

Many of you have purchased the Thermor weather station last year and have found that it eats batteries in the outside unit like crazy! Well, during one of the Wednesday nights nets on KSR (hosted by yours truly), a suggestion has been made to try and run the transmitter from a couple "garden night lights". I've been procrastinating this job as I still haven't mounted the unit, but on the 21st of December I decided to have a go.



The LED light units I used were purchased at a dollar store. Each unit had a 600mA nicad, solar panel, and associated circuitry to turn the LED on and off. To make the Thermor unit work, you will need about 2.5 to 3 volts for proper operation, so prepare two of the garden lights exactly the same, as each unit will provide only 1.2 to 1.4 volts.

The first thing to do is take the LED unit apart and toss everything except the solar panel and the battery. Mine was colour coded using red for positive and blue for negative. See pictures #1, #2 and #3 for "before" modification views.



I used about 2 feet of light 18 gu. speaker wire for the main connections from each solar array and then to the Thermor "main" unit. I know many of you want to try and use DC blocking diodes between the battery and the solar panel, but DON'T. I tried to measure the current running back through the solar panel (in the dark) with a charged battery, and needless to say it was less than 1 or 2 uA (micro

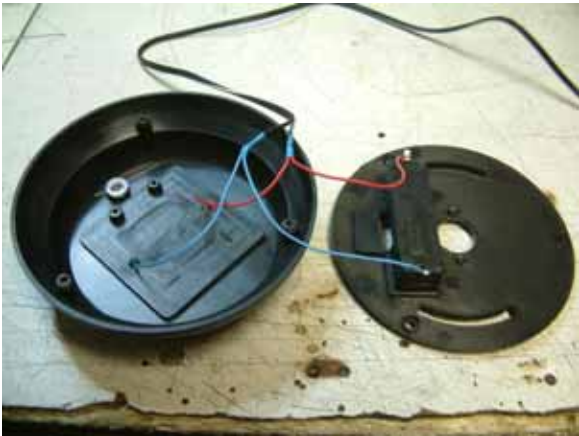
amps). The diodes are simply not needed. The wiring couldn't be simpler.... red to red to black (with tracer) and blue to blue to black (without tracer).

Picture #4 shows the completed solar array wiring (simple eh!). I took a small drill bit and made a hole on the side of the solar assembly to get the power wires out and then used hot glue to seal the wire. Picture #5 shows the completed assembly ready for connection.



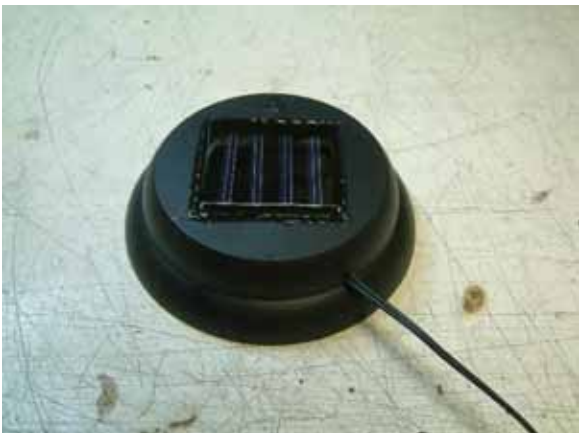
After completing two units, the rest is easy. Treat each solar unit as a battery (with its own positive and negative) and hook them in series (connecting one of the positive leads from one unit to the negative lead of the other) will give you about 3 volts across the remaining 2 leads.

Now to get the outside transmitter ready. Unfortunately, I didn't take any pictures of this procedure, so try and bare with me. Take the 4 screws out holding the TX assembly together. Once split, on one side of the main board you will see 2 terminals which lead to the battery connections (closest to the black IC or BLOB). One is mark BATT+ and the other GND. I simply took another 2 feet of hookup wire and soldered the leads to these pads. Drilling a small hole (and sealing with hot glue) made the exit from the box easy.



Now, if you did everything right, you should have 2 leads from your solar array (one positive and one negative), and 2 leads from your Thermor transmitter (amazingly one positive and one negative!). Hook the positive from the solar array to the positive of the transmitting unit, and the negative from the solar array to the negative of the transmitting unit.....that's it!

Mounting will be left up to you, but I would suggest a slight tilt towards the South of the solar panels, especially during the Winter months. As I charged my nicads before installation, they should normally last for a few weeks, so the long term longevity of the system won't be known for a few months. I'll



I'll check the voltage of the cells once a month to see if the solar panels are keeping up with the current drain.

Remember that your solar units may be slightly different, but using these guidelines, you should be able to figure it out.

Now wasn't that fun!

That's it for this month....

Best 73,

Tedd, VE3TJD

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