

# QUANTUM BATTERY 5+

## OPERATING INSTRUCTIONS

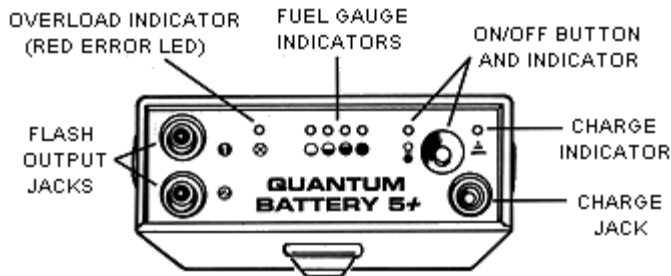
---

### 1. NEW FEATURES!

---

The new Quantum Battery 5+ (QB5+) has 50% greater capacity than the QB5.

The QB5+ also has these new features:



#### 1.1 Battery Capacity Display:

Without any equipment Cables connected, press the ON/OFF Button.

The LED "gas gauge" will display battery capacity for 3 seconds and then shut off.

#### 1.2 Discharge Prevention:

If the ON/OFF Button is pressed for more than 10 seconds, the QB5+ shuts off to prevent accidental discharge.

#### 1.3 Energy Saver Mode:

Hold down the ON/OFF Button about 3 seconds until the LED "gas gauge" blinks once, then release the Button.

The yellow LED will be on and the LED "gas gauge" will display every 3 seconds.

#### 1.4 Low Battery Shut Down:

When the cells are exhausted QB5+ shuts itself off. The red Error LED lights and one red "gas gauge" LED blinks slowly. After one minute all lights shut off. **Charge QB5+ as soon as possible.**

#### 1.5 Over Current/Overheat Protection:

QB5+ shuts down, the red Error LED will light, and the "gas gauge" will blink 3 times every 2 seconds.

#### 1.6 Charging:

Charging time is decreased to between 3 and 5 hours. The LED "gas gauge" indicates the charge progress.

#### 1.7 Self Check:

When connecting the charger, QB5+ goes through a self check. If QB5+ detects any problems, the red Error LED will light, and one or more of the "gas gauge" LED's will be blinking. See section 5.3.

**WARNING! Connect only QB5 type cables (12 volt) to this battery pack. DO NOT connect any cables designed for QB1 type packs (6 volt).**

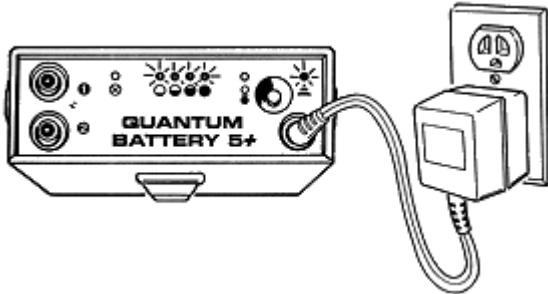
---

## 2. CHARGING QB5+

---

## 2.1 When to charge:

- Charge QB5+ before using it for the first time.
- Charge after each use. The QB5+'s lead cells have no memory.
- **Never discharge fully prior to recharging.**
- Charge immediately if there is a Low Battery shutdown.
- Charge before storing QB5+. Recharge a stored QB5+ every 3 months.



1. TYPICAL CHARGE: 3 TO 5 HOURS

2. CHARGE IS COMPLETE WHEN "FUEL GAUGE" INDICATORS STOP BLINKING

## 2.2 How to charge:

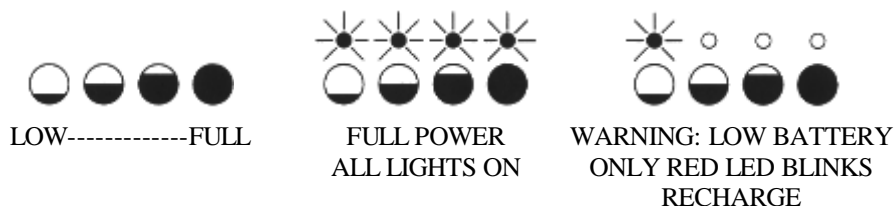
- Remove Output Cables from output jacks.
- Connect the charger to QB5+ and mains (household) power.
- **Charge to completion in one continuous period.**  
Do not use a timer or connect to a mains outlet that can be turned off.
- **Do not use a voltage adapter.** This will damage QB5+.  
Instead, use one of the optional QB5+ chargers listed on our Web Site or see a Quantum Dealer.  
Charge until all green LED indicators are on.

---

## 3. FUEL TANK INDICATORS

---

The LED "fuel gauge" indicates the remaining capacity of the battery during charging or discharging.



---

## 4. POWERING YOUR EQUIPMENT WITH QUANTUM BATTERY 5+

---

### 4.1 Follow this sequence to assure proper connection to your equipment!

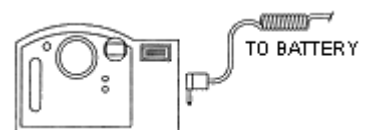
a. Connect the Output Cable to the equipment.

The Output Cable Instructions explain the proper Output Cable position.

b. Plug the Output Cable cord into power output 1 or 2 on the QB5+.

c. Turn on the equipment's power switch.

d. Press the ON/OFF Button of the QB5+.



**You must immediately see the equipment indicators on the equipment turn on.**

**e. If you notice nothing, press the ON/OFF Button on QB5+ to turn it off.**

f. If you failed to power your equipment, check that you are using the correct cable and that it is properly connected.

## 4.2 Powering two pieces of equipment at once:

Connect two cables into outputs 1 and 2. The combined current drain may not exceed 3 amperes. Otherwise the QB5+ circuit breaker will trip.

---

## 5. TROUBLESHOOTING

---

### 5.1 Equipment not powered:

- Is the Output Cable correct for your equipment?
- Is the Output Cable firmly seated into the external DC input jack of the equipment?
- Is the Output Cable cord securely plugged into the QB5+ output?
- Is the Equipment switched ON?
- Has the QB5+ been charged?

### 5.2 Charger not charging:

- Is the charger plugged into a working mains outlet?
- Is the charger securely plugged into the charge jack of the QB5+?
- Is the charge LED indicator on?

### 5.3 Gas Gauge LED's are blinking after connecting the charger:

- a. If there are three LED's blinking simultaneously, and the red Error LED is on, make sure the proper charger is plugged into the QB5+.
- b. If one, two, or four LED's blink and the red Error LED is on, this indicates the QB5+ detects a fault in its circuit. Please return the unit for service.

### 5.4 Overload Occurs:

An overload is indicated by the red Error LED and a blinking gas gauge. QB5+ power to the Cables will automatically shut down.

To restart the QB5+, determine the cause of the overload and remove it. Then turn QB5+ off and on again.



### 5.5 Causes of Overload:

- An Output Cable inserted incorrectly into the equipment.
  - A short circuit across the Output Cable contacts. Be sure the contacts do not touch any metal surface.
  - Defective equipment which has an internal short circuit (repair or replace equipment).
  - The equipment connected to the QB5+ requires more than 3 amperes for more than 5 seconds at a time.
- 

## 6. CARE AND MAINTENANCE

---

### 6.1 Battery Replacement:

All rechargeable cells have a limited lifetime, usually a few hundred recharges. The recharge life is greater for shallow discharges, and also depends upon proper charging. Battery cells can be replaced by sending the QB5+ and charger to Quantum Instruments or any overseas distributor.

### 6.2 Conserve Power:

To save power turn QB5+ off when the equipment connected is not needed for a while.

### 6.3 Environment:

- Recharge indoors at room temperature.
  - Store at room temperature or cooler. Recharge every 3 months when in storage.
  - Operation temperature: -40°F to 120°F (-40°C to 55°C).
  - Never submerge the QB5+ or its charger in water.
- 



CONTAINS SEALED LEAD ACID BATTERY.  
MUST BE RECYCLED OR DISPOSED OF PROPERLY.

DO NOT PLACE USED BATTERIES IN YOUR REGULAR TRASH!

Return this battery to a federal or state approved sealed lead battery recycler.  
This may be where you purchased the battery.