

ASOS MAINTENANCE NOTE 28 (for Electronics Technicians)

Engineering Division

W/OSO321:BGM/AJW

## Safe Operation of ASOS Freezing Rain Sensor

### GENERAL

All National Weather Service freezing rain sensors had AC power removed pending the correction of the safety hazard (reference Maintenance Note 26). This maintenance note establishes proper procedures for returning the freezing rain sensor back to operational status. Analysis conducted by the freezing rain sensor manufacturer revealed that the sensor can operate safely when proper grounding techniques are employed. Visual checks of the grounds must be complete before applying power to the sensor.

### PROCEDURE

#### NOTE:

The technician should order from NLSC a **CAUTION** label to be installed on the freezing rain enclosure. The ASN for the label is **S100-2MT3-Label**. Listed below is how the label reads:

### CAUTION

**This sensor requires that a proper ground be established and maintained for safe operation. DO NOT apply AC power or perform maintenance until the ground condition is verified.**

The Freezing Rain Sensor is an LRU and should not be repaired by the technician. The technician can test the unit to ensure proper operation before installation.

The technician is to check all ground connections before turning on the Freezing Rain circuit breaker in the Data Collection Platform (DCP). Visually check the following grounds and verify proper connection.

#### THESE STEPS MUST BE FOLLOWED:

1. Check the internal chassis ground inside the freezing rain enclosure (2MT3A1); reference the Automated Surface Observing System site Technical Manual S100, Chapter 11, Page 11-3. Verify J1-3, the green wire, is tight.

2. The second ground is the electronics enclosure (case) ground and it is the 10 American Wire Gauge (AWG) ground wire connected to the single barrel lug on the electronics enclosure (case). Check ground wire connection at the raceway ground wire. Check for corrosion on both lugs. If corrosion is detected, clean by using a wire brush.
3. The third ground is the mounting pole connected to the pedestal and provides earth ground. Check that all bolts and nuts are installed and tight.
4. After the ground connections are checked and verified, set the freezing rain circuit breaker in the DCP to the **ON** position. **Caution: Do not touch sensor case until voltage check has been completed in step 6.**
5. Go to the **REVUE-SITE-CONFIG-SENSR** page. Configure the freezing rain sensor in the appropriate position.
6. Using a Volt Ohm meter, check the AC and DC voltages between the case of the freezing rain enclosure and the 10 AWG copper wire located at the raceway. If the voltage measures more than 0.25 volts AC or DC, remove power from the freezing rain sensor by turning **OFF** the circuit breaker in the DCP. Call Bobby McCormick at 301-713-1835 X 167 and report the problem. If the voltage is less than 0.25 volts, AC or DC, install the caution label on the freezing rain enclosure. The temperature must be greater than 40 degrees Fahrenheit before installing the label.
7. Contact the AOMC at 1-800-242-8194. Inform the AOMC of the site configured for the freezing rain sensor.
8. This completes this maintenance note.

#### **EFFECT ON OTHER INSTRUCTIONS**

Safety Alert Bulletin

#### **REPORT MAINTENANCE ACTION**

None.

#### ***Original Signed***

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