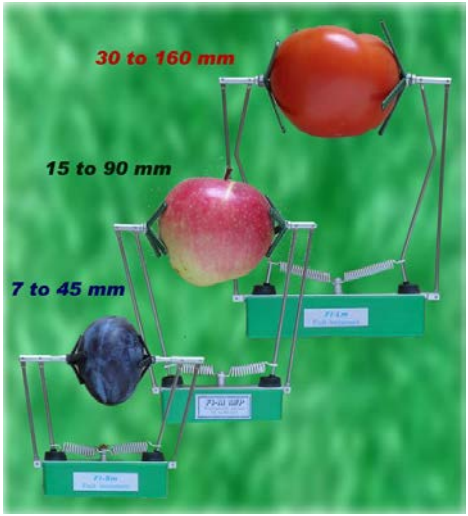
FI-ST, FI-MT, and FI-LT – SDI12

Fruit Growth Sensors



Implexx

Digital Environmental Sensing

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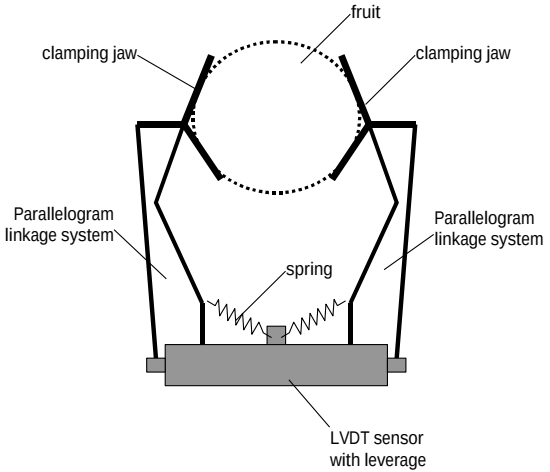
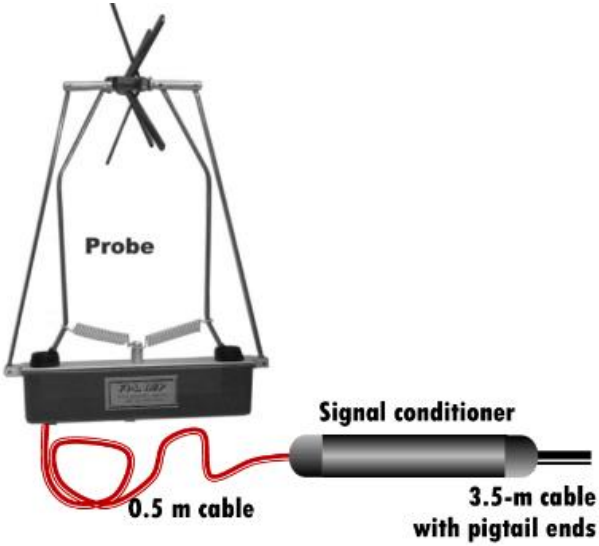
Introduction

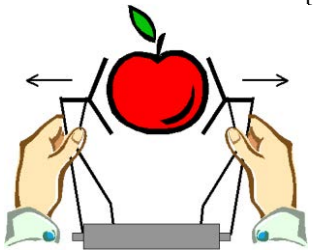
A series of absolute displacement sensors provides recording both size and growth rate of intact rounded (like tomato and apple) and oblong (like cucumber and banana) fruits in three diameter ranges within 7 to 160 mm. Original parallelogram design of moving arms provides firm and straight positioning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




Probe
Signal conditioner
0.5 m cable
3.5-m cable
with pigtail ends

Installation

- Choose a fruit for attaching the sensor.
- Move clamping jaws apart so as the sensor can hold the fruit in the desired position.



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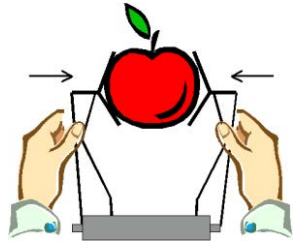

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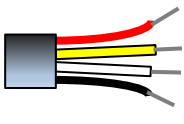
- Check if the sensor holds the fruit firmly and cannot easily slide down with application of gentle force.
- Secure the sensor's cable on a stem near the fruit in order to prevent occasional movement of the sensor.
- Check the position of the sensor regularly.

Connection

The connection diagram is shown below. The shield shall be grounded at the data loggers side or connected to the 'minus' contact of the power source.



Red: +Power 5 to 24 Vdc
Yellow: SDI12 Input/Output
White: Ground
Black: Shield

SDI-12 Communication

Default Address
0

Identification I! Command
SDI-12 command: 0I!
Returns: 013BIOINST FI-MT 3.026
Sensor address: 0
SDI-12 version: 1.3
Vendor: BIOINST
Model: FI-MT
Version Number: 3
Sensor Serial Number: 026

Measurement M! Command
SDI-12 command: 0M!
Returns: 00011
Return 1 measurement after 1 second settling period

Measurement Range, Resolution and Units
FI-LT: 30.00 - 160.00 millimetres (mm)
FI-MT: 15.00 - 90.00 millimetres (mm)
FI-ST: 7.00 - 45.00 millimetres (mm)

Data logging

SDI-12 : A single output (mm) with the M! command in accordance with SDI-12 Standard (version 1.3)

Specifications

Model	**FI-L**	**FI-M**	**FI-S**
Measurement range	30 – 160 mm	15 – 90 mm	7 - 45 mm
Resolution, mm	<0.1	<0.05	<0.02
Operating temperature	0 to 50°C		
Temperature effect	<200 ppm FS/°C		
Supply voltage	5 to 24 Vdc@10mA max.		
Measurement time	0.3s		
Protection index	IP 64		
Cable length:	Customized (4 m total length standard)		

Customer Support

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