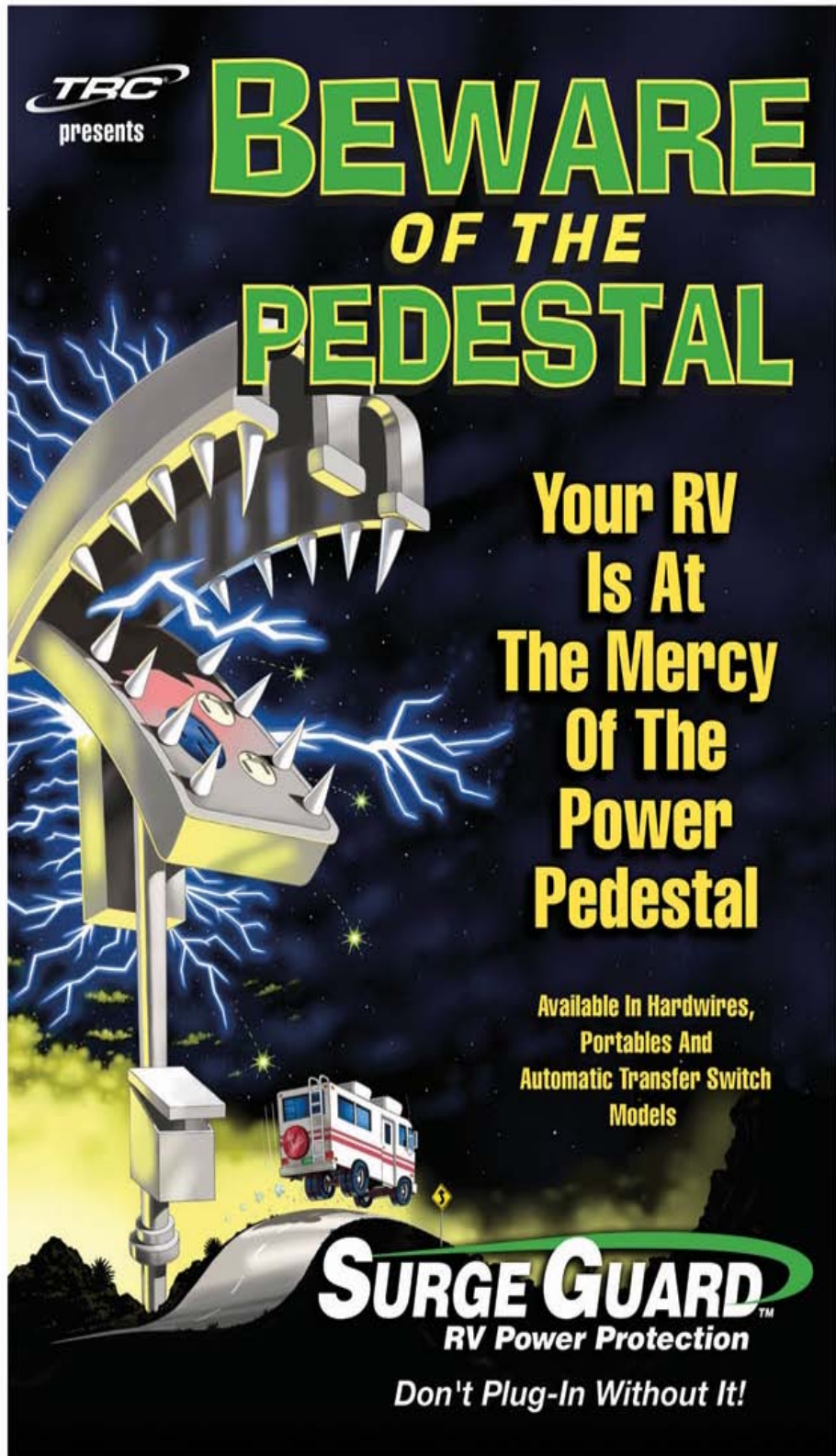


Training Manual



TAC
presents

BEWARE OF THE PEDESTAL

**Your RV
Is At
The Mercy
Of The
Power
Pedestal**

Available In Hardwires,
Portables And
Automatic Transfer Switch
Models

SURGE GUARD™ RV Power Protection

Don't Plug-In Without It!

RVs are at the Mercy of the Power Pedestal

This Surge Guard Training Manual will show you how to help prevent this from happening...



Consequences of an Electrical Fire in an RV:

1. Costly Damage and/or Loss of the RV
2. Insurance Deductibles/claims
3. Annoying Downtime





Training Manual

What does Surge Guard do?

Why is Surge Guard needed?

RVs hook up to power pedestals for shore power at campgrounds, parks and other locations. RVs today have highly sophisticated electronic circuitry with an array of expensive appliances ranging from air conditioners and microwaves to plasma TVs. The single largest threat to a RV's electrical system and appliances is the "power pedestal", either miswired or faulty electrical power. Faulty power can result in significant damage to these appliances. TRC manufactures a complete line of Surge Guard products that offer bumper-to-bumper electrical system protection for all RVs.

Due to the enormous damage and repair expense caused by miswired pedestals and faulty power, many of the RV manufacturers have begun installing Surge Guard hardwire models in their RVs. As RVs continue to increase in cost, so does the need to protect the investment. Surge Guards are one of the best insurance policies that an RV owner can purchase.

120V, 30Amp Portable with Shock Shield Model 44740

This product is the most economical and offers two types of electrical protection, surge suppression and ground fault protection. It does not protect against miswired pedestals, low-high voltage or open neutral conditions.



RV owners buy this product primarily to protect their RV's electronics from power surges. Rather than purchasing individual surge strips for individual circuits and appliances, the Surge Guard with Shock Shield protects the entire RV and its contents. It is perfect for Towables, 5th Wheels and Class C Motorhomes.

When a power surge or voltage spike occurs, the Surge Guard instantaneously shuts off the power to the RV and automatically resets when the power is restored.

When a ground fault condition occurs, the power

is disconnected in 25/1000ths of a second to protect the RV's wiring, appliances and prevent shock and fire hazards. Once the ground fault is corrected the reset button must be activated to continue power.

A commonly asked question –

Is this unit self-sacrificing?

The answer is yes, it can be in extreme conditions, lightning strikes, etc. In such conditions the RV owner may need to purchase a replacement. The \$100 Surge Guard protected the RV and in all probability thousands of dollars of electrical wiring and appliances...It did its job!

Provides 510 Joules of Surge Suppression

What is Surge Protection?

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.

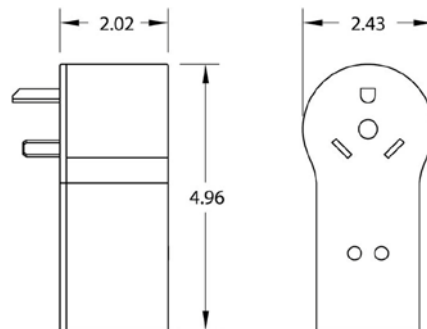
120V, 30Amp Portable Circuit Analyzer
Model AECM10086



Identifies faulty park power plus offers surge protection. Plug into power pedestal to test for and indicate Open Ground, Open Neutral or Correct Polarity.

Pedestal is OK if the two (2) "Green" lights come on. Provides 1,020 Joules of Surge Suppression

This item is priced for the Rver who wants the wiring diagnostics not available with Model 44740, but also wants Surge Protection. It does not provide low-high voltage protection.



120V, 30Amp Portable, Model 34730
120/240V, 50Amp Portable, Model 34750



These units automatically shut off the power to the RV when the power pedestal is miswired or faulty power is detected.

When safe current is available to the RV, the “Power On” light will be illuminated. The “Line Voltage” light on the 30A model and both “Line Voltage #1 & #2” lights on the 50A model will be illuminated to indicate that the circuits are operational.

One of the most damaging types of pedestal miswiring is an “open neutral” which can cause severe electrical damage. When this or other conditions such as reverse polarity are detected, the power is shut off instantaneously.

And, one of the most common power pedestal problems that RVers experience is “low voltage”. When the voltage from the power pedestal drops below 102V or goes above 132V for more than 8 seconds or in cases of instantaneous severe voltage drops or spikes, the power is automatically shut off.

When the Surge Guard shuts off the power for this or any other cause, it will automatically reset once the power problem has been corrected. However, there is a 2 minute 15 second delay built in to allow the head pressure to bleed off on the RV’s air conditioner prior to reconnecting the power. During this period the “Time Delay” light will flash.

Whenever the power is shut off due to polarity, miswiring or current to ground conditions, the “Caution Light” will be illuminated in order to help RV owner identify the cause of the power outage.

It is not uncommon for RV owners with 50A circuits to encounter campgrounds with an insufficient number of 50A power pedestals.



30Amp model provides 1,050 Joules of Power Surge Protection.
50Amp model provides 1,750 Joules of Power Surge Protection.



Can Rvers use a 50A/30A adapter plug with their 50A Surge Guard and hook up to a 30A power pedestal?

Yes; however, their RV is wired with two 50A/120V circuits for a total of 100Amps while the 30A power pedestal will only provide a total of 30Amps of power. Subsequently, only a limited number of appliances can be operated without causing circuit breakers on the power pedestal to be thrown. The Surge Guard will provide the protection; however, the Rver may experience inconvenience due to the limited power.

Can I hook up a 30A Surge Guard to a 240V/50A power pedestal using a 30A/50A adapter?

The answer is yes, and the Surge Guard will function properly; however, it is not recommended. The higher 50A input can cause the circuit breakers to be thrown.

Can an RV owner use a ‘voltage boosting’ product in conjunction with a Surge Guard?

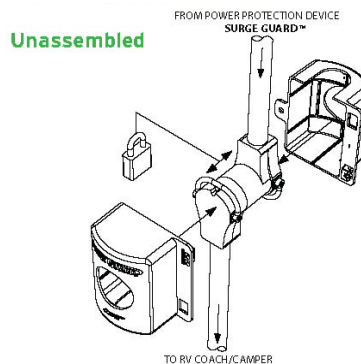
Yes, by plugging the voltage booster into the power pedestal in front of the Surge Guard. The voltage booster’s primary function is to increase the voltage in low voltage situations. Most provide “limited” surge protection or protection for extreme over/under voltage and open neutral condition. If the voltage booster is mounted after the Surge Guard, the Surge Guard will automatically shut off the power if it is below 102V for more than 8 seconds; subsequently not allowing the voltage booster to operate.

**Universal Lock Hasp
Model 34590**

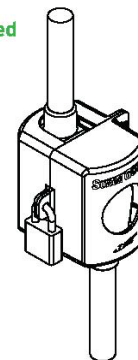
Fits all portable Surge Guard models and Surge Guard Voltage Regulators, as well as standard 30 Amp and 50 Amp portable plugs.



Lock not included.



Assembled

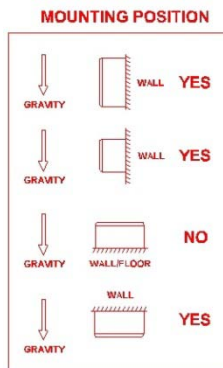


120V, 30Amp Hardwire, Model 34520
120/240V, 50Amp Hardwire, Model 34560



These units offer the same protection, features and benefits as the portable Surge Guards, except they are permanently installed in the RV.

TRC recommends a qualified licensed electrician install the unit. It may void the warranty if installed incorrectly. Please see approved mounting directions illustration.



30Amp model provides 1,050 Joules of Power Surge Protection
50Amp model provides 1,750 Joules of Power Surge Protection

Although it is a feature that has been phased out, some hardwire units had a keyed By-Pass mode. This feature was added years ago to allow the RV owner to bypass the Surge Guard when a low voltage situation occurred. By turning the key to By-Pass, the RV owner could still charge their batteries with low voltage while operating in the battery mode. Once the By-Pass was activated the Surge Guard offered protection from surges only. There was no protection for over/under voltage and open neutral in the By-Pass mode. Due to misuse (failing to take the unit off By-Pass) of this function by some RV owners, TRC phased out this function on future production.

50Amp Hardwire with RV Power Protection 120/240V, 50A, 60Hz
Model 40240

This Surge Guard offers the same features and benefits as the hardwire units; however, it also monitors and displays the condition of the power being supplied to the RV with an LCD readout and source power connection diagnostics. This model has multi-mode surge suppression (fuse protected) and protects against: excessive voltage, miswired pedestal, open neutral, open ground, high/low frequency, and reverse polarity.



Provides 3,350 Joules of Power Surge Protection

A Multitude of RV Electrical Protection Choices

	30A Portable 44740	30A Portable AECM 10086	30A Portable 34730	30A Hardwire 34520	50A Portable 34750	50A Hardwire 34560	50A Hardwire 40240
Over/Under Voltage			●	●	●	●	●
Open Neutral Protection			●	●	●	●	●
Reverse Polarity Protection			●	●	●	●	●
Miswired Pedestal Indication		●	●	●	●	●	●
Ground Fault Protection	●						
Dangerous Current on Ground Wire Indication			●	●	●	●	
Time Delay at Power Up (2 min. 15 sec.)			●	●	●	●	●
Remote Display							●
Weather Resistant	●	●	●		●		
UL Listed				●		●	●
Source Power Connection Diagnostics							●
Lock Hasp Available	●		●		●		
Cord Gauge	10/3	N/A	10/3	N/A	6/4	N/A	N/A
Electrical Rating	120V, 30A	120V, 30A	120V, 30A	120V, 30A	120/240V 50A	120/240V 50A	120/240V 50A
Surge Suppression (Joules)	510	1,020	1,050	1,050	1,750	1,750	3,350
Max Spike Current	1,250A	N/A	6,500A	6,500A	6,500A	6,500A	130,000A

**50Amp Surge Guard Plus Automatic Transfer Switch
with RV Power Protection 120/240V, 50A, 60Hz
Model 41260**

This unit transfers to either shore power or generator automatically when energized. In the event both shore and generator powers are available, generator power will dominate after a 30 second delay.

Provides open neutral and reverse polarity protection as well as Multi-mode surge suppression.

Provides 2,600 Joules of Power Surge Protection



**50Amp Surge Guard Plus Automatic Transfer Switch
with RV Power Protection 120/240V, 50A, 60Hz
Model 40250**

This unit offers the same features and benefits as Model 40240 with the added bonus of an Automatic Transfer Switch. It transfers to generator power automatically when energized after a 30 second delay. When both shore power and generator power are available, generator dominates after a 30 second delay. Once the generator is shut down, the shore power activates after a 2 second delay. Oversize contactors and UL Approved ATS - full transfer switch rating.

Optional 2-line plain English display with continuous visual indication of source voltage, load current or diagnostics.

Provides 3,350 Joules of Power Surge Protection



Optional

Compare Automatic Transfer Switches

	50A Hardwire 41260	50A Hardwire Plus 40250
		
Over/Under Voltage		●
Open Neutral Protection	●	●
Reverse Polarity Protection	●	●
Miswired Pedestal Indication		●
Ground Monitoring		●
Time Delay at Power Up	●	●
Remote Display (Optional)		●
Amperage Measurement		●
UL Listed	●	●
Source Power Connection Diagnostics		●
Generator Dominant	●	●
Mechanical Interlocking Contactors	●	●
Electrical Rating	120/240V, 50A	120/240V, 50A
Surge Suppression (Joules)	2,600	3,350
Max Spike Current	76,400A	130,000A
Contactor Rating	50/65A, FLA	65/80A, FLA
UL Approval	UL 1008	UL 1008

Surge Guard 30 A & 50A Voltage Regulators

120V, 30Amp, **Model 10176**

For use on single phase, 2-wire services

120/240V, 50Amp, **Model 10175**

For use on single phase, 3-wire services

This product provides a stable, reliable source of power to the coach or travel trailer. It is designed primarily for use in areas where low voltage (less than 102 VAC) is a persistent problem. If the voltage is as low as 95 VAC, the Voltage Regulator's heavy duty transformer will increase the voltage to a safe operating level for all RV circuits and appliances.

The Voltage Regulator continuously monitors the voltage and indicates the conditions with a series of LED status lights – Open Neutral, Under Voltage, Over Voltage, Phase Reversal and Operating Mode.



Optional Mounting Bracket

Special Note: While the Voltage Regulator monitors and provides a stable regulated source of power, it does not protect against open neutrals and faulty electrical conditions that can potentially cause catastrophic damage. Subsequently, always use a Surge Guard portable or hardwired unit in addition to the Voltage Regulator. Plug the Voltage Regulator directly into the pedestal followed by the Surge Guard, prior to connecting the shore power cord.

How to Hook Up to RV and/or to Surge Guard

- ▶ Voltage Regulator plugs directly into 30A or 50A power pedestal at campground
- ▶ Hook RV's shore cord to Voltage Regulator if no Surge Guard protective device is being used
- ▶ If RV has a Portable Surge Guard - Surge Guard unit needs to be plugged between the Voltage Regulator and the RV
- ▶ If RV has an installed Surge Guard Hardwire then unit is already in the correct position

Digital Power Monitor Model AECM20020

This is the most advanced microelectronics power monitor and diagnostics tool on the market. Plug into any 15A outlet and the backlit LCD display shows RMS voltage & frequency. The mode button allows for only the voltage or frequency or both to be displayed alternately. If a fault is encountered, the display screen will display one of the following:



LO (Low Voltage<102V)
HI (High Voltage>135V)
LF (Low Frequency<55Hz)
HF (High Frequency>65Hz)
GF (Ground Fault)
PF (Polarity Fault)

If the fault continues for more than 3 seconds, a **5 second audible alarm** sounds. It also provides 300 Joules of Surge Suppression for the circuit in which it is plugged.

This is the only power monitor with an audible alarm, RMS technology (reads inverters & generators correctly) and digitally displays all faults with built in surge suppression.

Contact and Resource Information

- ▶ For information, Specs, and Troubleshooting Assistance, please go to: www.surgeguard.com
- ▶ Customer Service
Kathy Neal
Email – kneal@trci.net
Direct Line – 727-812-0532
- ▶ Technical Support
Email – productinfo@trci.net
Direct Line – 727-812-0531 or 800-780-4324 x 311



Your RV Is At The Mercy Of The Power Pedestal

**Surge Guard Protects
Your RV Against:**

▼
Power Surges

▼
Over/Under Voltage

▼
Mis-wired Pedestal

▼
Open Neutral

**Available in
120V/30A and 240V/50A Portables and Hardwires
120/240V 50A Hardwires and
120/240V 50A Automatic Transfer Switches**

800-780-4324