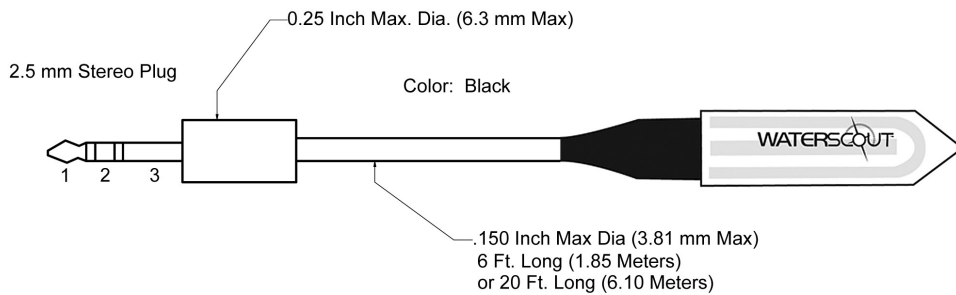


WaterScout Excitation Specs

Absolute Maximum Voltage: 6.0V
Operating Voltage Range: 2.7 - 5.5V
Recommended Operating Range: 3.00 - 5.00V (regulated)
Power Draw: 6 to 8 mA
Approximate Output Range: $0.15 * V_{excitation}$ to $0.50 * V_{excitation}$
Valid output within 5ms after power is applied
Pulsed Excitation. Reading must be taken between 5ms and 5s.

Caution: If the sensor is powered for more than 5 seconds, the internal firmware transitions to sensor calibration mode and the sensor will be recalibrated as if it were submerged in distilled water.

Wiring Diagram



- 1 - Red Wire (Sensor Output)
- 2 - White Wire (Sensor V+ Excitation +3.00 to 5.00 regulated)
- 3 - Black Wire (Ground)

Calibration Equations

The nature of the measurement circuit results in a range of possible values when the moisture content is truly zero. As a result, voltage ratios (V_{out}/V_{in}) less than 0.29 correspond to zero %VWC.

The calibration curve for the sensor is divided into 3 regions:

$$0.34 < V_{out}/V_{in} < 0.50$$

$$\text{VWC (\%)} = 263.51637 - 1575.238883 * (V_{out}/V_{in}) + 2380.458179 * (V_{out}/V_{in})^2$$

$$0.29 < V_{out}/V_{in} < 0.34$$

$$\text{VWC (\%)} = -19.13331696 + 65.29244414 * (V_{out}/V_{in})$$

$$V_{out}/V_{in} < 0.29$$

$$\text{VWC (\%)} = 0$$

$$V_{out}/V_{in} = \frac{AD}{2^{CR} - 1}, \text{ Where AD=A/D ratio, CR=Computer Resolution (in bits).}$$