

meteoLCD Weblog

A weblog on climate, global change and climate measurements

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Equipment problems

Running the meteoLCD station is never painless. Even if most of the equipment works reliably, from time to time problems are rising fast, and usely in a bundle. The main computer reading the radioactivity sensor broke down without any hope of repair. An identical spare that could have been used was dead on startup (no graphics). The image of the original computer saved for cloning was corrupt. The software written by Claude Baumann to drive his amazing serial to voltage converter (*) was missing.... After a lot of pain, and with the help of Claude, I put up a "new" computer, which is running fine ("new" means 7 years old!. Machine runs Win2k and has a PIII processor).

A second problem: the NOx sensor shows a fatal "ozone gen fault after I changed the charcoal in the main pump. NOx is measured by a chemiluscent reaction with strong O3 gas, and this O3 has to be destroyed before eating away all plastic membranes of the pumps. So there is quite a lot of charcoal in use; a problem is that a grain gets stucked somewhere in the tubing and lowers the air flow below the acceptable minimum. For the moment the air flow is normal, so the problem seems to hide deeper in the inner parts of the sensor. I am not sure if I will be able to do this repair. In that case, the sensor will remain down up to the next visit of the Envitec technician.

(*) Claude built a device which is inserted into the serial RS232 line between the computer and the Bittsens gamma counter. This device uses a PIC and ancillary electronics to fetch the data out of the serial stream and convert it to a voltage readable by the main data logger. Works like a charm!

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