



***Bio Instruments S.R.L.***

SENSORS AND SYSTEMS  
FOR MONITORING GROWING PLANTS

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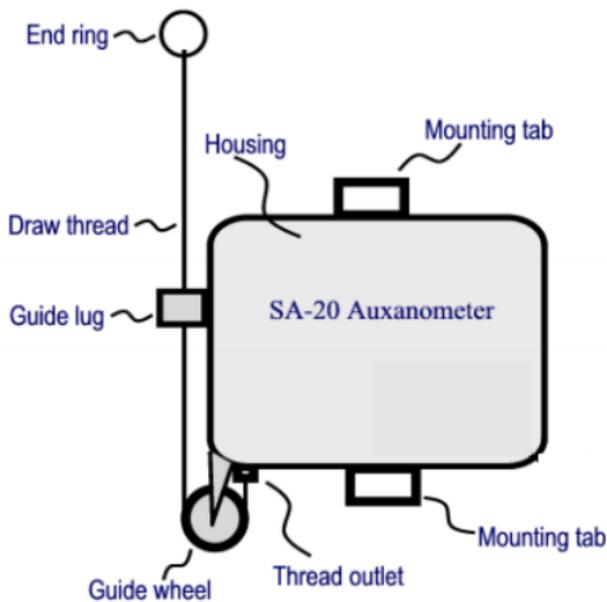
## **SA-20P**

*Auxanometer*



## ***Introduction***

The SA-20P Auxanometer is a draw thread displacement transducer. The output of the SA-20P Auxanometer is proportional to the amount of thread pulled out of the unit. The thread is a plastic stretch-resistant cord and is tensioned by an internal spring pack. A thread begins with a ring for connecting an extension wire (thread, cord, or clip) provided by a user. A thread outlet is located at the bottom panel of the housing. A guide wheel and a lug provide the upward thread direction. A rough outline of the SA-20P Auxanometer is shown in the Fig.1. The outline is approximate and shall not be of the essence.



*Fig.1*

The SA-20P model is for using with the PM-11 Phytomonitor or the PTM-48M Photosynthesis Monitor. It has a 4-meter output cable with the IP67 plug at the end. The above-mentioned instruments provide necessary excitation power and the output signal processing.

## Connection

Plug the sensor into any analog input of the PM-11 Phytomonitor or the PTM-48A Photosynthesis Monitor. In the PC program, specify the input number where the sensor is connected to.

If you use the sensor for the first time, please make the appropriate record in the Sensors Database as described on page 5 of the PM-11 Phytomonitor Terminal Emulator software Guide or on page 11 of the PTM-48A Photosynthesis Monitor User's Guide.

Sensor data

Type: SA-20P

ID: #xxxx

Description: Auxanometer

Units: mm

Format: #.#

Measurement mode: Normal

Measurement ranges

Minimum: 0.0 mm

Maximum: 2000.0 mm

Max Volts: 2.5 V

Coefficients

Standard

#	Coefficient
C0	0.00000e+000
C1	1.66500e+002
C2	0.00000e+000
C3	0.00000e+000
C4	0.00000e+000
C5	0.00000e+000

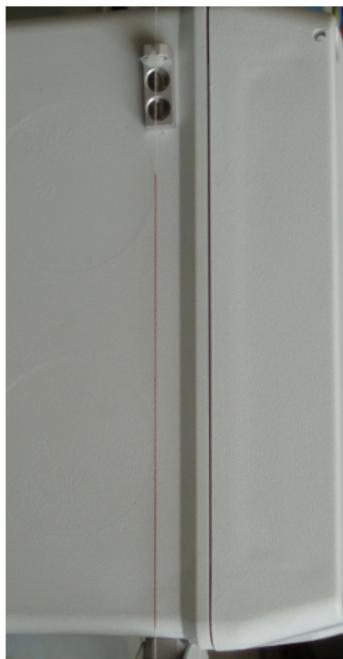
Edit

Defaults

*Sensors Database Window in PM-11 / PTM-48A*

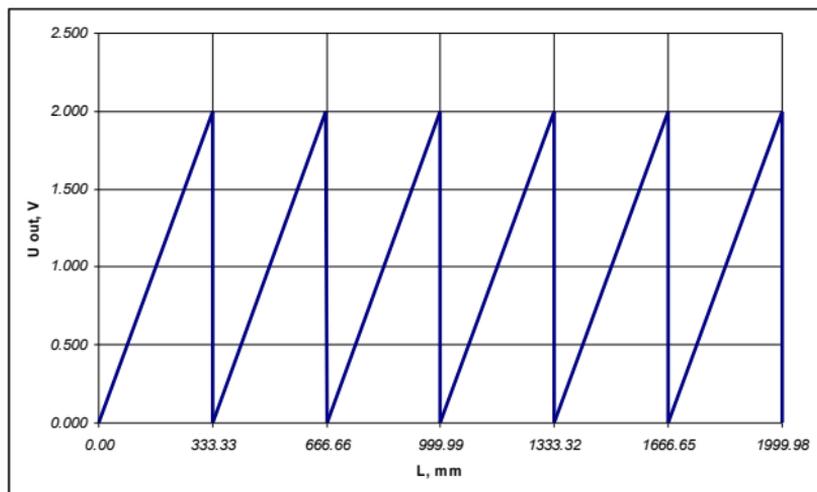
## ***Installation***

- To be mounted on a trunk or another base with the use of two screws or bandings (not included into delivery set).
- Installation simply involves bolting down the housing and then attaching the draw thread to the part, which is to be measured.
- You may see the red segment of the thread which indicates that the 2-meter thread is almost fully released. Please adjust extension wires to set the thread close to zero value.



## Output

The displacement transformation characteristic of the SA-20P is ramp (or sawtooth) as shown in the figure below:



## ***Specifications***

Measurement range	2000 mm
Linear output range	0 to 2 Vdc that corresponds to 333.33 mm
Resolution	0.1 mm
Sensitivity	6 mV/mm
Operating temperature	0 to 50°C
The tension of the thread	40 to 60 g
Protection index	IP 53
Overall dimensions, mm	220 × 220 × 100
Output cable length	4 m



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