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PERPHORMAX™

CE IVD EC REP

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1C 60C

CO2 ELECTRODE PN: 660318 BI

CO2 electrode troubleshooting

Electrode adc's are 4095

Electrode is unplugged. Coax cable pin bent or damaged. Reagents are depleted. Silicone membrane is punctured. Silicone membrane is not silicone (make sure it is not a teflon membrane - silicone membrane will stretch and return to it's original size). Two (2) quad rings inside the electrode port.

Electrode calibration adc's error on back to back:

Check drain port(s). Pull the drain lines from the top of the measure electrode, and from the top of the flow cell and sit them into a paper cup. Recalibrate - if it calibrates then the problem is the drain needs to be cleaned.
Re-membrane the electrode - insure the electrode, membrane, and retainer are completely dry. Otherwise the membrane may slip when installing it.
Insure the quad ring is facing the electrode port and not the electrode.
Make sure there are no pin-holes in the membrane - you may check it by removed the electrode and hand-turning the peri pump that feeds the rear of the electrode. If you see fluid buildup then install a new membrane.
Verify flow cell is not leaking thru the electrode port. Remove electrode and check for fluid buildup on white retaining screw. If there is verify the black retainer is not damaged and/or installed incorrectly.

Electrode calibration adc's error on span:

Verify ambient room temperature is not too low. CO2 span definitely decreases as room temperature decreases. (PH electrodes are very temperature sensitive).
Verify PH of alkaline buffer has not decreased. Compare the color (pink) to an un-opened container and color should be similar. If lighter in color - more than likely acid reagent has mixed with the alkaline buffer and decreased the PH. This is usually caused by running with a torn silicone membrane.
CO2 electrode glass may have a plasticer coating. Over time the glass may become coated. It may be removed by using cyclohexanone (in a fume hood) and a q tip. Apply very little pressure to the CO2 electrode glass - it is only a few thousand's of an inch thick. Rinse with DI water and immediately dry the electrode.
PH electrodes fundamentally do not last very long. The span will drop over time irregardless of how many samples are run. The span will drop over time even while electrode is being stored.

DAC initialization error:

The Digital to Analog converter board (prior to each calibration) and when the home key is depressed will monitor the strength in millivolts of the CO2 electrode. It then feeds back a signal to the analog board to tell it how much it should amplify the signal. If the DAC board determines that the signal is too strong or too weak it sends out this error code "DAC initialization error".
This can happen simply by too much drift caused by temperature change or having just installed a new "cold" electrode into a warmer reagent flow or vice versa. Allow for temperatures to stabilize and retry.
If it persists try reversing the position of the reference electrode and the measure electrode. It can also be caused by the glass bulb being broken or cracked. Sometimes this may be hard to see - use a microscope with good lighting. The other possibility is the ADC board or DAC board is defective.

Precautions: Electrode face is very thin - do not apply excessive pressure. If glass cracks electrode is inoperable.