

## 2. Nodes

In this section, we will highlight some of the important maintenance procedures to be followed when working with Em50 series, nM50 and nC24 data loggers.

### 2.1. Changing Batteries

The Sensorweb™ “Data View” page shows battery level for each node and the “Home” page alerts users about nodes with low battery levels. It is good practice to change batteries before they completely run out as all radio nodes stop transmitting data (to basestation or server) when battery levels drop considerably (usually below 10%), although data will continue to be recorded until batteries are completely dead.

Some tips to lengthen battery life:

- As battery life is a function of measurement interval, use longer measurement intervals whenever possible.
- When using Em50G nodes, select fewer time periods for data transmission.
- Waterproof nodes to protect battery decay and prolong battery life

### 2.2. Checking Time / Date stamp

After changing batteries, it is always important to connect the data logger directly to a laptop computer, so that the date and time are set correctly.

### 2.3. Firmware Updates

Decagon Devices, Inc. periodically releases firmware updates for nodes. These updates can be to fix existing bugs or to add newly released sensors for use with the node. Subscribe to receive Decagon's Technical Updates and regularly visit their [website](#).

### 2.4. Checking Sensor Connections

Sensor may get unplugged from their ports due to various reasons, for example when sensor cables are pulled or when opening and closing the data logger node. So, it is important to make sure the sensors stereo connectors are plugged all the way as even slightly unplugged sensors stop collecting data.

Care must be made not to crimp/cut sensor cables when closing the data logger door. Sensors need to be aligned straight on the rubber gasket before closing the data logger door. To maintain the nodes water proof at all times, the rubbers seals inserted in the groove around the node need to be firmly in place when closing the data logger door (Figure 2).

### 2.5. Sensor Configuration

It is always recommended to write the data logger sensor configuration in the card provided (Figure 2). This is a useful practice and avoids the possibility of plugging sensors in wrong ports. When two or more sensors of the same type are installed on a node, identifying each sensor on the card in some way/form is important. For example, if two or more soil moisture sensors of the same type are used, the sensor depth, pot number, species type etc. can be used to identify each individual sensor.

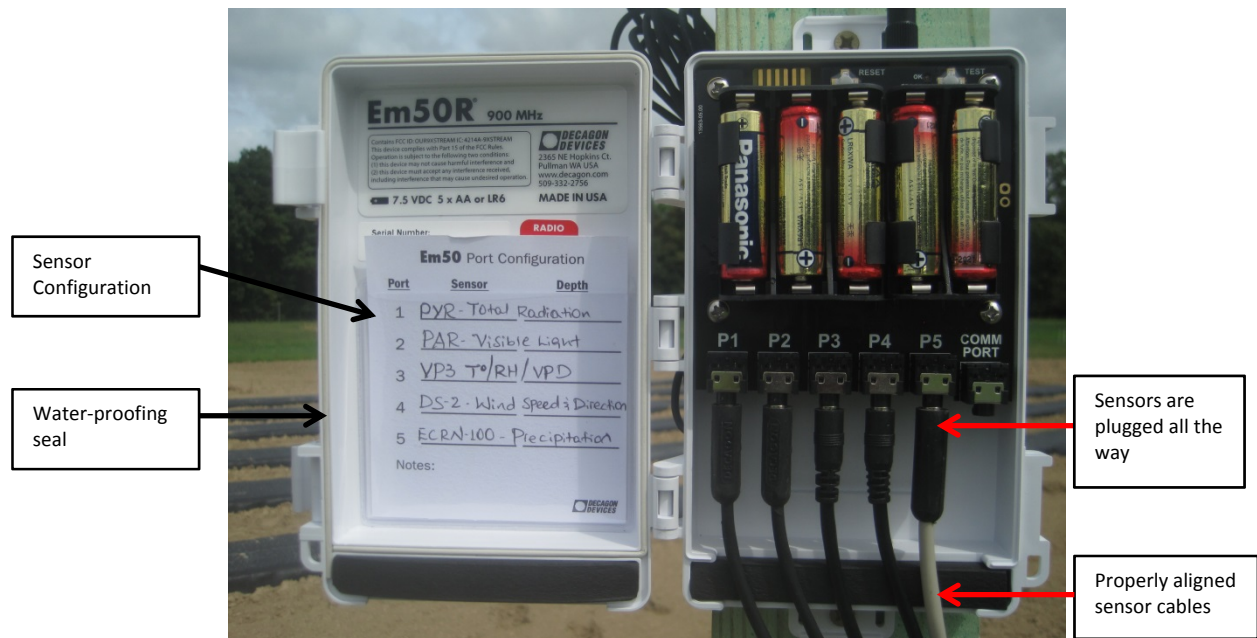


Figure 2. A well maintained weather station node

## 2.6. Downloading and Archiving Backup Data from Nodes

It is always good practice to download data directly from the node and save this file for backup purposes. This is especially important when communication between nodes and basestation is not solid all the time and there are losses in data packets. The data downloaded from nodes is always complete.