Bio Instruments S.R.L.

SENSORS AND SYSTEMS
FOR MONITORING GROWING PLANTS

LWS-02P

Leaf Wetness Sensor

www.phyto-sensor.com

Introduction

Innovative and easy-to-use, the dielectric Leaf Wetness Sensor enables accurate leaf wetness monitoring. Many fungal and bacterial diseases affect plants only when moisture is present on the leaf surface. The Leaf Wetness Sensor determines the presence and duration of wetness on a leaf's surface, enabling researchers and growers to forecast disease and protect plant canopies.

The LWS-02P sensor approximates the thermal mass and radiative properties of leaves to closely mimic the wetness state of a real leaf. The way it works is simple: if the canopy is wet, the sensor is wet; if the canopy is dry, the sensor is dry. The Leaf Wetness Sensor measures the dielectric constant of the top of the sensor. The dielectric constant of water (80) is higher than air (1), so the sensor can determine the presence or absence of wetness using this method. Measurements can be logged by the PM-11 or by the PTM-48A at user-defined intervals to determine the duration of wetness on the canopy. It is important to collect data frequently enough to capture changes in the surface wetness. A sampling frequency of 10 minutes or less is often necessary to accurately capture leaf wetness duration.

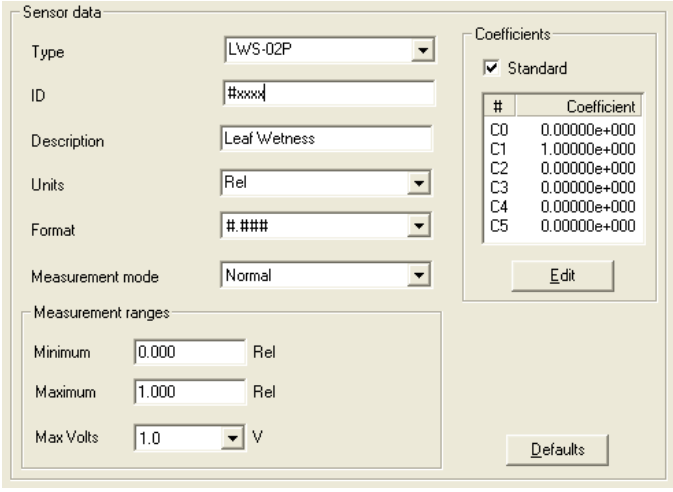
Installation

Simply place the sensor in a desired part of the canopy.

Connection

Plug the sensor into any analog input of the PM-11 Phytomonitor or the PTM-48A Photosynthesis Monitor. In the PC program, specify the input number where the sensor is connected to.

If you use the sensor for the first time, please make the appropriate record in the Sensors Database as described on page 5 of the PM-11 Phytomonitor Terminal Emulator software Guide or on page 11 of the PTM-48A Photosynthesis Monitor User's Guide.



Sensors Database Window in PM-11 / PTM-48A

Specifications

Output:	Analog voltage, proportional to wetness of the probe surface	
	Dry output	0.25 V approx.
	Fully wet output	0.4 V approx.
Probe dimensions, cm		11.2 × 5.8 × 0.75
Operating temperature		0 to 50 ℃
Protection index		IP 67

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