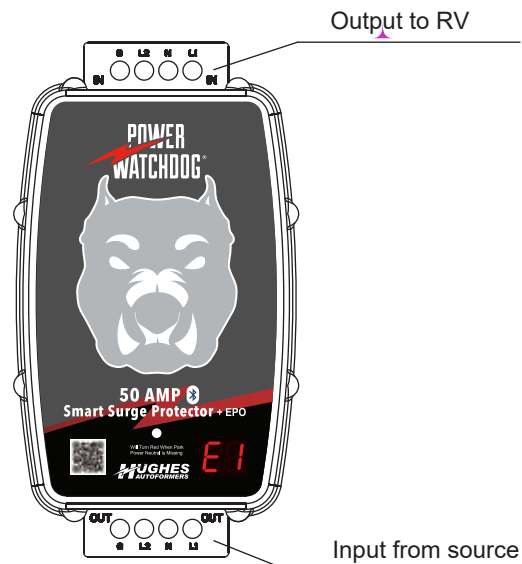


# INSTALLATION & OPERATING INSTRUCTIONS



## MODEL: PWD50-EPO-H



**FOR YOUR RECORDS**

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

**SERIAL NO:** \_\_\_\_\_

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

**PURCHASED FROM:** \_\_\_\_\_

### OVER/UNDER VOLTAGE PROTECTION

Should the voltage drop to 104V or below, or rise to 132 V or higher, power to the RV is turned off.

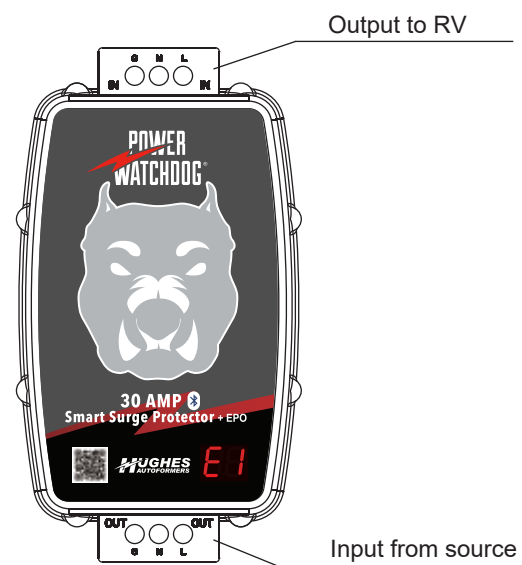
Hughes Autoformers, a trusted name in RV power protection for over 25 years would like to say, "THANK YOU and CONGRATULATIONS." You are now in possession of the most advanced surge protector on the market!

What your Power Watchdog can do:

- Analyzes the park power prior to connecting your RV to the park.
- If there is a problem detected, it notifies you by an error code on the box and via Bluetooth message sent to your phone.
- If park voltage gets too low or too high the Watchdog will turn off this damaging power.
- Monitors your power while hooked up to the RV. Check your phone and see how many amps you're drawing and more importantly how many volts the park is supplying you.
- When problems occur the Watchdog will shut off power to the coach and notify you by phone and by error code on the box.
- The Watchdog will absorb high voltage spikes and surges.
- If the surge board is ever used up, you can call Hughes Autoformers and purchase a new board to replace it.
- The Power Watchdog can be used as a diagnostic tool. Use it to see how balanced your circuits are. Turn off appliances and see how many amps that appliance was using.
- Your Power Watchdog will keep track of how many kilowatt hours you've used since plugging into the park.
- The Watchdog's face will turn from white to red the moment there is a power problem.

The Power Watchdog is warranted for 3 years. The Power Watchdog is IP65 rated for outdoor use. The unit will operate fine without using the app. Error codes will be displayed on the unit. Otherwise, download the correct app and sync it to the Power Watchdog unit via Bluetooth.

## MODEL: PWD30-EPO-H



### Error Codes

E1	Line1 voltage error	E6	Line2 & neutral reversed
E2	Line2 voltage error	E7	Missing ground
E3	Line1 overcurrent	E8	Missing neutral at the coach
E4	Line2 overcurrent	E9	Surge protection used up
E5	Line1 & neutral reversed		



Scan this unique QR code to connect to your Power Watchdog. KEEP FOR RECORDS

## TECHNICAL SPECIFICATIONS

FEATURES	PWD30-EPO	PWD50-EPO
Operating Current	30 Amps	50 Amps
Operating Voltage	120 Volts	120 Volts
Maximum Watts	3600 Watts	12000 Watts
3 Mode Surge Protection	Yes, L-N, L-G, N-G	Yes, L1-N, L2-N, L1-G, L2-G
Energy Dissipation	2450 Joules	4900 Joules
Maximum Spike Current	6500A per MOV	6500A per MOV
Over/Under Voltage Protection	Yes	Yes
Voltage Range	132/104V	132/104V
Time Delay for A/C	90 seconds	90 seconds
Reverse Polarity Check	Yes	Yes
Voltage On Ground Check	Yes	Yes
Power Indicator	Error code window/phone	Error code window/phone
Warranty	3 years warranty	3 years warranty
Corrosion Resistant	Yes	Yes
Easy Installation	Yes	Yes
Industrial Contactor	Yes	Yes

Here is a listing of our error codes. They will always appear on the Watchdog itself and also more detailed explanations on your phone.

### E1 LINE ONE VOLTAGE ERROR....

Your Watchdog has determined that the voltage coming from the park has either exceeded 132 or dropped below 104 and shut off the park power. Both voltages are damaging to your RV. The Watchdog will now constantly check the voltage, once the voltage stays in the safe range for 90 seconds, the Watchdog will turn the power back on. You can check your voltage right now by pressing the "Live Readings" button on the phone app. If volts are below 104, or above 132, contact park management. For low volts consider getting the Hughes Autoformer.

### E2 LINE TWO VOLTAGE ERROR.... (FOR 50A ONLY)

Your Watchdog has determined that the voltage coming from the park has either exceeded 132 or dropped below 104 and shut off the park power. Both voltages are damaging to your RV. The Watchdog will now constantly check the voltage, once the voltage stays in the safe range for 90 seconds, the Watchdog will turn the power back on. You can check your voltage right now by pressing the "Live Readings" button on the phone app. If volts are below 104, or above 132, contact park management. For low volts consider getting the Hughes Autoformer.

### E3 LINE ONE OVERCURRENT....

Your Watchdog has determined that you have exceeded your amp rating. Two issues; One, the park circuit should have tripped and apparently didn't. Two, you are drawing more amps than your RV can handle. At this point go into the RV and turn off a major appliance such as an air conditioner or TV. You will now draw fewer amps. Push the restart button on your phone and check how many amps you're drawing. You can use the app to see how different appliances effect amperage reading on your phone. Check the park voltage on your phone, low voltage causes higher amperage. Report both conditions to park management. Consider getting a Hughes Autoformer if your voltage is low.

### E4 LINE TWO OVERCURRENT.... (FOR 50A ONLY)

Your Watchdog has determined that you have exceeded your amp rating. Two issues; One, the park circuit should have tripped and apparently didn't. Two, you are drawing more amps than your RV can handle. At this point go into the RV and turn off a major appliance such as an air conditioner or TV. You will now draw fewer amps. Push the restart button on your phone and check how many amps you're drawing. You can use the app to see how turning off different appliances effects amperage reading on your phone. Check the park voltage on your phone, low voltage causes higher amperage. Report both conditions to park management. Consider getting a Hughes Autoformer if your voltage is low.

## Operating your Power Watchdog.

1. Start by making sure the park breaker is in the off position.
2. Plug in the Watchdog by itself, without the RV attached.
3. Turn on the park breaker.
4. If the dog's face is highlighted in white, all is well, turn off the breaker and plug in the RV. Turn on the breaker, you're good to go.
5. If the dog's face is red there is a problem, read the error code and see what the problem is by checking the code definitions on the side of the box or the last page of this manual or read the verbal message that should appear on your phone. Contact the park management and tell them what error you're getting.
6. If the dog's face does not light up, check to see if the small LED on the front of the box is on. This LED indicates there is no neutral connection in the park. A dangerous condition. If the LED is not on, you have no power on line #1 (line #1 powers the Watchdog). Contact park management.
7. Your RV is now up and operating while plugged into the Watchdog. If voltage drops below 104 or goes over 132 the watchdog will shut off the RV. Both are dangerous conditions. If the park loses the ground connection, a neutral, or reverses polarity, the Watchdog shuts you off. If you lose your neutral wire inside the RV, the Watchdog will shut off power. WHEN THERE'S PROBLEM, the dog's face will turn red.
8. If the Watchdog shuts down the RV, it will continue monitor the situation. When it sees the problem has been corrected and has stayed corrected for 90 seconds, IT WILL TURN THE RV BACK ON. MAKE SURE, if you're going to do repairs, UNPLUG THE RV.
9. The Watchdog is constantly absorbing voltage surges and spikes. If the surge board is ever used up, the Dog Face will turn Red and stays Red to let you know it's time to change out the board. Also E9 will be displayed on the unit and you will receive a message on your Cell Phone. Contact Hughes Autoformers at 888 540 1504 to order your replacement module.

### E5 LINE ONE NEUTRAL REVERSED....

Your Power Watchdog has noticed a very serious condition. The park power has a wire reversed somewhere. This could cause severe damage to your appliances. See park management and tell them they have a neutral and hot wire reversed. The Watchdog will not allow park power through in this condition. Once this condition is fixed the Watchdog will automatically turn on the power after a ninety second delay.

### E6 LINE TWO NEUTRAL REVERSED.... (FOR 50A ONLY)

Your Power Watchdog has noticed a very serious condition. The park power has a wire reversed somewhere. This could cause severe damage to your appliances. See park management and tell them they have a neutral and hot wire reversed. The Watchdog will not allow park power through in this condition. Once this condition is fixed unplug and replug the Watchdog for a reset.

### E7 MISSING GROUND....

Your Power Watchdog has found a condition that can be very serious. You have lost your ground connection. If an electrical wire touches metal in your coach it normally goes to ground and that triggers the breaker, currently this safety feature is not working. You could receive a serious shock. Contact park management. The Watchdog will not allow park power to the RV without a ground connection. The Watchdog will now monitor the ground wire. Once this condition is fixed the Watchdog will wait 90 seconds and turn the power back on.

### E8 NEUTRAL MISSING.... (FOR 50A ONLY)

The Power Watchdog is reporting you have no neutral circuit inside your RV. The neutral wire provides a return path for electricity. Without a neutral, you will begin to burn up your appliances. You can very quickly have major damage. The Power Watchdog will not allow power to an RV that does not have a proper neutral connection. You must service your RV and restore the neutral circuit inside your RV. Once this condition is fixed the Watchdog will automatically return power to your RV.

### E9 SURGE PROTECTION USED UP....

The Power Watchdog is sensing the surge absorption capacity has been used up. This is your only warning, the RV will operate with a used up surge board. Each surge protector can only take so many surges before they're done. Fortunately, the Watchdog's surge absorption board is replaceable. Go to hughesautoformers.com or call 888 540 1504 and order a new board.