

## 2500 Audible Alarms

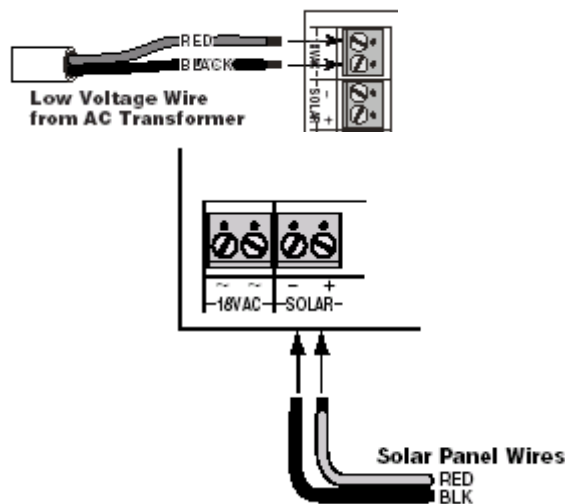
These are the Audible Alarm Indications for the Pro 2500, 3000, 4000 & M/M 500.

### Symptom

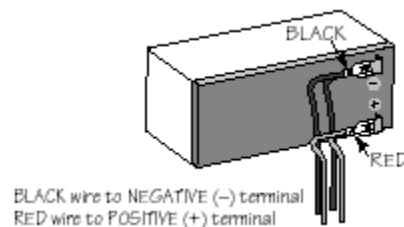
- 1) Gives one short beep and no operations when you press the remote.
- 2) Gives a three second tone, 1 second of silence, and then another three second tone repeatedly.
- 3) Gives a constant tone.

### Diagnosis

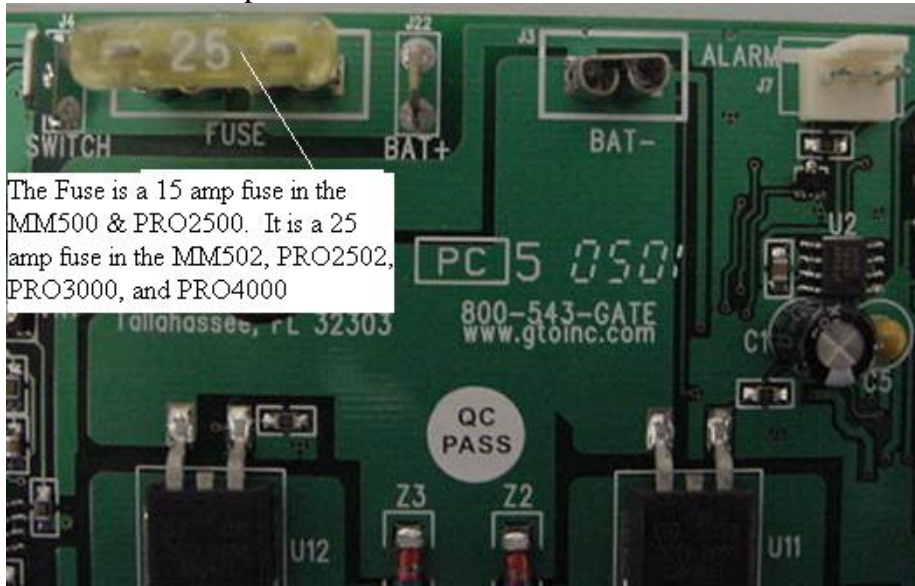
- 1) There is a power problem with the Mighty Mule 500/502, PRO 2500, PRO 3000/3200, 4000/4200.
  - The battery could have a dead cell in it.
  - The battery could be low. Disconnect the transformer or solar panel and check the battery voltage. If the battery is fully charged, the voltage should be between 12.5 vdc to 13.5 vdc. Any voltage reading below 12vdc is low.



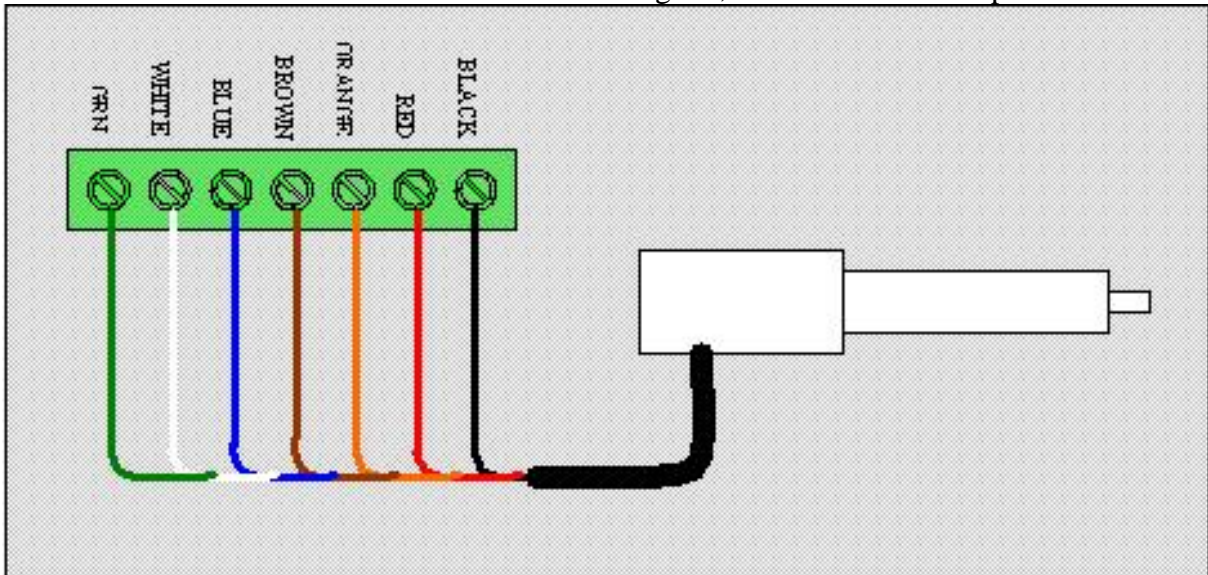
- The battery could be dead or disconnected at battery or board. The transformer or solar panel is powering the board with the charge voltage. Disconnect the transformer or solar panel to see if the board still powers up.



- The fuse is blown. Replace the fuse.

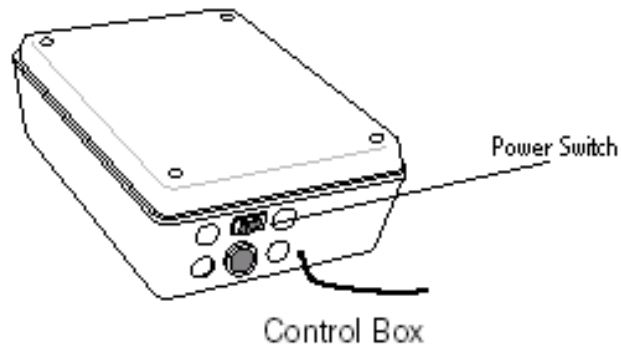


- 2) On the M/M500/502, PRO 2500, PRO 3000/3200, and PRO 4000/4200, the board is giving a limit switch error. Check the connections on the power cable. If this does not work, check the terminal voltages on the circuit board that is supplied to the limit switch. The voltage across the orange and green and the brown and green should be 5 vdc without the arm connected. If the board is good, the arm will need repair.

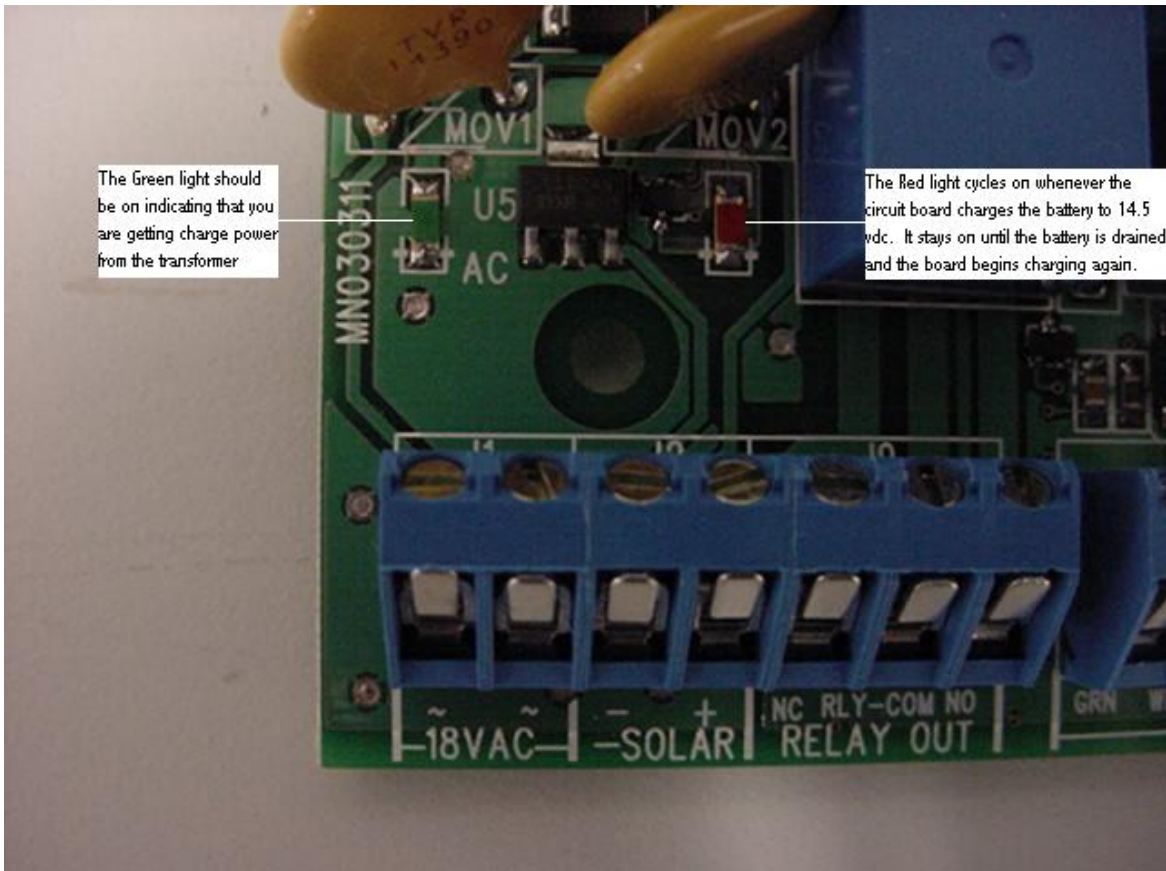


3) MM500/502, PRO 2500, PRO 3000/3200, and PRO 4000/4200

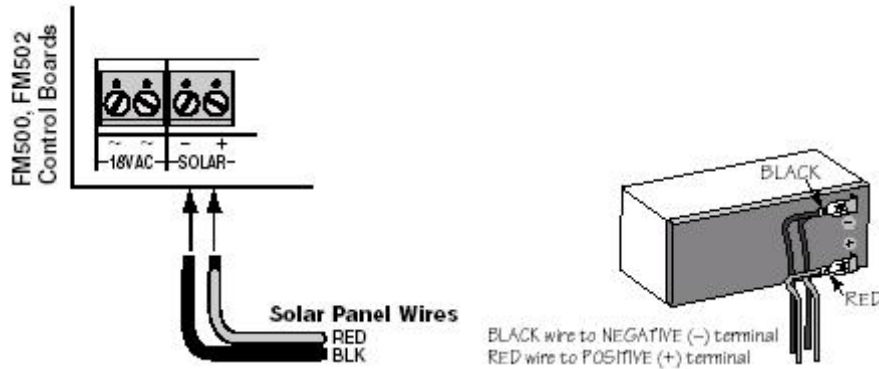
- The battery could be very low at about 10 vdc. Flip the power switch off and back on to see if it will clear the alarm.



If the alarm is not cleared, check to make sure that there is power at the outlet. There could be a tripped breaker or GFI. The transformer could be unplugged. The transformer could be blown. If there is no charge power from the transformer, the green light will be off.



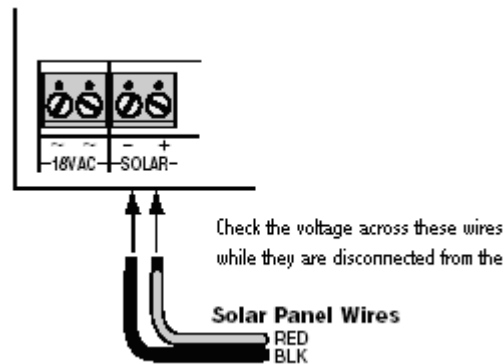
- The board has sensed an obstruction two times in a row. If the alarm clears by switching the power off and on, the board is sensing an obstruction.
  - o Something on or about the gate is causing the arm to push too hard to open or close the gate. Look for something in the path of the gate or something unlevel, out of plumb, or that is binding or pinching.
  - o This can be due to a low battery when the unit is charged with a solar panel. Test the charging circuit and the solar panel in direct sunlight.
    - ★ Disconnect the solar panel and check the voltage on the battery. You will need between 12.5 vdc and 13.5 vdc on the battery for the gate opener to function properly. 12 vdc or lower is too low.



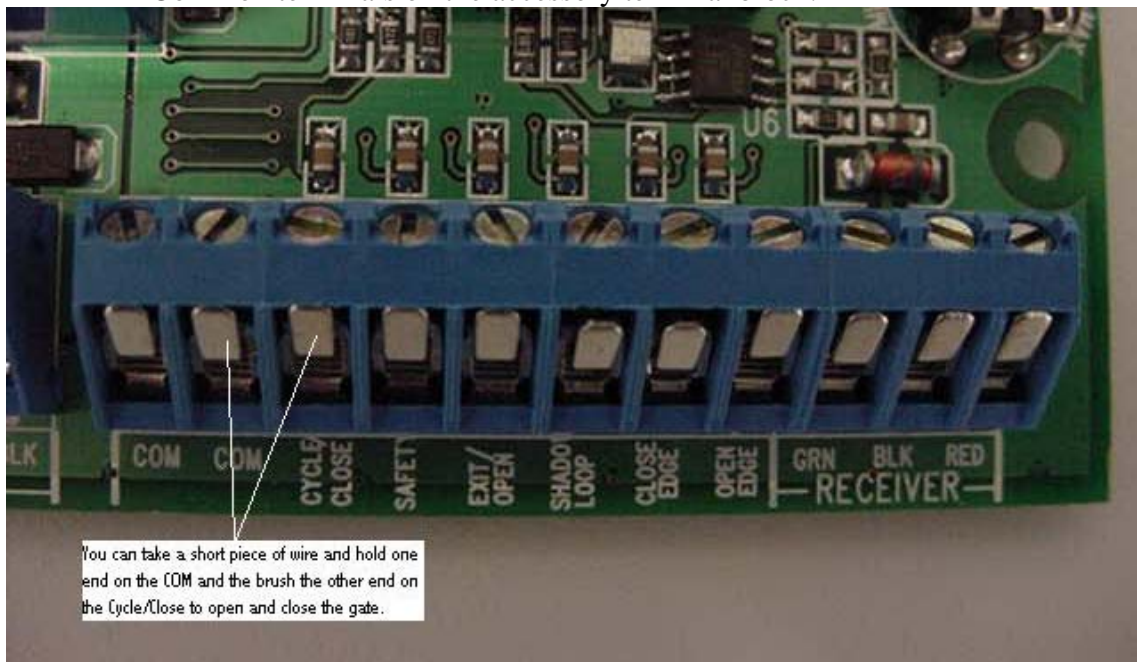
- ★ If the battery is low, you can charge the battery with a trickle charger on a setting of 12 volts dc and 2 amps or less for about three to four hours. Once the battery is charged, we can troubleshoot to find out what your problem is.
- ★ Check the connections of the battery leads. Make sure that there is no corrosion around the posts or the connections on the circuit board. Give the wires a pull test to ensure that they are making good connection. Especially check the black wire where it connects to the female connector on the circuit board. It is sometimes necessary to take a pair of needle nose pliers and crimp the female connector to tighten it up.



- ★ If the connections are good, test your solar panel.
- ★ Make sure that the solar panel is pointing due south. This way, the solar panel will be exposed to the maximum amount of sun throughout the day.
- ★ Make sure that there are no trees, bushes, etc. that are shading out the solar panel for any part of the day.
- ★ Make sure that you are testing the solar panel in the middle part of the day between the hours of 10:00am and 2:00pm when the sun is the most intense.
- ★ Make sure that you are testing the solar panel in direct sunlight. The solar panel will not give you a full output if it is cloudy or hazy. You actually have to see the sun in the sky.
- ★ With the wires from the solar panel disconnected from the circuit board, measure directly across the wires.



- ★ The output of the solar panel should be 18 to 22 vdc and 300 mada.
- ★ If the solar panel is good, we need to load test the battery. With the solar panel disconnected from the circuit board, the voltage across the battery should be about 12.5 to 13.5 vdc. If the voltage is more than 12vdc, try to activate the opener with your transmitter or by shorting the Cycle/Close and Common terminals on the accessory terminal block.



- ★ The voltage should not drop more than 1 vdc. For instance, if the battery is charged to 13 vdc, the voltage should not drop more than 12 vdc. If the voltage does drop more than 1vdc, then you have a dead or weak cell in the battery and it needs to be replaced.
- ★ If the solar panel is good and the battery is good, check the charging circuit with the battery and solar panel connected to the board. Do a draw on the battery by activating the unit. You should see the charging circuit slowly charge the battery toward 14 to 15 vdc.
- o If the alarm will clear by switching the power off and on, the board is sensing an obstruction. Disconnect the arm from the gate. If it is still obstructing, increase the Stall Force. Max it out if you have to. However, do not leave the Stall Force at this setting when connected to the gate.

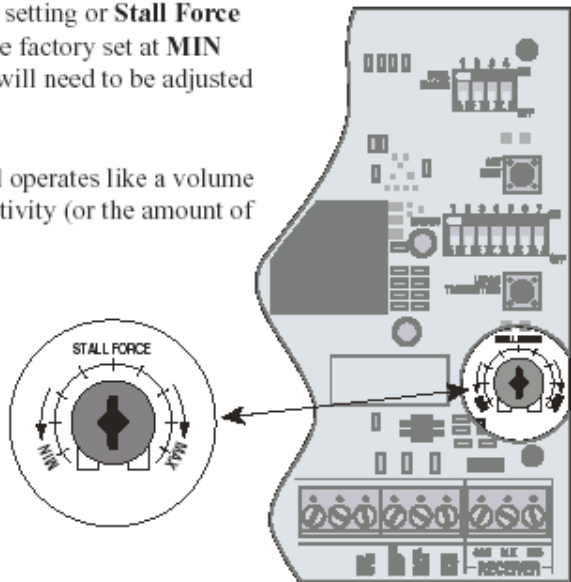
## **Obstruction Sensitivity Potentiometer**

**IMPORTANT:** For safety reasons the obstruction setting or **Stall Force** on the Mighty Mule® control board comes from the factory set at **MIN** (minimum). In many gate installations this setting will need to be adjusted to overcome the weight and size of the gates.

The **Stall Force** potentiometer on the control board operates like a volume control on a radio. It controls the obstruction sensitivity (or the amount of force the opener will apply to an obstruction) before it automatically stops and reverses direction for approximately two (2) seconds.

Use a small slotted screwdriver to turn the arrow in the center of the potentiometer. Adjust the sensitivity from the **MINIMUM** position where the gate operates without obstructing from its own weight or the wind conditions in your area.

**NOTE:** You may need to increase the stall force in cold weather due to increased resistance from gate hinges.



**ALWAYS KEEP SAFETY AT THE TOP OF YOUR LIST WHEN ADJUSTING OR  
SERVICING YOUR AUTOMATIC GATE OPENER!**

If the arm is in the middle of its cycle, it extends a couple of inches, retracts a couple of inches, and the tube does not hit the limit switch when retracted, the rev counter in the arm is bad.