

## **TECHNICAL BULLETIN**

**TB # 0215.1**

**DATE: July 22<sup>th</sup> 2015**

**PRODUCT: Residential Elevators**

**SUBJECT: Testing Batteries**

The most common issues with batteries are incorrect power due to batteries needing replacement, or a problem with the battery charger. These two issues are often interrelated; a faulty charger can cause the batteries to fail, and a faulty set of batteries can cause a charger to fail.

If the elevator is to be turned off for longer than one hour, disconnect one of the battery leads. This will prevent the batteries from draining through the charger. If there is a power failure that may last longer than one hour, the main disconnect should be turned off - and if possible the batteries should have one lead removed.

Under normal conditions, batteries are expected to last between 2.5 - 6 years. In order to avoid a battery related problem (especially between annual inspections) and to prevent damage to the battery charger, we recommend that the batteries be replaced every 2 years.

**The optimal battery voltage is 27.5VDC.**

### **Suggested Procedures:**

The following tests should be performed during every visit to a customer's elevator. Low battery power can cause many issues from failure to go up, to failure to unlock the door. These tests assume the elevator can move up and down in service mode, if it cannot, you will need to troubleshoot that problem first.

#### **1. Test the battery charger**

- a. Make sure the 120vac and 220vac disconnects **and** the 120vac relay are on.
- b. Remove the black and red leads from the batteries.
- c. Insert a DC voltmeter's leads into the red and black leads that were removed in step B.
- d. This will show the charger's output voltage and should read between 27 and 28VDC.
- e. If the voltage is between 26 and 30VDC you may be able to adjust it up or down, so that is it within the acceptable range.
- f. If the voltage cannot be adjusted to between 27 and 28VDC the charger should be replaced.

- 2. Testing the battery voltage.** The batteries should be connected to a properly functioning charger for at least 4 hours before this test is conducted.
- Make sure the 120VAC and 220VAC disconnects and the 120VAC relay are on.
  - Send the elevator up either in automatic or service mode.
  - While it is moving up, measure the battery voltage across the two batteries (where the red and black wires attach).
  - If the battery voltage drops below 25VDC, replace both batteries.

**NOTE:**

- Swelling of the batteries and corrosion of the battery terminals is a sign of a failed battery and they should be replaced regardless of the test results.
- Corroded battery connectors should be replaced to ensure a good connection to the new batteries.

**Adjusting the Soniel 2403 SRL battery charger**

- Remove the charger from the equipment, but leave it connected.
- Turn off the 120VAC lighting disconnect.
- Remove the rubber feet from the back of the charger to uncover the screws.
- Remove the screws and carefully snap open the charger.
- Locate the small voltage adjustment dial and adjust up or down as required.
- Replace the cover and turn the power back on.
- Check the charger voltage as per procedure 1, above.
- Repeat steps 1e to 1g until the voltage is in range (27.0 to 28.0Vdc)

**Adjusting the CE elevator charger**

- Remove the sticker covering the adjustment hole
- Turn the dial while watching the output as per procedure 1 above.

**Call CE technical support if you require any assistance with this procedure: Toll-free 1-866-209-3421**