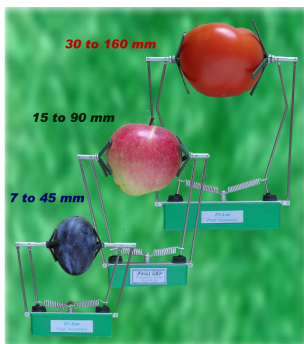




Bio Instruments S.R.L.

SENSORS AND SYSTEMS
FOR MONITORING GROWING PLANTS

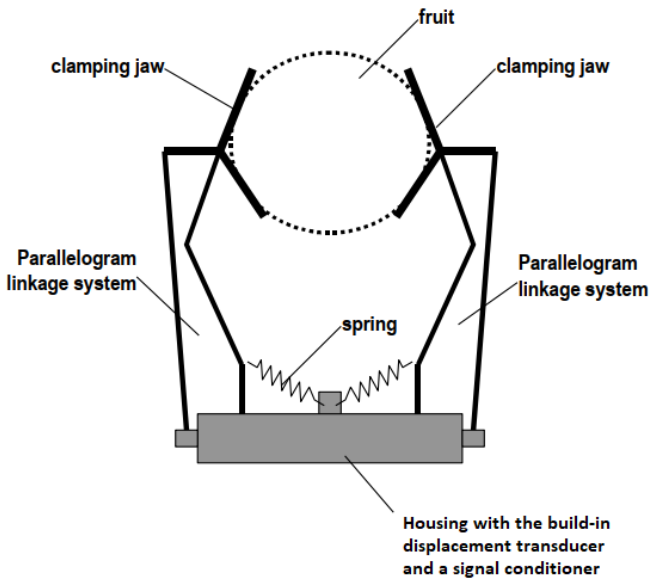
FI-x-PT **(FI-S-PT, FI-M-PT, FI-L-PT)** Fruit Growth Sensors Quick Start Guide



www.phyto-sensor.com

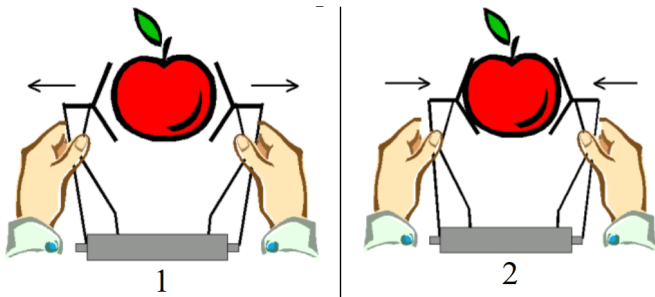
Introduction

A PT-series of the FI-type absolute displacement sensors provides recording both size and growth rate of intact rounded (like tomato and apple) and oblong (like cucumber and banana) fruits in three diameter ranges within 7 to 160 mm. Original parallelogram design of moving arms provides firm and straight positioning of the sensor on a fruit under study. The PT-series sensor has a built-in precision displacement transducer with a miniature DC-powered signal conditioner.



Installation

- Choose a fruit for attaching the sensor.
- Move clamping jaws apart so as the sensor can hold the fruit in the desired position.
- Check if the sensor holds the fruit firmly and cannot easily slide down with application of gentle force.
- Secure the sensor's cable on a stem to prevent occasional movement of the sensor.
- Check the position of the sensor regularly.



Connection

The connection table:

1	Black	Ground
2	White	Output 0 to 2.4 Vdc
3	Red	Power 2.8 to 16 Vdc @ 1mA typ.

Power supply

The PT-series sensors are to be powered from an external regulated power supply with 2.8 to 16 Vdc @ 1mA typ. output voltage.

Calibration table

U, Volts	FI-S-PT, mm	FI-M-PT, mm	FI-L-PT, mm
0.0	7.00	15.00	30.00
0.6	15.50	33.75	62.50
1.2	26.00	52.50	95.00
1.8	35.50	71.25	127.50
2.4	45.00	90.00	160.00

Calibration equations

$$D = 15.8(3) \times U + 7 \text{ (FI-S-PT)}$$

$$D = 31.25 \times U + 15 \text{ (FI-M-PT)}$$

$$D = 54.1(6) \times U + 30 \text{ (FI-L-PT)}$$

where:

D — measured diameter, mm

U — output voltage, V

Specifications

Measurement range	<i>FI-S-PT</i>	7 to 45 mm
	<i>FI-M-PT</i>	15 to 90 mm
	<i>FI-L-PT</i>	30 to 160 mm
Temperature effect		< 200 ppm FS/°C
Output		0 to 2.4 Vdc
Excitation time		25 ms
Supply voltage		7 to 30 Vdc
Current consumption		1 mA typ.
Operating temperature		0 to 50°C
Protection index		IP64
Cable length		5 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.

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