



Bio Instruments S.R.L.

SENSORS AND SYSTEMS
FOR MONITORING GROWING PLANTS

LT-1L, LT-4L

Leaf Temperature Sensor



Introduction

The LT-1L sensor is a subminiature touch probe that measures absolute temperature of a leaf. The lightweight stainless steel wire clip holds a high precision glass encapsulated thermistor, which is about a millimeter in diameter. Small size of the probe and its special design provide almost negligible disturbance of the natural leaf temperature. The thermistor is connected to the clip by thin 0.15 mm leads to minimize heat conduction and response time. All conductors are proofed to avoid corrosion under the wet operating conditions.

The probe is connected by a standard 2-meter cable to the waterproof box with the signal conditioner inside. The output cable length should be specified in the order if required. Every sensor is tuned and calibrated within the measurement range. The tolerance range is ± 0.08 °C .

The LT-4 sensor has 4 probes.

Installation

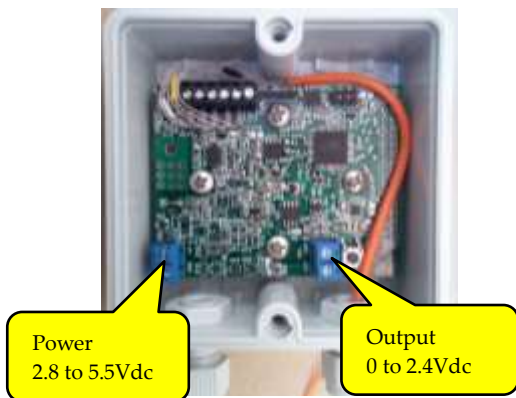
Open the clip and attach the sensor to a leaf. Thermistor should be placed at the lower shady side of the leaf.

Secure the sensor's cable on plant stem with adhesive band in order to prevent occasional movement of the sensor.

Connection

Please use a four-core cable with 3 to 6 mm outer diameter.

The connection ports is shown in the picture below:



Maximal length of the output cable is 10 m.

Calibrations equations

0 to 2.4V output:

$$T = 20.833 \times U$$

Where **U** – output voltage in Volts

Calibrations table

U, Volts	T, °C
0.000	0.0
0.240	5.0
0.480	10.0
0.720	15.0
0.960	20.0
1.200	25.0
1.440	30.0
1.680	35.0
1.920	40.0
2.160	45.0
2.400	50.0

Specifications

Measurement range	0 to 50 C
Analog linear output	0 to 2.4VDC
Instrumental accuracy	< 0.15 C
Tolerance range	±0.08 C
Probe weight	1.6 g
Contact area of thermistor	About 1 mm ²
Supply voltage	2.8 to 5.5 VDC 10 mA approx.
Probe dimensions, mm	50 W × 20 H × 10 D
Output auto update time	5 s
Excitation time	1s
Protection index	IP 64
Cable length between probe and signal conditioner	2 m

Customer Support

If you ever need assistance with your sensor, or if you just have questions or feedback, please e-mail at support@phyto-sensor.com. Please include as part of your message your name, address, phone, and fax number along with a description of your problem.



Datasheets



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