

Replacing the Battery in a Model PEL 102 or PEL 103

By Neil Franklin

The PEL 102 and PEL 103 power and energy logger instruments include an 8.4V NiMH battery pack for backup power. This battery, shown below, can be replaced by the user. With normal use, the battery should only need to be replaced once every three or four years or so.



⚠ CAUTION ⚠

PEL battery replacement must be performed carefully and in strict accordance with the procedure described below. Any variation could result in damage to the instrument. ***If you are unsure about performing this procedure, return the PEL to AEMC for a factory battery replacement.***

Before you Begin

To replace the battery you will need the following:

- A clean work surface free of debris, water, and other possible contaminants. This surface should be well-lighted and provide sufficient room to perform the steps below.
- 8.4V NiMH battery pack ([Cat. #2137.75](#))
- Torx T10 screwdriver. (Torx type screwdrivers are also known as "star" screwdrivers.)
- Tape (masking, electrical, etc.)
- (Optional) A small non-conducting implement such as a drink stirring stick or toothpick

Before starting this procedure, we recommend that you view the instructional video "PEL 102/103 Battery Replacement" on our [AEMC YouTube channel](#).

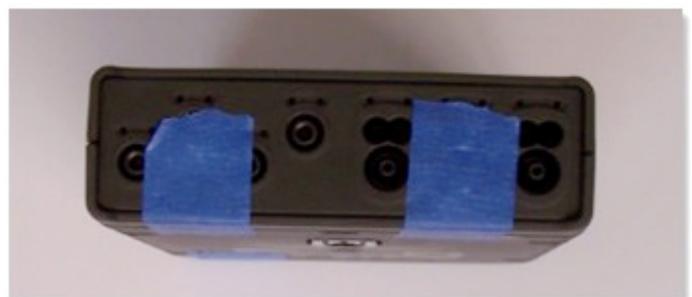
Battery Replacement Procedure

To replace the battery in the PEL 102/103, disconnect the instrument from all leads, electrical sources, and sensor probes. Then follow these steps:

1. Apply tape to the control buttons on the PEL front panel. This tape will ensure that the buttons remain in place when you remove the PEL's front cover from the back cover.



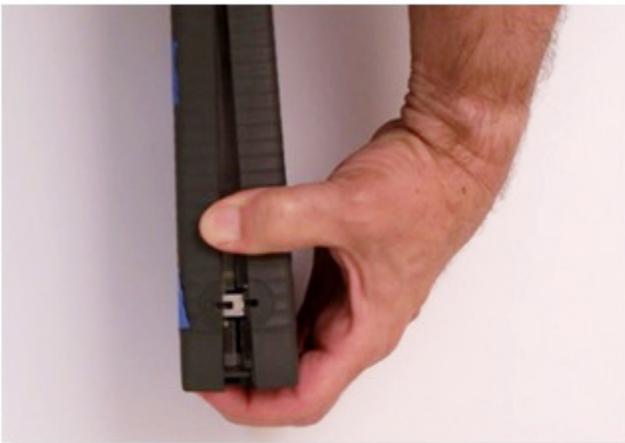
2. Tape the PEL's endplates to the back cover, as shown below. This helps ensure that the endplates remain attached to the back cover when you remove the front cover.



3. Turn over the PEL, and locate the six fastening screws on the back of the instrument.



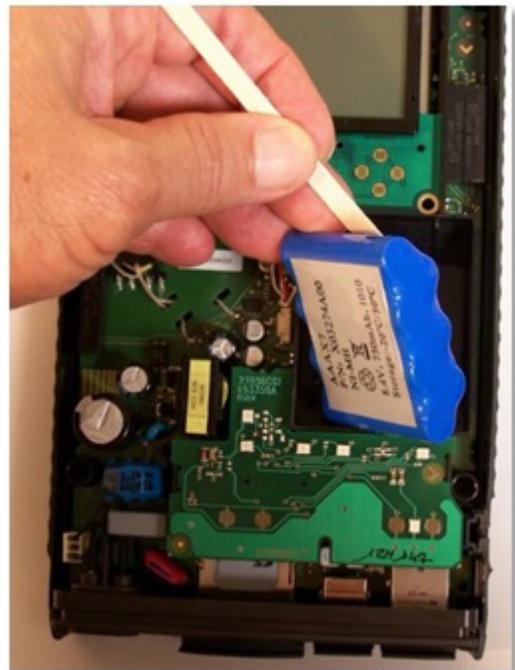
4. Using a Torx T10 screwdriver, remove these fastening screws.
5. Carefully separate the front cover of the PEL from the back cover. Typically the two covers fit together very snugly, so it may be difficult at first to separate them. One way to do this is to turn the instrument on its side as shown below, and then carefully separate each corner in turn, starting with the bottom right corner. With your fingers on the bottom endplate, pull the covers apart, ensuring that the endplate remains attached to the back cover. Do not allow either the top or bottom endplate to become separated from the back cover. This may cause damage to the input and connection terminals, requiring that the PEL be sent to AEMC® for repair.



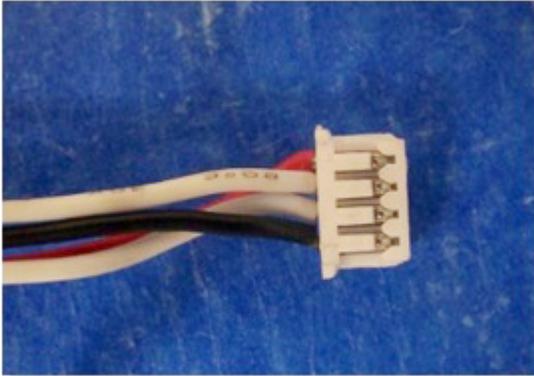
6. With the front cover removed, locate the battery pack inside the PEL.



7. Gently remove and unplug the battery from the PEL. A small non-conductive implement such as a drink stirring stick (shown below) can be useful for doing this.



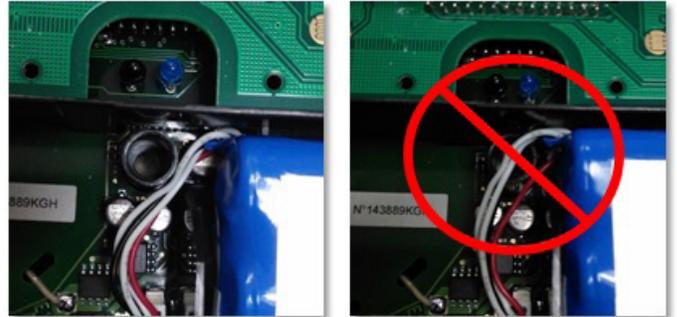
8. Inspect the plug of the replacement battery pack, and note the position of the connector pins (see below).



9. Position the plug with the connector pins facing away from the battery pack compartment. In the illustration below, the pins are facing towards the left. Then very carefully insert the plug by gently pushing it into the socket within the PEL. There is very little room for this procedure, so an implement such as a stirring stick or toothpick may be helpful in ensuring the plug is securely inserted. (The PEL instrument will likely turn on when you plug in the connector; this can be disregarded.)



10. Place the replacement battery into the compartment provided for it within the PEL. When doing this, ensure that the battery's connector wires are positioned as shown in the illustration on the left below. Be sure the wires do not cross over the top of the post, as shown in the right illustration below. If the wires are placed over the post, they will likely be damaged when you replace the PEL top cover.



11. Perform a final inspection of the interior of the PEL to ensure no foreign object or debris has fallen inside. Then replace the front cover, carefully ensuring that it is securely in place.
12. Turn the PEL over, and replace the six fastening screws removed in step 3 of this procedure.
13. Remove the tape applied to the front cover and endplates at the beginning of this procedure. The PEL is now ready for operation.

For a step-by-step demonstration showing how to replace the battery in a PEL instrument, view the instructional video on our [AEMC YouTube channel](#).



About the Author:

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