

## Error Codes

Error codes are indicated by the lit Red LED located on the front of the tester along with a two digit code displayed in the LED Readout.

Error Code	Required Action
01	Over Temperature — Turn the tester off and allow to cool. Prolonged high current usage can cause overheating as well as damage to the load under test.
02	Over Current — Excessive current draw may be caused by high start-up demand on the component being tested. Start from 0% and slowly increase the current. Over Current can also be caused by failing component or excessive testing run time.
03	Low Battery — The tester detected low battery voltage. Check the vehicle's battery and/or connections.
04	Ground Jack Inoperable — The tester detected (at power up) that the ground jack is open. The tester is still usable but you must run a separate ground jumper. To correct the error the tester must be sent in to Hickok / Waekon for service
05	Timed Out — To protect the vehicle, the Auto-off time varies with the current.

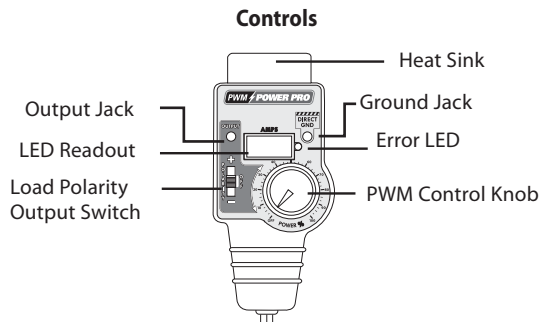
## Specifications

Power Supply	10–25VDC
Operating Current	< 100mA
Output Current	0–40A (high side / low side drive)
Ground Jack	0–40A (unprotected)
Current Display	0–40A (0.1A steps)
PWM Rate	15kHz
PWM Range	0–100% duty (1% steps)
Over Temperature	Heat Sink > 150° F (output disabled)
Over Current	> 40A (output disabled)
Continuous On Time	2 minutes @ 40 amps 10 minutes @ 20 amps 25 minutes @ 10 amps 30 minutes @ 5 amps

**A comprehensive User Guide is available  
for download at our website  
[www.plusquip.com.au](http://www.plusquip.com.au)**

# PWM POWER PRO

## Quick Start Guide



**CAUTION!** The Heat Sink can become extremely hot during use. Therefore, avoid contact with your skin or any of the vehicle's components.

## Kit Contents

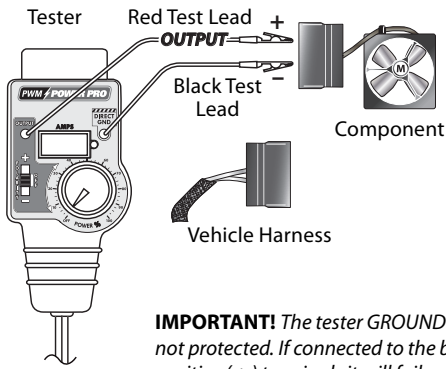
- (1) Tester with attached Power Cable & Banana Jacks
- (2) 3ft 40A Test Leads
- (2) Removable Power Clips
- (2) Alligator Clips
- (2) Female Spade Terminal Probes
- (1) Male Spade Terminal Probe
- 1 year limited warranty

## Before You Begin

1. Set the Output Polarity Switch to the **OFF** position and the PWM Control Knob to **OFF**.
2. Connect the tester's power cable to the battery. The tester will power up and perform a self test. Once the test is completed, the LED Readout displays a zero.
3. **If using 1 or 2 Wire Procedure** — Select the probes (or clips) that most closely mates to the components and then connect to the test leads.  
**If using Fuse Box Testing or Total Circuit Demand Testing** — Connect the male spade terminal to a test lead.

**HICKOK**

**WAEKON**

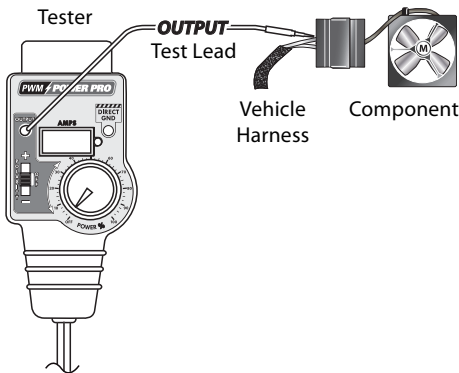


**IMPORTANT!** The tester GROUND JACK is not protected. If connected to the battery's positive (+) terminal, it will fail and become inoperable (see Error Code 04).

## 2 Wire Testing Procedure

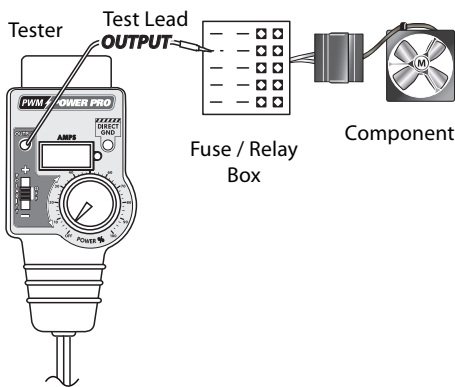
1. Plug the red test lead into the output jack and the black test lead into the ground jack. **IMPORTANT!** To avoid possible damage, do not let the tips of the leads touch once they are connected to the tester.
2. Disconnect the component from the circuit and connect the positive (+) and negative (-) leads to the component per the vehicle's shop manual.
3. Set the Output Polarity Switch to + and rotate the PWM Control knob to increase (or decrease) the amount (%) desired to test the component. The amount of current the component is drawing is displayed in the LED Readout.

Note: For reversing motors such as power windows and locks, reverse the test leads to drive the motor in the opposite direction.



## 1 Wire Testing Procedure

1. Plug the test lead into the output jack.
2. Connect the output lead to the component by back probing the drive side of the component per the vehicle's shop manual.
3. Set the Output Polarity Switch to + or - based on the component's circuit operation per the vehicle's shop manual. Rotate the PWM Control knob to increase (or decrease) the amount (%) desired to test the component. The amount of current the component is drawing is displayed in the LED Readout.



## Fuse Box Testing Procedure

1. Plug the test lead into the output jack.
2. Remove the fuse (or relay) and connect the output lead to the component side of the fuse or relay per the vehicle's shop manual.
3. Set the Output Polarity Switch to + and rotate the PWM Control knob to increase (or decrease) the amount (%) desired to test the component. The amount of current the component is drawing is displayed in the LED Readout.

## Total Circuit Demand Testing Procedure

1. Plug the test lead into the output jack.
2. Remove the fuse (or relay) and set the Output Polarity Switch to + and rotate the PWM Control knob to 100%.
3. Connect to the component side of the suspect circuit fuse or relay with all of the component(s) turned on (or off, as desired). Determine the demand by reading the amps displayed in the LED Readout.

## After You Complete All Tests

Make note of the results and refer to the specifications listed in the vehicle's shop manual to determine the course of action needed for repairs.