



## BEFORE YOU CALL GUIDE



### You will need the following:

- ▶ A fundamental understanding of electricity (otherwise get assistance)
- ▶ Your coach's AC input wiring diagram, mfg product troubleshooting guides and product specifications
- ▶ Voltmeter that will measure up to 250V AC

### Scenario:

You lose shore power for no obvious reason. If you have a TRC Surge Guard unit, the following procedures will help you determine whether you have a problem with your Surge Guard, in your coach electrical system, or an external power problem. Also see the following pages for additional detailed checks and for recording applicable voltages for your Surge Guard.

### Troubleshooting Steps:

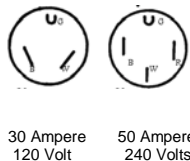
**CAUTION – For the experienced coach owner, otherwise get assistance.**

1. Look at the transfer switch display or Surge Guard lights to see if there is power to the unit.
2. Follow the manufacturer's troubleshooting guide to help determine if the surge protector failed.
3. We recommend you do not bypass the surge protection if at all possible. In the event the Surge Guard is doing its job, it is preventing faulty power from damaging your coach equipment. That is, it may have prevented severe damage to your coach electrical and electronic equipment and appliances.

If it is not obvious what is wrong after following the manufacturer's troubleshooting guide, continue as follows: Using a suitable AC voltmeter, measure the power at the pedestal (power source) to determine if the input power is between 102V and 132V AC (from L1 to Neutral and L2 to Neutral). Remember that Ground is normally bonded to Neutral at the RV park power source or pedestal. Ground to Neutral measurement should read 0V.

### Pedestal measurements (Figure 1):

1. Measure B to W (L1 to Neutral), should be between 102V and 132V AC
2. Measure R to W (L2 to Neutral), should be between 102V and 132V AC
3. Measure G to W (Ground to Neutral), should be 0V



**Figure 1:** Pedestal Power Configuration  
Typical: W-B, W-R = 120V, W-G = 0V  
G = Ground, W = Neutral, B = L1, R = L2

### Adapter Measurements:

If you are using a 30A to 50A adapter, the voltages at the 50A connector will be the same as above. Note that B to R voltages will be 0V if using a 15A, 20A or 30A adapter.

For hard-wired units and transfer switches, repeat the above measurements at the input(s) to the units.

Provided all measurements are correct we have to assume that the Surge Guard has failed and needs to be replaced.

### Why is Surge Guard protection needed?

RVs today have highly sophisticated electronic circuitry with an array of expensive appliances. The largest threats to a RV's electrical system and appliances are surges and the power pedestal, either miswired or faulty electrical power. Surges and faulty power can result in significant damage to these appliances. TRC engineers designed the Surge Guard models specifically for RV power applications and are field-proven in all kinds of rough applications. TRC manufactures a complete line of Surge Guard products that offer bumper-to-bumper protection for all RVs.

When your unit is installed, verify (or have your installer verify) and record voltages as indicated below, preferably under your normal operating conditions. This could assist you in locating a problem, in the event you lose power later. If you have the experience to do it yourself, you will need a suitable AC voltmeter. Relatively inexpensive AC voltmeters for measuring AC voltages are available at electrical supply locations.



**The following suggestions may help expedite troubleshooting:**

If you verify that you do have shore power problems, either try another pedestal or consider moving to another location. Otherwise, check voltages, etc. for your product(s) as follows:

**CAUTION: Get help unless you are an experienced electrician.**

**Models 34520 and 34730, 120V, 30A Portable/Hardwired Surge Guards:**

**At the pedestal:**

A) \_\_\_\_\_(Voltage)

Verify and record that you have approximately 120V between the two slotted openings on the pedestal receptacle.

B) \_\_\_\_\_(Voltage inside coach)

Verify and record the voltage inside the coach (note location for future checks).

Additional voltage checks for 30A Model 34520 hardwired Surge Guard units:

**At the Surge Guard input:**

C) \_\_\_\_\_(Voltage at input)

Verify and record the voltage at the input to the Surge Guard (white to black wires).

D) \_\_\_\_\_(Voltage at output)

After the unit powers up, verify and record the voltage at the output of the Surge Guard (white to black wires).

**Models 34560 and 34750 and \*40240, 120/240V, 50A Portable/Hard-wired Surge Guard:**

**At the pedestal:**

A) Left (L1) \_\_\_\_\_Right (L2) \_\_\_\_\_(Voltages)

Verify that you have approximately 120V between the center slotted opening (opposite the round opening) and the two slotted openings on either side.

B) \_\_\_\_\_(Voltage)

Verify that you have 0 volts between the center slotted opening (neutral) and the round opening (ground).

C) L1 \_\_\_\_\_ L2 \_\_\_\_\_(Voltages inside coach)

Verify and record the voltages inside the coach (note location for future checks). If you have a remote monitor or power monitoring system, note voltages and fault indications accordingly.

\* For the Model 40240 Remote, record all readings, note any fault conditions.

Additional voltage checks for 50A Models 34560 and 40240 Hard Wired Surge Guards:

**At the Surge Guard input:**

D) L1 \_\_\_\_\_ L2 \_\_\_\_\_(Voltages at input)

Verify and record the voltage at the input to the Surge Guard: white to black wires (L1), white to red wires (L2).

E) \_\_\_\_\_(Voltage)

Verify that you have 0 volts between the white wire (neutral) and the green wire (ground).

F) L1 \_\_\_\_\_ L2 \_\_\_\_\_(Voltages at output)

After the unit powers up, check and record the voltages at the output of the 50A Surge Guard: white to black wires (L1) and white to red wires (L2).

**Models 40250 and 41260, 120/240V, 50A Transfer Switch, Shore Power checks:**

**At the pedestal:**

A) Left (L1) \_\_\_\_\_ Right (L2) \_\_\_\_\_(Voltages)

Verify that you have approximately 120V between the center slotted opening (opposite the round opening) and the two slotted openings on either side. If less than 110V on either side, you may have a pedestal voltage problem.

B) \_\_\_\_\_(Voltage)

Verify that you have 0 volts between the center slotted opening (neutral) and the round opening (ground).

C) L1 \_\_\_\_\_ L2 \_\_\_\_\_(Voltages inside coach)

Verify and record the voltages inside the coach (note location for future checks). If you have a remote monitor or power monitoring system, note voltages accordingly.

Additional shore power voltage checks for 40250 and 41260 Transfer Switch:

**At the Transfer Switch shore power input:**

D) L1 \_\_\_\_\_ L2 \_\_\_\_\_(Voltages at shore power)

Verify and record the voltage at the shore power input to the transfer switch: white to black wires (L1), white to red wires (L2).

E) \_\_\_\_\_(Voltage)

Verify that you have 0 volts between the white wire (neutral) and the green wire (ground).

F) L1 \_\_\_\_\_ L2 \_\_\_\_\_(Voltages at output)

After the unit powers up, check and record the voltages at the output of the transfer switch: white to black wires (L1) and white to red wires (L2).

Generator power voltage checks for 40250 and 41260 Transfer Switch:

**At the Transfer Switch generator input:**

G) L1 \_\_\_\_\_ L2 \_\_\_\_\_(Voltages at input)

Power up the generator, verify and record the voltage at the input to the transfer Switch: white to black wires (L1), white to red wires (L2).

H) \_\_\_\_\_(Voltage)

Verify that you have 0 volts between the white wire (neutral) and the green wire (ground).

I) L1 \_\_\_\_\_ L2 \_\_\_\_\_(Voltages at output)

After the unit powers up, check and record the voltages at the output of the transfer switch: white to black wires (L1) and white to red wires (L2).

### **Model 10176, 120V, 30A Voltage Regulator:**

#### **At the pedestal:**

A) \_\_\_\_\_(Voltage)

Verify and record that you have approximately 120V between the two slotted openings on the pedestal.

B) \_\_\_\_\_(Red)

Verify that the Ground Status light is on (red)

C) \_\_\_\_\_(green-Bypass or red-Boost)

Verify that the Voltage Status light is on (green-Bypass or red-Boost)

D) \_\_\_\_\_(Voltages inside coach)

Verify and record the voltage inside the coach (note location for future checks):

### **Model 10175, 120/240V, 50A Voltage Regulator:**

#### **At the pedestal:**

A) Left (L1) \_\_\_\_\_ Right (L2) \_\_\_\_\_(Voltages)

Verify that you have approximately 120V between the center slotted opening (opposite the round opening) and the two slotted openings on either side.

B) \_\_\_\_\_(Red)

Verify that the Ground Status light is on (red-Good)

C) L1 \_\_\_\_\_ L2 \_\_\_\_\_(green-Bypass or red-Boost)

Verify that the Voltage Status lights L1 and L2 are on (green-Bypass or red-Boost)

D) L1 \_\_\_\_\_ L2 \_\_\_\_\_(Voltages inside coach)

Verify and record the voltages inside the coach (note location for future checks). If you have a remote monitor or power monitoring system, note voltages accordingly.

If you have questions regarding your Surge Guard units, Automatic Transfer Switch or Voltage Regulators, please contact TRC's technical support at **800-780-4324** during normal business hours, Eastern Time. You may also contact TRC through our websites at [www.SurgeGuard.com](http://www.SurgeGuard.com) and [www.trci.net](http://www.trci.net), or email at [productinfo@trci.net](mailto:productinfo@trci.net)

***If you require a replacement unit, check your local RV supplier.***

***If you require a replacement unit under warranty contact TRC for instructions.***