

Adjusting Contrast on Rev. B7 007 Matryx Display

Introduction

Some of the new version 007 Matryx displays have shown poor readability when exposed to heat, such as found when sunlight shines into the display housing. It will be necessary to adjust the contrast on these units to improve readability.

Assemblies Affected

All 007 Matryx displays of revision level B7 may be susceptible to this problem. The B7 version can be easily distinguished by the black and white LCD and red backlight. Older versions use a green LCD and backlight, and are not affected.

Symptoms

The affected units will have poor contrast and readability in warm weather. The display typically has several darker bars or bands across the LCD, and the text appears to bleed into the surrounding blank screen.

Materials

- ❑ LGS (Ockam's little green screwdriver) or similar
- ❑ 3/32" hex driver or Allen wrench
- ❑ 9 VDC power for Ockam displays (Ockam bus connection or 9 VDC on a service pigtail)

Procedure

1. Remove the problem display from its mounting on the boat. Disconnect the display from the bus cable and any button wire connections.
2. Place the unit face down on a flat surface. You may want to protect the bezel and glass from scratches by placing the unit on a towel or other thin pad. Remove the 14 hex screws around the edge of the bezel. The bezel and glass can now be removed from the back shell. Place the screws, bezel, glass, and gaskets aside in a safe place.
3. Turn over the unit. Remove the four hex screws and washers at the inside corners of the back shell and put them aside in a safe place. Be sure not to lose the washers. Pull the electronics assembly from inside the shell, leaving the wires connected.
4. Turn over the electronics assembly. The contrast adjustment is found next to the yellow/black/blue wire connection. It is a blue trim potentiometer approximately 3/8" x 1/4". Being careful to handle the electronics assembly only by the edges, connect the display to the 9 VDC supply. You may use a service pigtail connected to 9 VDC, but a connection to the Ockam bus (on the display back shell) is probably easiest.
5. With the display running, turn the contrast adjustment clockwise to decrease contrast. The LCD may have cooled off enough so that the "bleeding" is not observable, so it may not be possible to verify the actual appearance at temperature. A good rule of thumb for adjusting the contrast is to reduce contrast until the blank pixels are no longer visible. The on-screen text may appear slightly faded at this point, but everything will get darker with temperature. Disconnect the power once the adjustment is complete.

6. Place the electronics assembly back in the shell, being careful not pinch the wires inside between the shell and electronics. Re-insert the four shorter hex screws (with washers) in the four inside corners; the screws may make squeaking noises as they are tightened. Be sure that the screws are in all the way, as it is easy to leave them out a bit due to the resistance encountered while tightening.
7. Make sure that the gasket is seated in the channel around the edge of the shell. Place the glass on top of the shell, and then place the bezel on top of that. Make sure that both the shell gasket and bezel gasket are seated properly and are not pinched. Hold the pieces together and turn the unit over. Place the unit face-down on a flat surface as before. Re-insert the 14 screws around the edge of the bezel. Tighten them in a cross-pattern as you would when changing a car tire.
8. Connect the display to the Ockam bus, and verify that it is operating correctly. Also inspect the attachment of the bezel to the case to be sure that it is tight and the gaskets are seated correctly.
9. Re-install the display in the boat and reconnect the bus cable and any external button wires. It may be necessary to repeat this procedure at a later time if the contrast was not sufficiently adjusted.

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