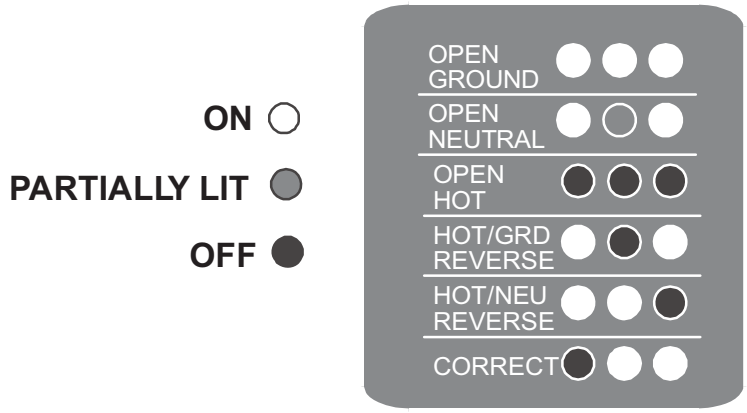
System Voltage Monitor

Users Manual

How The System Voltage Monitor Works

120Vac Line Polarity Check

The unit incorporates three indicator lamps located in the POLARITY CHECK area of the panel for each incoming line, for a total of six indicator lamps. The far left indicator is red and the remaining two indicators for each line are green. For safe operation of the vehicle's electrical system the red indicator must not be lit and the two green indicators for each line must be lit. If the red indicator lamp is lit or either or both of the green indicator lamps is not lit, the associated 120Vac incoming line is not wired correctly and may present a hazard to the operator or vehicle electrical system. The wiring error is indicated by the pattern exhibited by the indicator lamps and the reference table below the indicators in the POLARITY CHECK area of the panel.



120Vac Line Voltage Check

The unit incorporates a highly accurate TRUE RMS 3-digit voltmeter for each of the 120Vac lines that it is connected to. The reason for using a TRUE RMS voltmeter is to indicate the voltage available to each appliance connected to that line no matter what the shape of the Alternating Current waveform. Normally power produced by shore power sources is a pure sine wave with little distortion. A normal meter designed to measure 120Vac voltage would measure the voltage accurately. However, if the 120Vac power is being derived from a solid state inverter or other source which contains distortion in the AC waveform a normal meter would measure the voltage erroneously. By using a TRUE RMS voltage measuring circuit such as that found in the System Voltage Monitor Panel, the available voltage is measured accurately in both instances.

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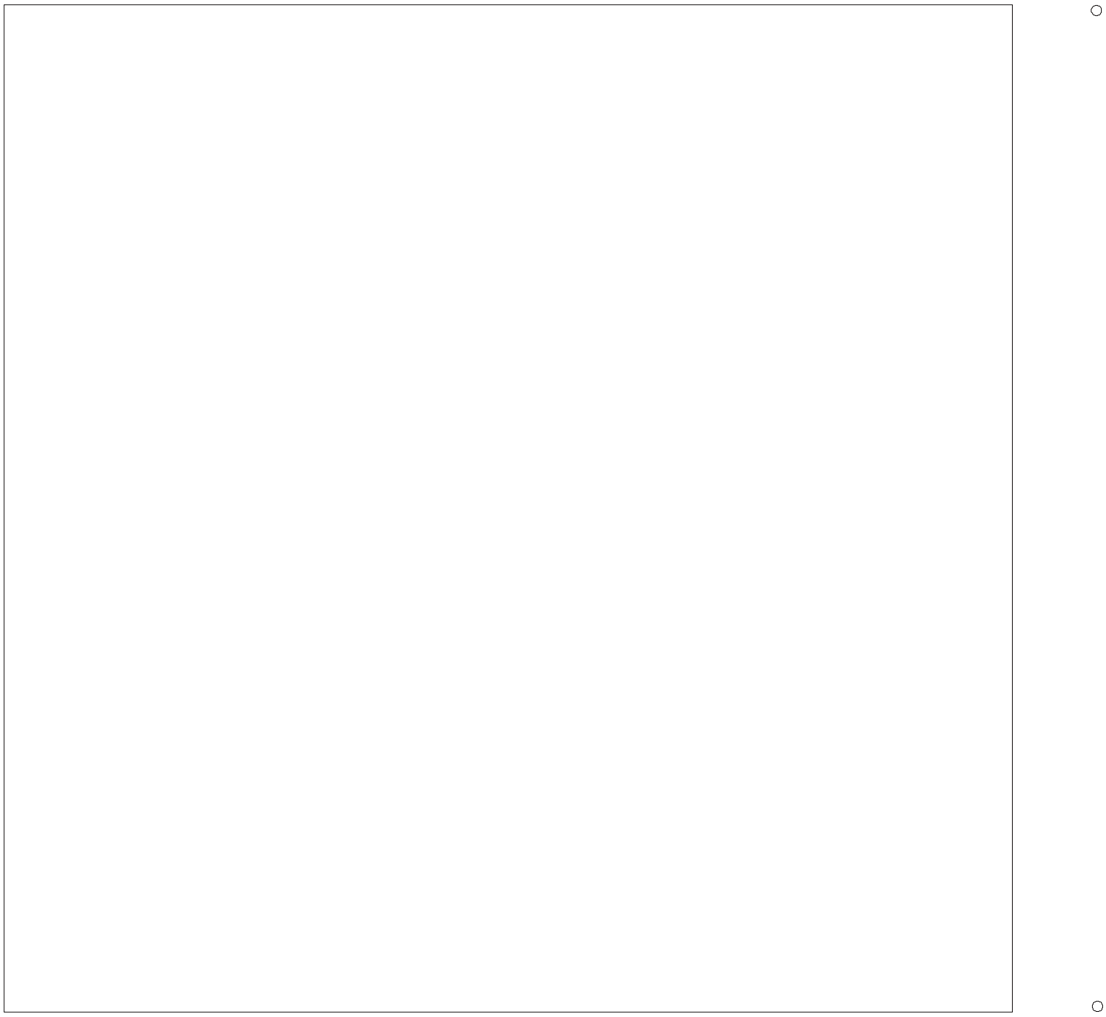
Installation

The System Voltage Monitor Panel is intended for mounting in a fixed location. The location should be in a controlled environment not exposed to rain or other outdoor environmental conditions. Additional ventilation is not necessary for proper operation of the unit.

Connection to the supply is made to via two approved, three pin, AC power cords, incorporating connection to line, neutral, and earth ground.

The unit is intended to be mounted using four #6 or #8 flat head screws in a 5 1/4" x 5 1/4" hole in a panel per the template below. 2 1/2" is required behind the face of the panel for clearance.



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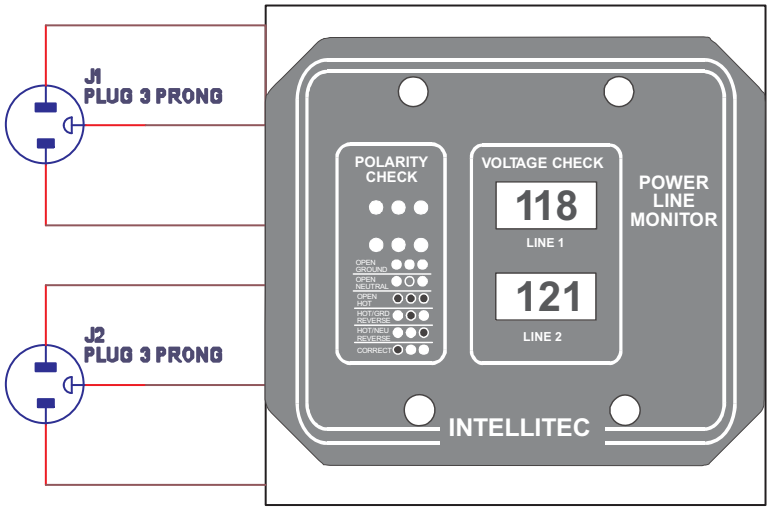
Wiring Diagram



Electrical Ratings for the System Voltage Monitor

Two sources of 120Vac power with an input voltage range of 85-132Vac. Connection is made via two approved, three pin, AC power cords, incorporating connection to line, neutral, and earth ground. The measurement accuracy of the VOLTAGE CHECK circuitry is +/- 2%.

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System Voltage Monitor

Trouble Shooting

The circuitry in the System Voltage Monitor is completely enclosed in a standard electrical box. Therefore, there are no user serviceable components. In order to determine whether the unit or wiring is defective there are several steps which may be used to determine the source of problems.

1. Problem:
None of the POLARITY CHECK indicators or VOLTAGE CHECK displays light.
Solution:
a) Make sure that the power cords on the System Voltage Monitor are plugged into sources of 120Vac power.
b) Check the main breaker and auxiliary breakers to make sure they are "ON".

2. Problem:
Only one of the VOLTAGE CHECK displays a voltage, the other indicates "zero" volts.
Solution:
a) Make sure that both of the power cords on the System Voltage Monitor are plugged into sources of 120Vac power.
b) Check all of the branch breakers to make sure they are "ON".

3. Problem:
The VOLTAGE CHECK displays indicate voltages different from each other.
Solution:
a) Plug both of the power cords on the System Voltage Monitor into the same branch circuit. The displays should indicate voltages within 2 volts of each other. If the displayed voltages indicate a difference greater than 2 volts the unit must be returned to Intellitec for recalibration. If the displayed voltages indicate a difference less than two volts when plugged into the same branch circuit, but larger differences when plugged into two separate branch circuits, the voltage differences can be attributed to differences in loading and wiring of the two branch circuits.

4. Problem:
The two green indicators on the POLARITY CHECK are not lit when a source of 120Vac is connected to the system.
Solution:
a) This indicates that the wiring polarity of one or both of the 120Vac power sources that the System Voltage Monitor is plugged into are not wired properly. This could create a hazard to the operator and/or equipment connected to these power sources. Use the pattern of lit indicators compared to the error table to determine the nature of the fault and write it down. Disconnect all power sources from the main 120Vac distribution panel and have a qualified service technician check the wiring of the power sources prior to reconnecting power.

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