



Bio Instruments S.R.L.

SENSORS AND SYSTEMS
FOR MONITORING GROWING PLANTS

ST-21P

Soil Temperature Sensor



Introduction

The ST-21P sensor measures absolute temperature of the soil once it is buried in. The sensor's body has low thermal conductivity that provides accurate measurements in shallow substrate like a Rockwool slab, for instance.

The probe is connected by a standard 1-meter cable to the waterproof box with the signal conditioner inside. Every sensor is tuned and calibrated within the measurement range. The tolerance range is ± 0.08 °C only.



Installation

The sensor can be inserted directly into growing media or soil. The probe does not need to be completely covered by soil. If you have difficulty inserting the probe, try loosening the soil somewhat or wetting the soil. Never pound the probe in. The probes can be oriented in any direction.

Removing the Probes

When removing either probe, do not pull it by the cable! This could break the internal wires and cause the probe to malfunction or not function at all.

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.

Sensor data

Type: ST-21P

ID: #xxxx

Description: Soil Temperature

Units: C

Format: #.#

Measurement mode: Normal

Measurement ranges

Minimum: 0.0 C

Maximum: 50.0 C

Max Volts: 2.5 V

Coefficients

Standard

| # | Coefficient |
|----|---------------|
| C0 | -9.90000e-003 |
| C1 | 2.65420e+001 |
| C2 | -4.50480e+000 |
| C3 | 1.86490e+000 |
| C4 | 0.00000e+000 |
| C5 | 0.00000e+000 |

Edit

Defaults

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

Specifications

| | |
|---|------------|
| Measurement range | 0 to 50 °C |
| Instrumental accuracy | < 0.15 °C |
| Probe dimensions, mm | 90 L × 6 Ø |
| Probe weight | 1.6 g |
| Protection index | IP 64 |
| Cable length between probe and signal conditioner | 1 m |
| Output cable length | 4 m |



Phyto-Sensor Group

Bio Instruments S.R.L.

26/1 Padurii St., Chisinau MD-2002

REPUBLIC OF MOLDOVA

Tel./Fax: +373-22-550026

info@phyto-sensor.com

www.phyto-sensor.com