



WATER & SOIL

DataHog2 loggers and 10cms ECH₂O Probes

These instructions show how to configure the Skye DataHog2 logger to read volumetric water content directly from a 10 cms ECH₂O probe.

1. Calculate the Full Scale Value (FSV) and Zero Offset (ZO) figures for the Ax+B scaling function in the DataHog2 as below:
 - a) Page 14 of the ECH₂O probe manual gives its standard calibration as shown by the equation $\theta \text{ (m}^3/\text{m}^3) = 0.000936 * \text{mV output} / 0.376$
 - b) The DataHog2 FSV for voltage channels is calculated as $[(\text{Sensor Output in units per mV}) / \text{Gain}] * 2000$
i.e. for a 2000 mV range voltage input, with a Gain of 1 (Gain Code 00)
 $\text{FSV} = [(0.000936) / 1] * 2000 = \mathbf{1.8720}$
 - c) The DataHog2 ZO for voltage channels is calculated as $\text{Sensor Offset in mV} * \text{Gain} * 9.5$
The sensor offset in the ECH₂O probe equation is $0.376 \text{ m}^3/\text{m}^3$
To convert this to mV, divide the 2000 mV range by the FSV and multiply by the sensor offset, i.e. $(2000 / 1.8720) * 0.376 = 401.71 \text{ mV}$
So the ZO = $401.71 * 1 * 9.5 = \mathbf{3816}$
2. Enter these new FSV and ZO figures into the DataHog2 using Option 9 of the Main Menu.
3. Check the configuration is correct in Option 1 of the Main Menu.

For each ECH₂O probe you should have its individual Software Channel and hardware channel number, but the following values should be the same for each channel:

Gain Code	00
Termination Code	00
Scale Code	01
Full Scale Value	1.8720
Zero Offset	3816

Units will now be volumetric water content $\theta \text{ (m}^3/\text{m}^3)$.

It is advisable to make a note of your changes on your DataHog2 Hardware Configuration Certificate. It is also recommended to clear the logger's memory before recording any data in the new units, to avoid confusion.

NOTE don't forget to press ESCAPE to return the DataHog2 to Log Mode before closing the software and disconnecting the RS232 datalead.

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