



fruit dendrometers

measure fruits between 7 to 160 mm

overview

A series of absolute displacement sensors provides recording both size and growth rate of intact rounded fruits in three diameter ranges within 7 to 160 mm.

Two phenomena affect fruit diameter. These are growth and internal water content. The growth component is usually dominant. At the same time, in some cases, the fruit may lose water that is manifested in deceleration of growth rate or even shrinkage of the fruit. It may be a result of water stress, lack of light, or another limiting factor.

Thus, the FI-type sensor allows investigating effect of irrigation rate and other environmental factors on both water balance and growth of fruits. Another exiting application of the sensor is monitoring of harvested fruits during storage.

The FI-type sensor consists of an LVDT transducer mounted in a special clip and a DC powered signal conditioner.

The probe is connected by a standard 1-meter cable to the waterproof box with the signal conditioner inside.

The output cable length should be specified in the order if required.

Original parallelogram design of moving arms provides firm and straight positioning of the sensor's flaps on a fruit under study.

FI-LT (large), FI-MT (medium) and FI-ST (small) models have different clips for providing three measurement ranges: 30 to 160, 15 to 90 and 7 to 45 mm,

respectively.

video – a FI-MT dendrometer installed on a mango:

video – the dendrometer field monitoring system

the grape monitor

In 2017, the New South Wales Department of Primary Industries commissioned Edaphic Scientific to install a phyto-monitoring system on various varieties of grapevines.

Known as The Grape Monitor, the phyto-systems are measuring stem growth (dendrometers), sap flow, soil moisture, canopy temperature, and more parameters.

Data is uploaded to the internet via the Edaphic Scientific telemetry system. These data can be viewed at anytime.

For more information, [visit The Grape Monitor](#).

whole system monitoring solutions



Edaphic Scientific is a one-stop shop for a whole system monitoring solution. We provide plant and soil monitoring systems

for researchers and growers.

Our systems not only support dendrometers, but related sensors such as sap flow, soil moisture, weather parameters, and more.

At Edaphic Scientific we want to work with you from the start of your project through to its completion. We can provide:

- Assistance with project and experimental design
- Procurement of all monitoring equipment, including sensors, data loggers and data management software. Edaphic Scientific is a one-stop shop where we can source and find any necessary equipment for your project from our preferred suppliers or third party suppliers
- Installation and training
- On-going assistance with data interpretation and equipment maintenance
- Data correction and analysis, including statistical analysis with the R-package
- Report and publication preparation including tables, figures, graphs, and manuscript writing

advanced data collection and management solutions



Edaphic Scientific recognises the need for flexible and adaptable sensor and [data logging solutions](#) for experimental or environmental monitoring projects.

Data can be downloaded directly in the field from data loggers. A direct connection between the data loggers and your computer, via a USB cable, can be used for manual downloading of data.

Alternatively, data can be [downloaded over the internet](#) on your iPhone, iPad or desktop computer with the Eagle cloud-based, data management software solutions. Through this remote based downloading capabilities, you can download, view and manage your data, and system, anywhere in the world and at anytime.

specifications

feature	specification
Measurement Range	FI-LT: 30 to 160 mm FI-MT: 15 to 90 mm FI-ST: 7 to 45 mm
Sensitivity (mV/mm)	FI-LT: 15.4 FI-MT: 26.7 FI-ST: 52.6
Noise	< 1 mV w/filter, 1 kHz cutoff
Resolution	FI-LT: 0.065 mm FI-MT: 0.038 mm FI-SMT: 0.019 mm
Output	SDI-12 (standard) RS-485, Voltage or 4..20mA available upon request
Supply Voltage	5 to 24 VDC
Power	1.5 W max
Operating Temperature	0 to 50 °C
Temperature Effect	< 0.02 % total stroke / °C
Excitation Time	< 1 second
Cable length between probe and signal conditioner	1 m
Cable length between signal conditioner and data logger	5 m (standard) maximum: 60 m for SDI-12 sensors

manual & docs

- [Fruit Dendrometer Manual](#)



- [Dendrometers Plant Growth Monitoring v2](#)
- [Phytomonitoring Dendrometer Guide](#)
- [Soil and Plant Monitoring for Irrigation v2](#)
- [Dendrometers: multi-purpose sensors](#)

related products

- [Tree and stem dendrometers](#)
- [Sap flow and tree water use](#)
- [Weather stations](#)
- [Soil moisture sensors and meters](#)
- [Soil carbon monitoring](#)
- [Environmental monitoring systems](#)