



RPPL

RemotePro™ Remote Power System

- Wireless Base Stations and Client Devices
- Surveillance Cameras
- Remote Sensors
- Remote Lighting
- Off Grid Electronics



Congratulations! on your purchase of the RemotePro™ off-grid remote power system. Please take a moment to review this Qwik Install Guide before assembly or battery installation.



DANGER! Avoid Powerlines! You Can Be Killed!

When following the instructions in this guide take extreme care to avoid contact with overhead power lines, lights and power circuits. Contact with power lines, lights or power circuits may be fatal. We recommend to install no closer than 20 feet to any power lines.

Safety: For your own protection, follow these safety rules.

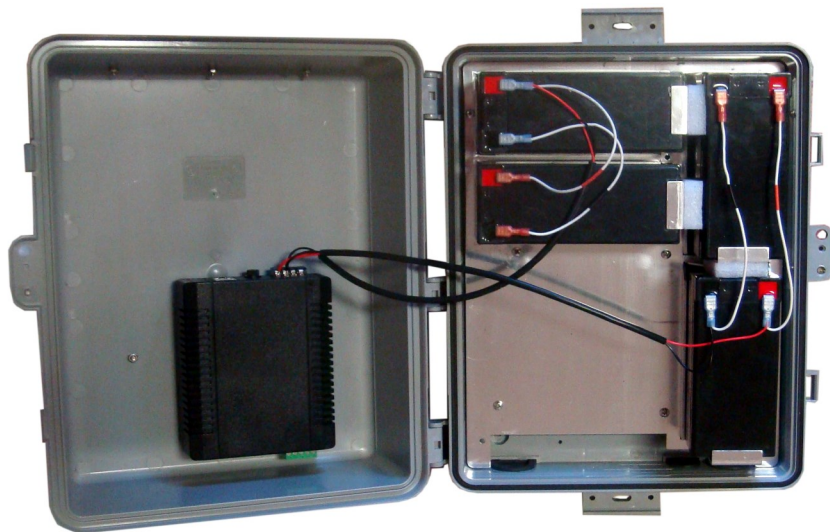
- **Perform as many functions as possible on the ground**
- **Do not attempt to install on a rainy, windy or snowy day or if there is ice or snow accumulation at the install site or if the site is wet.**
- **Make sure there are no people, pets, etc. below when you are working on a roof or ladder.**



Recommended Tools: Phillips Screwdriver, 1/2" Open End Wrench, 5/16" nut driver, Flat Blade Screwdriver



Please help preserve the environment and return used batteries to an authorized depot



Qwik Install

STEP 1: Connect 18AWG wire to the solar panel inside wire junction box. Install solar panel to the mount so that junction box is at the top or side. Install mount to 2" to 4" pole. Solar panel should be facing South if in Northern Hemisphere. If you are planning to keep solar panel angle fixed all year then set the angle to $\text{Your_Latitude} * 0.9 + 30$

STEP 2: Mount any electronics inside the enclosure then mount the enclosure to the pole. We recommend mounting the enclosure directly under the solar panel and just low enough that the enclosure cover can be opened without interfering with solar panel tilted at its winter angle.

Note: The enclosure and solar panel can also be mounted to a wall if desired.

STEP 3: Connect a CAT5 cable between the controller POE OUT and the electronics. There is a secondary voltage output on the back of the controller which can be used in addition to the POE OUT. The secondary output is equal to the battery voltage.

Note: If grid power is available the batteries can also be charged over POE using an appropriate power supply/POE Inserter and CAT5 cable connected to the controller POE Input. We offer a POE inserter model number **POE-INJ-S** and a 24V 2.5A power supply model number **PS24V-2.5** that are designed for this use.

STEP 4: Route 18AWG wire from solar panel into the enclosure and connect to the controller solar panel input. Make sure to maintain correct polarity.

STEP 5: Install batteries to enclosure with battery terminals on the left

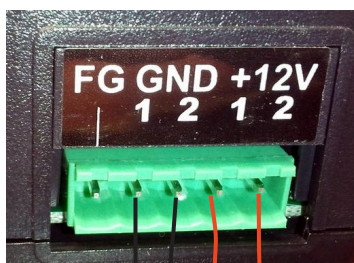
and towards the top. Upper right hand battery should be installed last. If lower right hand battery is too loose, remove both right hand batteries, bend both battery holding tabs toward the top slightly, re-install the lower right battery and then the upper right battery.

STEP 6: Connect the Battery cables to Controller BAT terminals and then to the batteries. Be sure to observe polarity. Black wire connects to battery negative terminal and BAT(-) terminal on the controller. When a fully charged battery is connected, the Green LOA LED should light on controller and power should be present on POE output and also green wire terminal connector.

STEP 7: Make sure lid gasket is clean and free from any particles, then carefully close the cover, making sure that wires are clear of the seam and hinge area. The cover snaps into place. There is one center security bolt that can be used to secure the cover.

NOTE: If you have any unconnected battery connectors on battery cable after installation, make sure they are wrapped with electrical tape so that there is no chance of shorting the connector to any metal. You can also remove the extra cable/connector permanently by cutting the cable at the existing battery connection.

Auxiliary Output Wiring



FG = Frame Ground (Do Not Connect to V-)

GND = V- (There are two V- connections: 1 and 2)

+12V or +24V = V+ (There are two V+ connections: 1 and 2)

Device 1 -
Device 2 +

TECH CORNER

Additional Information you may find useful

SPECIFICATIONS

Subject to change without notice

	RPPL12	RPPL24
Continuous Power Rating	8W	
Maximum Power Rating	30W	
Reserve Power @ 8W Load	27 hours	
Battery Voltage (DC)	12V	24V
POE Output Voltage (DC)	12V, 18V, 24V or 48V	24V
POE Input Voltage (DC)	18-57V	36-57V
Battery Capacity	36Ah	18Ah
Battery Type	Valve Regulated Sealed Lead Acid / Absorbent Glass Mat (AGM)	
Battery Life	5 Years	
Controller Type	Dual Input Solar/POE, PWM, 12V 8A Max Solar Panel Size 135W	Dual Input Solar/POE, PWM, 24V 8A Max Solar Panel Size 270W
Overcharge Protection	14.4V	27.3V
Over-discharge protection	11V	20V
Over-discharge recovery	12V	22.3V
Self Consumption	<0.5W	
Enclosure Type	Polycarbonate	
Enclosure External Size	17.5 x 12.5 x 6" (445 x 318x 152mm)	
Enclosure Internal Size	14 x 10 x 5" (356 x 254 x 127mm)	
Space for Customer Equip	7 x 7 x 4" (177 x 177 x 102mm)	
Operating Temperature	-30°C to +60°C	
System Weight (no batts)	4lb (1.8kg)	
Battery Weight (each)	2.5kg (5.5lb)	

1. **CONTROLLER:** The controller turns off power to the load at 11V and reconnects when the battery reaches 12V. This protects battery from overdischarge and increases battery life and performance.

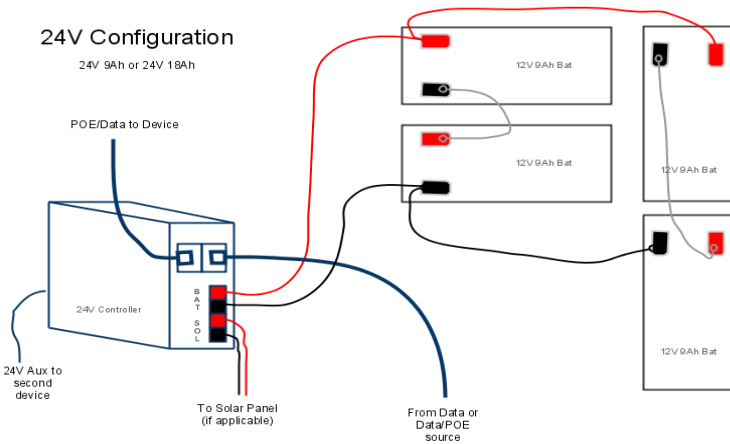
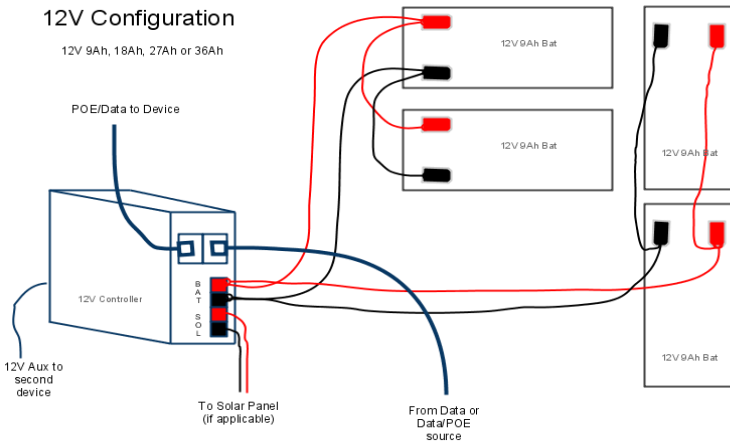
2. **CAPACITY:** The RemotePro RPPL is rated at 8W continuous power output with 6 hours of peak sun per day. Reserve battery capacity at 8W load is 27 hours.

3. **VENTING:** The enclosure is vented thru the wire feedthrus in the bottom of the enclosure. Don't make these airtight.

4. **CHARGING BATTERIES FROM AC POWER:** The Controller used in this system has a POE input which can be used for charging the batter-

Place	Optimum Winter Tilt
Houston / Cairo	56 deg
Albuquerque / Tokyo	60.5 deg
Denver / Madrid	65 deg
Minneapolis / Milano	69.5 deg
Winnipeg / Prague	74 deg

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om a 110/220VAC power source like a backup generator. If the site has access to AC power, even temporarily, you can use a 24V power supply with about 2.5A of current capacity and using a POE inserter cable like our **POE-INJ-S** to insert the power to the controller over Ethernet cable. We also offer a 24V 2.5A power supply that is suited for auxiliary charge of the batteries from 110/220VAC power.

5. BATTERY MAINTENANCE: The batteries used in the Remote Pro systems don't require any maintenance. They should last up to 5 years in normal use. **Note: Never store batteries for any length of time in a discharged state or it will kill the battery.**

6. SOLAR PANEL TILT: There is a solar panel tilt calculator at the Tyconpower website http://tyconpower.com/learning_center/learning_center.htm. We recommend using a fixed tilt and setting to optimize for winter sun. The panel should face South if you are in the Northern Hemisphere and face North if you are in the Southern Hemisphere. Some typical winter tilt angles are as follows:

7.BATTERY OVERDISCHARGE: We highly recommend hooking all equipment loads to the controller voltage output. This output will disconnect the load if the battery voltage drops below 11V and this will protect the battery from over-discharge. If batteries get completely discharged because the equipment was connected directly to the battery, you will reduce the battery life and you will most likely need to supercharge them with a good quality 10A automotive battery charger. Once they are back to a normal operating range, the integrated charge controller will maintain the charge.

8. WIND TURBINE: A wind turbine can be added to this system at any time. Wind Turbines are good sources of power, often in times when the sun isn't shining, like on stormy days. We like to think of a wind turbine as uptime insurance. Tycon Power Systems offers small wind turbines perfectly suited to augment the RemotePro systems. The TPW-400N-12 is a 400W 12V unit and the TPW-400N-24 is a 400W 24v unit. To add a wind turbine, it mounts to the top of a 41mm inside diameter pole. You will need to mount the controller inside the enclosure and connect the output of the controller to the batteries. The connection will be in parallel with the existing solar controller connection.

9. POE SWITCH: Tycon Power offers a universal voltage 5port and



8port POE switch if more than one device needs to be powered from the battery system. The **TP-SSW5-NC**, **TP-SW5G-NC** and **TP-SW8-NC** offer the unique feature that the voltage supplied to the switch is the POE voltage sent to the devices. So 24VDC in and you get 24VDC POE to the devices. The operating voltage is 12V to 56VDC.

10. **OTHER ACCESSORIES:** Tycon also offers a variety of voltage conversion products to meet almost any need. Just visit tyconpower.com for more info.



Limited Warranty

The RemotePro™ products are supplied with a limited 24 month warranty which covers material and workmanship defects. This warranty does not cover the following:

- Parts requiring replacement due to improper installation, misuse, poor site conditions, faulty power, etc.
- Lightning or weather damage.
- Physical damage to the external & internal parts.
- Products that have been opened, altered, or defaced.
- Water damage for units that were not mounted according to user manual.
- Usage other than in accordance with instructions and the normal intended use.

NOTES

