

# SURGE GUARD<sup>®</sup>

RV Power Protection

www.surgeguard.com

## Installation & Operating Instructions

**MODEL 34560**  
Hardwire

### PRODUCT FEATURES

**MODEL 34520**  
Hardwire

#### 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

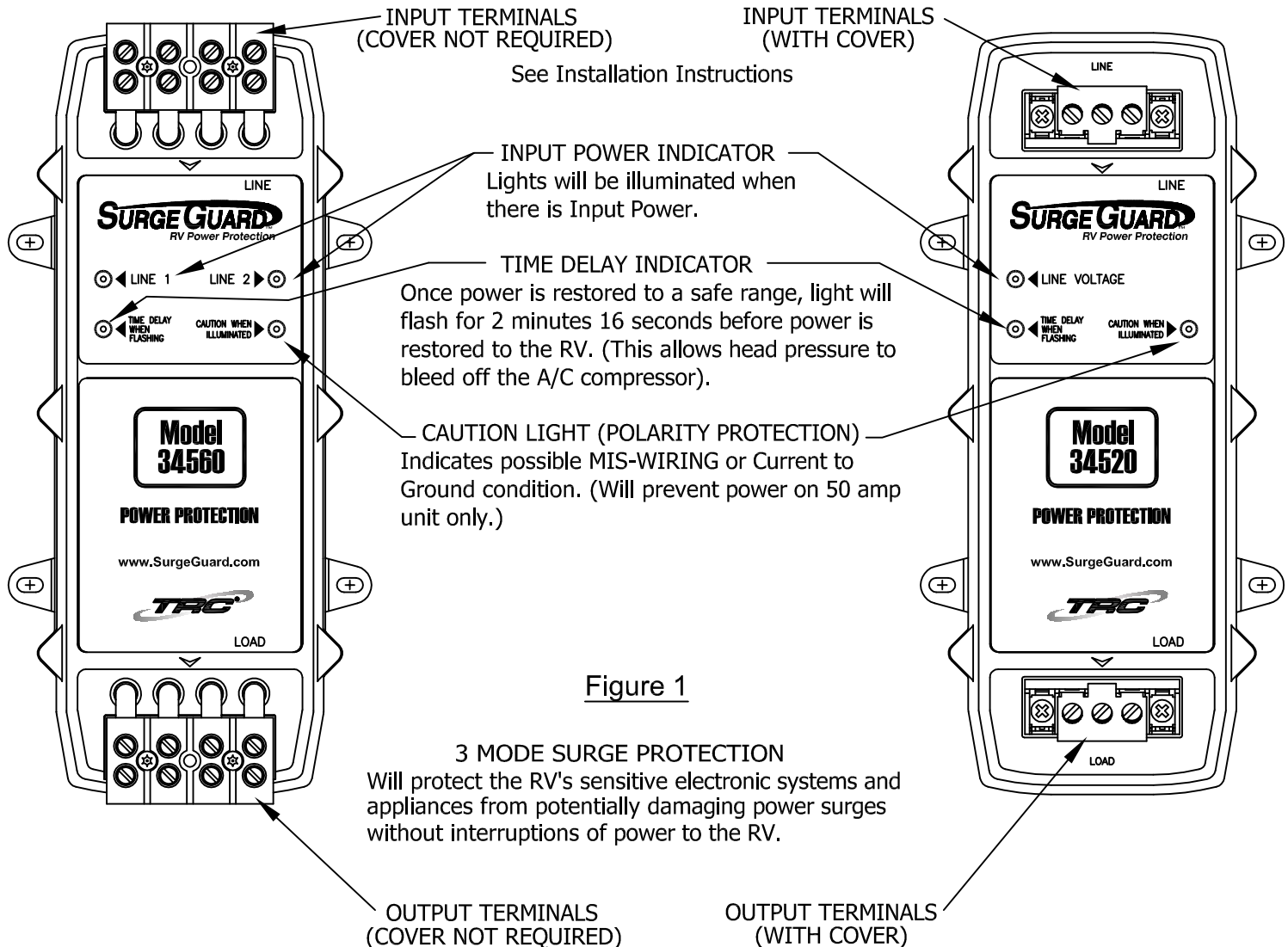


Figure 1

#### 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.

**PLEASE READ THE ENCLOSED INSTRUCTIONS CAREFULLY.**

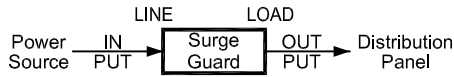
In the event you have any questions concerning the care of this product, please contact the Sales Department at Technology Research Corporation.

# INSTALLATION INSTRUCTIONS - MODELS 34560, 34520

**WARNING: This Surge Guard device must be installed by a licensed electrician or by an RV dealer.**

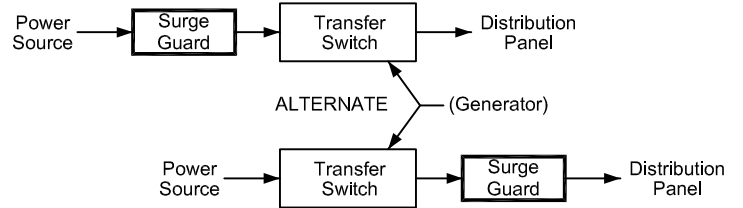
## PROTECTING SOURCE POWER ONLY:

1. Disconnect RV power cord from source power.
2. Locate Surge Guard® in the RV's electrical compartment. Unit should be located where lights are clearly visible to the user.



## PROTECTING BOTH SOURCE AND GENERATOR POWER:

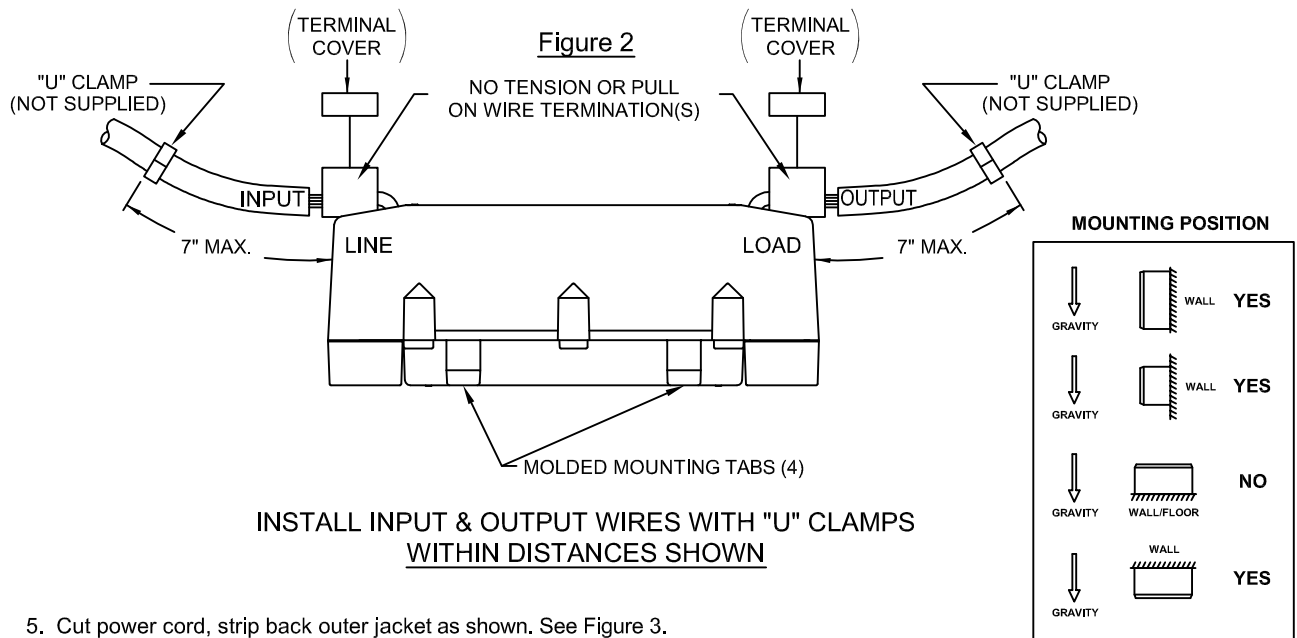
1. Disconnect RV power cord from source power.
2. Locate Surge Guard® next to transfer switch. Unit should be located where lights are clearly visible to the user.



ADDITIONAL CABLE USED MUST BE  
ELECTRICALLY EQUIVALENT TO ORIGINAL EQUIPMENT

## MOUNT SURGE GUARD IN RV ELECTRICAL COMPARTMENT

1. Position so LINE end is facing direction of incoming power cord.
2. Using #10 hardware, mount unit securely in place using molded mounting tabs.
3. Remove Terminal Block Covers. (Model 34520 only).
4. Route Primary Cable into position (over exposed terminals or into terminal block wells) - allowing enough slack to eliminate stress or tension on cable connections to be made. See Figure 2.

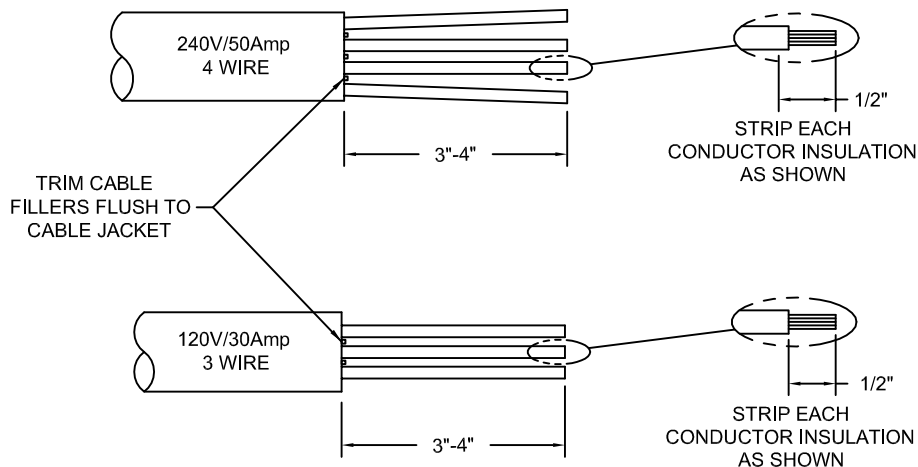


INSTALL INPUT & OUTPUT WIRES WITH "U" CLAMPS  
WITHIN DISTANCES SHOWN

5. Cut power cord, strip back outer jacket as shown. See Figure 3.

Figure 3

NOTE: WIRE PREPARATION IS THE SAME FOR ALL CABLES (EXCEPT AS NOTED)



6. Each conductor is to be installed as shown. See Figures 4, 4A, 5 & 5A.

Figure 4 - (50 Amp Model 34560)

Figure 4A - (30 Amp Model 34520)

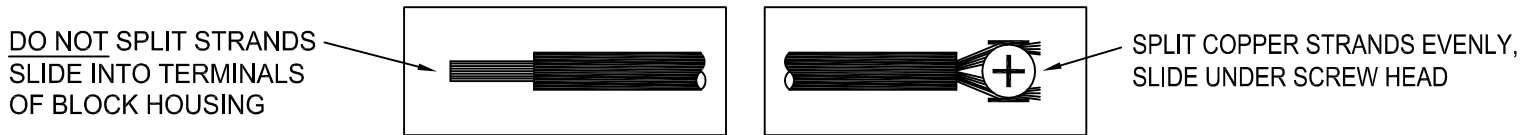
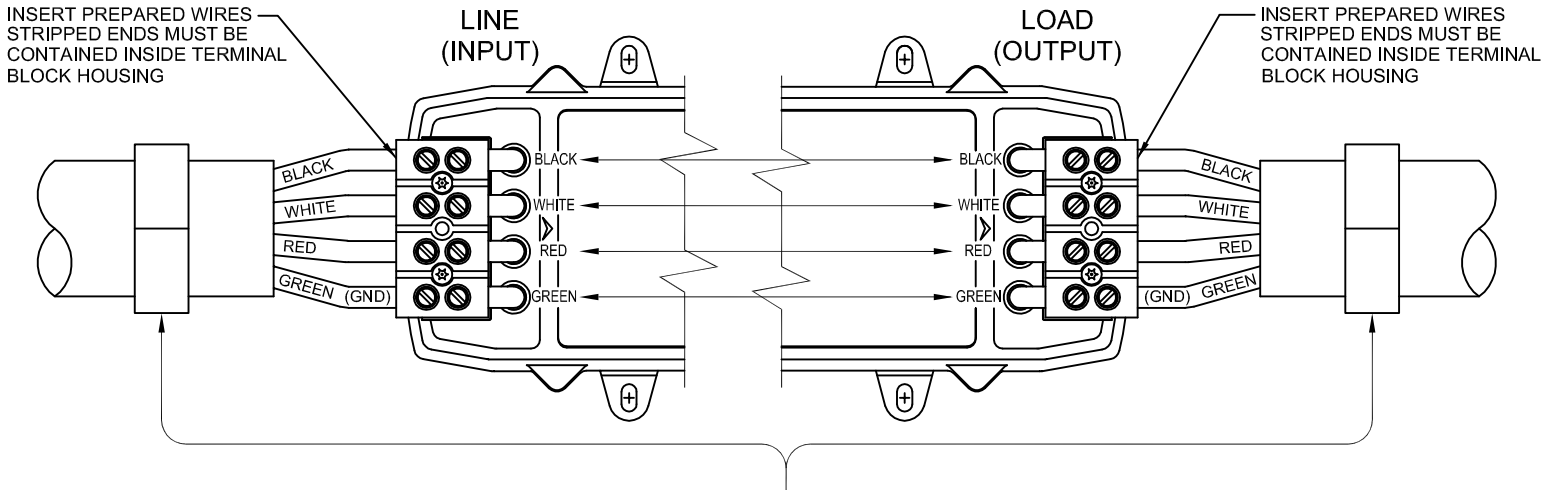


Figure 5

120/240V-50 AMP MODEL #34560

IMPORTANT NOTE - TORQUE PER CONNECTION = 16 IN - LBS.



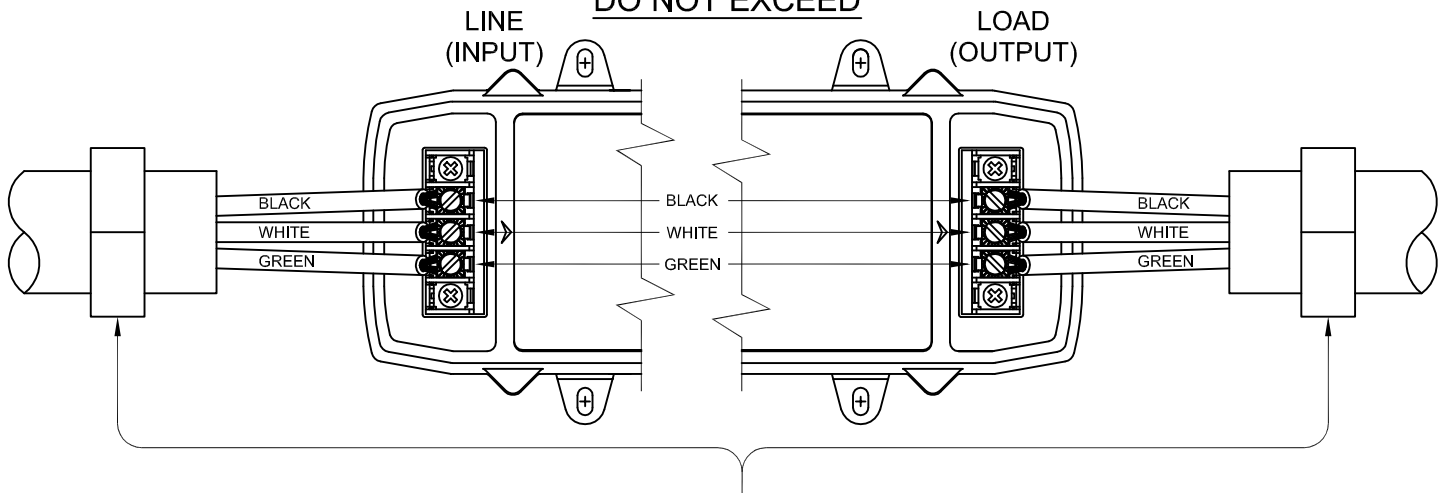
AFTER CONNECTIONS ARE MADE, SECURE BOTH LINE & LOAD SIDE CABLES. USE "U" CLAMPS (NOT SUPPLIED) TO PREVENT STRAIN ON TERMINAL CONNECTIONS.

Figure 5A

120V-30 AMP MODEL #34520

IMPORTANT NOTE - MAX. TORQUE PER CONNECTION = 7 IN - LBS.

DO NOT EXCEED



AFTER CONNECTIONS ARE MADE, SECURE BOTH LINE & LOAD SIDE CABLES. USE "U" CLAMPS (NOT SUPPLIED) TO PREVENT STRAIN ON TERMINAL CONNECTIONS.

7. Recheck tightness of ALL connections - **REINSTALL TERMINAL COVERS** removed in Figure 2.

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

Features	Model 34560	Model 34520
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
Industrial Contactor	Yes	Yes

### OPERATING INSTRUCTIONS - MODELS 34560, 34520

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:** \_\_\_\_\_

**DATE INSTALLED:** \_\_\_\_\_

**INSTALLED BY:** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**KEEP THIS INFORMATION FOR  
WARRANTY PROTECTION**

## Indicator Light Chart

Condition description for Model 34560	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 34520	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. 2. Surge Guard mis-wired on the line side.	1. Move RV to a new electrical source. 2. Match up colors on terminals with colors on conductors.
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

**WARNING:** It is extremely important that the terminal covers are in place prior to applying power to the RV. Failure to comply with these instructions may result in a shock hazard.



Technology Research Corp.

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