

COOP D111E NOTE 2, MODIFICATION. FPR-E Battery Cable Modification 017C-E-1825

Operations Division
W/OPS12: JD/GLD

SUBJECT: **FPR-E Battery Cable Modification 017C-E-1825**

PURPOSE: To provide instructions to modify the battery cable of the Fischer and Porter (F&P) Rebuild version E (FPR-E) precipitation gauges to fit the current batteries from NLSC.

SITES AFFECTED: All FPR-E precipitation gauge sites that are replacing the original FPR-E battery with ones from NLSC will need to make this modification. Perform this modification on an as needed basis coincident with battery replacement only; emergency or wholesale implementation is not recommended or authorized.

AUTHORIZATION: The authority for this note is by National Weather Service Headquarters direction.

VERIFICATION STATEMENT: This procedure was tested and verified at the Sterling Field Support Center (SFSC), Sterling, VA.

ESTIMATED COMPLETION DATE: As needed.

TIME REQUIRED: Approximately 0.5 hours.

ACCOMPLISHED BY: NWS Representative (NWSREP) for local COOP operations.

EQUIPMENT AFFECTED: D111E-2 – FPR Precip Recorder – Coastal

SPARES AFFECTED: None

PARTS/MATERIALS REQUIRED: 017C-E-1825 – Terminal, Quick Disconnect.
017-B-2-32 – Battery 12V 6.5 Ah PS1265, fully charged

SOURCE OF PARTS/MATERIALS: Above ASN parts are available from National Logistics Supply Center (NLSC), non-ASN parts locally supplied.

DISPOSITION OF REMOVED PARTS/MATERIALS: Dispose of locally.

TOOLS AND TEST EQUIPMENT REQUIRED: Wire cutters/stripper, small needle nose pliers, crimp tool, volt/ohm meter
Black & Red Electrical Tape or shrink tubing

DOCUMENTS AFFECTED: None

PROCEDURE: See Attachment A for Modifying the Battery Cable
See Attachment B for sample CSSA reporting entries.

TECHNICAL ASSISTANCE: For questions or problems pertaining to this note, contact Sterling Field Support Center (SFSC) at 703 661-1268.

REPORTING INSTRUCTIONS: Report the completed modification using a CSSA site inspection report, and update the site metadata on the B-44 Station Information Report. Follow the reporting instructions in Attachment B, for sample forms and entries.

Al Wissman
Chief, Maintenance Branch

Attachment A – Modifying the Battery Cable
Attachment B – Sample CSSA Report

ATTACHMENT A Modifying the Battery Cable

A.1 Battery Terminals

The original battery provided with the FPR-E kit had small 0.187" wide spade terminals, type F1; the replacement batteries from NLSC will have larger, 0.25" wide spade terminals, type F2. Obtain from commercial sources push-on female crimp connectors like AMP 3-350820-2 which are insulated, or from NLSC, ASN: 017C-E-1825 which is not insulated. Be sure you have an appropriate crimp tool for the connector you choose



Figure A-1: Push-on Spade Connector (Left: AMP 3-350820-2, Right: NLSC ASN 017C-E-1825)

Unless the wire jackets and polarity of power connection of the battery cable are already red (+) and black (-), mark the polarity of the new connectors once crimped in place. Use red and black electrical tape or shrink tubing. Mark the ground (-) side wire with black electrical tape or tubing, and mark the positive (+) side wire with red electrical tape or tubing.

A.1.1 Modifying Battery Terminals on Battery Cable

1. Disconnect the original battery from the battery cable.
2. Cut the small push-on terminals from the battery cable.
3. Strip about 3/8" insulation and crimp on the larger push-on connectors. If shrink tubing is used, make sure to put the shrink tubing on before attaching the new terminals. Mark the wire polarity as described above.
4. Connect the fully charged battery from NLSC and verify that the FPR-E and components are operating correctly.

ATTACHMENT B Sample CSSA Report

B.1 Metadata Requirements on FPR-E Battery Cable Modification Implementation:

B.1.1 Create a CSSA Site Inspection Report:

1. After completing the FPR-E Battery Cable Modification and returning to the office, access CSSA and call up the CSSA Station Name/CSSA Station Number to generate a new Site Inspection Report (see Figure B-1). Account for the total hours of work and total dollars of expense incurred to modify the battery cable in the FPR-E system.

**COOPERATIVE STATION SERVICE ACCOUNTABILITY (CSSA)
SITE INSPECTION REPORT**

Station Name: **CEDAR CREEK 5 S** Station Number: **41-1541** Climate Division: **07**

INSPECTION DATA

Inspector: HYDRO-MET TECHNICIAN Per Diem: N
 Inspection Type: SEMI-ANNUAL Trip Number: DT
 Inspection Date: 05/23/2014 Supplies Cost: 0
 Staff Hours: 4.0 Trip Cost: 0
 Miles Driven: 100

EQUIPMENT Maintenance Performed - More than one may be chosen

SRG	<input type="checkbox"/> Not Serviced	<input type="checkbox"/> Painted	<input type="checkbox"/> Modified	<input type="checkbox"/> Replaced	<input type="checkbox"/> Moved/Relocated
	<input checked="" type="checkbox"/> Routine Maintenance	<input type="checkbox"/> Calibrated	<input type="checkbox"/> Repaired	<input type="checkbox"/> Installed	<input type="checkbox"/> Removed
NIMBUS	<input type="checkbox"/> Not Serviced	<input type="checkbox"/> Painted	<input type="checkbox"/> Modified	<input type="checkbox"/> Replaced	<input type="checkbox"/> Moved/Relocated
	<input checked="" type="checkbox"/> Routine Maintenance	<input type="checkbox"/> Calibrated	<input type="checkbox"/> Repaired	<input type="checkbox"/> Installed	<input type="checkbox"/> Removed
FPR-E	<input type="checkbox"/> Not Serviced	<input type="checkbox"/> Painted	<input checked="" type="checkbox"/> Modified	<input type="checkbox"/> Replaced	<input type="checkbox"/> Moved/Relocated
	<input type="checkbox"/> Routine Maintenance	<input type="checkbox"/> Calibrated	<input type="checkbox"/> Repaired	<input type="checkbox"/> Installed	<input type="checkbox"/> Removed

58 characters left

Remarks
 MODIFIED THE FPR-E BATTERY CABLE, PER COOP D111E NOTE2, MODIFICATION.
 INSTALLED TYPE "F2" WIDE SPADE TERMINALS TO ACCOMMODATE STOCK BATTERIES.
 INSTALLED NEW BATTERY AND TIGHTENED ALL CONNECTIONS.

Save Inspection Report Clear Changes Delete Inspection Quit Form(don't save)

Figure B-1: Site Inspection Report

2. Complete the following fields to account for the FPR-E Battery Cable Modification work:

Inspector:..... select from pull-down menu "as appropriate"
Inspection Type:..... select from pull-down menu "as appropriate"
Inspection Date:..... mm/dd/yyyy
Staff Hours:..... x
Miles Driven:..... xxx
Per Diem:..... select from pull-down menu "as appropriate"
Trip Number:..... the trip number
Supplies Cost:..... xx.xx
Trip Cost:..... xxx.xx

3. In the *Equipment* category FPR-E under *Maintenance Performed*, click **Modified**.
4. At the bottom of the CSSA Site Inspection Report, in the free text field, enter the following and any other explanatory text necessary for the inspection:

Modified the FPR-E battery cable, per COOP D111E Note 2, Modification. Installed type 'F2" wide spade terminals to accommodate stock batteries. Installed new battery and tightened all connections.

B.1.2 Updating the B-44 for Battery Cable Modification to FPR-E Equipment:

1. Enter the following text in the *Equipment Description* field of the Station Information Report (B44), after the Calibration Constants:

FPR-E with Battery Cable Modification.

2. Enter the following text in the *Remarks* section of the Station Information Report (B44):

Modified the FPR-E battery cable, per COOP D111E Note 2, Modification.