

Technical Bulletin**External Harness and External SOC Gauge Mounting**

This bulletin is to notify the user of Flux Power batteries, equipped with an external harness, that proper care is required when mounting the external harness and external State of Charge (SOC) gauge onto the unit.

**Batteries Affected**

All batteries are equipped with an external harness. An external harness will connect to the battery's 12-pin communications port and may have a few different connections to either an external SOC gauge, a telematics box, a 6-pin truck connection, or to the power cables. The part number of the external harness can be seen on a white label at the base of the harness's connection to the communications port. This bulletin is for all external harness part numbers and revisions.

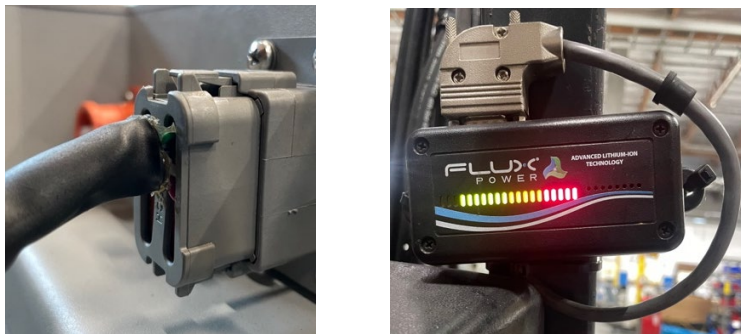


Figure 1: External harness connection to communications port and external SOC gauge

**Identifying the Issue**

We have identified that the base of the external harness's connection to the battery can be damaged from the environment due to sticking too far out from the battery. The harness can also be damaged when routing and mounting the harness onto the vehicle. We have also identified that the external SOC gauge, a connection to the external harness, can be damaged from unsecured mounting processes that can cause the SOC gauge to fall from the vehicle while in motion. Flux Power is currently working on new revisions of the external harness to be equipped with an additional covering on the 12-external harness's pin connector. Until these harnesses are available, please follow the procedure below for mounting instructions.



Figure 2: New external harness covering proposal

**External Harness and External SOC Gauge Mounting**

The process to mount the external harness and external SOC gauge will be completed in 3 phases. The overall estimated time to complete this process is about 10 minutes.

## Phase 1: Connecting the external harness to the battery (estimated time: 4 minutes)

1. There are two ridges on one side of the external harness connection to the battery that only allows it to be inserted through one specific orientation. Align these ridges and push the external harness into the communications port. Push the external harness into the communications port by applying force onto the back face of the gray 12-pin connector and not by pushing the set of wires into the 12-pin connector.

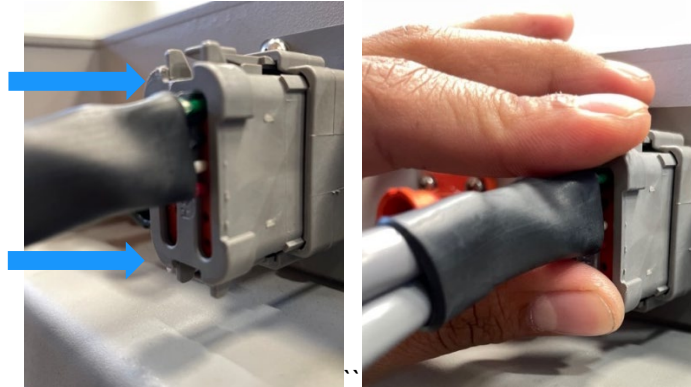


Figure 3: Area of applied force on 12-pin connector

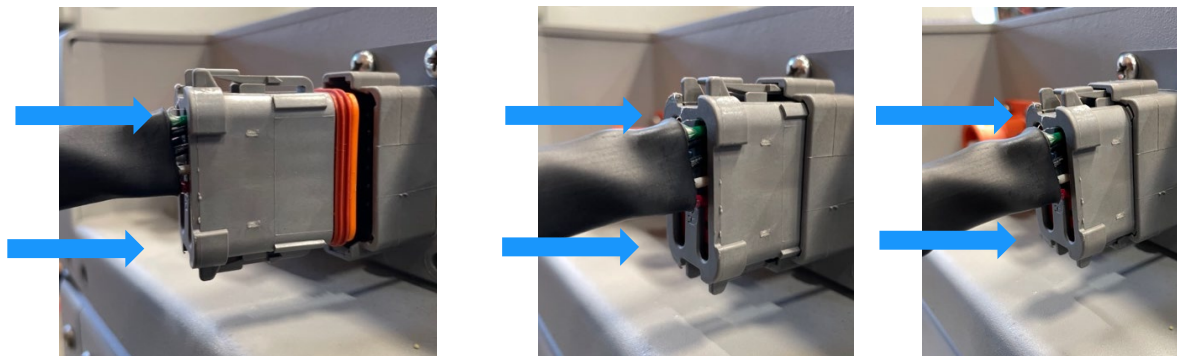


Figure 4: Ridge alignment into communication port (show where to push)

2. If the external harness is a straight-through set of cables at its base connection to the communications port, then ensure that the harness is not bent in any direction. If the harness needs to be bent upwards, then use one hand to firmly hold cables straight past their applied black heat shrink and another to gently bend the cables upwards. Excessive bending can damage the cable. Flux Power is currently working on making a new cable revision to accommodate for an upward bend, with the protective covering, and similar cable length.

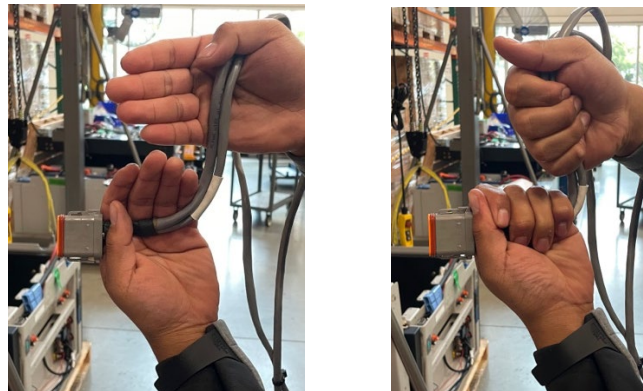


Figure 5: Gently bending the external harness

3. If the external comes bent at a 90-degree angle, then do not excessively pull the cables along the bend.

## Phase 2: Mounting the external SOC gauge (estimated time: 4 minutes)

1. Connect the external SOC gauge's silver 9-pin port onto the external harness.
2. Properly screw the 2 set screws coming from the external harness going into the external SOC gauge.
3. The external SOC gauge has 2 manufactured holes for mounting with one hole on each side. Locate a flat section along the truck to mount the external SOC gauge. This will vary by truck and operator.
4. Secure the component onto the truck with zip ties (what gauge?). More than one zip tie may be needed depending on the length of the zip tie.
  - a. The SOC gauge can also be re-enforced with wrap ties, but the component should not be held up with wrap ties alone. It should be accompanied by zip ties.



Figure 6: Mounted external SOC gauge

5. If the battery also has a telematics box, follow the same process to mount the telematics box onto the truck.

## Phase 3: Validating that the battery is properly operating (estimated time: 2 minutes)

1. To be sure that the process was properly implemented, conduct the following:
  - a. Ensure all other external harness connections are connected if present.
  - b. Turn the battery ON.
  - c. Turn the truck ON.
2. If the truck stays ON after 10 seconds, then all external harness connections are properly connected.
3. If the truck turns OFF after 10 seconds, then re-examine the external harness and its connections. Pinched sections along the harness can disrupt the battery's operation. If all connections seem fine, contact a Product Support representative.
4. Drive the truck around rough terrain to observe if any external harness connection or component is loose.
  - a. If the truck stays ON, then all external harness connections are properly connected.
  - b. If the truck turns OFF, then re-examine the external harness and its connections. Pinched sections along the harness can disrupt the battery's operation. If all connections seem fine, contact a Product Support representative.

### **Flux Power Contact Details**

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