OPERATING MANUAL

SOCTESTER

SOCTESTER - SILENT ACCELERATED TEST (SAT)

SOC-SAT-ALPHA

Introduction:

The SOC-SAT (SILENT ACCELERATED TEST) application is built on the SOC series CAP (CUSTOM APPLICATION PLATFORM) and is intended to be used as directed in this manual. It is not intended that the tester be used on any other than the specific type of battery it was designed to test. Customization, including hardware and pre-programmed software settings including resistance, duration of application and voltage settings have been updated to automate the ULC 2019 Silent Accelerated Test method as described in document can-ulc-s536-2019-en.pdf.

Preparation For Initial Use

This SOC series CAP (CUSTOM APPLICATION PLATFORM) is supplied with the following:

(1) - CABLE SET (P/N SOC-SAT-ALPHA-CAB)
(1) - WALL PLUG POWER UNIT (117 VOLTS) (P/N SOC-SAT-P1-A)

If either of these items have not been supplied, contact your distributor.

Recommendations Prior To Initial Use:

Prior to initial use, charge the internal battery pack with the supplied wall plug power unit for at least 12 hours. Charger -> WALL PLUG POWER UNIT (117 VOLTS) (P/N SOC-SAT-P1-A)

An overnight charge prior to the Initial use of the tester is recommended.

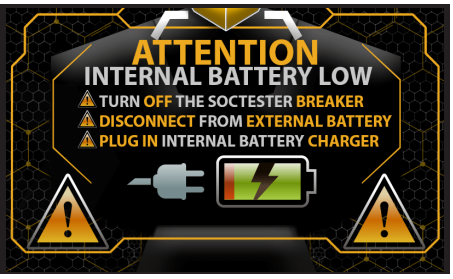
ONLY use the charger supplied with the SOCTESTER™. The use of an alternative charger may cause damage to the internal battery pack of the tester or the internal charging system of the tester.

An overnight charge after every use will ensure your tester is ready to perform the next day and lengthen the life of your internal battery pack.

If your tester is kept in storage, an overnight charge prior to use is recommended. If your tester is left in long term storage, a quarterly overnight charge is recommended.

Charge The Internal Battery

Charge the SOC internal battery pack for at least 12 hrs prior to first use.
Charge the SOC internal battery pack for at least 12 hours after each use.



LIMITED WARRANTY

THE SOCTESTER™ BATTERY TESTER IS GUARANTEED AGAINST DEFECTS IN MATERIALS AND WORKMANSHIP FOR 90 DAYS FROM THE DATE OF PURCHASE. ULTRASYSTEMS ELECTRONICS INC. WILL, AT ITS OPTION, REPAIR OR REPLACE DEFECTIVE PARTS OR UNITS.

THE PURCHASER AGREES TO ASSUME ALL RESPONSIBILITY FOR DAMAGES OR BODILY INJURY THAT MAY RESULT FROM THE USE OR MISUSE OF THIS TESTER BY THE PURCHASER, ITS EMPLOYEES OR AGENTS. UNDER NO CIRCUMSTANCES SHALL ULTRASYSTEMS ELECTRONICS INC. BE RESPONSIBLE FOR CONSEQUENTIAL DAMAGES.

THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES- EXPRESSED OR IMPLIED.

WARNING

THIS TESTER IS INTENDED FOR USE BY QUALIFIED PERSONNEL ONLY. IT IS IMPORTANT THAT OPERATORS OF THIS EQUIPMENT FOLLOW THE OPERATING INSTRUCTIONS CAREFULLY. PROPER BATTERY HANDLING PROCEDURES ARE MANDATORY AND THE MANUFACTURER'S INSTRUCTIONS MUST BE OBSERVED.

Step-By-Step Instructions:

IMPORTANT: In order to turn on the tester, you must first connect to the battery under test.

!The tester will not turn on, unless the harness is connected to the battery terminals of the battery under test!

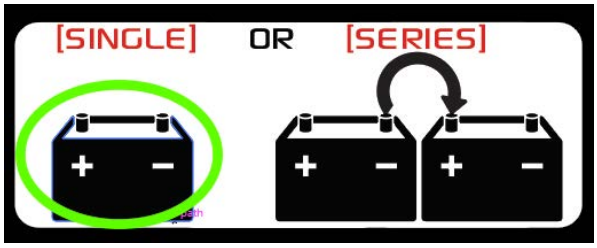
SIMPLE INSTUCTIONS - FRONT AND CENTER

Simple instructions are displayed on the center of the front panel when you open the tester.

The use of the tester is extremely straight forward, but the detailed step by step instructions below should provide the end user with ultimate clarity by breaking down every step in great detail.

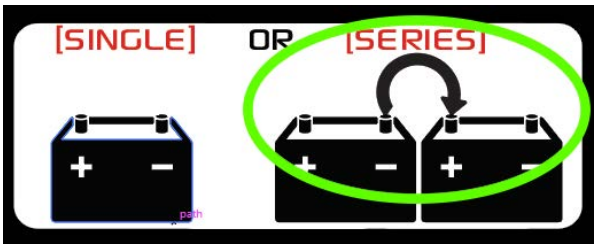
Step One: Disconnect From System And Power Up

INDIVIDUAL OR SERIES BATTERY DISCONNECTION



SINGLE:

Disconnect all battery terminal connections prior to attaching test clips directly to the battery terminals. Connect RED to Positive and Black to Negative.



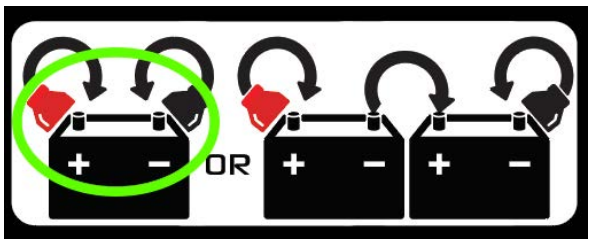
SERIES:

Disconnect all battery terminal connections EXCEPT the series connector prior to attaching test clips directly to the OPEN battery terminals. Connect RED to Positive and Black to Negative.

IMPORTANT NOTE: *The tester will not turn on, UNTIL the cable set is connected to the SOC tester AND the battery under test*

STEP 2: CONNECT AND VERIFY

INDIVIDUAL OR SERIES BATTERY CONNECTION



SINGLE:

Connect the tester test clips directly to the battery terminals. Connect the Red Clip to the positive battery terminal and the Black Clip to the negative battery terminal.

SERIES:

Connect the tester test clips directly to the battery terminals. Connect the Red Clip to the positive battery terminal on the first battery in series and the Black Clip to the negative battery terminal on the second battery in the series.

TURN ON THE BREAKER:

Turn on the breaker and the tester will power up. The Main settings screen will load and allow the end user to verify automatically recognized and pre-set variables for the test sequence. There is no manual input required by the end user, making the tester extremely simple to operate.

MAIN SETTINGS SCREEN

This is the Main Settings Screen that will be displayed when powering up the tester. This screen will give the end user a full view of the test variables.

TEST VARIABLES:

1. OHM SETTING
2. DURATION SETTING
3. VOLTAGE SETTING

The OCV (Open Circuit Voltage) is also displayed above the "VOLTAGE" setting on the right side of the screen. The end user may view the starting OCV (Open Circuit Voltage) of the battery prior to test.

AVR - INPUT SETTINGS

VARIABLE RECOGNITION

AUTOMATIC VOLTAGE VARIABLE RECOGNITION - AVR

AUTOMATIC VOLTAGE VARIABLE RECOGNITION - AVR is engaged by default and will automatically select the required voltage variable of the battery under test.

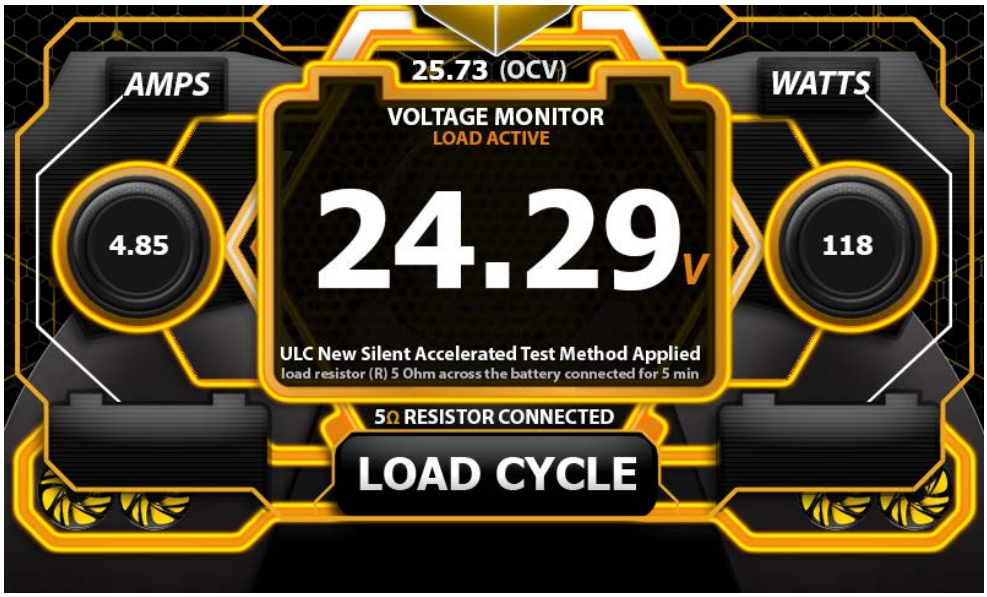
The OCV (Open Circuit Voltage) of the battery under test will also be displayed above the battery test voltage setting.

This variable is completely automatic and there is no manual input required or allowed for this variable.

Step Three: Start The Test Cycle

Press The Start Button

Press the start button on the right side of the control panel to start the test cycle to connect the load. Active monitoring will be available for the duration of the load cycle as seen below:



RESULTS AFTER 5 MINUTES THE RESULTS WILL BE DISPLAYED AND CONTINUE TO BE DISPLAYED UNTIL THE COOLING CYCLE HAS COMPLETED.

RESULTS SCREEN BREAKDOWN

At the end of the 5 minute load cycle, the battery tester will beep and the results will be displayed on the Results screen. Note the EPBV (End Point Batteries Voltage) in 22.5(r); Disconnect the test clips from the battery, or batteries, under test and reconnect the battery, or batteries to the system.

Test Variables Are Displayed On The Left

All the test variables are displayed on the left side of the screen under "SETTINGS".

Voltage (AUTO)
OCV [Open Circuit Voltage] (AUTO)
EPBV(AUTO)
Resistor (Pre-Set)
Minutes (Pre-Set)

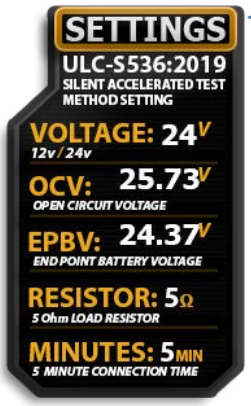
These are the test variables for the completed test cycle.

Quick View Results are Displayed On The Right

A quick view and reference of the testing cycle results will be displayed on the right.

The OCV (Open Circuit Voltage) and the EPBV(End Point Batteries Voltage) will be displayed in the cener of the screen.

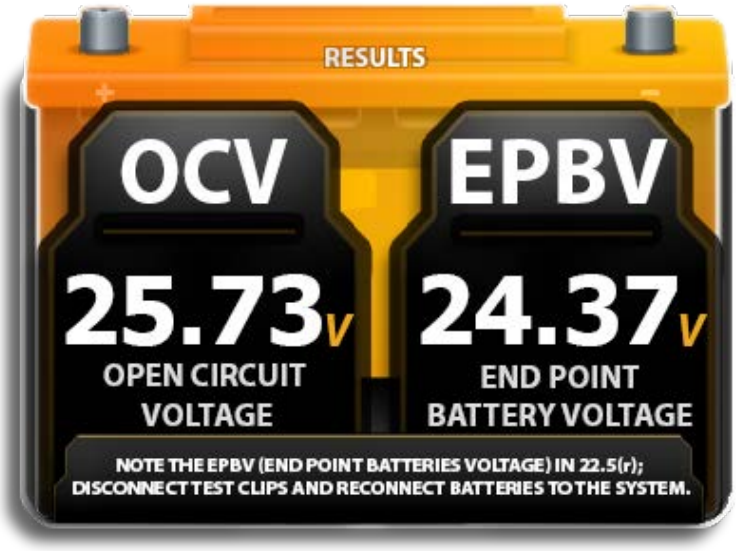
The test results will remain on the screen for the duration of the cooling cycle (1 minute).

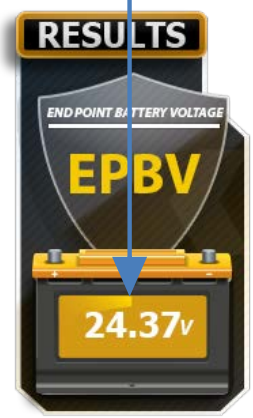


Quick Settings Reference:

EPBV (END POINT BATTERIES VOLTAGE) Results

When the load test cycle has completed, the tester will beep and the EPBV (End Point Batteries Voltage) results will be displayed under the results tab. Note the EPBV (End Point Batteries Voltage) in 22.5(r); Disconnect the test clips from the battery, or batteries, under test and reconnect the battery, or batteries the system.

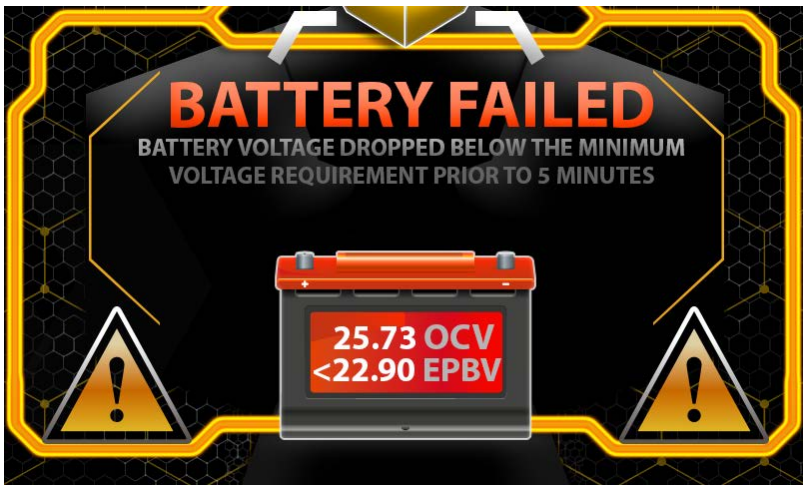




Successful Operation

Tips And Best Practices

***LOW VOLTAGE INTERRUPT ***
When the battery under test voltage drops below the minimum requirement prior to completing the load cycle, the tester will disconnect the load and provide an audible and visual alert to the end user.



This safety interrupt has the added benefit of saving testing time when encountering premature failures. After the safety interrupt disconnects the load, the OCV (Open Circuit Voltage) and EPBV (End Point Batteries Voltage) will be displayed on the LCD screen.

*Important Tips And Recommendations For Proper Use:

Make sure test clips and battery terminals are clean prior to making connections.

The supplied cable set has been specially designed for this application and must not be modified or altered in any way.

An overnight charge after every use will ensure your tester is ready to perform the next day and lengthen the life of your internal battery pack.

Internal Battery Pack Maintenance

INTERNAL BATTERY CHARGING

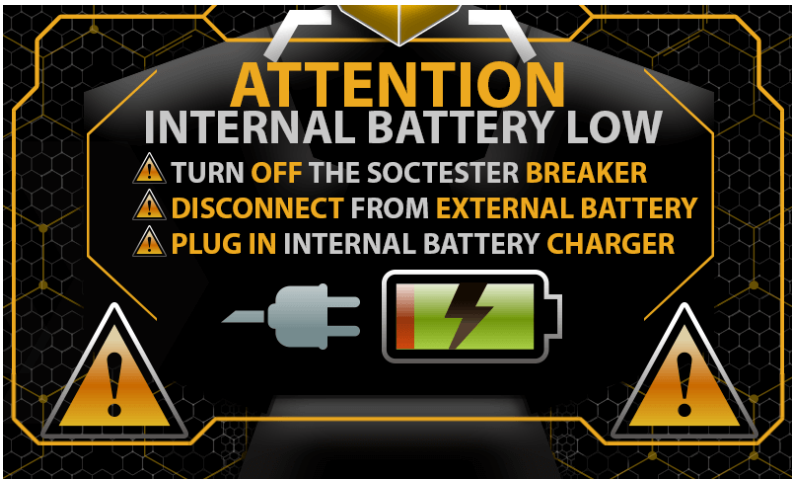
"Internal Battery Low"

If the "Internal Battery Low" indicator comes on during use, the internal battery pack needs to be recharged. Follow the directions on the display.

Prior to initial use, charge the internal battery pack

Prior to initial use, charge the internal battery pack with the supplied wall plug power unit for at least 12 hours. (P/N) WALL PLUG POWER UNIT (117 VOLTS) (P/N SOC-SAT-P1-A)

An overnight charge prior to the Initial use of the tester is recommended.



Charging Notes and Recommendations

The tester may be used with the internal battery pack charger plugged in, but if the tester has reached maximum battery pack discharge and the "Internal Battery Low" screen is displayed, it is recommended to immediately turn of the tester, disconnect the tester from the external battery under test and plug in the wall charger while the tester is disconnected from any external battery.

The tester should remain disconnected from any external batteries, in the off position, with the wall charger plugged into the tester for at least 15 minutes of charge time prior to continuing to test batteries WITH the charger plugged into the tester.

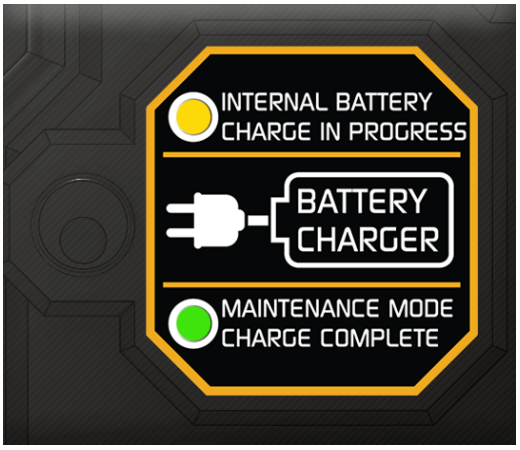
The "INTERNAL BATTERY CHARGE IN PROGRESS" LED will be illuminated during battery pack charging. The "MAINTENANCE MODE/CHARGE COMPLETE" LED will illuminate gradually when the system is reaching full charge and be at full brightness in maintenance mode when the charge is complete.

The AC power unit may be plugged in for extended periods of time if desired and overnight charging is recommended before every use and after every use.

An overnight charge after every use will ensure your tester is ready to perform the next day and lengthen the life of your internal battery pack.

If your tester is kept in storage, an overnight charge prior to use is recommended. If your tester is left in long term storage, a quarterly overnight charge is recommended.

ONLY use the SOCTESTER™ charger supplied with the SOCTESTER™. The use of an alternative charger may cause damage to the internal battery pack of the tester or the internal charging system.



Specifications

SOC-SAT-ALPHA

SPECIFICATIONS:

VOLTAGE: 12V-24V

LOAD RESISTANCE: 5 OHM

TEST TIME: 5 MINUTES

AMPERE HOUR RATING: 1-140AH

SHIPPING WEIGHT: 20.5 lb.

SIZE: 14.9" X 12.1" X 9.6"

OPTIONS & REPLACEMENT PARTS

BATTERY CABLE SET: (P/N SOC-SAT-ALPHA-CAB)

WALL PLUG POWER UNIT (117 VOLTS): (P/N SOC-SAT-P1-A)