



*Bio Instruments S.R.L.*

SENSORS AND SYSTEMS  
FOR MONITORING GROWING PLANTS

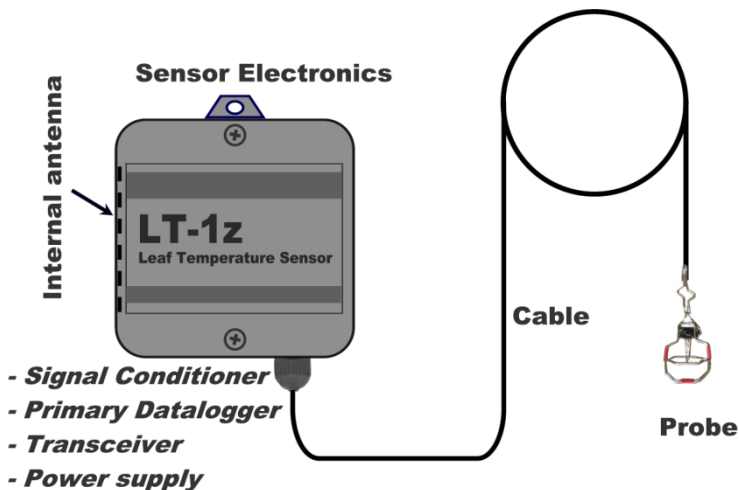
**LT-1z, LT-4z**  
*Wireless*  
*Leaf Temperature Sensor*





## Introduction

The LT-1z 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 LT-4z sensor has 4 probes.



The probe is connected by a standard 1 meter cable to the waterproof box with electronics, which combines signal conditioner, primary datalogger, RF 2.4 GHz transceiver, and power supply (3xAA Alkaline batteries).

Every sensor is tuned and calibrated within the measurement range.

### **Communication**

The LT-1z communicates over the radio 2.4 GHz channel with a network data logging unit. Activation of the sensor and measurement settings are described in the Quick Start Guide of the data logging unit (RTM-50 or PM-11z Phytomonitor)

### **Power**

The LT-1z is powered by three AA Alkaline batteries.

### **Readings**

LT-1z represents average value of leaf temperature measurements made 10 times evenly during the measurement time interval. For instance, at 30 min time interval, the LT-1z measures leaf temperature every 3 minutes and, then, calculates and records the average of those ten values measured. LT-4z represents average value of 4 probes.

### **Installing the sensor**

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.

### **Specifications:**

**Range of Measurement:** 0 to 50°C

**Instrumental accuracy:** < 0.15 °C

**Resolution:** 0.1 °C

**Power Requirements:** 4.5 Vdc (3xAA Alkaline batteries)

**Operating Environment:** 0 to +50 °C

**Probe dimensions, mm:** 50 W × 20 H × 10 D

**Probe weight:** 1.6g

**Contact area of thermistor:** About 1 mm<sup>2</sup>

**Cable length:** 1m

**Datalogger Compatibility:** Bio Instruments S.R.L.: PM-11z  
Phytomonitor and/or PC Phyto-Logger.

## ***Customer Support***

If you ever need assistance with your LT-1z, or if you just have questions or feedback, please e-mail at [support@phyto-sensor.com](mailto: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.





Phyto-Sensor Group

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