

Clamp Dendrometer PDS40S SDI

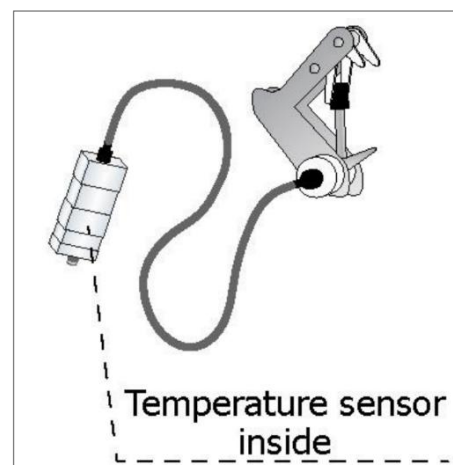
GENERAL DESCRIPTION

Clamp dendrometers are designed for the precise measurement of diameter changes in stems and branches. Their compact design enables easy and fast, non-invasive attachment to the measurement object. With a measurement range of 5 to 40 mm, they are suitable for measuring small stems and branches. The sensor is attached to the measurement object using three pressure levers, with the central measuring arm moving the rotary position sensor proportionally to the diameter of the measurement object. The contact pressure is designed to ensure stable positioning while minimizing the impact on plant tissue. The position sensor bearing is designed to minimize the effects of temperature and axial forces. The sensors are suitable for precise long-term measurements in the field and feature IP67 protection and an operating temperature range of -40 to 60 °C. The sensor requires minimal maintenance and energy.



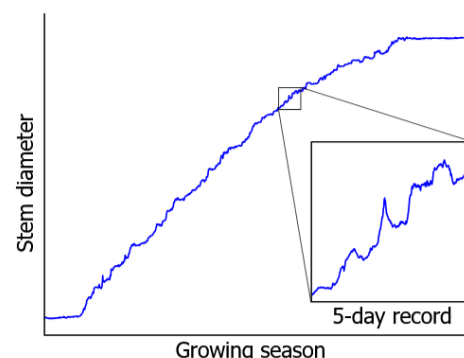
MAIN FEATURES

- Sensing pivot concept
- Contact force up to 2 N
- Output signal: digital SDI-12
- Each sensor is individually calibrated at 100 points across the entire range
- Operating range 5 to 40 mm
- Accuracy better than 0.3 mm
- 1.24 micrometer resolution
- Temperature dependence better than $\pm 3 \mu\text{m/K}$
- Internal temperature measurement
- Easy and fast non-invasive fixing



PRECISE STEM DIAMETER RECORDS

- no effect on plant growth
- efficient tool for field measurement
- comprises information about growth, water stress and freezing up of the stem
- Together with soil water potential, it allows for a realistic assessment of drought stress and tree response



TECHNICAL SPECIFICATIONS

PARAMETERS	SPECIFICATIONS
Weight of sensor	160 g
Measuring range	5 ... 40 mm
Resolution	1.24 µm
Accuracy	better than 0.3 mm
Output signal	Digital: SDI-12 Version 1.3 compatible
Contact force	1.5 ... 2 N lateral levers, 2 ... 3 N central measuring arm
Temperature dependence	better than $\pm 3 \mu\text{m/K}$
Temperature measurement accuracy	$\pm 0.2 \text{ }^{\circ}\text{C}$
Power Supply	
Supply voltage	5 ... 12 V
Current consumption idle	30 µA
Current consumption measurement	6 mA
Warm-up time	300 ms
Connection	3-pin M8 connector male
Environmental conditions	
Protection class	IP67
Operating temperature	-40 ... 60 °C
Humidity	0 ... 100 %

INSTALLATION NOTES

The sensor should be mounted on a stem (or branch) that is as straight and evenly shaped as possible, making sure that the cable gland does not touch the object being measured. The cable must be firmly attached to the trunk so as not to affect the position of the sensor. In addition, the label on the black tag on the central lever must be clearly visible and facing away from the stem.