SPTG1 Battery Conductance Tester

User Manual

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stingerelectronics.com

Stinger's Battery Conductance Tester (SPTG1) with advanced conductance testing technology, allows you to digitally analyze the condition of your 12V battery. This unit checks voltage, cold cranking amps (CCA), resistance and overall battery condition. The (SPTG1) can be used to troubleshoot and find the root cause of a problem quickly and accurately.

Product specification:
Applications: 12V automotive marine and powersports lead acid battery and 12V car system test

Ranges of Measurement:

Measurement Standard	Measurement Range
CCA	100-200
BCI	100-2000
CA	100-2000
MCA	100-2000
JIS	26A17 -- 245H52
DIN	100-1400
IEC	100-1400
EN	100-2000
SAE	100-2000
GB	100-1400

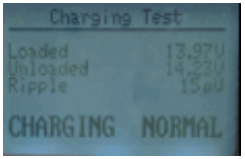
Working Environment Temp: -20□ – 50□/ -4□ – 122□
Testing Clips: Double conductor Kelvin clamp
Measure Range: 30AH-200AH
Voltage Measure Range: 7-30VDC

Viewing Test Results
After entering 4 battery test result, press the OK key to view the final test results.

Printing Test Results
5 print test result, please visit www.stingerelectronics.com/SPTG1 and click downloads tab to download printing software.

Select Language
Select '6 select language' from menu, then press UP/DOWN key to choose desired language.

English, French, German, Spanish, Italian, Polish



NOTE: If no increase in RPM is detected, it could be fault of alternator, regulator or connection to battery failed. SPTG1 will try 3 times to detect RPM, if no RPM detected, it will skip the increase RPM detect and the test result will display "No Volt Output". Check the connection between alternator and battery, then retest.

Charging Test Result:
1. Charging Volt: Normal. The alternator output normal, no problem detected.

2. Charging Volt: Low. Check drive belt of the alternator for wear and/or slippage. Check that the connection between alternator and battery is good. If both the drive belt and the connection are in good condition, follow the manufacturer's suggestion to eliminate alternator as faulty.

3. Charging Volt: High. Since most alternators use an internal regulator, the alternator assembly must be replaced. (Some pre-1990 vehicles use an external regulator; if equipped, just replace the regulator.) The normal high volt of the voltage regulator is maximum 14.7±0.5V. (Some newer vehicles will exceed 15V+). If charging volt is too high, it could possibly overcharge the battery. Causing premature failure of battery from overcharging. Systems that are designed charge at a high voltage can compensate for this and it is not an issue. Check vehicle specifications if output is over expected range and verify if this is the desired function.

4. No Volt Output: No voltage output is detected. Check the alternator connection cable, the drive belt of alternator and engine to see if they're in good condition and working properly.

5. Diode Test: While testing charging current ripple, the SPTG1 will determine whether the diode is functioning properly. When ripple voltage is too high, it is possible that at least one diode is damaged. Check and replace the diode if possible or repair/replace alternator.

How to test:
Connect the red test clamp to the battery positive (anode) and black to battery negative (cathode), the SPTG1 then will power on automatically. After the display illuminates press OK key to continue.

Note: Battery voltages below 7.0VDC will not test properly (Charge battery first if below 7VDC then retest)

The display menu will allow for the following choices, you can press UP/DOWN key to choose the desired option:

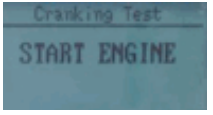
1) battery test
2) starting system test
3) charging system test
4) battery test result
5) print test result
6) select language

Battery Test

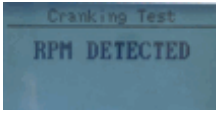
- Select the battery test and press OK key to continue:
- Input testing standard: the standard which you can see on the front of the battery, such as CCA, BCI, DIN, CA, etc. CCA or CA are the most common. CA is the standard for Stinger AGM batteries and car audio applications.
- Input rated capacity: you can see the starting current standards of the battery, such as CCA/800A. This is usually listed on the battery label. Note: This determines the threshold for Pass/Fail based on battery specifications. Inaccurate setting of this target can cause incorrect Pass/Fail results.
- Then press OK key to start testing.

Note
If battery is in discharged state (such as a vehicle in storage so battery has not been charged in a long time; excessive drain from headlights left on or doors left open, resulting in a serious loss of battery power and vehicle and cannot be started, etc.), the actual testing process may result with "Please replace the battery." For such batteries, please consult the battery manufacturer's charging requirements and charge the battery then retest.

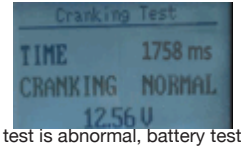
Cranking test
Select “2 starting system test” then press OK:



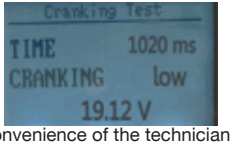
Start engine when prompted; SPTG1 will automatically complete the cranking test and display the results.



Normally, cranking voltage value lower than 9.6V is regarded as abnormal, but it is OK if it is higher than 9.6V. The test result of the SPTG1 will include actual cranking voltage and actual cranking time.

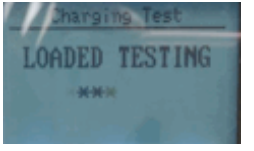


When cranking test is abnormal, battery test result will also be displayed at the same time.



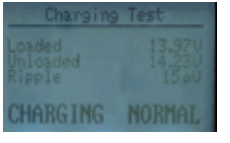
This is for the convenience of the technician to quickly know the current state of the starting system before proceeding.

Charging system test
When entering the “3 charging system test”, SPTG1 will prompt “Loaded testing”

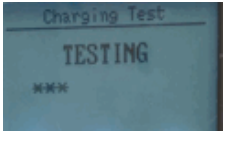


Note: Do not shut down the engine during the test. All non-essential items should be turned OFF. If left ON, the test will be affected and could compromise the accuracy of test results.

Adjust throttle/accelerator to increase the engine speed to 2500 RPM, and hold for 5 seconds.



SPTG1 starts the charging volt test after the increase in RPM is detected.



After the test is finished, the SPTG1 will display the charging voltage, ripple test, and charging test results.