
TROUBLESHOOTING THE EMS770 OPACITY MONITOR

Please fill in the following and fax to 203.634.6663 or email to: service@emsct.com.

Company name _____

Your name _____ ph. _____ Email _____

Note: It is assumed that the person conducting the testing below is familiar with the EM770 operation and typical electronic instruments used for the procedures. If you are not familiar with the EMS770 system, please read the operation manual prior to filling out this form.

Equipment Needed:

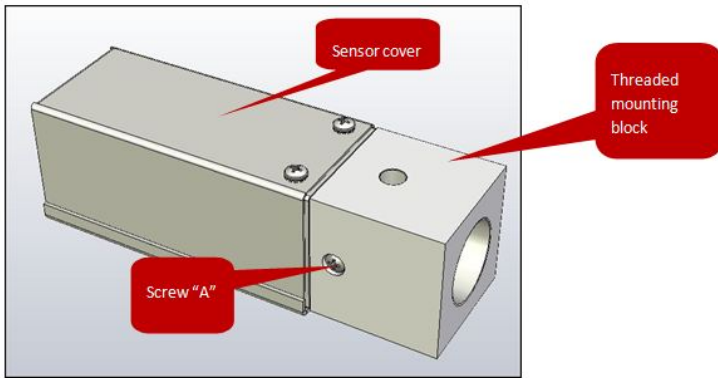
1. What is the controller Opacity displaying now? _____ %
2. Press "ESC" button twice to enter the "About Page" and record; S/N _____, Date Manufactured _____, Flange to Flange _____.
3. Return to the Main page by pressing "ESC" button once, select "Main Display" using up/down arrow keys and press enter key .
4. Measure the input current to the controller placing a good meter such as fluke that can measure 0-20mA current. Remove the wire on terminal I6 of the controller and place the positive lead on the terminal and the negative lead to the wire. Make sure the 402 ohm resistor is still connected to 0V and I6. Record the mA reading _____, record the opacity reading _____. Remove the meter and replace the I6 wire.

Environmental Monitor Service, Inc.
P.O. Box 4340 Yalesville, CT 06491
Ph. 203.935.0102 Email: service@emsct.com

5. Measure the 4-20 mA output from the controller by removing a wire of the A0, place negative test lead on the 0V and positive test lead on A0. Record the mA reading _____, record the opacity reading _____. Remove the meter and replace the A0 wire.

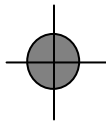
6. Go to the sensor location. Make sure you have a good meter such as a fluke that can measure both DC Volts & 0-20mA current.

7. Loosen the set screws on the light source and detector mounting blocks and remove sensors. Measure the distance from the surface of light source mounting block to the detector mounting block. Record here _____.



8. Is there smoke or any obstruction in the measurement path? Yes____ No____ If "Yes", a clear path must be obtained.

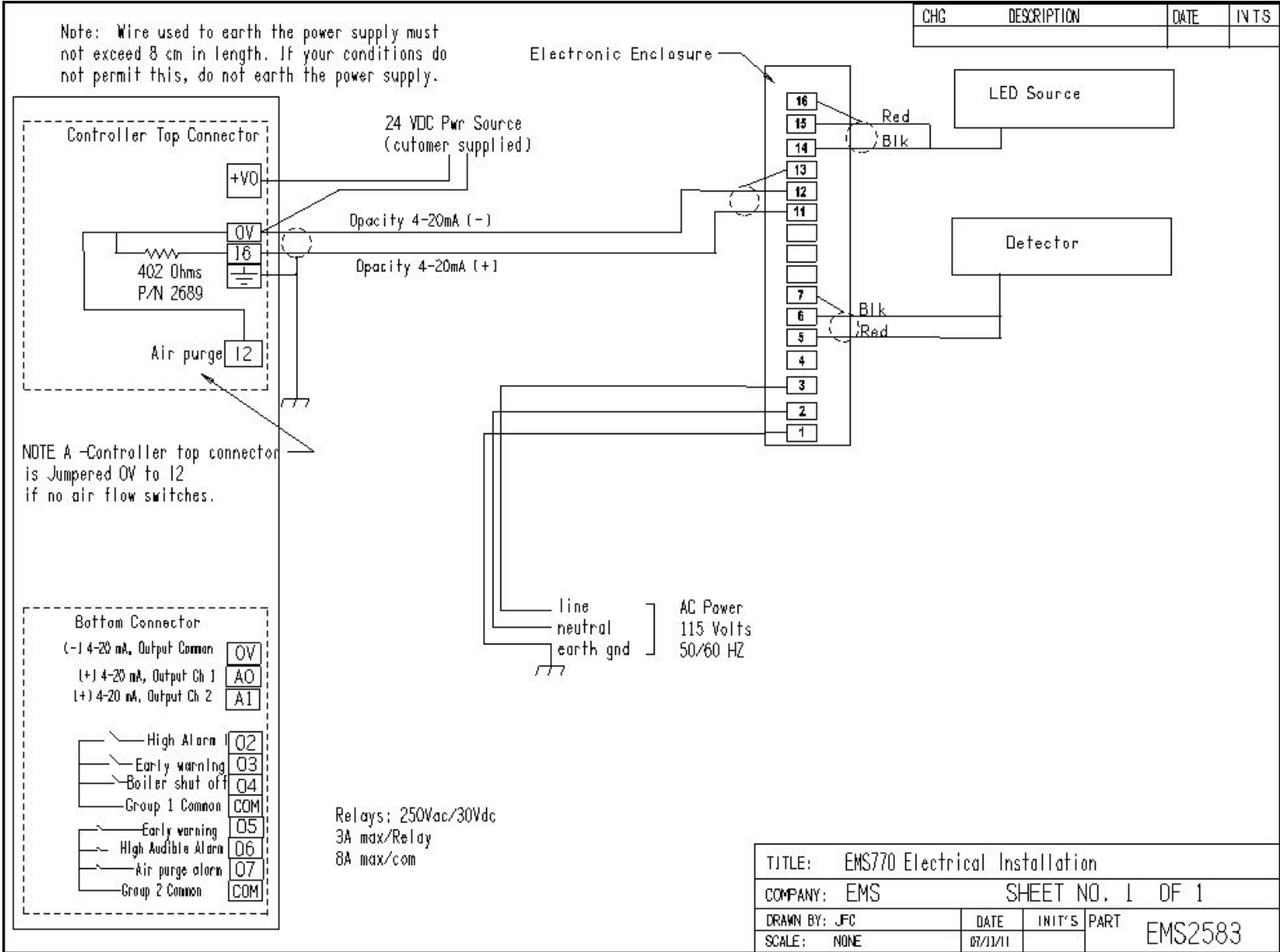
9. Install the light source ONLY (clean lens); check the alignment by looking through the detector mounting block at the light source. The Light Source should be centered in the opening of the Detector block as shown below. Align it, if needed.



10. Check that the light is modulating (flickering). Is it modulating? Yes____
No_____.
11. Install the Detector (clean lens).
12. Refer to EMS drawing 2894, the Signal Processor PCB 2582, put the DVM negative lead on TP0, measure and record the lamp drive voltage at TP4 (Red) _____Vdc. This voltage should correspond with the voltage written on your monitors final test form. . Measure the DC voltages at TP1 (+15Vdc)_____ TP2 (-15Vdc) _____ TP7 (-10Vdc)_____. If your DVM is equipped with measuring frequency and duty cycle, check it at TP3. Record the frequency _____Hz. Record the Duty cycle (20.0%)_____.
13. Make sure that the Operate/Span Switch on the PC Board is in Span (up).
14. With the negative lead of your meter on TP0 and the positive lead on TP6 record the voltage reading (0.0) _____Vdc. Measure TP8 (5.0) _____Vdc.
15. Make sure that the Operate/Span Switch on the PC Board is now in Operate (down).
16. With the negative lead of your meter on TP0 and the positive lead on TP6 record the voltage reading (5.0) _____Vdc. Measure TP8 (0.0) _____Vdc.

17. If voltage is used as the output, check readings on terminal strip 8(-) and 9(+). Make sure that the Operate/Span Switch on the PC Board is in Span (up) measure across terminals 8 and nine(5.0) ____Vdc. Move Operate /Span (down) to Operate. Measure across terminals 8 and nine(0.0) _____Vdc

18. Check 4-20 current output across terminals 11 and 12 (if a recording device and/or control unit is connected to terminals be sure to put meter in series) make sure the Operate/Span switch is in span (up position) (20.0ma) _____. Switch the Operate/Span switch to the down position (operate) (4.0ma) _____.



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