

HOW EMI CAN AFFECT YOUR HOTWIRE ANEMOMETRY SYSTEM

FREQUENTLY ASKED QUESTION #4

Question:

I have a 2-channel TSI hot wire system with IFA signal processor that is only a few months old. The system worked fine during installation, but then the system began to act strangely.

1. ThermalPro suddenly will not recognize the IFA.
2. Often get the error message "ADC values under range."
3. The problems do not happen at the same point - so it is probably NOT a software problem. For example, sometimes the first point of calibration itself shows this problem, other times it may be the last point of calibration. This problem also crops up during data collection.
4. We have tried different gains and offsets for the channels - but the problem remains.
5. The problem is on BOTH the channels. We have changed the channel on the data acquisition card also, to no avail.
6. The problem seems to have gotten worse with time. Just after installation, the problem would crop up only once in a while - that too on channel 1. At that time channel 2 was ok. Now we CANNOT MEASURE EVEN A SINGLE POINT on either channel.
7. Currently, the software is not even recognizing the IFA. Note this problem happened while doing the measurements. That is to begin with, there was no communication problem between the software and hardware. Then, even when we did not do anything, it stopped communicating!

How can I get the system working?

Answer:

This appears to be an electrical noise issue in your lab. Devices like fans, blowers, variable speed drives, electromagnetic solenoids, high-voltage strobes are known sources of EMI in a lab. Good grounding, surge protectors, and UPS are good ways to reduce EMI. Another good way is to move the offending equipment away from the PC and IFA.

Follow-up:

We found that a variable speed blower being used in our laboratory, was causing all these problems. We are all amazed that this variable-speed fan can cause so much interference. In fact, it was even affecting other PC equipment before and we did not realize it.





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