

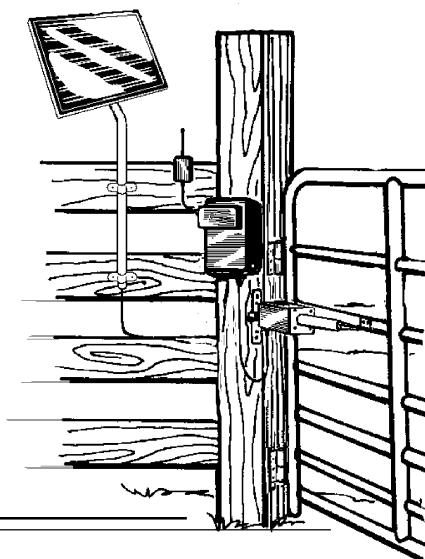


5 Watt (300 ma)

# Solar Panel

for GTO Automatic Gate Openers

# Installation Manual



NOTE: Maximum of 3 panels w/ Mighty Mule, GTO/PRO1000  
 Maximum of 4 panels w/ GTO/PRO1800  
 Maximum of 8 panels w/ GTO/PRO2000 and GTO/PRO SL-1000

**Parts Included:**

- A. Solar Panel
- B. #2 Lag Screws (4)
- C. Pipe Clamp (4)
- D. Curved Pipe
- E. 1/4" Nuts (4)
- F. 1/4" x 1" Bolt (4)

**Tools Required :**

- Flat blade screwdriver
- 7/16" open end wrench

### Limited Two Year Warranty

GTO, Inc., 5 watt solar panels are warranted by the manufacturer against defects in workmanship for a period of two (2) year from the date of purchase, provided recommended installation procedures have been followed.

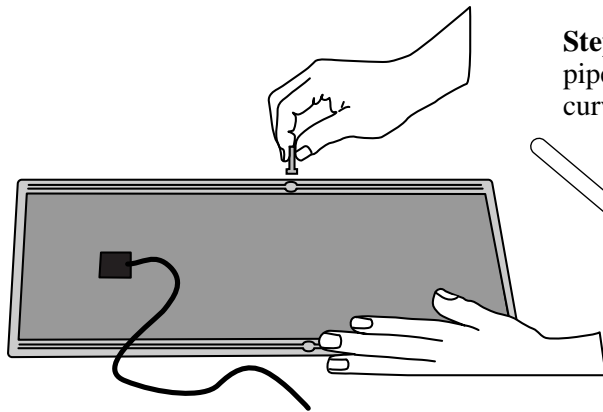
In the case of product failure due to defective material or manufacturer workmanship within the two (2) year warranty period, the accessory will be repaired or replaced (at the manufacturer's option) at no charge to the customer, if returned freight prepaid to GTO, Inc. 3121 Hartsfield Rd., Tallahassee, FL 32303. **IMPORTANT:** Call (850)575-0176 or fax (850)575-8912 for a Return Goods Authorization (RGA) number before returning accessory to factory. Products received at the factory without an RGA will not be accepted. Replacement or repaired parts are covered by this warranty for the remainder of the two (2) year warranty period. GTO, Inc. will pay the shipping charges for return to the owner of items repaired under warranty.

The manufacturer will not be responsible for any charges or damages incurred in the removal of the defective parts for repair, or for the reinstallation of those parts after repair. This warranty shall be considered void if damage to the product(s) was due to improper installation or use, connection to an improper power source, or if damage was caused by lightning, wind, fire, flood, insects, or other natural agent.

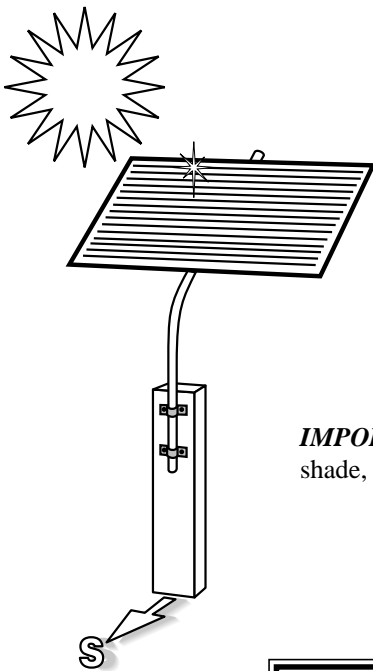
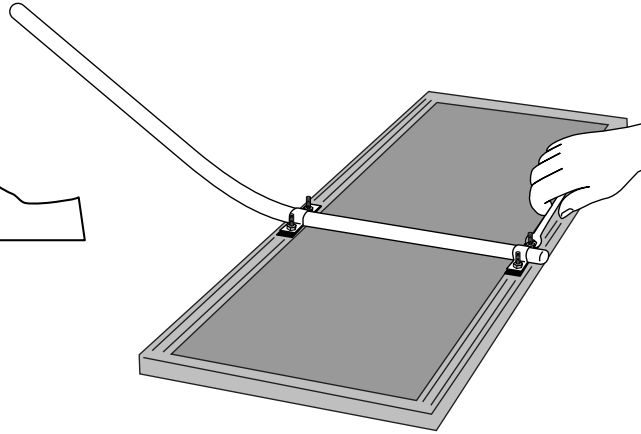
After the two (2) year warranty period, GTO, Inc. or one of its authorized service centers will make any necessary repairs for a nominal fee. Call GTO at (850)575-0176 for more information. This warranty gives you specific legal rights, and you may also have other rights which may vary from state to state. This warranty is in lieu of all other warranties, expressed or implied. NOTE: Verification of the warranty period requires copies of receipts or other proof of purchase. Please retain those records.

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# Solar Panel Installation



**Step 1:** Slide the 1/4" bolts (F) into each channel, position the pipe (D) between the bolts and place two clamps (C) over the curved pipe onto the bolts. 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 due south**. The curved pipe maintains the proper angle to the sun. Secure the solar panel assembly to wooden post or fence using two pipe clamps (C) and #2 lag screws (B) as shown in 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 south, in an open area away from shade, and should receive at least 8 hours direct sunlight for a full charge.

**HINT:** If the solar panel must be placed more than 8 ft. from the control box (but less than 250 feet away), use stranded, 16 gauge, direct burial, low-voltage wire (see Accessory Catalog). **Do not use telephone wire or any solid core wire.**

## HINTS for Obtaining Maximum Output from Your Solar Panel

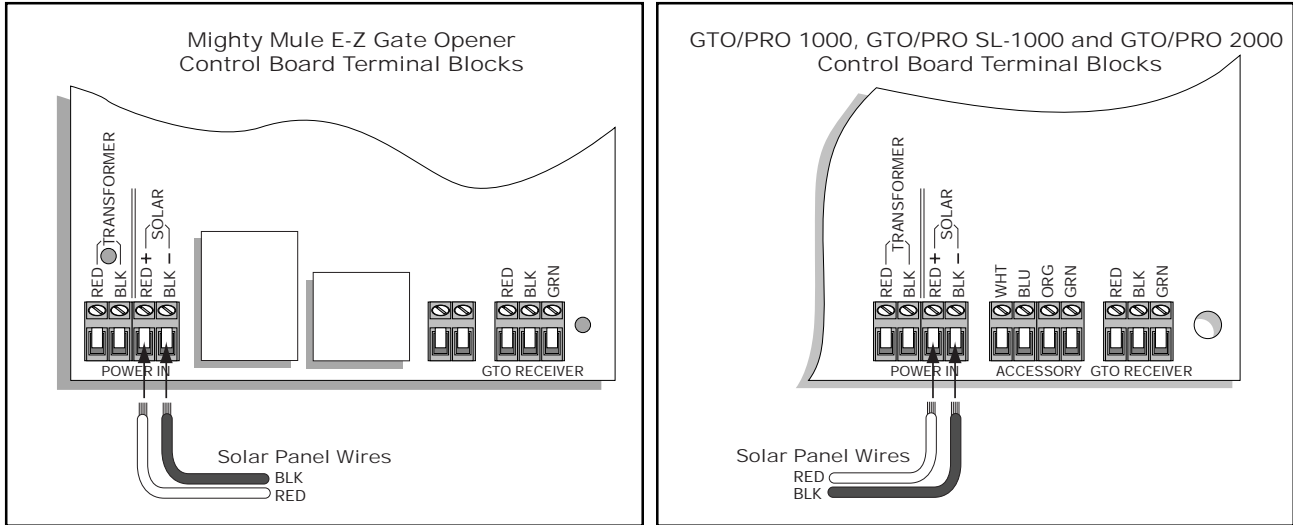
1. Place the panel facing south, where full sun will strike its face throughout the day (minimum 8 hours).
2. Mount the panel using the curved pipe provided to maintain the proper angle to the sun.
3. For optimal efficiency wipe the face of the panel frequently with a soft, damp cloth.

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 20 volts. To check the output simply disconnect the solar panel leads from the control board and connect directly to a D.C. voltmeter. In bright sunlight the panel output should read at least 18 volts D.C.

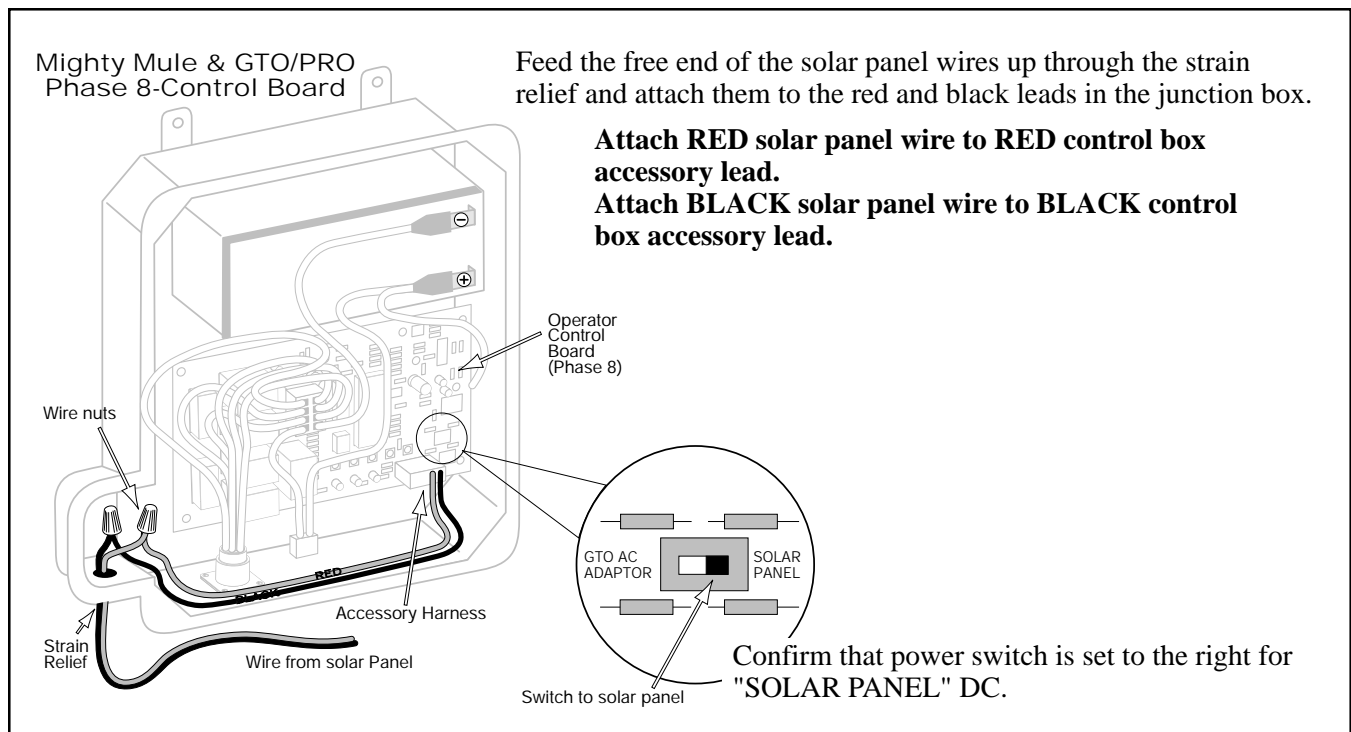
**Step 3:** Determine which operator and/or control board you have and follow instructions for wiring the solar panel. Connecting the Solar Panel to the **GTO/PRO 1000, GTO/PRO SL-1000, GTO/PRO 1800, GTO/PRO 2000** and the new **Mighty Mule Control Boards** – these control boards have green terminal blocks at the bottom of the board for connecting wires.

Feed the free end of the solar panel wires up through the strain relief on the control box and attach them to the "power in" terminal block marked **SOLAR**.

**Attach RED solar panel wire to terminal block marked SOLAR RED.**  
**Attach BLACK solar panel wire to terminal block marked SOLAR BLK.**



Connecting the Solar Panel to the **"Phase 8"** Control Board. These boards have a plug with accessory leads instead of terminal blocks.



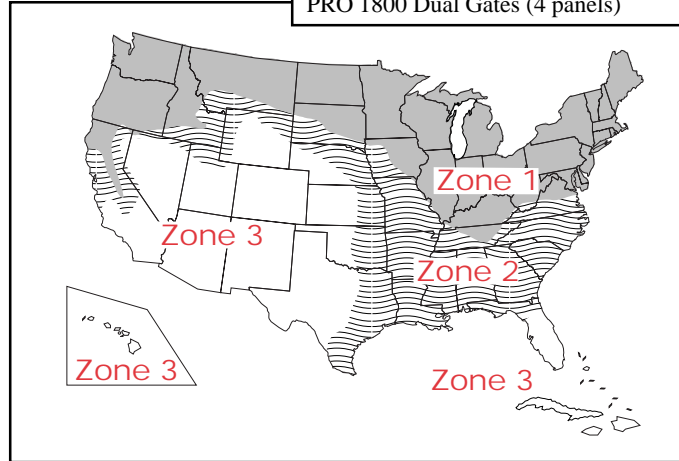
# Solar Zones and Gate Activity

Using the table and map, you can determine the number of gate open/close cycles per day to be expected in your area, using either one, two, three or four panels. Figures are shown for winter (minimum sunlight) and do not account for use of any accessory items.

Accessories will draw additional power from the battery; the more accessories you have, the more power they will require.

**Estimated Minimum Gate Openings Per Day**

Winter Ratings	Zone 1	Zone 2	Zone 3
PRO 1000; Mighty Mule (1 panel)	4	8	13
PRO 1000; Mighty Mule (2 panel )	11	19	29
PRO 1000; Mighty Mule (3 panels)	18	30	45
PRO 1200 Dual Gates (2 panels)	7	13	20
PRO 1200 Dual Gates (3 panels)	11	20	30
PRO 1800 Single Gate (2 panels)	7	13	20
PRO 1800 Single Gate (4 panels)	14	26	40
PRO 1800 Dual Gates (2 panels)	4	8	13
PRO 1800 Dual Gates (4 panels)	8	16	26



## Multiple Panel Installations

Mighty Mule, GTO/PRO 1000, GTO/PRO 2000 and GTO/PRO SL-1000 connect in parallel.

GTO/PRO 1800 connect panels in series; connect paired panels in parallel.

**NOTE: All connections should be weather proofed!**

