

















## Comparison between the Battery Testers and BioPower TECH™ Charging Analyzer







Tester Types: Comparison Items:	Battery Alternator Tester#1	Battery Alternator Tester#2	Battery Alternator Tester#3	BioPower TECH™ Vehicle Charging System Analyzer
Pics				
Certificate	CE	N/A	N/A	<b>CE &amp; FCC</b>
Cable Wire Material	PVC	PVC	PVC	<b>Silicon Rubber</b>
Wire Length (in CM)	25 CM	90 CM	N/A	78CM
With Magnetic Board or not?	No	Yes	N/A	Yes, can adhesive the tester onto vehicle metal plate
Voltage (V) display on sticker?	No	Yes	Yes	Yes, voltage LEDs 5.0V to 14.0V
3M Sticker	No	No	NA	Yes, better property & long life
IC Operating Temp. Range	N/A	0°C to +70°C (LM324N/ST)	N/A	-20°C to +70°C
Testing Accuracy	Logic not correct: Battery “low” condition is setting on 12.3V, below that, led turns off; Alternator “good” is setting on 14.0V, below that, led turns off. <b><u>Details refer to (2) Intro.</u></b>	Not accurate: Voltage 14.0V, led#6 (14.0V) off; Logic not correct: When voltage drop down to 11.0V, led#2 (12.0V) still on; IC not work in its spec. in cold weather (below 0°C) <b><u>Details refer to (3) Intro.</u></b>	The tester with <b>cigar lighter connector</b> will ONLY work upon auto “ACC ON”; will not have a correct reading on battery, cause when “ACC ON”, input voltage will normally drop down 0.3~0.8V <b><u>Details refer to (4) Intro.</u></b>	<b>Accuracy on full range testing from 5.0V to 14.0V</b> , and 100% tested for each item delivered. <b><u>Details refer to (1) Intro.</u></b>
Retail Pricing:				<b>US\$11.90 Suggested</b>

**(1) Accuracy Testing on BioPower TECH™ Vehicle Charging System Analyzer:**

					
					
Led#1 – 5.0V on (One led turns on)	Led#2 – 12.0V on (2 leds turn on)	Led#3 – 12.5V on (3 leds turn on)	Led#4 – 13.0V on (4 leds turn on)	Led#5 – 13.5V on (5 leds turn on)	Led#6 – 14.0V on (6 leds turn on)









**(Accurate reading on all ranges of voltage inputs)**

(2) Accuracy Testing on Battery Alternator Tester#1:

		
		
<p>Input voltage 12.2V, Led on “Low” (Battery State) no turn on</p>	<p>Input voltage 12.3V, Led on “Low” (Battery State) turns on</p>	<p>Input voltage 14.0V, Led on “good” (Alternator State) begins to turn on; Alternator State ONLY have 2 conditions, good (14.0V) and fault (15.0V).</p>
<p><b>Logic not correct</b>, normally battery voltage on 12V, is still workable; the tester will misguide the auto driver, should their auto battery is still good.</p>		<p><b>Logic not correct</b>, most of the cars normally with alternator output within 13.5V~14.0V; the tester will misguide the user on alternator test.</p>

(No voltage figure “V” display on brand sticker; Logic not correct, will misguide users both on battery and alternator tests.)

**(3) Accuracy Testing on Battery Alternator Tester#2:**

			
			
<p>Input voltage 12.0V, led#1 (5V) and led#2 (12V) all turn on</p>	<p>Input voltage drop down to 11.0V, Led#2 (12V) still on</p>	<p>Led#2 (12V) will ONLY turn off upon voltage drop down to 10.6V</p>	<p>Led#6 (14.0V) no turn on, when input voltage be 14.0V</p>
<p><b>Logic not correct</b>, normally when an auto battery 11.5V or below, you have to consider re-check in 4S store or replacement (cause during engine ignition, it will be a voltage quick drop down, when battery 11.5V, it may get rise to engine start voltage low and affect normal working on other electric devices in your car); the tester will misguide user when their battery on malfunctions.</p> <p><b>(Logic not correct on 12V testing; and not accurate on voltage reading on 14.0V)</b></p>			<p><b>Not accurate</b> on voltage reading 14.0V</p>

**(4) Why “NO” on Battery Alternator Tester#3 (The Battery Tester with cigar lighter connector)?**



Auto power off and car key no insert, reading voltage as 12.4V

Car key in “ACC On” (Power On) and engine off, reading voltage as 12.0V

Engine running, reading voltage as 13.8V

The Battery Tester with cigar lighter connector will ONLY work upon car key in “ACC On” (Power On), if not, it can't get power and no input voltage. Per above 3pics, you will see the voltage difference among different conditions, and will have 0.4V voltage down, when car key in “ACC On”, compared by the condition of auto power off and car key no insert. That means, when you use a **Battery Tester with cigar lighter connector**, you **will get a wrong reading on actual voltage output on auto battery**. Above testing is done on a Hyundai Elantra 2012 1.6L, with battery in use for one and a half year.

**Conclusions:** BioPower TECH™ Vehicle Charging System Analyzer will be your better choice, when you want a certified product, with prime materials, accurate metering and reasonable price!