



ETP-MT/R OP SOLAR Tower Installation Instructions

I. Introduction

Note: This manual is for tower and solar kit installation only. For instructions on installing the anchor bolts into the foundation, see the ETP-MT/R Anchor Bolt Installation Instructions.

II. Contents

Before beginning installation, make sure you have all the included components. Each Tower consists of three packages. Package #1 contains the tower itself. Package #2 labeled MT/R BOLT KIT contains the anchor bolts and template for foundation prep work. Package #3 labeled TOWER PTS SOLAR contains the lighting and hardware for final tower assembly. The solar panels and accessories are shipped separately because they vary by installation location. The bill of materials is summarized below:

MT/R BOLT KIT (Foundation Installation Kit)

QTY	Part Number	Description
4	42838	J-Bolts
1	26312	Cardboard Template

TOWER PTS SOLAR (keep for use when installing the tower)

QTY	Part Number	Description
8	42839	3/4"-10 Hex Nut
8	42840	3/4" Washer
3	42841	10-24 x 3/4" pan head tamperproof screw
2	42843	6-32 hex nut
1	67478	Polycarbonate light cover
1	68590	LED light board (12-24V AC/DC - 120VAC)
1	ETP-EL12/24	12/24V AC/DC Strobe Light

Solar Equipment (e.g. Model SOLAR-C) is shipped separately and includes the following:

QTY	Part Number	Description
1-2	Varies	Solar array (may be more than 1 panel depending on location)
1	68507PM	Solar panel mounting bracket with instructions
1	PCS-DCDC	DC-DC Converter with in-line fuse and battery terminals
2	68594	42 AmpHour batteries
1	68507CC	Solar Controller
1	86507OC	Solar cable with 2 fittings attached
2	67492	Battery terminal crimp-on connectors
2	42855	10-24 Screws for mounting Solar Controller
2	42847	10-24 Nuts for mounting Solar Controller

Emergency phone and wireless communication equipment (e.g. cellular or RF) are sold separately.

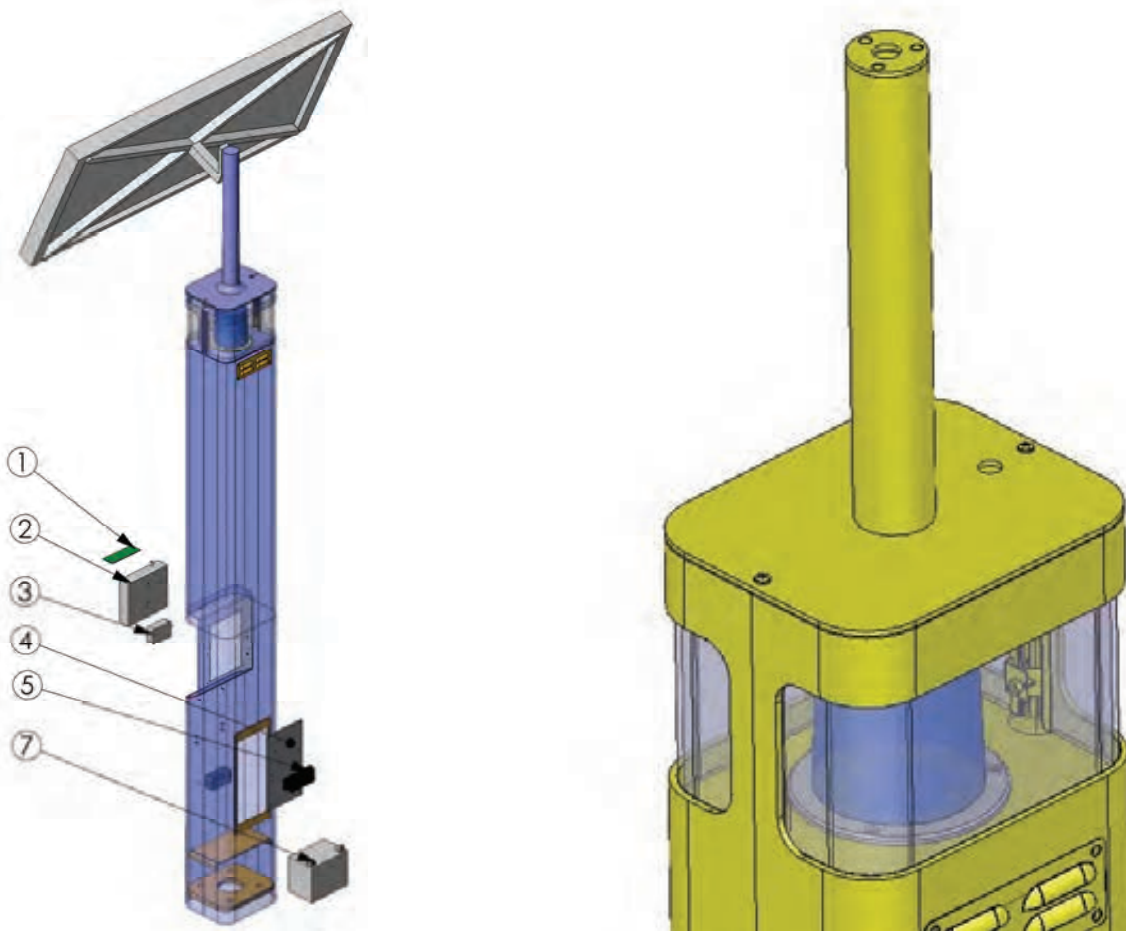
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III. Installation Overview

Solar towers including the following features (see Figures 1 and 2):

- Louvers for airflow to avoid condensation on the electrical connections
- A removable aluminum Plate to mount the Solar Controller and other devices
- Weld studs behind the Emergency Phone for mounting optional cellular device
- Weld studs with nuts behind the access panel to mount the aluminum plate
- An extra large access door
- Shelf for the batteries
- Plugged antenna hole
- Clips inside the Lexan cap and extra holes in the strobe mounting plate for routing the antenna and solar power cables
- A mast with removable cap welded to the top of the tower's Lexan cap



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1. Remove the cap at the top of the tower with the solar mast and install the antenna mount, antenna, and solar bracket and panels using the separate instructions for those items. Run the solar power wires through the hole at the top of the mast using the included fitting. Extra cable can be used to connect the two batteries.
2. Fasten the blue light/strobe to the tower with three (3) 10-24 pan head tamperproof screws. Feed the power cord and control wires through to the tower.
3. Feed the solar power cable and the antenna cable through the two wire routing clips and into the holes beneath the clips to run those cables into the main tower body. See Figure 2.
4. Secure the cap, with solar panels and antenna attached, back onto the top of the tower.
5. A polycarbonate light cover protects the LED light assembly from the inside. Peel the protective film off the light cover and fit it onto the studs inside the tower. Slide the LED board over the studs with the LEDs facing down. The built-in spacers will keep the LEDs from resting on the acrylic window. Tighten down using the enclosed #6 nuts. Be careful not to over-tighten to avoid cracking the circuit board.
6. Remove the aluminum plate from the tower and attach the Solar Controller using the included 4 screw and nuts. This is the where most of the wiring connections should be made.
7. Install one 3/4" nut and one washer on each anchor bolt 2.5" above grade to top of washer. This will allow for a 1/2" air gap between the foundation and the tower which will allow airflow and prevent moisture problems. Verify that the nuts are level (0° pitch).

NOTE: To insure proper grounding of all electrical components, the tower mount should be effectively earth grounded from the grounding stud (located in the electrical box--see Figure 1) with 6 AWG or better insulated, stranded copper wire to the metallic power service raceway (conduit) or an 8' or longer corrosion-resistant ground spike.

After removing the cover plate from the tower's rear access opening, install the tower onto the bolts with the Emergency Phone opening oriented in the desired direction. Install second set of nuts and washers. Tighten the upper nuts; the bottom set is only for leveling.

8. Connect the solar power wires to the SOLAR terminals on the Solar Controller. The remaining power cable can be used to run from the BATTERY terminals on the Solar Controller to the 2 batteries, connected in parallel. Crimp on connectors are included for the batteries.
9. The blue light/strobe and LED faceplate light power wires should be connected to the LOAD terminals on the controller.
10. Connect the antenna cable to the Cellular Interface or other wireless communications device, if used. Cellular interfaces and VOIP-1's should be powered by the included DC/DC converter, which has battery ring terminals pre-connected. The VOIP-RF-900, if used, should be powered directly from the battery through the 12VDC internal connection.
11. The communications equipment (through the DC/DC converter, if needed) should be connected **directly** to the battery. If the battery voltage drops, the solar controller will shut off power to the LOAD terminals so as not to damage the battery. This will cause the lights to shut off. By connecting the communications equipment directly, you will still be able to make emergency calls for a little while after the lights shut off. Excessive drainage WILL damage the batteries, so if the lights go off due to low voltage, you should promptly replace the batteries.

Make sure the DC/DC converter is set for the correct output voltage. The lowest effective voltage should be used for maximum power efficiency. For Cellular units, this is 6 or 6.5VDC. The

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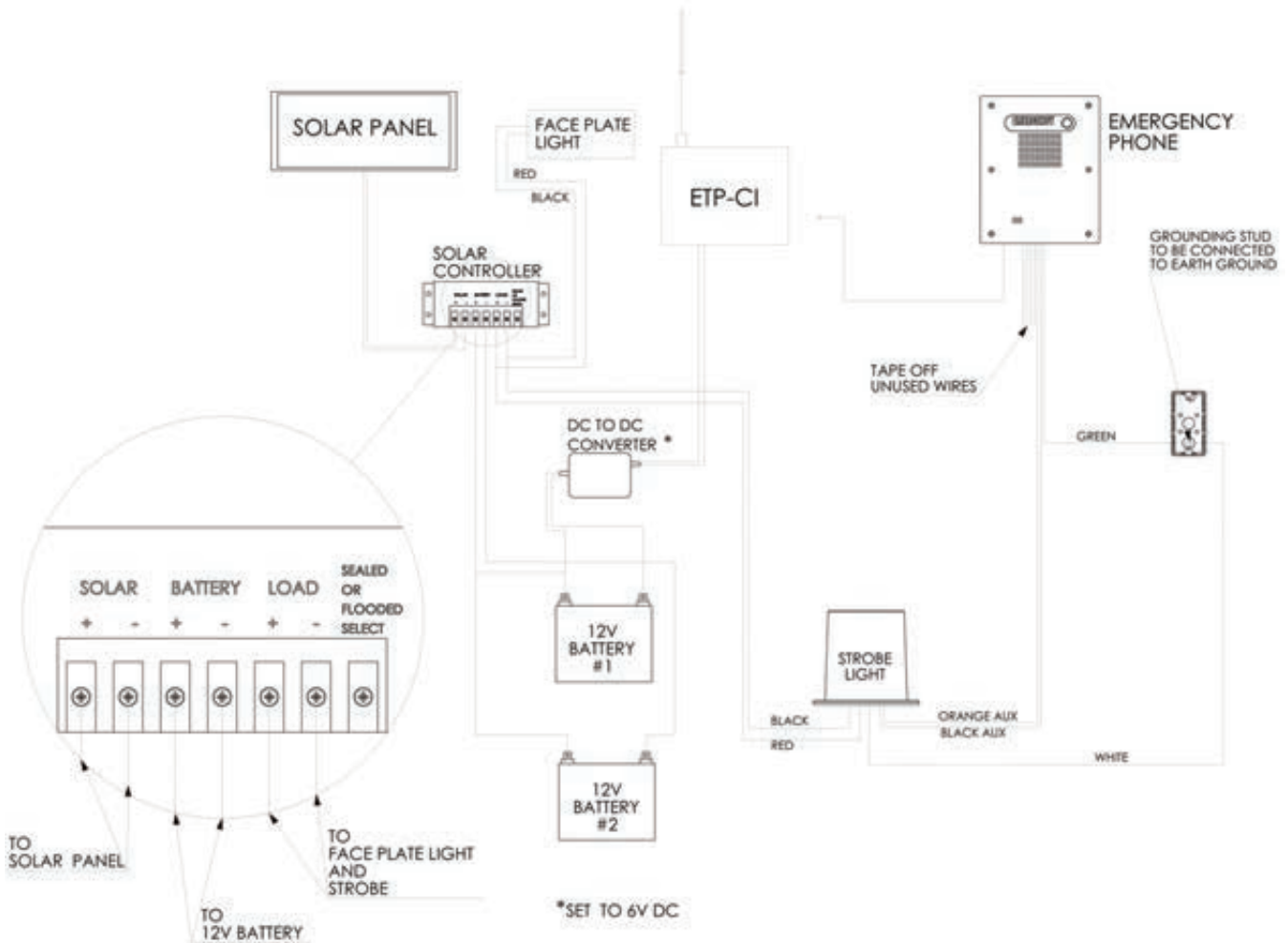
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DC/DC converter can be mounted inside the tower below the Cellular Device using the attached double-sided Velcro.

12. Install the shelf and battery and make all remaining connections, including connecting the batteries in parallel with the provided connector cable. **NOTE: IT IS ESSENTIAL THAT THE BATTERIES ARE CONNECTED IN PARALLEL AND NOT IN SERIES OR DAMAGE WILL OCCUR TO THE SYSTEM.**
13. Connect the black and orange wires of the Emergency Phone to the black and orange control wires of the blue light/strobe. These are the AUX 2 output leads (see Emergency Phone manual for programming). Plug the RJ11 connector on the emergency phone into the Cellular or other communications device. Attach the Emergency Phone to the tower with six (6) 10-24 oval head tamperproof screws.
14. Re-attach the cover plate over the access opening.

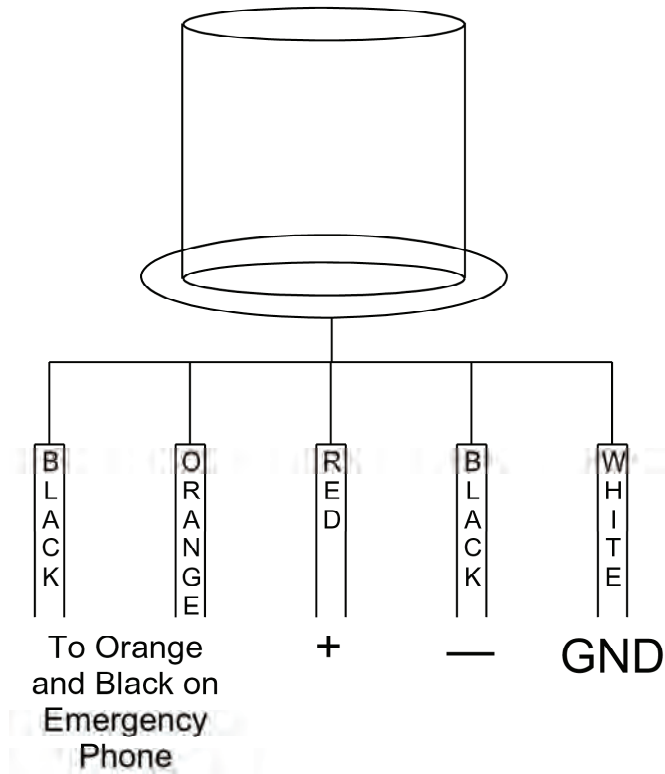
IV. ETP-MT/R OP SOLAR Wiring Diagram



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V. 12VDC/24VDC/24VAC Strobe Wiring Diagram



It is the installer's obligation to ensure compliance with all national, regional, and local regulations.

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