

DEXLOG Dendrometer Data Logger System



DEX Features

- **Non-destructive**
- **Real-Time measurements**
- **Long-term monitoring**
- **For woody or herbaceous plants, stems or fruits**
- **Weatherproof and rugged**
- **Ranges from 5 mm up to 200 mm diameters available**
- **Long extension cables available, up to 100 ft**

Ordering Information

DEXLOG2

GP1 Logger with two DEX stem and fruit growth electronic dendrometers (DEX70 or DEX100). Includes 10 ft. cables, and factory calibration.

GP1-MP1

Stainless steel mounting plate and fittings for mounting onto a 2" tube or flat surface.

DEXCC

Calibration kit for DEX70 or DEX100

ECWD-25

Cable for Dendrometers, 25 ft., with weatherproof connectors

ECWD-Lxx

Extra length, (XX) added to cable ECWD-25

Complete Plant Growth Monitoring Solution

- **Weatherproof for field applications**
- **Comes complete, programmed and assembled**
- **Can be used on plant stems or fruits**
- **Battery life (9 volt) – typically one year**
- **Works with Laptop PC's or PDA's**
- **Import data into Excel spreadsheets easily**
- **Options for adding soil moisture or weather sensors**

A Complete Logging Solution

The DEX Dendrometer Data Logging System is comprised of a GP1 data logger and (2) DEX electronic dendrometers and can be used to monitor plant growth rate or stress levels over long periods of time. The system can operate completely unattended. The GP1 data logger offers a self-contained solution for monitoring DEX electronic dendrometers, soil moisture and weather sensors. Data can be monitored and displayed in real-time or output to a PC using the supplied RS-232 serial data cable.

The DEX Electronic Dendrometers can be clamped on stems or fruits (citrus, apples, plums, etc.) and can measure very tiny changes in stem or fruit diameter (~0.004 mm). A trend upward represents the growth rate of the plant, whereas a leveling off or trend downward indicates plant stress. This way, growers know when, and how much stress the plants are under. This information can then be used to schedule irrigation or fertilizer applications, as well as keeping track of growth rates over time.

Easy Installation

The DEX dendrometers are connected to the GP1 data logger using a twist-lock connector and extension cable. The dendrometers are then clamped onto a stem or fruit using a screw adjustment knob and suspended with a mono filament string to keep the weight of the dendrometer from pressing on the plant. Thereafter, the change in stem size influences the dendrometer output, which directly converts to mm or inches of expansion from the zero point. A calibration multiplier may be loaded into a logger command, as well as the zero offset, and readings are output directly in mm or inches of change. This data can be stored in the data logger memory or output to a PC or PDA device.



Technical Specifications

DEX Dendrometer Specifications

Units	DEX20	DEX70	DEX100	DEX200
MECHANICAL				
Measurement Range	5 - 25	10 - 70	25 - 100	95 - 200
Expansion Range	0 - 5	0 - 13	0 - 13	0 - 13
Dimensions				
Length	65	102	155	263
Width	19	25.4	25.4	38
Height	38	51	76	153
Weight	55 g	180 g	230 g	572 g
Standard Clamping Blocks				
Dimensions Set 1	19 x 19 x 6	25 x 25 x 9.5	25 x 25 x 9.5	25 x 25 x 905
Face Radius	5 mm	70 mm	108 mm	200 mm
Dimensions Set 2	19 x 19 x 6	25 x 25 x 13	25 x 25 x 13	
Face Radius	25 mm	5 mm / 50	25 mm / 75	
Optional Clamping Blocks				
Dimensions	19 x 19 x 6	25 x 25 x 9.5	25 x 25 x 13	38 x 38 x 7
Spherical Radius	25 mm	70 mm	105 mm	500 mm
ENVIRONMENTAL				
Operating Range		-10 to 50° C		
Temperature Stability		0.0025 mm/° C		
Accuracy over 20°C range		0 .050 mm		
ELECTRICAL				
Signal Output Range	±5 mV	±5 mV	±2.5 mV	±2.5 mV
Output Sensitivity^{Note1}	0.5 mV/mm	0.22 mV/mm	0.13 mV/mm	0.05 mV/mm
Conversion Mult.^{Note1}	2.0 mm/mV	4.5 mm/mV	7.7 mm/mV	20 mm/mV
Output Linearity	±.01 mV/mm	±.006 mV/mm	±.004 mV/mm	±.004 mV/mm
Electrical Noise Limit	±0.01 mV	±0.01 mV	±0.01 mV	±0.01 mV

Note 1

Output sensitivity and multiplier are determined by a 10 point calibration curve from 0 - 3 mm and 5 points from 3.5 to 13 mm. Each sensor is provided with a factory calibration certificate for precise figures.



GP1 Specifications

Input Connections

2 voltage channels
 2 temperature inputs or 2 additional Soil Moisture Sensors
 2 pulse counters (33kHz & 50Hz)
 1 WET Sensor input

Control Outputs

1 smart relay (1A)

Readings Stored

600,000

Recording Rate

1 second up to 24 hours

Configuration

DeltaLINK-PC or Pocket DeltaLINK (PDA option)

Communication Options

RS-232 or modem

Sensor Excitation

1 switched logger power
 1 5 V precision reference

Power

One 9 V alkaline/lithium or external power supply 11-24 V

Battery Life

~ 1 year

Enclosure Rating

IP67

Temperature Range

-20 to +60° C (with lithium battery)

Size

5.5 x 4.1 x 1.7 inches
 (140 x 105 x 45 mm)

Typical Applications

- Monitoring soil moisture
- Logging weather sensors
- Controlling irrigation



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