

# INSTALLATION & OPERATING INSTRUCTIONS



# SURGE GUARD\*

RV Power Protection

## MODEL 34951 50A Portable

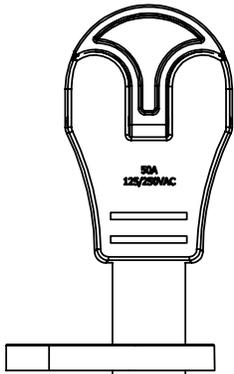
FOR YOUR RECORDS

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

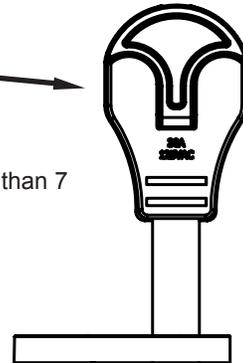
DATE PURCHASED: \_\_\_\_\_

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

## MODEL 34931 30A PORTABLE



INPUT POWER CORDS



### OVER/UNDER VOLTAGE PROTECTION

Should voltage drop below 102V or rise above 136V for more than 7 seconds, power to RV is turned off.  
SEE TIME DELAY INDICATOR

The green LED indicates power to RV when illuminated.

### TIME DELAY INDICATOR

When unit is plugged in, the red caution LED is flashing indicating delay. The LCD at the same time will count down to 0 seconds. When the delay expires, the red caution LED will stop flashing and power will be applied to the RV. Time delay will also be applied to reset once power is restored to a safe range following a 128 second delay. This allows head pressure to bleed off the A/C Compressor.

### SURGE FAILURE

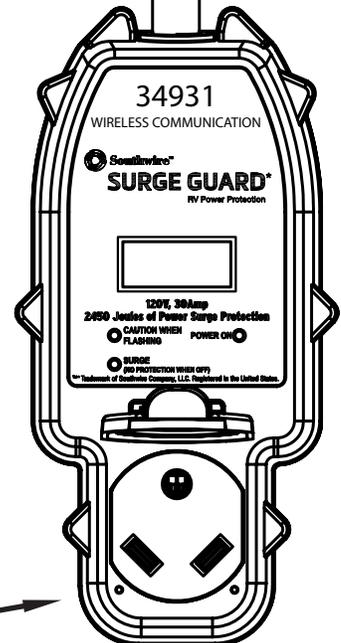
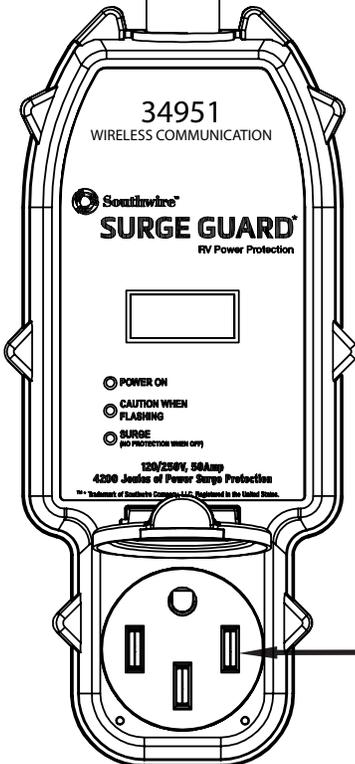
If the red "SURGE" indicator LED is on, it means that the built-in surge protection has been sacrificed to protect your equipment and is no longer functioning properly. Other features will still function, but the unit is recommended to be replaced.

### CAUTION LIGHT POLARITY PROTECTION

Indicates possible miswiring or current to ground condition present. (Will prevent power on 50 amp unit only.) The LCD screen will also indicate REVERSE POLARITY.

### 3 MODE SURGE PROTECTION

Protects the RV's sensitive electronic systems and appliances from potentially damaging power surge events without power interruptions to the RV.



OUTPUT POWER

[rvpower.southwire.com](http://rvpower.southwire.com)

For technical assistance, please call 1-800-780-4324 x 20311

Manufactured by Southwire Company, LLC - 11211 69th Street North - Largo, Florida 33773

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505-00170A

## TECHNICAL SPECIFICATIONS

FEATURES	MODEL 34931	MODEL 34951
Operating Current	30 Amps	50 Amps
Operating Voltage	120 Volts	120/240 Volts
Maximum Watts	3600 Watts	12000 Watts
3 Mode Surge Protection	Yes, L-N, L-G,N-G	Yes, L-N, L-N, L-G, N-G, L-L
Energy Dissipation	2450 Joules	4200 Joules
Oven/Under Frequency	Yes	Yes
Frequency Trip Points	70/54	70/54
Over/Under Voltage Protection	Yes	Yes
Voltage Range	136/102V	136/102V
Trip Time	7 seconds	7 seconds
High Neutral Current Trip	N/A	130%
Receptacle Temperature Trip	Yes	Yes
Time Delay for A/C	128 seconds	128 seconds
Reverse Polarity Check	Yes	Yes
Voltage On Ground Check	Yes	Yes
Power Indicator	LCD voltage & current reading	LCD voltage & current reading
Warranty	Limited Lifetime	Limited Lifetime
Corrosion Resistant	Yes	Yes
Easy Installation	Yes	Yes
Industrial Contactor	Yes	Yes

## OPERATING INSTRUCTIONS MODELS 34931/34951

1. Plug the Surge Guard\* models 34931/34951 into an approved RV receptacle and plug the RV power cord into the Surge Guard device.
2. Verify the delay indicator is flashing, the LCD is counting. The LCD will read between 102V and 136V.
3. Once caution light stops flashing (this takes 128 seconds), verify RV power is on.

### NOTE: USING WITH POWER CORD ADAPTERS

Purchased power cord adapters will work in most cases with Surge Guard devices, but Southwire 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 Amp (electrical current) ratings are exceeded. Should you decide to use an adapter, our recommendation is to check the power cord from time to time to make sure it is not overheating.

## LCD DISPLAY INDICATORS

REPLACE SURGE	Surge expended	
OPEN GROUND	Open ground	
REVERSE POLARITY	L1 or L2 wired to neutral or ground	
L1 HIGH WAS 137V	L2 HIGH WAS 137V	Voltage > 136
L1 LOW WAS 99V	L2 LOW WAS 99V	Voltage < 102
NEUTRIP WAS 65A	Current > 130%	
L1 AMPS WAS 56A	Current > 110%	
RECEPT OVERHEAT	Overheating plug/receptacle	
GND HIGH WAS 35V	Abnormal voltage on ground	
OPEN NEUTRAL	Open neutral on coach side	
FREQ HI DETECTED	Frequency > 70	
FREQ LO DETECTED	Frequency < 54	

### Display for Normal Operation

During normal operation, the Surge Guard device LCD screen alternates between two displays, a main screen showing voltages and currents for power Lines 1 and 2 coming into the RV; and a secondary screen showing whether power to the RV is ON or OFF, with voltage for Line 1 coming into the RV.

The main screen for model 34951 (50Amp) will show the voltages and currents for Lines 1 and 2, whereas model 34931 will only show Line 1 since there is no Line 2 for that model.

There are two rows or text lines on the LCD screen. The top row for the main screen shows information for Line 1 in the following format: 120V 50A. This means that the voltage on power Line 1 coming into the RV is at 120 volts and the RV is drawing 50 amps of current on Line 1. The bottom row of the main screen for 34951 shows voltage and current for Line 2.

#### Model 34951

125V 25A  
125V 25A

RV STATUS ON/OFF  
L1 120V

Main Screen

Secondary Screen

#### Model 34931

120V 30A

RV STATUS ON/OFF  
L1 120V

The top row of the secondary screen for both models shows RV ON or RV OFF, and the bottom row shows the voltage on power Line 1 as L1=120V.

If the power coming into the RV is less than 102 volts on either Line 1 or 2, then the main screen will show L1 Low or L2 Low, in place of the voltage or current. If the power coming in is greater than 136 volts, then the main screen will show L1 High or L2 High.

### Display During Fault Conditions

When the device is powered up, the LCD screen will display "Delay" and the elapsed time in seconds until it reaches 0 seconds. After the delay is completed, the unit will go to the Normal Operating screen showing voltages and currents as described above. If there is a fault condition during normal operation such as high or low voltage, the unit will display that L1 or L2 is high or low; and when power comes back within range (102V-136V) the unit will begin the Delay as described above before returning to the main screen that shows the voltages and currents.

### Reverse Polarity Conditions

If the polarity of the voltages coming into the RV is reversed, then the Surge Guard unit will display the REVERSE POLARITY until this condition is corrected. Also, current or voltages on ground will be displayed as reversed polarity.

REVERSE  
POLARITY