

Best Hardware Questions of 2013

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The current and/or temperature of Pump “X” has recently increased. I think it may fail soon, is there something I can do?

- One may be able to exchange the pump before it actually fails. Hopefully you have been recording pump data before and after the current/temp change. Having the data showing the changes of the pump characteristics makes it easier to prove to Agilent that an exchange is necessary.

A pump failed on my AMS, what is the best way to store the instrument until I can obtain an exchange pump?

- This depends. In general the lower the pressure in the chamber the better.
 - If the pump failed with the inlet valve open, and the system vented to atmosphere, then close the valve and let the diaphragm pump evacuate the chamber.
 - If the pump failed, but there is still high vacuum in the chamber, it may be better to leave all valves closed to conserve the vacuum as much as possible. (Assuming an exchange pump can be obtained quickly.)

I am bringing my AMS to a location where I expect frequent power outages, what can I do to protect the AMS?

- Make sure that all interlocks are functioning as they should. See interlock troubleshooting power point.

http://cires.colorado.edu/jimenez-group/ToFAMSResources/Hardware/AMS_Interlock.pdf

- Use a UPS.
- Consider automatic inlet option?

I Lost my PToF signal, what can I do to fix?

- PToF Issues are usually chopper related. The first thing to check is that the chopper is a clean square wave, and that it is set to a reasonable frequency. If that is not the case, follow the chopper calibration procedure.

[Chopper Frequency Calibration.ppt](#)

- If the chopper is okay, the problem may be that the NI-6024e card is “hung up” and needs to be reset. Don’t just simply restart the computer, but shut it down, and unplug for several seconds.

I replaced a filament, it turns on, but no emission current is measured. Why?

- No two filaments are alike, and the new filament will need a different Filament current to obtain the same emission current. Try increasing Fil Current. (Do not exceed 3.70 A).

I replaced a filament, and I have a mass spectrum, but it is weak. Why?

- Again, no two filaments are alike. You should expect to have to retune the ToF voltages every time you change a filament.

My AMS is become more sensitive to cell phone noise recently, what could have changed, and what can I do to fix the issue?

- Don't use a cell phone near the AMS.
- See “ToFwerk Handy Guide v3b” Rohner, 2009.

[TOFWERK-Handy-Guide-V3b.pdf](#)



I plan to deploy my AMS close to a cell phone tower, will this be an issue, and what can I do to prevent issues?

- Cell tower can potentially be an issue. Depends on exactly where the tower is located with respect to the AMS, and the frequency the tower. Changing the extraction rate can help.