CAMPBELL SCIENTIFIC

Solar800

Quick-Deploy
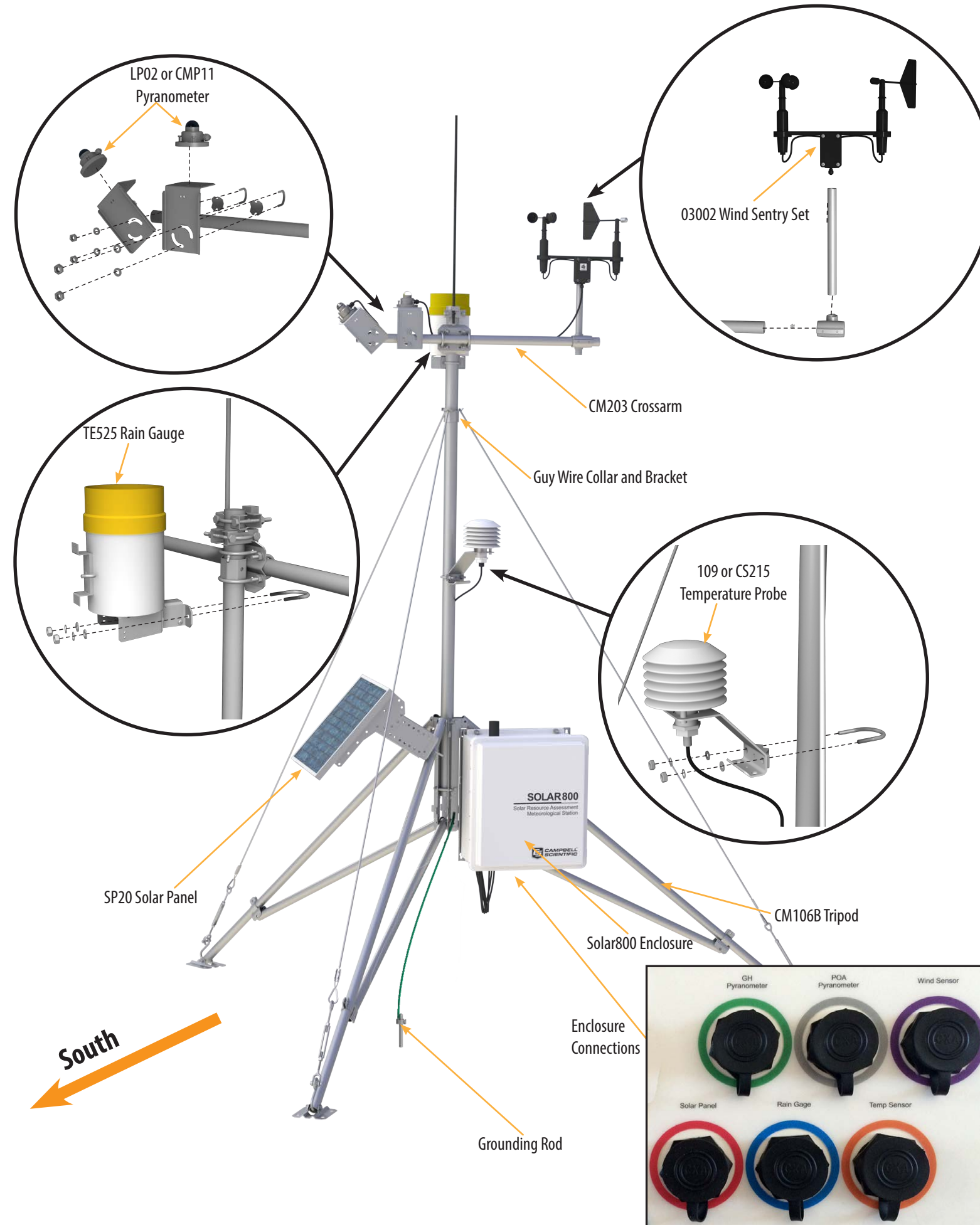Solar Resource
Assessment
Station

Quick Deploy Guide pn 29642
Revision: 06/2015

Info Link

IMPORTANT NOTE: *This Quick Deploy Guide is meant to be a general reference to give the installer an overview of the steps required to make this system operational. The Owner's Manual is the definitive source for detailed installation instructions and information.*

1 ⚠ Caution!

• Proper installation of the Solar800 is critical for measurement quality.

• Please read the entire Solar800 manual for complete instructions as to proper installation.

• This is not a commissioning document. The document is not a replacement for complete system commissioning performed by a trained professional.

• Do not over-tighten bolts as this will damage or deform the mounting hardware.

• Grounding the Solar800 system is critical. Proper grounding to earth will ensure maximum electrostatic discharge (ESD) protection and improve measurement accuracy.

• Tripod installation near power lines is dangerous. The minimum safe recommended distance from overhead power lines is two times the height of the tripod and mast combined. Contact local utility providers to locate buried utilities prior to installation.

• System maintenance is critical. See the Solar800 manual for a maintenance guide and schedule.

Solar800 Quick-Deploy Solar Resource Assessment Station

LP02 or CMP11 Pyranometer

03002 Wind Sentry Set

CM203 Crossarm

TE525 Rain Gauge

Guy Wire Collar and Bracket

109 or CS215 Temperature Probe

SP20 Solar Panel

Solar800 Enclosure

CM106B Tripod

Enclosure Connections

Grounding Rod

South

2 Required Gear

• step ladder
• horizontal and vertical bubble level (with magnet to hang on mast preferable)
• angle finder
• 1/2 in. wrench
• 5/16 in. wrench
• 3/16 in. Allen wrench
• flat blade screwdriver
• Phillips screwdriver
• 48 oz or larger sledge hammer
• compass
• tape measure
• Solar800 Configuration Utility Software

3 Physical Deployment

The following steps are a quick summary of the Solar800 assembly procedure. See the Solar800 manual for complete instructions.

1. Set up the tripod. For Northern Hemisphere installations, ensure one face of the tripod is pointing south (one leg will be pointing due north).
2. Install the guy wire collar on the mast and insert the mast into the tripod.
3. Hang the guy wires on the guy wire bracket, and them slide the bracket over the top of the mast, allowing the bracket rest on the collar.
4. Plumb the tripod mast to ensure it is vertical and tighten the guy wires. Verify the tripod is still plumb.
5. Stake or secure the tripod to the ground.
6. Slide the rain gage, crossarm, and lightning rod bracket over the top of the mast, in that order.
7. Tighten the lightning rod bracket, the crossarm, and the rain gage at the top of the mast as shown at right. Note that the crossarm is off center, with the shorter side pointing due south.
8. Secure the pyranometer mounts to the south end of the crossarm. Position the pyranometer mount on the end of the crossarm at the desired angle and the second mount horizontal. Use a bubble level and angle gauge to ensure the tilt and the azimuth angles are correct.
9. Mount the Wind Sentry to the north end of the crossarm. The wind sentry must be mounted with the wind vane end pointing due north for correct wind direction readings.
10. Install the multi-plate radiation shield approximately 2 ft above the tripod legs.
11. Install the enclosure to the north leg of the tripod by placing the upper left corner of the enclosure bracket over the hook on the tripod and anchoring the right side of the enclosure to the tripod leg using a U-bolt and hardware.
12. Attach the solar panel bracket between the two southern tripod legs.
13. Attach the solar panel to the solar panel bracket.
14. Connect each sensor cable and solar panel cable to the wire colored connectors on the bottom of the enclosure.
15. Drive the grounding rod into the ground at the base of the tripod and connect the enclosure ground to the grounding rod.
16. Secure all cables to the tripod with zip ties.

1. Install and Run the Solar800 Configuration Utility from the USB drive shipped with the Solar800.

2. Follow the Solar800 Connect Instructions found in the Solar800 Utility to connect to the Solar800. Select **Solar800** under device type. Next, select the correct **Communications Port** and **Baud Rate**, and then click **Connect**.
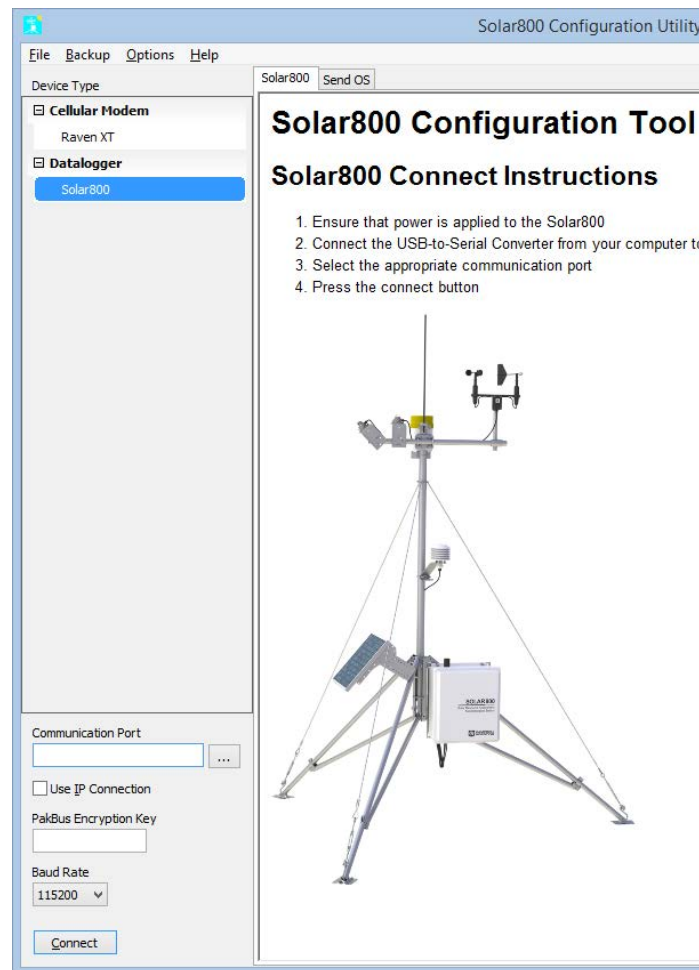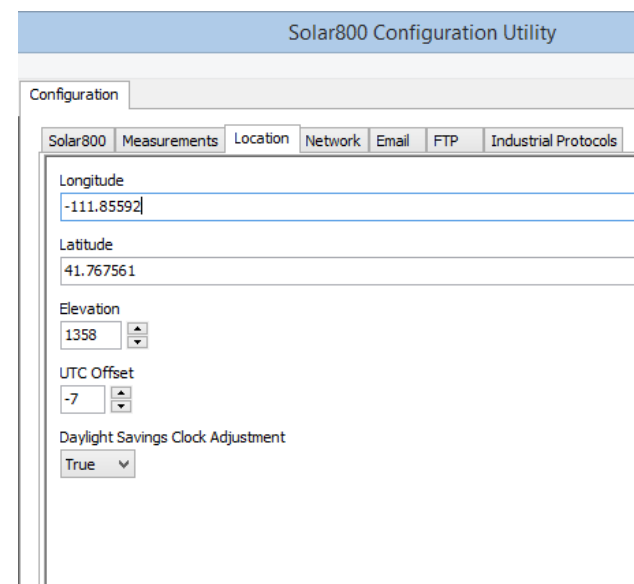

3. In the Configuration tab, give the Solar800 station a name.
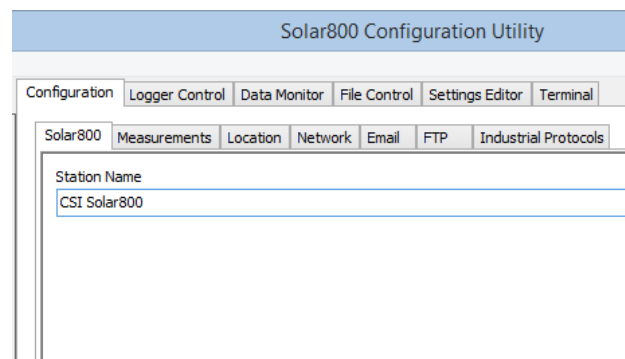
4. In the Measurements tab, configure the Solar800 measurement settings.
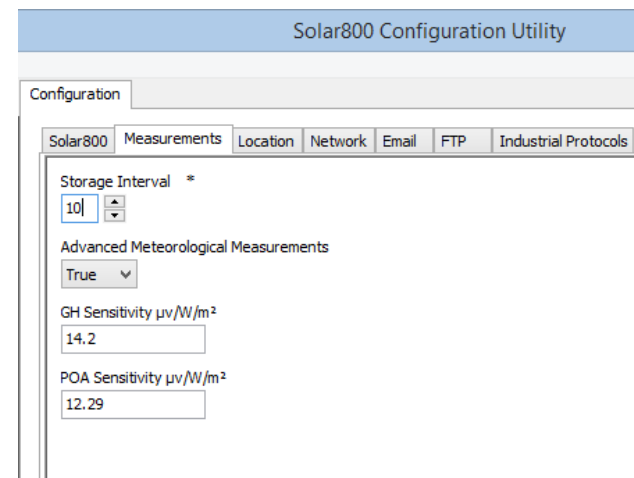
5. In the Location tab, enter the correct coordinates and elevation for the Solar800. Also enter the correct Coordinated Universal Time (UTC) offset and if Daylight Savings Time is currently in use.
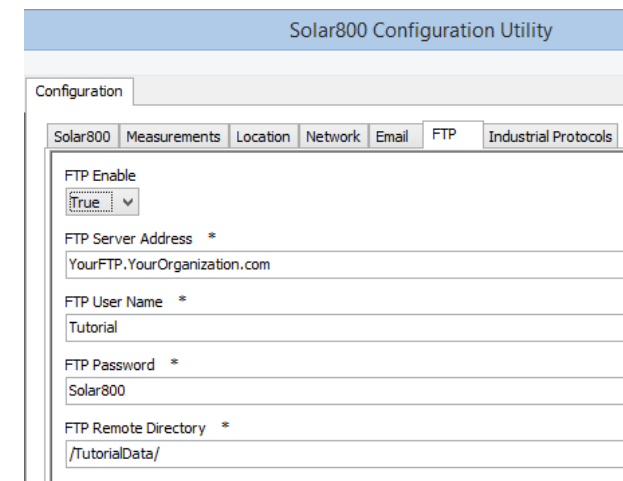

6. Configure the Solar800 network settings. Enter the correct IP Address for the station, along with any additional network settings. Entering an IP address of 0.0.0.0 will cause the Solar800 to use DHCP to configure the interface.
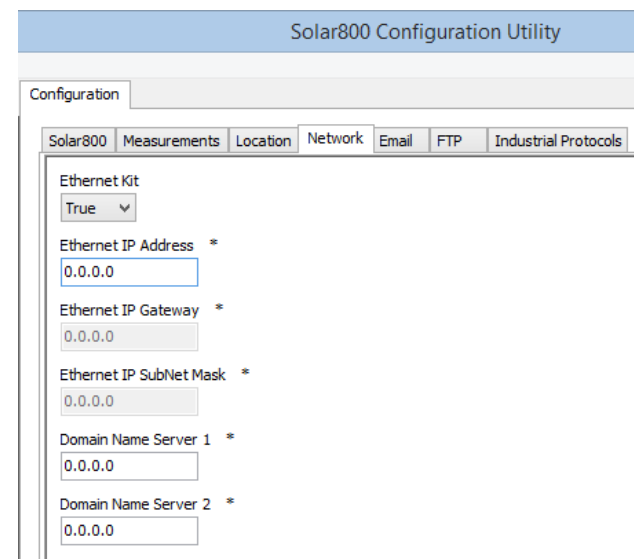

7. Configure the Solar800 email settings. Enter the destination (To) and source (From) email addresses. The email server and server password are also entered here.
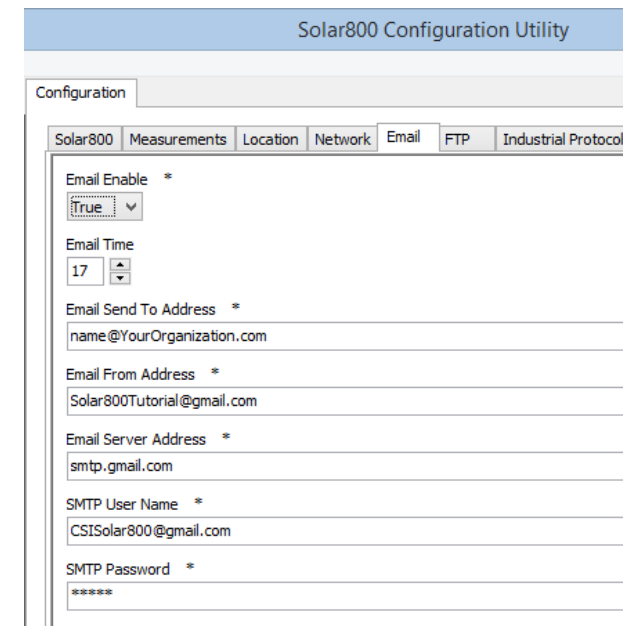
8. Configure the Solar800 FTP settings. FTP is enabled in this tab. The FTP server, user name, and password are entered here.
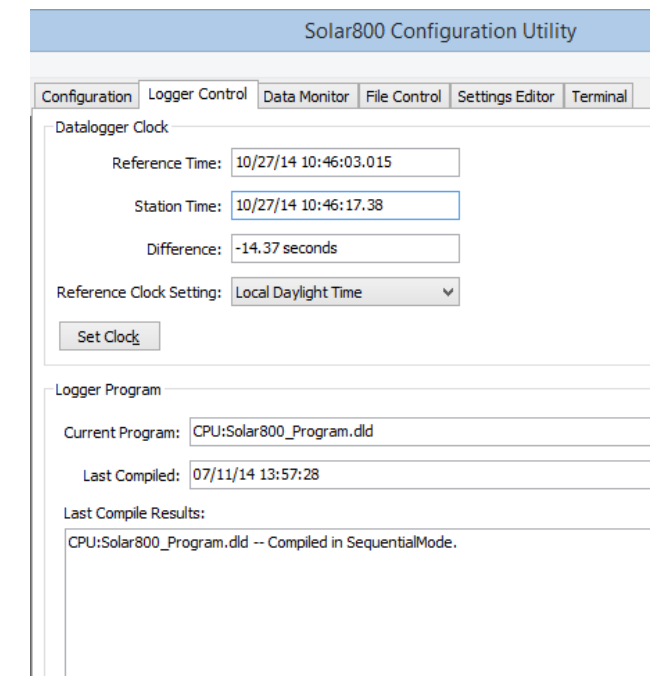

9. Configure the Solar800 Industrial Protocol settings. Enter the MODBUS and DNP3 addresses here.
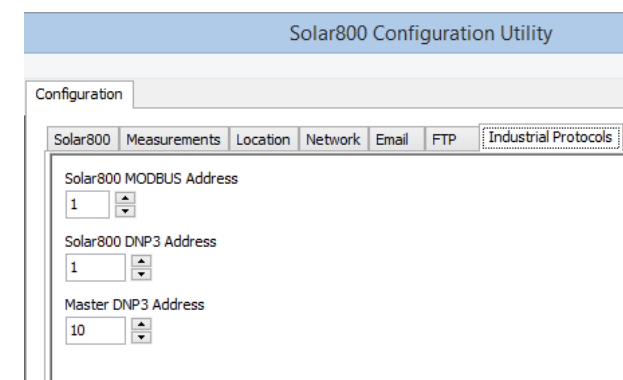
10. Click on the **Apply** button when all the desired settings are entered. Wait a few minutes for the Solar800 to apply the settings and restart.

11. **Reconnect** to the Solar800, select **Logger Control** and set the clock of the Solar800 to the desired time.

12. **Disconnect** from the Solar800.

13. Test communications via email, FTP, and industrial protocols prior to site installation to ensure that all settings are correct and functioning.

NOTE: A video tutorial on configuring the Solar800 software is available on the Campbell Scientific YouTube channel.
https://www.youtube.com/user/CampbellScientific

Here is the direct link to the video tutorial:
http://youtu.be/xuW3QyfEEEM