

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.

! 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

- **Required Gear**
- step ladder

2

- 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

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.

4 Software Configuration

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

<u>a</u>	Solar800 Configuration Utility
<u>F</u> ile <u>B</u> ackup <u>O</u> ptions <u>H</u> elp Device Type	Solar800 Send OS
Cellular Modem Raven XT Datalogger Solar800	Solar800 Configuration Tool Solar800 Connect Instructions
	Ensure that power is applied to the Solar800 Connect the USB-to-Serial Converter from your computer to Select the appropriate communication port Press the connect button
Communication Port	
115200 V	Å

3. In the Configuration tab, give the Solar800 station a name.

Solar800 Configuration Utility

4. In the Measurements tab, configure the Solar800 measurement settings.

	in the measurements tas, compare the solarooo measurement settin								
	Solar800 Configuration Utility								
C	onfiguration								
	Solar800 Measurements Location Network Email FTP Industrial Protocols								
	Storage Interval *								
	Advanced Meteorological Measurements True								
	GH Sensitivity µv/W/m² 14.2								
	POA Sensitivity µv/W/m²								
	12.29								

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.

Solar800 Configuration Utility									
Configuratio	n								
Solar800	Measurements	Location	Network	Email	FTP	Industrial Protocols			
Longitud -111.85 Latitude 41.767	de 5592 561								
1358 UTC Off -7	n T set								
Daylight True	Savings Clock Ac	ljustment							

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.

	Solar800 Configuration Utility									
	_									
Configuration	1									
Solar800	Measurements	Location	Network	Email	FTP	Industrial Protocols				
Ethernet	Kit									
True	~									
Ethernet	IP Address *									
0.0.0.0										
Ethernet	IP Gateway *									
0.0.0.0	in outenay									
Ethernet	TD SubNet Maek	*								
Ethernet	IP SUDIVET Mask									
0.0.0.0										
Domain N	Name Server 1	*								
0.0.0.0										
Domain	Jame Server 2	*								
	vanie berver z									
0.0.0.0										

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.

		S	Solar800	Confi	gurati	on Utility
nfiguration	1					
Solar800	Measurements	Location	Network	Email	FTP	Industrial Proto
Email Ena True Email Tim	able * V					
Email Ser	d To Address	⊧ .com				
Solar800)Tutorial@gmail.o	om				
Email Ser	ver Address *					
smtp.gm	nail.com					
SMTP Us	er Name *					
CSISolar	800@gmail.com					
SMTP Pa	ssword *					

8. Configure the Solar800 FTP settings. FTP is enabled in this tab. The FTP server, user name, and password are entered here.

Solar800 Configuration Utility										
-										
onfiguration										
Solar800	Measurements	Location	Network	Email	FTP	Industrial Protocols				
FTP Enal	FTP Enable									
YourFTP	.YourOrganizatio	n.com								
FTP User	Name *									
Tutorial										
FTP Password *										
Solar800										
FTP Remote Directory *										
/Tutoria	IData/									

9. Configure the Solar800 Industrial Protocol settings. Enter the MODBUS and DNP3 addresses here.

	Solar800 Configuration Utility										
С	onfiguration	1									
	Solar800	Measurements	Location	Network	Email	FTP	Industrial Protocols				
	Solar800	MODBUS Addres	s								
	Solar800	DNP3 Address									
	Master D	NP3 Address									
	1										

- 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.

Solar800 Configuration Utility										
			_							
Configuration Logger Control Data Monitor File Control Settings Editor Terminal										
Datalogger Clock										
Refe	erence Time:	3.015								
Station Time: 10/27/14 10:46:17.38										
	Difference:	-14	1.37 seconds							
Reference C	lock Setting:	Loc	cal Daylight Time	• •	*					
Set Clock										
Logger Progr	ram									
Current Pro	gram: CPU:	Sola	r800_Program.o	bld						
Last Con	npiled: 07/11	/14	13:57:28							
Last Compile Results:										
CPU:Solar800_Program.dld Compiled in SequentialMode.										

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