

MODEL FT2A FLOW METER TROUBLESHOOTING GUIDE

This document has been created to assist Fox Thermal’s technical service staff to resolve flow meter problems. Your assistance to provide complete details is appreciated. At times, you may need to refer to the FT2A Instruction Manual. A link to the Fox Thermal model FT2A Instruction Manual is located on the “Downloads” tab of the FT2A product webpage or you can use the direct link below:

<https://www.foxthermal.com/products/pdf/ft2a/ft2a-manual.pdf>

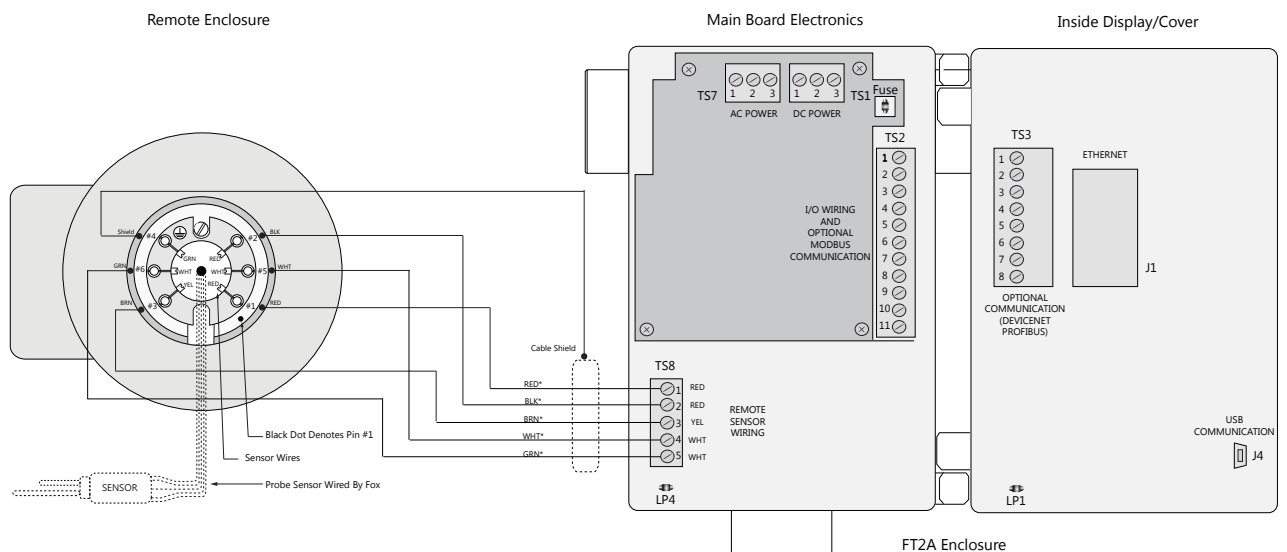
Section A: General information:

1. What is the serial number and model number of the flow meter?
2. Please describe the problems in detail.
3. Approximately when did the problem start? Did the flow meter ever work properly or has the problem existed since the initial installation?

Section B: Troubleshooting:

1. Please provide all alarm codes shown on the display #3 of the meter. You can also read the alarms using a laptop and Fox’s FT2A View™ software. Refer to FT2A Instruction Manual for a full list of alarm codes.

Figure B.1: FT2A Wiring Access and Location of Fuse, USB, and LED Indicators



2. If the sensor is remote from the electronics please advise the length and gauge of the wire/cable connecting the sensor junction box to the electronics housing.
3. The serial number on the electronics housing must match the serial number on the probe/sensor assembly. It is a common mistake to mix the serial numbers when multiple meters with remote electronics are ordered. Please confirm the probe serial number is the same as on the electronics housing.
4. If the sensor is remote carefully check for proper wire terminations at the sensor junction box and at the electronics housing (please refer to the flow meter Instruction Manual).



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5. What is the measured input power to the flow meter? Refer to FT2A Instruction Manual for input power requirements.
6. Test/Check fuses and LED status lights for FT2A.
 - With the power off, take a resistance measurement across the fuse to ensure it measures less than 1 ohm.
 - Is the LP4 LED on the main board emitting a steady orange light?
 - Is the green LP1 LED on the inside of the display board blinking once per second?
4. Have any of the flow meter settings been changed since you received the meter from Fox Thermal?
5. If advised by a Fox technical representative please confirm the following sensor resistances are correct. Turn off power to meter and disconnect sensor wires from TS 8 (the sensor termination terminal strip located at the bottom of FT2A main board) before taking measurements.
 - Sensor wiring: White to White wires= 200 to 225 ohms, Red to Red = .1 ohms, Red to Yellow = 9 to 10 ohms.

Section C: Investigating flow meter inaccuracy:

1. How high or low is the flow meter reading and at what flow rate? Please provide specific data.
2. Confirm that the 4mA and 20mA scaling in the PLC or DCS matches the scaling in the flow meter's settings. If you are using the 4-20mA output also confirm that the measurement unit (SCFM, KG/HR, NM3H, etc.) in the Fox meter is the same as in your PLC/DCS.
3. Did the meter ever read accurately or do you believe it has measured incorrectly since it was installed?
4. Is the gas you are measuring the same as is shown on the flow meter calibration certificate? If not, what gas are you currently measuring?
5. Has there been any change in meter location or pipe configuration?
6. Is the insertion depth setting in accordance with Fox Thermal installation instructions? Refer to FT2A Instruction Manual for insertion depth.
7. What is the inside diameter (ID) of the pipe? Is the actual pipe ID the same as listed on the flow meter's Calibration Certificate? Is the area setting programmed into the flow meter correct?
8. Compare the STP (Standard Temperature and Pressure) settings (values and units) in the meter with the information recorded on the calibration certificate. Do the settings match? This is a requirement for accurate measurement.
9. How much straight pipe is upstream and downstream of the flow meter? Fox recommends a minimum of 15 diameters of straight pipe upstream of the flow meter and 10 diameters downstream. Refer to FT2A Instruction Manual for upstream and downstream conditions for insertion and flowbody types.
10. Is the arrow on the flow meter probe pointing in the direction of flow? If your meter is an inline-type, is the flow body or spool piece installed with the flow conditioner on the upstream side of the sensor? Refer to the FT2A Instruction Manual for information regarding the direction of flow.
11. What is the CSV voltage? Please refer to the flow meter Instruction Manual.

For assistance contact the Fox Thermal Service Department:

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