



DATALOGGERS

Converting Sensor Readings in μmol to Raw Current.

When a sensor is used with a DataHog the readings from a light sensor can be converted back to the raw current readings from that sensor as below,

$$\text{Raw Current } (\mu\text{A}) = \text{DataHog Reading } (\mu\text{mol}) / \text{Sensor sensitivity } (\mu\text{mol}/\mu\text{A})$$

So, for example, using DataHog SDL 5200 0206 30543 and sensor SKR 1800/I 0206 30542.

The logger was configured at the factory to take readings from the sensor with the diffuser in place. If the diffuser is removed then these readings will be incorrect. What is required is a reading of the raw current from the sensor.

The incorrect readings can be converted into raw current values using the above equation.

If we consider software channel 02, which has been set up to read Channel 1 of sensor 30542. The readings from this software channel of the DataHog should be divided by the sensitivity of Channel 1 of sensor 30542.

$$\begin{aligned} \text{So, Raw Current } (\mu\text{A}) &= \text{Software 02 Reading} / \text{Channel 1 sensitivity} \\ &= \text{Software 02 Reading} / 150.3 \end{aligned}$$

A similar process will give the raw current readings from Channel 2 of the sensor.

$$\text{i.e. Raw Current } (\mu\text{A}) = \text{Software 03 Reading} / 68.03$$

These raw current values can now be used, along with the Ratio of Sensitivities to calculate NDVI values or the ratio of the light falling on the two channels.



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