



DATAFLOW SYSTEMS PTY LTD

LOW COST DATA RECORDING SENSORS

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Odyssey Temperature Logger.

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Introduction.

The Odyssey submersible temperature recorder is a low cost and high-resolution temperature recorder. The recorder is submersible to 20 metres and records temperature in the range of -10 degrees C to 50 degrees C. The temperature resolution is 0.02 degrees C.

The Odyssey recorder records 16350 temperature readings. The interval between readings can be set when the recorder is started at any interval between 10 seconds and 12 hours.

If required the sensor can be connected to the recorder via a cable, this allows the sensor to be buried in soil. The length of cable connecting the sensor to the recorder is user specified.

Calibration.

The temperature loggers are supplied with a factory calibration however recalibration can be done using the following methods.

Temperature - Trace Mode.

Maintain the recorder at a stable air / water temperature for about 30 minutes with the top cap removed and the data cable connected to the recorder and the computer. Read data from the logger in trace mode. When the data is stable write down the raw data value and the temperature recorded by an independent thermometer. Repeat this procedure at a different temperature. It must be at least 10°C different to the first value. The greater the better. Enter the raw values and temperatures into the calibration software. Temperature calibration is linear.

Temperature - Recording Mode.

Set the scan time to 30 seconds and start the recorder. Maintain the recorder at a stable air or water temperature for about 30 minutes. Record the air/water temperature and the time. Change the temperature by at least 10°C. After another 30 minutes record the temperature and the time.

Stop the recorder and download the data. Using the Edit Data software, find the raw data values at the times you recorded the temperatures. Use this data in the calibration software. Temperature calibration is linear.

Memory Storage Capacity.

These loggers store 2 bytes per reading.

The memory is capable of recording 32764 records. The time span in days can be calculated by dividing 32764 by the number of logs per day.

Example:

A scan time of 30 minutes has 48 recordings each day. The total number of days is *682 days. A scan of 10 minutes has 144 recordings each day. The total number of days is 227 days.

When the memory is full the recorder shuts down.

***Note:** *When using a long scan time it is possible for the battery to expire before the memory becomes full.*