

# SURGE GUARD®

RV Power Protection

MODEL 34750  
Portable

www.surgeguard.com

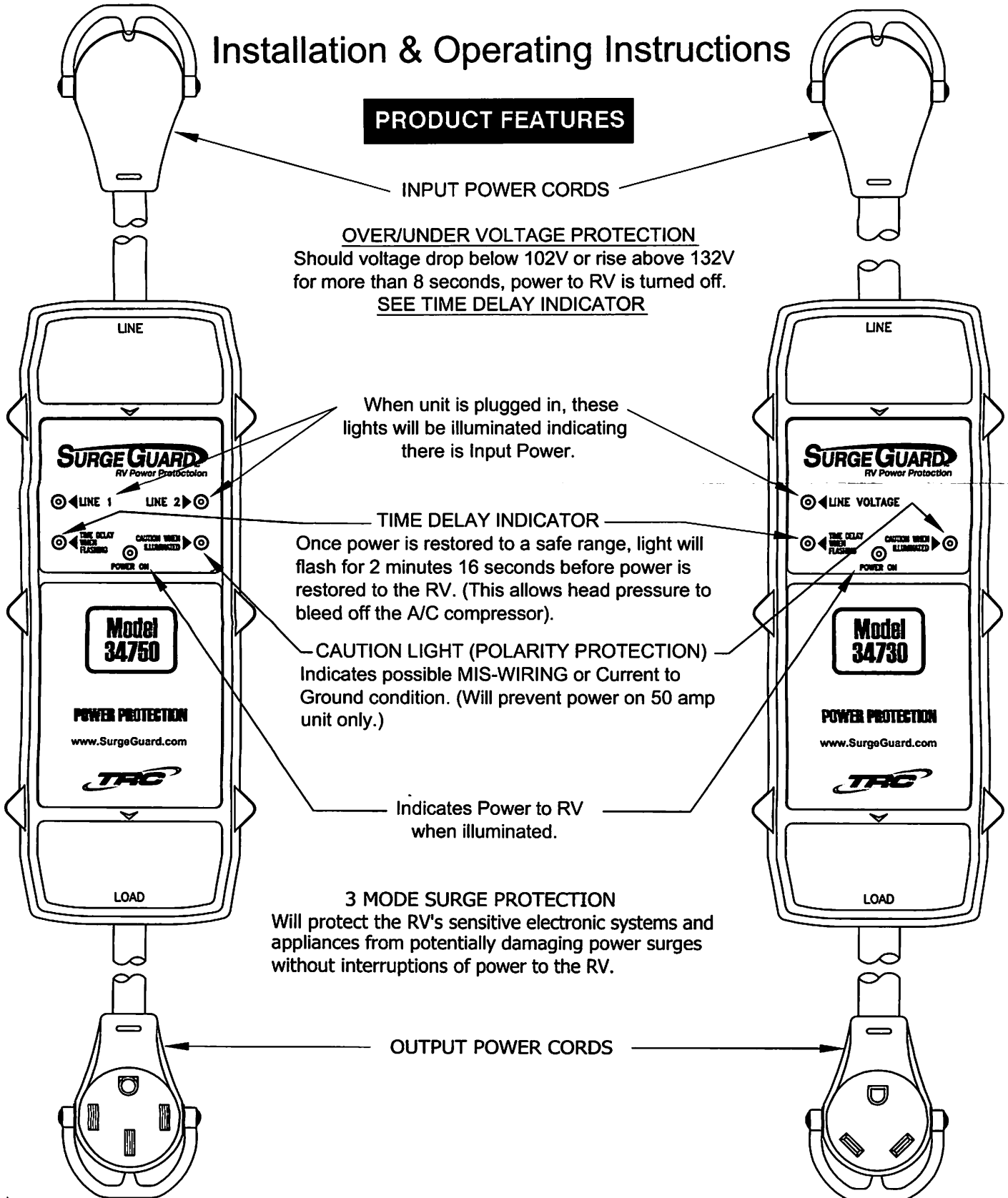
MODEL 34730  
Portable

## Installation & Operating Instructions

### PRODUCT FEATURES

INPUT POWER CORDS

**OVER/UNDER VOLTAGE PROTECTION**  
Should voltage drop below 102V or rise above 132V for more than 8 seconds, power to RV is turned off.  
SEE TIME DELAY INDICATOR



When unit is plugged in, these lights will be illuminated indicating there is Input Power.

TIME DELAY INDICATOR

Once power is restored to a safe range, light will flash for 2 minutes 16 seconds before power is restored to the RV. (This allows head pressure to bleed off the A/C compressor).

CAUTION LIGHT (POLARITY PROTECTION)  
Indicates possible MIS-WIRING or Current to Ground condition. (Will prevent power on 50 amp unit only.)

Indicates Power to RV when illuminated.

3 MODE SURGE PROTECTION

Will protect the RV's sensitive electronic systems and appliances from potentially damaging power surges without interruptions of power to the RV.

OUTPUT POWER CORDS

### Technical Specs for the Surge Guard Over and Under Voltage Models

Features	Model 34750	Model 34730
Operating Current	50 Amps	30 Amps
Operating Voltage	120/240 Volts	120 Volts
Maximum Watts	12,000 Watts	3,600 Watts
3 Mode Surge Protection	Yes, L-N, L-N, L-G, N-G	Yes, L-N, L-G, N-G
Energy Dissipation	1750 Joules	1050 Joules
Clamping Voltage	< 300 VAC	< 300 VAC
Maximum Spike Current	6500A per MOV	6500A per MOV
Over/Under Voltage Protection	Yes	Yes
Voltage Range	< 102V - 132V > (each side)	< 102V - 132V >
Trip Time	8-10 seconds	8-10 seconds
Restoration Level	> 102V -132V < (each side)	> 102V - 132V <
Time Delay for A/C	2 minutes 16 seconds	2 minutes 16 seconds
Reverse Polarity Check	Yes	Yes
Voltage On Ground Check	Yes	Yes
Power Indicator	Yes (2 line lights)	Yes (1 line light)
Warranty	1 year	1 year
Corrosion Resistant	Yes	Yes
Easy Installation	Yes	Yes
Remote Panel	Not Applicable	Not Applicable
Industrial Contactor	Yes	Yes

### OPERATING INSTRUCTIONS - MODELS 34750, 34730

1. Plug the RV power cord into an approved RV receptacle.
2. Verify the line lights are illuminated, danger light is off and delay indicator is flashing.
3. Once flashing light stops flashing (this takes 2 minutes 16 seconds), verify RV power is on.

Note: Using with TRC Voltage Regulators.

If the Surge Guard is used with the TRC Voltage Regulator (10175 or 10176) then the Voltage Regulator should be positioned between the power pedestal (shore power) and the Surge Guard.

Note: Using with power cord adapters.

Purchased power cord adapters will work in most cases with Surge Guard but TRC does not recommend using them for full load applications due to the possibility of over-heating. Be advised that power cord adapters have been known to cause fires when Amps (electrical current) ratings are exceeded. Should you decide to use an adapter, our recommendation is to check on the power cord from time to time to make sure it is not overheating.

### FOR YOUR RECORDS

MODEL NO: \_\_\_\_\_

DATE PURCHASED: \_\_\_\_\_

WHERE PURCHASED: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**KEEP THIS INFORMATION FOR  
WARRANTY PROTECTION**

### Indicator Light Chart

Condition description for Model 34750	Indicator light status				RV Power
	Line 1	Line 2	Delay	Caution	
Voltage on Ground	on	on	off	on	on
Startup condition	on	on	flashing	off	off
Normal conditions	on	on	off	off	on
Reverse polarity	off	on	off	on	off
Over or Under voltage condition	on	on	off	off	off
Power to line 1	on	off	off	off	off
Power to line 2	off	on	off	off	off
No power at the input	off	off	off	off	off

Condition description for Model 34730	Indicator light status			RV Power
	Line Voltage	Delay	Caution	
Startup condition	on	flashing	off	off
Normal conditions	on	off	off	on
Reverse polarity or current to ground	on	off	on	on
Over or Under voltage condition	on	off	off	off
No power at the input	off	off	off	off

### TROUBLESHOOTING

Symptom	Cause	Solution
Caution light is on.	1. Reverse polarity or voltage on ground condition is present at source power.	1. Move RV to a new electrical source.
Line 1 and or Line 2 is off.	1. Only partial power at 50 AMP source. 2. No power at the source.	1. Move to a new source pedestal. 2. Use inverter or generator power.
When first plugging into pedestal power, time delay light flashes momentarily, then goes out.	1. High or low voltage is present at source.	1. Change site or use inverter or generator power.

For further assistance call TRC at 727-535-0572



5250 140th Avenue North • Clearwater, Florida 33760 • (727) 535-0572

www.surgeguard.com



## Frequently Asked Questions

For additional Surge Guard product information please visit our website at:  
[www.SurgeGuard.com](http://www.SurgeGuard.com)

- Q. Can 50 Amp models be operated on a 120V/30 Amp, 120V/20 Amp, or 120V/15 Amp power source?**
- A. Operation of these models (using a standard adapter) on a 120V/30A, 120V/20A, or 120V/15A power source is acceptable, the unit will function properly.
- Q. The unit "hums" when operating, is this dangerous?**
- A. Typically this is a normal electrical phenomenon caused when the contactor coil "vibrates". Check to see if other symptoms are present (i.e. signs of overheating or erratic power). Try removing and restoring power to the unit several times. The supplier of the contactor indicates this condition often will subside with continued operation. If the condition persists or other symptoms are observed, contact the manufacturer for instructions by calling 1-800-780-4324 x 311.
- Q. How is Surge Guard different from a voltage booster?**
- A. Voltage boosters are only able to correct for minor out of specifications low voltages and provide only limited surge protection for itself and not for the coach. Voltage boosters offer no protection for extreme over/under voltage and open neutral condition.
- Q. Is it safe to switch to the bypass mode?**
- A. Some discontinued models do provide the bypass function. We have since removed it from all our products for safety reasons. Bypass mode is for emergency use only in a high/low voltage situation. There is no protection for over/under voltage and open neutral when in bypass mode.
- Q. What should be in line first, the voltage booster or the Surge Guard?**
- A. We recommend that the voltage booster be first, then the Surge Guard.
- Q. What are the approximate dimensions for the hardwire units?**
- A. 34520 – 6" W x 12" L x 5" D (with key), 4" D (without key)  
34560 – 6" W x 12" L x 6" D (with key), 5" D (without key)  
40240 – 6" W x 13" L x 6" D  
40250 – 9" W x 15 1/4" L x 5 1/2" D  
41250 – 9" W x 13" L x 5 1/2" D  
41260 – 9" W x 13" L x 5 1/2" D  
41290 – 12 3/8"W x 16 3/8"L x 6 1/8"D
- Q. Can I install the hardwire Surge Guard unit myself?**
- A. The manufacturer recommends that the hardwire units be installed by a qualified licensed electrician. However, as long as the unit is properly installed warranty is still valid.  
For all units, the manufacturer recommends that initial power be applied to the Surge Guard with the coach disconnected. If the Surge Guard operates normally, remove power and carefully connect the remaining load wires. Apply power for normal operation.
- Q. Can the hardwire units be mounted horizontally?**
- A. The manufacturer recommends mounting the unit any way other than flat where the label is facing the sky. Vertically or horizontally upside down (label facing the earth) is advised.
- Q. What does the "CAUTION WHEN ILLUMINATED" light mean?**
- A. A potentially dangerous condition exists. Disconnect/remove power and verify that power to the unit (from the power source) is not miswired. If the unit is properly wired, it may not be adequately grounded, causing the CAUTION WHEN ILLUMINATED light to be on.
- Q. Why does the Time Delay light blink for 2 minutes 16 seconds when the unit is first connected and power is applied or reapplied?**
- A. This is normal. When the blinking light goes out after blinking for 2 minutes, 16 seconds, power is available for the coach. The Over/Under voltage light is *not* lit during normal operation.

**Q. My unit makes a single large "clunk" 2 minutes, 16 seconds after power is applied (or when switched to bypass mode). Should I be concerned?**

**A.** This is a normal sound and is caused by the power contactor (relay) inside the unit energizing. This indicates "normal" power is available to the RV.

**Q. What do I do when the unit "chatters" when power up is attempted?**

**A.** DO NOT ATTEMPT TO OPERATE. Consult the troubleshooting guide and/or call TRC technical support at (800) 780-4324, ext 311

**Q. What do I do if the unit fails to operate?**

**A.** With Line Light(s) Off: Check power source. On 50 Amp units, **both** line lights must be on for the unit to operate. With Lines Light(s) On: If the condition persists, verify that the line (source) voltage is within 102V to 132V per line. If line voltage is within 102V to 132V per line (both lines must be within tolerance), return unit to manufacturer. Call 1-800-780-4324 x 311 for return instructions.

**Q. Can these units be "field repaired"?**

**A.** No. The unit must be returned to TRC. Please call 1-800-780-4324 x 311 to obtain a return materials authorization number.

**Q. Can these units be "field tested"?**

**A.** No. However, please consult the troubleshooting guide shipped with each product or at [www.surgeguard.com](http://www.surgeguard.com) under the given part number. If unit needs to be returned, please contact TRC at 1-800-780-4324 x 311 to obtain a return materials authorization number.

**Q. What is Surge Protection?**

**A.** Surge protection is protection against voltage spikes on power lines. These voltage spikes can cause severe damage to electronic/electrical equipment, even if not in close proximity. Although several factors determine the effectiveness of surge protection, a loose guide is the number of joules rated for the device. This should not be confused with over/under voltage protection, which is effective for a gradual increase or decrease in voltage, exceeding the maximum or minimum voltage for which appliances are rated.

**NOTE:** Direct lightning strikes can be catastrophic. Although effectiveness varies, obviously no device can effectively protect against a close or direct lightning strike.

**Q. How is Surge Guard different from standard surge protectors?**

**A.** Standard surge protectors do not provide protection for over/under voltage or open neutral conditions.

**Q. How do I know my surge protection still works?**

**A.** The surge protection does not usually fail unless there is a direct lightning strike. If this happens, there would likely be other obvious damage; otherwise, the surge protection should last indefinitely.

**Q. What is Over Voltage and Under Voltage Protection?**

**A.** Over voltage and under voltage protection removes primary power from the load (i.e. RV Coach) when the voltage drops below 102V or above 132V (safe mode). This predetermined value is selected as the point beyond which electrical and electronic equipment is likely to be damaged if operated for an extended length of time. The user of any protective device is urged to be aware that protective devices are not necessarily effective for all circumstances. Bypassing for this condition can result in damage of electrical equipment on the coach.

**Q. What is the warranty period for these units?**

**A.** Refer to the warranty information supplied at time of purchase. Generally, unless otherwise noted, the unit is under warranty for one (1) year with proof of purchase

**Q. Are locking devices available to protect my portable Surge Guard unit?**

**A.** Yes, a lock hasp (for use with a padlock) can be obtained through Surge Guard dealers nationwide.

For technical assistance please call 1-800-780-4324 x 311

For additional Surge Guard product information please visit our website at:  
[www.SurgeGuard.com](http://www.SurgeGuard.com)

Technology Research Corporation • 5250 140<sup>th</sup> Avenue North • Clearwater, Florida 33760

**Technology Research Corporation (TRC)  
Surge Guard®  
Warranty Information**

**Limited Product Warranty**

TRC warrants that this product, when properly installed according to TRC's installation procedures, shall be free of defects in materials and workmanship under normal use for a period of one year from date of purchase. For original equipment installed products, warranty is one year from date of purchase, not to exceed two years from date of manufacture. The warranty extends only to the original purchaser and is non-transferable, unless it was factory installed onto the RV and is then transferable with the RV Coach. During the warranty period, TRC will, at no charge, repair or replace defective parts or, at the option of TRC, replace the Surge Guard product within a reasonable time after the unit is returned to us. This warranty does not extend to any TRC product that has been damaged or rendered defective (a) as a result of an accident, misuse, or abuse; (b) by the use of parts not manufactured or sold by TRC; or (c) by modification of product. Labor charges for removal or replacement of the Surge Guard product are the responsibility of the customer. This Limited Warranty covers only products purchased from an authorized dealer, retailer or seller and does not cover used, salvaged or refurbished products.

**Nullification of Warranty**

The occurrence of any of the following nullifies and voids this warranty:

1. Any non-authorized modification, repair, or physical damage to the Surge Guard product, accidental or otherwise, not caused by a defect in material or workmanship.
2. If TRC determines that the Surge Guard has been improperly installed (see installation instructions) altered in any way, or tampered with.

The Warranty does not protect against acts of God, such as direct lightning strikes, flood, earthquake and war. It also does not protect against vandalism, theft, normal-use wear and tear, erosion, depletion, obsolescence, abuse, or damage due to low voltage disturbances for products without under voltage protection (i.e. brownouts, sags, or power outages), non-authorized program or system equipment modification or alteration.

**Sole Warranty**

This warranty contains the sole warranty of TRC, there are no other warranties, expressed or, except as required by law in the State of Florida, implied, including implied warranty or condition of quality, merchantability or fitness for a particular purpose, and such implied warranties, if any, are limited in duration to the term of this warranty. TRC expressly disclaims any liability under this warranty for any sums that exceed the retail value of the Surge Guard unit. Some states do not allow limitations on how long an implied warranty lasts.

No agent or representative of TRC, retailer, distributor or dealer has any express or implied authority to make any representation, promise, guarantee or warranty not stated in the Limited Product Warranty.

In no event shall TRC be liable for direct, indirect, incidental, special, consequential or multiple damages arising out of the use of the product or damage to the connected equipment, regardless of the legal theory on which such claim is based; even if advised of the possibility of such damage. The excluded damages include, but are not limited to, loss of profits, loss of savings or revenue, loss of life, injury, loss of use of the product or the connected equipment or any associated equipment, loss of software, cost of capital, cost of any subsequent equipment, facilities or services, downtime, the claims of third parties, including customers, and damage to property. Some states do not allow exclusion or limitations of incidental or consequential damages. This warranty is valid in the U.S. and Canada only.

This warranty is in lieu of all other warranties, obligations, or liabilities expressed or implied by the company. Any properly installed device that proves defective in normal use will be repaired or replaced at TRC's option provided the procedure as stated below is followed:

1. Contact TRC Customer Support at 1-800-780-4324 to obtain a Return Materials Number.
2. Properly package returned unit.
3. Display Return Materials Number on outside of box.
4. Include Proof of Purchase, including date of purchase.
5. Supply full written description of the problem.
6. Specify your name, address, and daytime phone number.
7. Ship unit postage prepaid directly to:

Return Materials Department  
Technology Research Corporation  
5250 140<sup>th</sup> Avenue North  
Clearwater, Florida 33760

Any questions regarding this warranty, please contact TRC by phone at 1-800-780-4324, or by email at [productinfo@trci.net](mailto:productinfo@trci.net).



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