

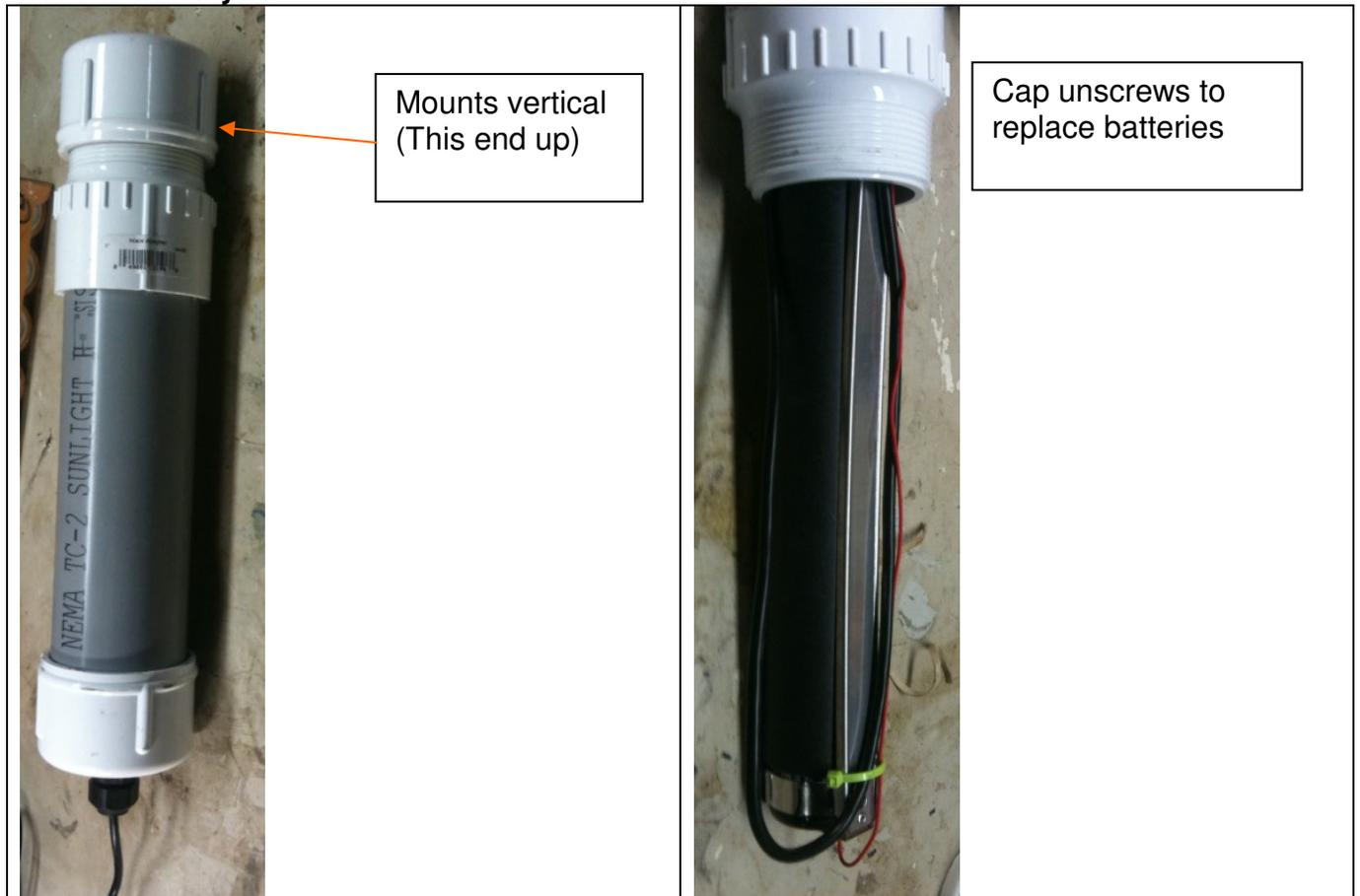
### Using External Batteries to Power eKo Nodes

For some applications there is not enough available sunlight to continually recharge the internal eKo node batteries. This typically occurs when operating under a dense canopy or deploying in areas with insufficient sunlight during part of the year. eKo's rechargeable internal batteries usually run for 3 months without any sunlight but for applications without sufficient sunlight, users can connect an external power source or battery (5-10VDC) to **Port 4** (only) of the eKo node which will power the entire unit.

The CN-BP consists of four D cell batteries in series which supply about 6.4V at around 16Ah. eKo nodes draw about 500uA average current depending on the attached sensors. Usually the maximum current draw is about 1mA with sensors that require more power. Estimated life of the external batteries is:

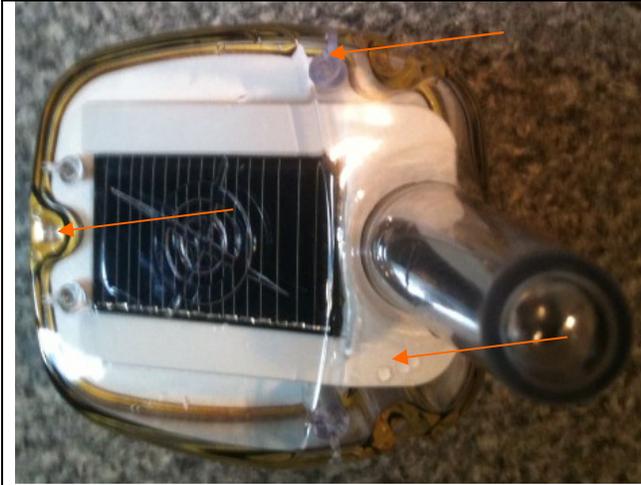
Battery Type	Capacity	Estimated Life (hours) at 500uA avg current	Estimated Life (hours) at 1ma avg current
D Cells	16 AmpHr	32000 (4 yrs)	16000 (2 yrs)

### CN-BP Battery Pak



## Configuring the eKo Node for an External Battery

- Open the node and remove the 3 screws (below the lid) holding the transparent lid to the case (picture,below,left). carefully remove lid without damaging black environmental gasket)



1 of 3



switch

- Set the CFG2 Switch (second from bottom) on the printed circuit board to the **OFF** position. The other 3 switches should normally be **ON**



The OFF position for CFG2 enables the external power regulator circuit inside the unit.

- Verify environmental gasket is installed correctly and not pinched by cover. Reinstall 3 mounting screws.

**Do NOT disconnect the “BATTERY” and “SOLAR CELL” cable connections.**

### Wiring & Connecting the Battery to the Node

1. Plug the connector into **Port 4** of the eKo node.
2. Restart (press "ON" button) unit. Until restarted the unit will not use power from the external power source.

### Operational Notes

1. The external power source charges the internal eN2100 node's battery pack. Therefore the node will continue to operate even if the external power supply is interrupted (power failure or replacement)
2. The solar panel continues to charge the internal en2100 battery pack if the solar voltage exceeds 6V (bright sun).
3. The solar panel does NOT charge the external power source.
4. The external battery voltage is reported by the node.