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SP1024 Solar Battery Charger Installation Manual

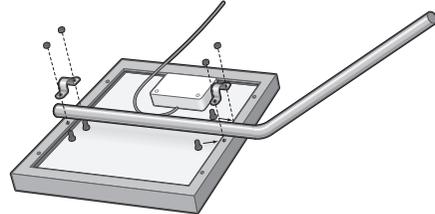
10 Watt, 24 Volt

Compatible with all Linear APeX™ enabled DC Slide and Swing Gate Operators.

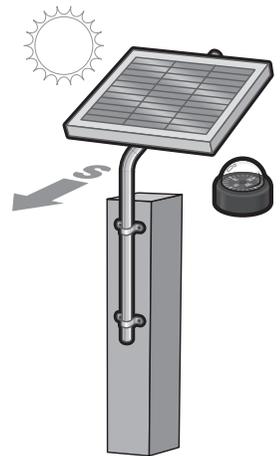


Solar Panel Installation

Step 1: Slide the 1/4" bolts (F) through the bottom of each channel so the threaded part of each bolt comes through top of frame, position the pipe (D) between the bolts and place two clamps (C) over the curved pipe onto the bolts. The clamp at the top of the solar panel should fit over the pin on the curved pipe. Secure with the 1/4" nuts (E).

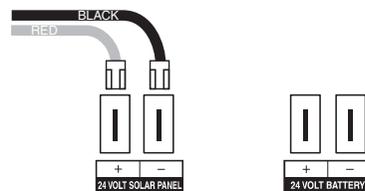


Step 2: Determine the site for installation of the solar panel. It is important to install the solar panel **facing the path of the sun** where full sun will strike its face throughout the day. **The solar panel cannot be shaded out or obstructed by trees, bushes, buildings etc for any part of the day.** The curved pipe (D) maintains the proper angle to the sun. Secure the solar panel assembly to a wooden post or fence using two pipe clamps (C) and #2 lag screws (B) as shown in the illustration. If your fence post is metal, you will need alternative hardware not provided, (i.e. U-clamps or metal screws).



IMPORTANT: the solar panel must be positioned facing the path of the sun, due south and in an open area away from shade. It should receive at least 8 hours of direct sunlight for a full charge.

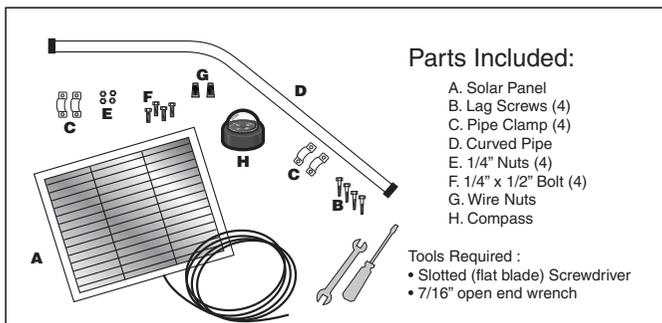
Step 3: All Linear APeX powered gate operators have a POWER IN terminal on their control boards marked 24V SOLAR PANEL for connecting the solar panel wires (See illustration). Feed the free end of the solar panel wires into the control box and attach them to the 24V SOLAR PANEL terminals APeX control board. The RED solar panel wire goes to the (+) POSITIVE Solar terminal and the BLACK solar panel wire goes to the (-) NEGATIVE Solar terminal. See diagram below.



IMPORTANT: Improper installation of these wires will cause damage to the APeX controller or solar panel.

HINT: If the solar panel must be placed more than 10 ft. from the control box (but less than 250 feet away), use multi-stranded, 16 gauge (AWG), direct burial, low-voltage wire. **Never use telephone wire or solid core wire.**

IMPORTANT: To provide secure and moisture resistant splices for solar panels use a direct burial splice kit for underground splices and an above ground splice kit for above ground splices. These splice kits can be found at hardware and electrical supply stores.



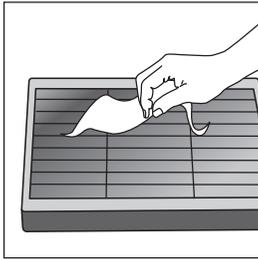
For more information on Linear's full line of gate operators, residential and commercial door operators, radio, and access controls visit our website at www.linearcorp.com

HINTS for Obtaining Maximum Output from Your Solar Panel

1. Place the panel facing due south in the path of the sun, where full sun will strike its face throughout the day (minimum 8 hours).

2. Mount the panel using the curved pipe provided to maintain the proper angle to the sun.

3. For optimal efficiency, wipe the face of the panel frequently with a soft, damp cloth. The output of the Solar Panel is variable during the day depending on the intensity of the sun and the angle of the rays striking the panel. The output may vary from a few millivolts to as much as 44 volts. To check the output, simply disconnect the solar panel leads from the control board and connect them directly to a dc voltmeter. In bright sunlight the panel output should read at least 34 volts dc at approximately 300mA.

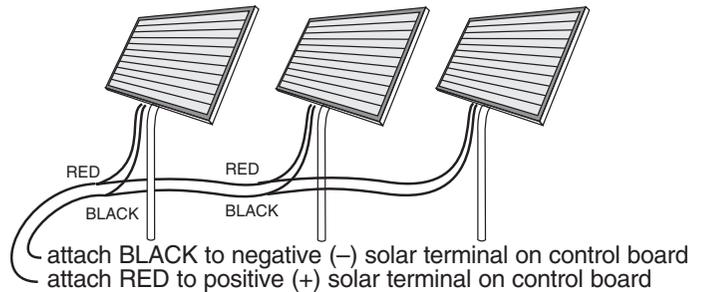


Multiple Panel Installations

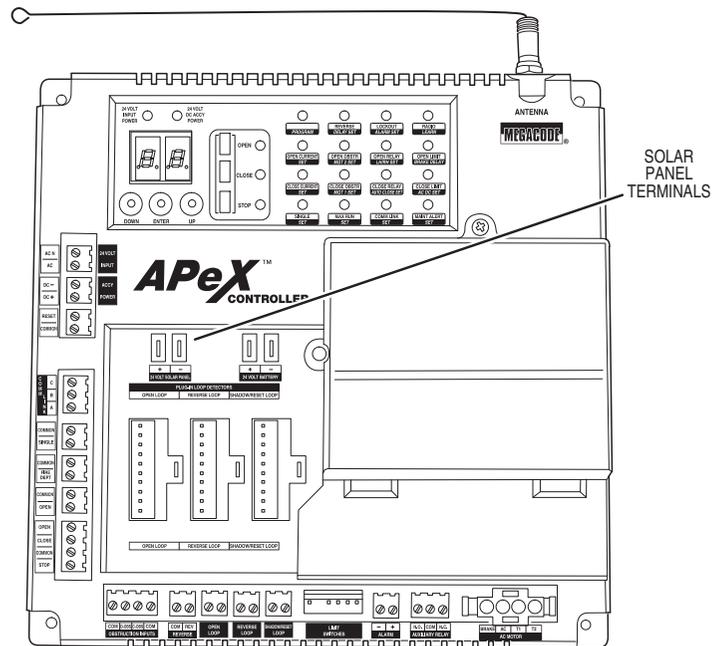
NOTE: All connections should be weather proofed using weather proof splice kits available at hardware and electrical supply stores.

Solar Panels connect in PARALLEL

Solar Panels connect in PARALLEL



Attach BLACK to negative (-) solar terminal on control board attach RED to positive (+) solar terminal on control board.



Solar Zones and Gate Activity

Use the table and map to determine the number of operational cycles* per day to expect in your area, using 10 to 30 Watts of charging power. Figures are shown for winter (minimum sunlight), on a maximum loaded gate and do not account for the use of any accessory items.

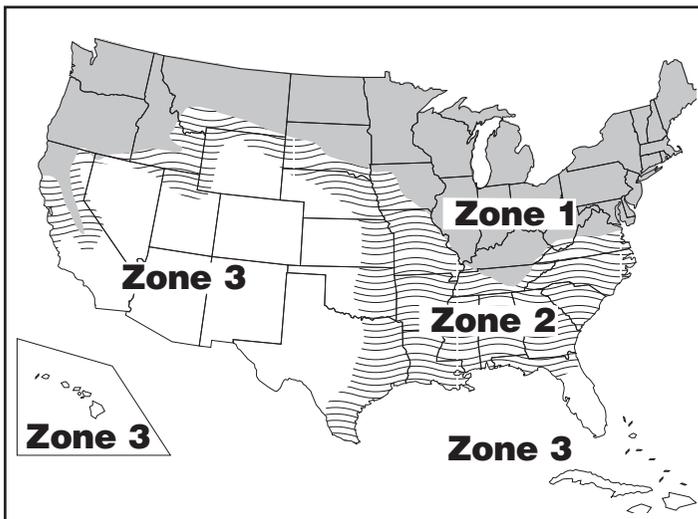
Accessories will draw additional power from the battery; the more accessories you connect, the more power your system will require.

*An operational cycle is one full opening and closing of the gate.

*Number of openings per day will depend on the length, weight, hardware and environmental conditions.

LRA Estimated Gate Cycles Per Day

	Zone 1	Zone 2	Zone 3
10W	8	25	35
20W	20	50	60+
30W	60	60+	60+



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