

ENFORCER

ST-BT02Q

6-in-1

12VDC Battery Tester with Continuity

Manual



6-in-1 Tester

Performs the following tests:

Continuity • Voltage • Polarity • Load • Voltage Drop • PTC Fuse

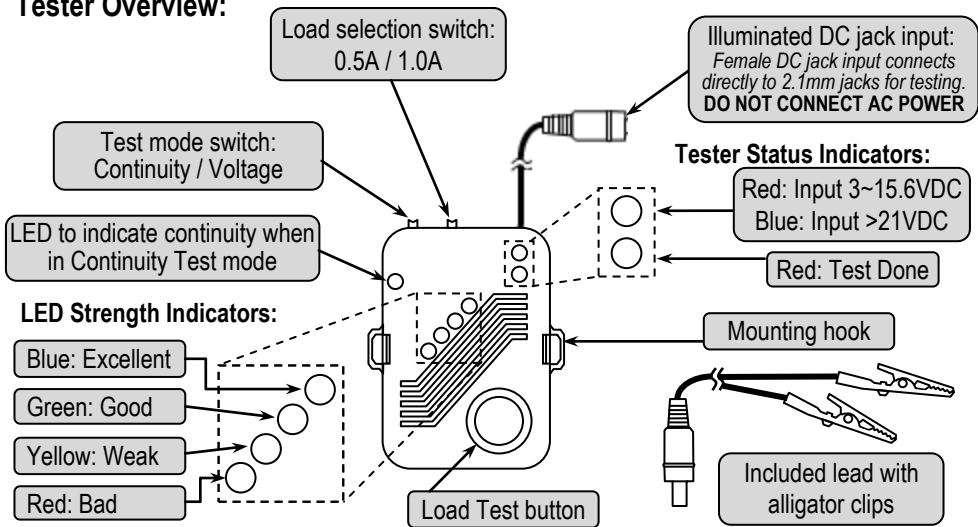
The ENFORCER **ST-BT02Q** 12VDC 6-in-1 Battery Tester with Continuity is a compact unit that performs six essential troubleshooting tests in the field, including continuity testing. Four individually lit LEDs show the strength of the voltage present from excellent to poor, two separate LEDs show the progress of the test, and one LED shows continuity during continuity testing. The illuminated pigtail connector shows AC, DC, and polarity, while included alligator clips allow easy connection in any situation.

SLI SECO-LARM



Note: Products with model numbers that end with "Q" or that have a round green "Q" sticker are RoHS compliant.

Tester Overview:



IMPORTANT NOTES:

1. DO NOT CONNECT THE ST-BT02Q TO AC POWER. DOING SO WILL VOID THE MANUFACTURER'S WARRANTY AND MAY PERMANENTLY DAMAGE THE TESTER.
2. THE ILLUMINATED DC JACK LED WILL SHOW PURPLE TO INDICATE AC IS PRESENT. DO NOT PERFORM ANY TESTS WHEN AC POWER IS PRESENT.
3. THE TESTER IS INTENDED FOR USE WITH 12VDC. DO NOT EXCEED 30VDC. The unit's power LED will show a blue color when connected to voltages 21~30 VDC for indication purposes only.
4. Load testing takes no longer than a few seconds. Significant heat is normal when load testing but pressing the test button for too long will cause the unit to overheat.
5. When load testing, wait 30 seconds between tests to allow the unit to cool.
6. The unit should be stored in Voltage Test mode in order to prevent draining the battery.

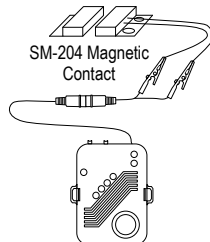
Specifications:

Operating voltage	12VDC
Maximum load	0.5 / 1 A (switch selectable)
Power	Continuity test: 3VDC CR1220 type battery All other tests: Passive, no power required
Weight	1.4 oz (40g)
Dimensions	2" X 1 3/4" X 1 1/8" (51 X 44 X 29 mm)

Test #1: Continuity Test

1. Switch the tester to Continuity Test mode using the mode switch on the upper side of the unit.
2. Ensure the circuit to be tested is unpowered. Using the alligator test leads, connect the unit across the circuit to be tested. If the circuit is continuous, the red Continuity LED will illuminate.
3. When testing long lengths of wire, it is easiest to test two wires at once. Connect the wires together at one end, and attach one alligator test lead to each of the other two ends. Be sure the circuit is not live while testing.
4. Always return the tester to Voltage Test mode using the mode switch, or the battery will drain.

Continuity Testing

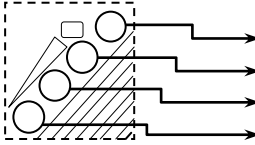


Test #2: Voltage Test (DC Voltage Only)

- Using the alligator test leads, connect each clip to the output wires or terminals being tested.
- The four LEDs (red, yellow, green and blue) will display the voltage present as shown in the table below. The power LED will turn on for voltage from 3~15.6 VDC and 21~30 VDC.
- The power LED will turn red for voltage from 3~15.6 VDC and blue for voltage from 21~30 VDC.

Note: Unit is intended for use with 12VDC. Power LED shows 24VDC for indication purposes only.

LED Color	Power LED	
	Red (3~16 VDC)	Blue (21~30 VDC)
Blue	≥12.8VDC	≥24.7VDC
Green	10.8~12.7 VDC	23.8~24.6 VDC
Yellow	10~10.8 VDC	22.7~23.7 VDC
Red	9.4~10 VDC	21.5~22.6 VDC



Test #3: Polarity Test (12VDC Only)

- Connect the test leads to the wires or terminals being tested.
- OR**
- Connect the tester's 2.1mm DC illuminated jack directly to the 2.1mm DC plug of any 12VDC power source.
- The illuminated connector will show the polarity of the power present. Intensity of the LED is proportional to the voltage.

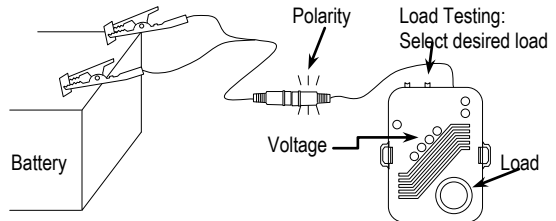
DC Jack LED Color	Polarity
No color	No voltage present
Red	Incorrect polarity
Blue	Correct polarity
Purple	AC voltage present Unplug Immediately

Test #4: Load Test (12VDC Only)

- Using the alligator test leads, connect each clip to the power source being tested.
- Depending on the application, use the load selection switch to select a 0.5A or 1A load for testing.
- Press and hold the Load Test button for 6~10 seconds. The four LEDs (red, yellow, green and blue) will show the strength of the voltage present under the load that has been selected.
- When the "Test Done" LED illuminates, release the Load Test button. The Load Test button should not be held past this time. Wait about 30 seconds for the unit to cool before performing further tests.

Voltage, Load, and Polarity Testing

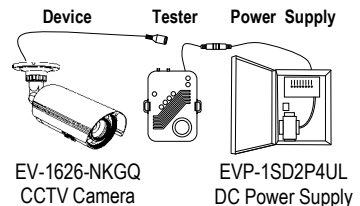
- Test battery or supply voltage
- Test voltage under a load
- Test polarity at a glance



Test #5: Voltage Drop Test (12VDC Only)

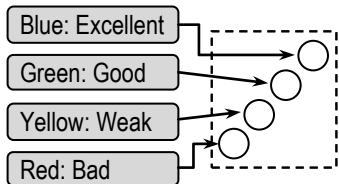
- Set a load (0.5/1.0 A) similar to the device you will connect.
- Connect the tester to the DC power supply's output terminal. Read the tester voltage LEDs when the load is applied.
- Connect the tester to the device end of the power supply cable. Read the tester voltage LEDs when the load is applied.
- The voltage drop is difference between the power source's voltage and the voltage reading at the end of the cable run.

Voltage Drop Testing



Test #6: PTC Fuse Test (12VDC Only)

1. Use the tester to determine whether a PTC fuse can be used with a given device load.
2. Always wait about 30 seconds for the tester and fuse to cool before and after performing tests.
3. Using the alligator test leads, connect the clips to the leads or terminals of the fuse being tested.
4. Tester load selection: 0.5A when device load to be used is 0~0.5 A; 1.0A when device load is 0.5~1.0 A.
5. Press and hold LOAD button for about 3 seconds. Read fuse condition according to the image below.



If the fuse tests “Weak” or “Bad:

- Test another fuse. If the test yields the same results, the load may be too great. Try a lower load.
- If test still yields “Weak” or “Bad,” replace the fuse.

Changing the Battery (Use type 3VDC CR1220 battery):

1. Open the top of the case by applying pressure inward and upward at the point right above the mounting hook on one side. The top cover will unclip. The PC board may come out, this is normal.
2. Use a fingernail to gently push the gold-colored metal retaining strip on the battery holder away from the battery. The battery will pop free. Replace only with a **3VDC CR1220** type dry cell battery.
3. After replacing the battery, snap the cover back on one side at a time. Ensure internal wires are not pinched by housing or housing guide pins and that indicator LEDs are correctly aligned.

Troubleshooting:

Battery load test fails	<ul style="list-style-type: none"> • Charge the battery fully for best results. • Replace battery being tested.
Voltage drop test fails	<ul style="list-style-type: none"> • Use SECO-LARM ST-HB105-TTQ Voltage Booster to increase the amount of voltage present. • Reduce length of wiring. • Decrease gauge of wire used (increase thickness of wire).
PTC fuse test fails	<ul style="list-style-type: none"> • Check PTC soldering to make sure it is correctly applied. • Replace PTC fuse.
Continuity test yields false negative	<ul style="list-style-type: none"> • Change the internal battery. Be sure to store tester in Voltage Test mode.

WARRANTY This SECO-LARM product is warranted against defects in material and workmanship while used in normal service for a period of one (1) year from the date of sale to the original consumer customer. SECO-LARM's obligation is limited to the repair or replacement of any defective part if the unit is returned, transportation prepaid, to SECO-LARM. This Warranty is void if damage is caused by or attributed to acts of God, physical or electrical misuse or abuse, neglect, repair, or alteration, improper or abnormal usage, or faulty installation, or if for any other reason SECO-LARM determines that such equipment is not operating properly as a result of causes other than defects in material and workmanship. The sole obligation of SECO-LARM, and the purchaser's exclusive remedy, shall be limited to replacement or repair only, at SECO-LARM's option. In no event shall SECO-LARM be liable for any special, collateral, incidental, or consequential personal or property damages of any kind to the purchaser or anyone else.

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