

BATTERY OPERATION

The LC103 is designed to operate as a completely portable unit with the optional BY289 rechargeable battery installed. The operation of the LC103 when it is battery powered is the same as when it is AC powered except that the display will dim slightly to reduce the power consumption and increase battery life. The length of time the LC103 will operate before the battery needs recharging depends on several factors: 1) the test functions used; 2) temperature; 3) battery age.

Leakage tests place the heaviest current drain on the battery -- greater currents result in shorter battery life between charging. Value tests place the least drain on the battery. The LC103 provides approximately 2 hours of typical operation using battery power. These times, of course, will vary with temperature and battery age.

As the temperature of the battery decreases, its capacity also decreases. The operating time between recharging decreases at the rate of approximately 1 hour for every 20° F drop in temperature below 70° F. The BY289 battery is a sealed, lead acid type that requires no maintenance other than recharging. As a battery ages, it will require more frequent recharging. If used properly, the BY289 will provide several years of service before needing replacement.

You can maximize the lifetime of the BY289 several ways:

1. Never allow the battery to deeply discharge. The LC103 has a built-in battery test and low battery shut off circuitry. Check the remaining charge periodically and recharge the battery before the low battery circuit shuts the unit off.
2. Keep the battery fully charged. The BY289 will not be harmed if it is left installed in the LC103 during AC operation. Instead, this will keep the battery fresh and ready for use and will actually lengthen its useful lifetime.
3. Recharge the battery before using it if it has sat idle for more than a couple of weeks. Lead acid batteries may lose some of their charge if they sit idle for a period of time.

WARNING

Observe these precautions when using lead acid batteries:

1. Do not dispose of old lead-acid batteries in fire. This may cause them to burst, spraying acid through the air.
2. Do not short the "+" and "-" terminals together. This will burn open internal connections, making the battery useless.
3. Do not charge 12 volt lead-acid batteries with a voltage greater than 13.8 VDC. High charging voltage may damage the battery or cause it to explode.
4. Do not drop the battery. While lead-acid batteries are well sealed, they may break if

dropped or subjected to a strong mechanical shock. If the battery does break and the jelled electrolyte leaks out, neutralize the acid with baking soda and water.

5. Do not charge the battery below 0° C or above +40° C. (32° to 104° F).



Fig. 6: The optional BY289 is installed in the LC103 for portable operation.

To install the optional BY289 Battery:

1. Open the BATTERY COMPARTMENT COVER located on the rear of the unit by unscrewing the thumbscrew. Fold the cover down on its hinge.
2. Slide the battery end that does not have the connector attached into the battery compartment. (The wire should be facing out after the battery is in place.)
3. Connect the plug from the battery to the jack inside the battery compartment. Close the battery compartment cover and tighten the

thumbscrew to hold the door and battery in place.

Note: Recharge the BY289 overnight before using it for the first time.

Battery Test

The LC103 has a built-in battery test feature that shows the remaining battery charge. A reading of 100% indicates that the battery is fully charged. As the battery charge is used up, the reading will drop. The low battery circuits will turn the unit off shortly after the battery test reading drops to 0%, and before the battery level drops too low for reliable operation. The LC103

never fully discharges the battery, which helps extend the life of the BY289.

To perform the battery test:

1. With a BY289 installed, press and hold the POWER button.
2. Read the graph and numerical percentage of remaining battery charge in the DISPLAY.
3. If the reading shows 0%, the unit may not operate, or operate for just a short time since the low battery circuit turns the LC103 off at this battery level.

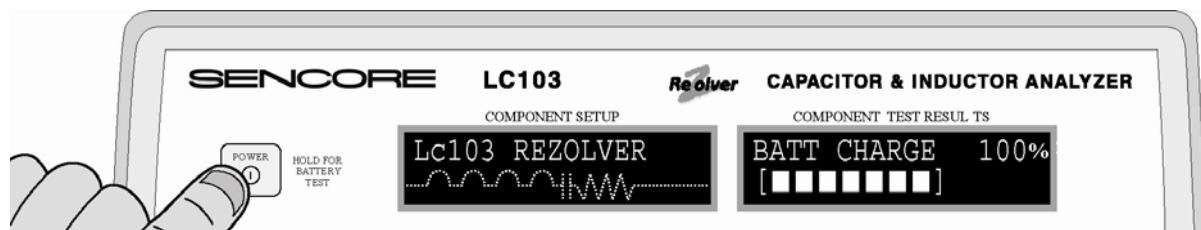


Fig. : Press and hold the Power button to read the remaining battery charge.

Recharging the Battery

The BY289 battery should never be allowed to remain discharged for more than a few hours, since this will shorten its lifetime. The battery must be recharged whenever the battery test reads 0%. However, you should recharge the battery more often than this to lengthen the battery's lifetime and keep the LC103 ready for portable use at all times.

To recharge the battery, simply leave it installed inside the LC103 while the unit is connected to the AC Power Adapter and the Power Adapter is connected to a source of AC power. The charging time required to return the battery to 100% depends on how far it is discharged. The battery will trickle charge while the LC103 is in use and powered from the AC adapter, but it will recharge the quickest if the POWER is turned off. Normally, a battery will completely recharge in about 8 hours with the POWER off.

To operate the LC103 using the optional BY289 battery:

1. Install the BY289 battery into the LC103 battery compartment.

NOTE: If you are using the BY289 for the first time, be sure to charge the battery

before using the LC103. Though factory tested, the BY289 may not be charged when you receive it.

2. Press the POWER button and release. The WARNING LED will momentarily blink to indicate it is operational and the displays will read "LC103 ReZolver" and "Ready."
3. The LC103 is immediately ready for use. If precise measurements are required, allow the unit to operate for 20 minutes to reach specified accuracy.

Auto-Off

To conserve battery charge, the LC103 contains an auto-off circuit. This circuit keeps the batteries from running down if you should forget to turn the unit off, but keeps the ReZolver powered up during use. The auto-off circuit will shut the LC103 off after approximately 5 minutes if none of the front panel buttons have been pushed. Pressing any COMPONENT TYPE button, COMPONENT PARAMETERS button, COMPONENT TEST button, or the POWER button resets the auto off circuits. The auto-off circuits are bypassed when the LC103 is operated from the AC Power Adapter.