

VHI
3/5/2015

DEPTH SENSOR CALIBRATION SERIAL #188A

The pressure sensor used in MOCNESS is a titanium strain gauge with an internal temperature sensor. The temperature of the sensor is measured and used to correct for thermal effects. The MOCNESS measures the voltage across the temperature and pressure bridges of the sensor and reports these values in its output data stream. The MOCNESS pressure sensor is calibrated at several pressure points and two temperatures. There are no adjustments in the MOCNESS hardware and all the calibration is done with software in the surface control computer. The values sent up the wire in the MOCNESS data stream (the bridge voltages) are scaled to be sent as integers in the range of 0-99999 for temperature. The calibration data is fit in the following equation:

$$Z=(C1*VT+C0)*VP^2+(B1*VT+B0)*VP+(A1*VT+A0)$$

Where

- Z = pressure in decibars (1 decibar is approx. 1m of water)
- VP = voltage reading from pressure sensor
- VT = voltage reading from strain gauge temperature sensor

Serial number = 197

$$c1= -2.975015 \text{ e-}12$$

$$c0= 3.680733 \text{ e-}08$$

$$B1= 3.712704 \text{ e-}08$$

$$B0= 0.1035743$$

$$A1= -1.281562 \text{ e-}03$$

$$A0= -272.784$$

