Patriot Troubleshooting

Red Board

PN – 500018

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1. **When Pressing the LED indicator D5, D12 and D14 are ON**:

   D12 - battery status indicator – On indicates battery is Good.

   D5 – Monitored contact edge #1 – This LED monitors for the presence of a contact edge with either 8.25k or 10k resistor installed. If not present the LED will be ON. If installed LED should be OFF.

   D14 - Monitored contact edge #2 – This LED monitors for the presence of a contact edge with either 8.25k or 10k resistor installed. If not present the LED will be ON. If installed LED should be OFF.

2. **Secondary Entrapment Siren Beeps 3 times pauses 5 seconds repeats:**

   This indicates the battery voltage has fallen below 10.5 vdc during operation. Press the LED indicator and observe the D12 LED it should be flashing indicating the battery needs to be load tested and charging system checked for proper operation.

3. **S 5 when pressed and held operates the gate, but Open/Close command does not:**

   The S 5 push button requires constant pressure for gate operation. This button bypasses the entrapment protection requirement as you are the safety device. Releasing the button will stop gate. Verify the entrapment device installed is working properly.

4. **Gate will not operate :**

   Press and hold the LED indicator push button. Look at the battery status LED located to the right of the LED push button. If light is OFF battery has failed remove battery and have it load tested.

5. **Gate will not operate and battery status (step 4) is Good:**

   Press the S 5 button and hold. If gate operates a monitored entrapment device is not working or improperly setup.
   Identify the entrapment device installed (there could be more than 1) and verify it is operating correctly.
   If no contact edges are installed verify that all contact edge dipswitches are turned OFF.
   DS1 switch 6 and DS2 switch 4 must be OFF.
   If no photo eyes are installed verify that all photo eye dipswitches are turned OFF.
   DS1 switch 7 and switch 8 must be OFF.
   *You must have one of the 2 types of entrapment devices listed above for the gate to operate normally. You must have the correct dipswitches turned ON for the device connected.

6. **Gate opens using transmitter, but will not close using transmitter:**

   (LCR receiver only)
   a. The problem is most likely the programming of the LCR receiver (transmitter button is programmed to the P2 channel).
   b. On the Patriot control board locate the “LED Indicator” pushbutton. Press and hold.
   c. Look in the lower left corner of the control board at the LED’s.
   d. Press the transmitter button and observe which LED comes ON.
   e. If the “Free Exit/Open Input” LED comes ON then the transmitter button is programmed to P2.
   f. Erase transmitter button from P2 channel.
   g. Program transmitter button to the P1 channel.
   h. If problem is not corrected, call the factory for further troubleshooting.

7. **Wiring harness 20 amp fuse blows when harness is connected to the battery:**

   a. Possible short in the wiring harness.

8. **Gate begins to open or close but stops and reverses after a couple of seconds:**

   a. Remove control box cover and locate the Patriot control board. Locate the sensitivity adjustment (see page 39) potentiometer located on the control board. The white center is adjustable and needs to be turned in a clockwise direction to increase force.
   b. Normally a setting of 5 will operate most gates; if your gate requires a setting above 8 there is a good chance that your gate has a problem, which needs to be corrected. Possible causes are incorrect hinges, gate touching the ground; gate not level or the actuator arm connected to the gate is bent. Identify and correct problem.

9. **My gate will not automatically close:**

   NOTE: If DS1 switch 1 is on and switch 2 is off then the gate should automatically close from any position. If switch 2 is also on the gate will only automatically close if the "Retract Limit" LED (both "open limit" LED's for dual gate) is on.

   a. Locate the "Open/Close Command ", push button. Press the button to verify that the gate will close. If gate closes correctly then proceed to the steps below.
   b. Verify that DS1 switch 1 is on. If not, turn it on and recheck gate operation. If gate remains open, continue with step c.
   c. If your installation is a single gate, then only DS1 switch 3 or 4 can be on. If both are on the gate will not automatically close. Turn off the one that is not being used and recheck gate operation.
   d. Locate the "LED Indicator" push button and depress and hold. While pushing the button observe the LED indicators located just below the Gate 1, Gate 2 (X1, X2) actuator plugs. Note which LED's are on. Read note below.

   NOTE: The two LED's located below the Gate 1, Gate 2 actuator plug, when on, represent the closure of the limit switch. If the left LED is on, then the gate should be in the retracted position. If the LED on the right is on, then the gate should be in the extended position. If the LED for the retract position is not on when the actuator is fully retracted, then the auto close will not work. The limit switches need to be adjusted.

   e. Locate the "LED Indicator" push button and depress and hold. While pushing the button inspect the LED indicators located on the control board (lower left corner) and note which LED's are on. If any LED's are on disconnect the green J2 connector from the control board. Press the "Open/Close Command "push button to close the gate. Press the button again to open the gate fully and verify the automatic close is working.

f. If gate automatically closes correctly, then the accessory connected to the J2 connector that is activated (LED is on) needs to be repaired.
g. Verify entrapment devices are connected and working properly.

10. Single Gate opens or closes, then immediately reverses direction:

Note: Verify that the gates are not crossing the path of the photo eye.

a. This is most likely caused by an incorrect limit switch adjustment. The limit switch adjustments are located on the bottom of the actuator motor housing, behind the removable rubber plug. Locate the limit switch adjustment screws and determine which one needs to be adjusted (see page 32). Operate the gate. Once it reaches the desired retract or extend position, stop the gate in that position using the transmitter or "Open/Close Command" push button located on the Patriot control board.
b. Locate the "LED Indicator" push button located on the left side of the Patriot control board. Also locate the retract and extend LED indicators below the actuator plug on the Patriot control board. The left LED represents the retract position and the right LED represents the extend position.
c. With the gate in the desired open or close position, press and hold the "LED Indicator." Observe which of the LED lights come on. If your actuator is in the desired retracted position, then the LED on the left should be on. If not adjust the retract limit switch (see page 32, until the LED comes on. If actuator was in the extend position adjust the extend limit switch until the close LED comes on.
d. Once adjusted correctly the retract limit LED should be on when the actuator is retracted and the extend limit LED should be on when the actuator is extended.
e. If the LED's will not come on contact the factory.

11. Dual Gate opens or closes then immediately reverses direction:

Note: Verify that the gates are not crossing the path of the photo eye.

a. This is most likely caused by an incorrect limit switch adjustment. First determine which gate is in need of adjustment.
b. Locate the DS1 switches on the Patriot control board. Switch 3 and 4 should be turned on for a dual gate, turn off switch 4. This will disable one gate.
c. Operate the gate and verify that it stops in the correct position. If so then turn switch 4 back on and turn switch 3 off. Operate the other gate now and verify that it stops in the correct position. One or both may not stop in the correct position.
d. Once the gate that needs adjustment is identified (possibly both) refer to problem 10 above steps b through e for instructions.

12. Gate only operates when the "LED INDICATOR" is pressed:

a. An accessory wiring problem, gate 2 cable spices are wet or a bad control board can cause this, this problem can be intermittent and possibly take a little patience in locating the problem.

b. Using a DC volt meter take voltage readings on the following connector pins. DO NOT disconnect the J2 plug or actuator cable or cables from the control board when taking these readings.

Note: Readings are DC voltage and must be taken for the open and close position.

	J2 green accessory plug						X1 gate 1		X2 gate 2	
	3	5	6	9	10	11	orange	white	orange	white
Open										
close										

c. Gate 1 (X1) and Gate 2 (X2) actuator connectors - the bottom left and right pins must be measured. Place meter lead in back side of connector where the orange and white wires are located. If no actuator cable is connected then the reading will be on the 2 pins located in the bottom left and right corner of the connector.

d. Good readings are 5 Vdc or 0 Vdc. Any readings different than this need to be corrected.

e. Identify the pins with incorrect readings to determine which device or input is bad.

13. Gate Fully Open and Close Stop Positions are changing (not consistent):

NOTE: Verify that the open and close positions are both changing randomly, before following these steps.

a. Remove the five 5/16 bolts from the back of the actuator to expose the limit assembly.
b. Loosen the 4 screws that hold the limit assembly in place (Yellow circles).
c. Gently push the limit assembly over reducing the spacing between the small white gear and the blue gear (see below).
d. While holding the limit assembly in place tighten the 4 screws.
e. Reinstall the rear housing and adjust retract and extend limits to desired stop positions.