TYCON Solar®

UPSTL48
UPSPro® Backup Power System

- Wireless Base Stations
- Surveillance Cameras
- Remote Gate Control
- Electric Fence
- Up to 200W loads

Congratulations! on your purchase of the UPSPro® outdoor backup power system. Please take a moment to review this Qwik Install Guide before assembly or battery installation.

STOP

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 & Flat Screwdriver, 17/13/10mm wrench, 8mm nut driver

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

Qwik Install

STEP 1: Prepare the enclosure: Install DIN rail (if required) to door using two Philips head screws. Install just the top mounting bracket to the enclosure using two 8mm bolts.

NOTE: It takes two people to mount the enclosure to a pole. The standard U-Bolt mounting accommodates a pole up to 4" diameter. Multiple pole straps can be used for extra strength. Pole straps are available for poles up to 11" diameter or larger.

STEP 2: Install the bottom bracket and stabilizer bracket to the pole using U-Bolt and/or Pole Straps. The stabilizer bracket is used as an aid to mounting and additional support when mounted.

STEP 3: Lift the enclosure and place it on the stabilizer bracket. Connect the top bracket to the pole using U-Bolt and/or Pole Straps.
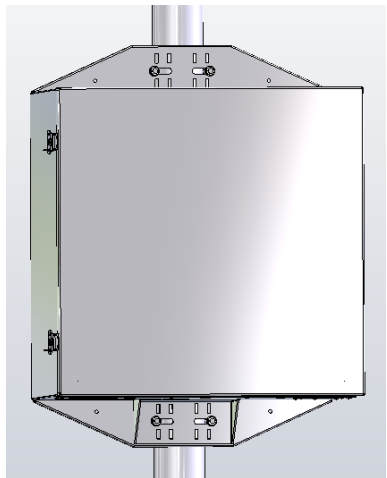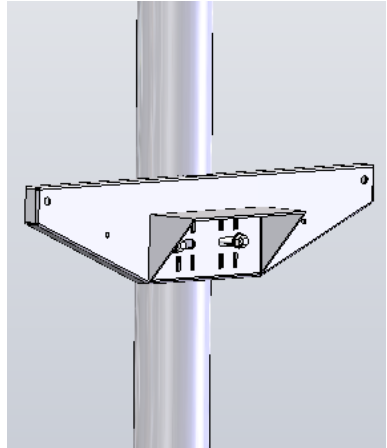
STEP 4: Attach The two 8mm bolts that hold the bottom bracket to the enclosure. Make sure all bolts are tight. (8-15 ft lbs)
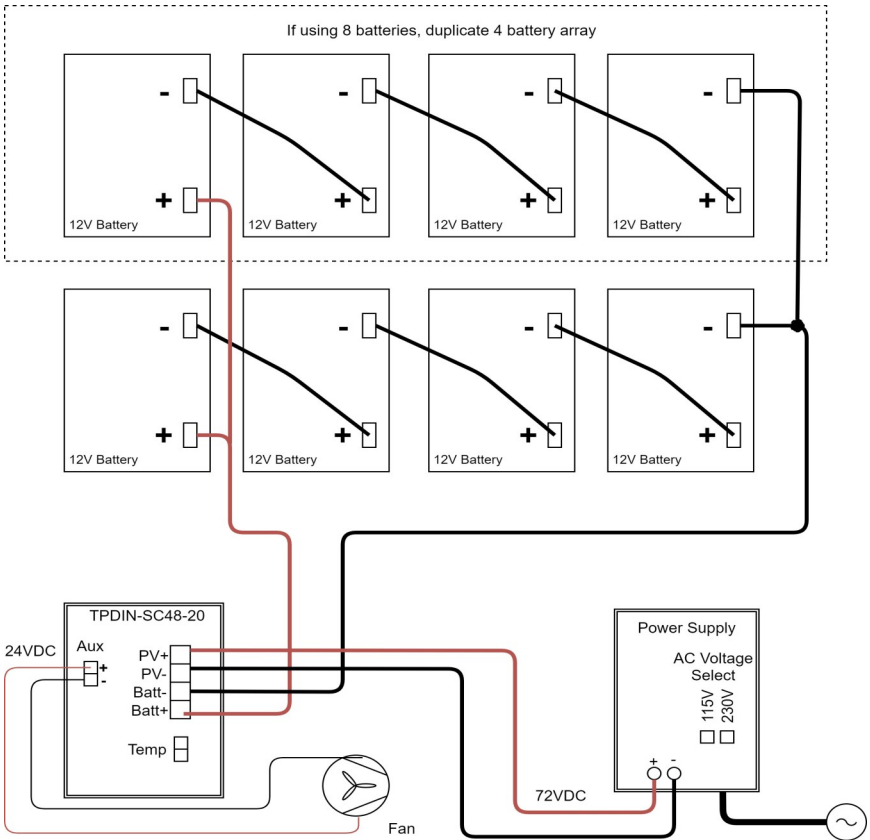
STEP 5: Install the three wire feedthru cable glands in the holes in the bottom of the enclosure. If one or more of the cable glands will not be used, just cut a short piece of wire and tighten in the cable gland.

NOTE: The bottom plate can be removed from the enclosure if you need to add some additional feedthru. (ex; conduit connection)

STEP 6: Install the batteries in the enclosure. There must be at least four batteries connected in series to create 48V. If eight batteries are used connect first four in series and second four in series then parallel the two banks. (See wiring diagram).

Note: The enclosure has slot features that can be used to strap the batteries if desired. Tycon® has velcro straps available. It takes two straps per battery.

2

If using 8 batteries, duplicate 4 battery array

WARNING! The fan supplied with the system operates on 12VDC or 24VDC. It is thermostatically controlled to turn on if temperature exceeds 45C. It cannot be connected to 48V battery voltage. It can be connected to the Aux output of the controller set to 24VDC or it can be connected across one of the batteries in the array.

STEP 7: Before attaching the battery cables to the batteries, first remove the battery cable fuses. This will prevent accidental short circuit.

Connect the battery cables to the batteries. Connect the Temperature probe from the controller to any of the battery terminals. The temperature sensing lug is just a mechanical connection so it doesn't matter which terminal it is connected to (+ or -). The probe has no polarity when connecting to the controller.

STEP 8: Remove the large green connector from the controller. Connect the battery cables to the BAT+ and BAT− connections. Be sure to observe proper polarity. Cut off the connector on the battery charging power supply (if necessary) and strip the wires and connect to the large green connector PV+ and PV− connections. Make sure to observe proper polarity. Brown wire is V+. The controller has a pluggable 3 wire

AC cord. You can cut this cord to hardwire into the mains. You can also mount conduit to the enclosure if local codes require it.

STEP 9: Install the TPDIN-SC48-20 Battery Controller to the enclosure by hanging on welded DIN rails on either side of enclosure between batteries and door.

Note: When attaching controller onto the DIN rails, first put the bottom of the bracket against the DIN rail and then push the part upward and over the top of the DIN rail. To remove, just reverse the process.

Connect the thermostatically controlled fan to the controller Aux+ and Aux– inputs or a single battery in the array.

STEP 10: Set the battery charging power supply input voltage to either 115VAC or 230VAC by moving the switch to the appropriate position., if applicable. Some Battery charger used are auto ranging and will not have a voltage select switch.

WARNING! **If the unit has a voltage select switch, make sure it is set correctly before connecting the AC line or you will damage the power supply.**

STEP 11: Connect your equipment to the controller and finish up any wiring to your equipment then plug the wired large green connector to the TPDIN-SC48-20 Battery Controller and re-install the fuses in the battery cables. The Battery Charging LED will light for about 60seconds when power is first applied, then there will be no LED lit until some changes are made to the controller web interface.

STEP 12: Turn on AC power to the battery charging power supply. You should see the Battery Charging LED turn on. The LED will be steady state when the batteries are charging and will be flashing when the controller is in float charge mode.

STEP 13: Connect the controller to your network through one of the switch ports, preferably port 1. The default IP address is 192.168.1.6 The unit may also get an IP address from a DHCP server. We have a free discovery tool available at http://tyconsystems.com/index.php/support/tpdin-firmware This tool will find the controller no matter what IP address it is on even across subnets.

STEP 14: Once you open the web interface, you can set the voltage for each port including the Aux port and you can turn the power on and off to each port. Also set the battery type.

STEP 15: Refer to the controller user guide for more info on setup and

use of the controller features.

TECH CORNER

Additional Information you may find useful

1. CONTROLLER: The controller will turn off all loads when the battery voltage falls below a set value. This value can be set in the user interface. This low voltage disconnect function is needed to preserve the life of the batteries.

2. MAXIMUM LOAD: The maximum load supported by the controller is 200W. If the load is exceeded the controller will shut down all loads and display an error condition. It will automatically reset after the load falls below 200W.

3. OUTPUT VOLTAGE: The output voltage from the controller on all ports can be set individually to 48V or 24V in the user interface.

4. VENTING: The enclosure has vents in the upper back of the enclosure and a thermostatically controlled fan and vent in the bottom of the enclosure. Fan airflow should be toward inside of enclosure.

5. BATTERY MAINTENANCE: The batteries used in the UPSPro®

SPECIFICATIONS

Subject to change without notice

	UPSTL48
Load Voltage	24V/48V Selectable
Max Load	200W
VAC Input +/- 10%	115 / 230VAC user selectable
Battery Capacity	200Ah (AGM or Lithium) or 400Ah (AGM Only)
Battery Type	Non-Spillable Sealed Lead Acid —AGM or LiFePO4 Lithium
Battery Life	5 Years AGM / 10 years Lithium
Over-discharge protection	45.8V to 47.8 – settable in web interface
PoE Ports	Qty 7 Gigabit 0.645A max per port 802.3at (port 1-4 only), 48VDC or 24VDC or OFF – settable in web interface .
Aux Output	24V or 48V @ 2.25A Max; Selectable via Web Interface
Self Consumption	3.5W Typ
Enclosure Type	Steel—STL

systems don't require any maintenance. They should last up to 5 years in normal use. (10 years for Lithium) **Note: Never store batteries for any length of time in a discharged state or it will kill the battery.**

6. 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 the set voltage 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. Discharged batteries will freeze at very low temperatures.

7. SOLAR READY: The system is solar ready so solar panels can be added at any time by connecting them to the PV input through a blocking diode. The battery charge controller can handle up to 20A of solar which is equivalent to 960W of solar panels max. A single blocking diode is needed to prevent reverse current from battery charger power supply into the solar panels. Blocking diode should be at least 6A/100V rated.

8. Lithium Batteries: The maximum array for Lithium batteries is 4 batteries in parallel or series connection. Lithium batteries without heaters will not charge if battery temperature drops below 0degC

9. ACCESSORIES: Tycon® also offers a variety of voltage conversion products to meet almost any need. Just visit tyconsystems.com for more info.

Limited Warranty

The UPSPro® products are supplied with a limited 36 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.

Tycon Systems Inc.
930 W 14600 S Suite 600
Bluffdale, UT 84065
support@tyconsystems.com
PH: 801-432-0003

NOTES