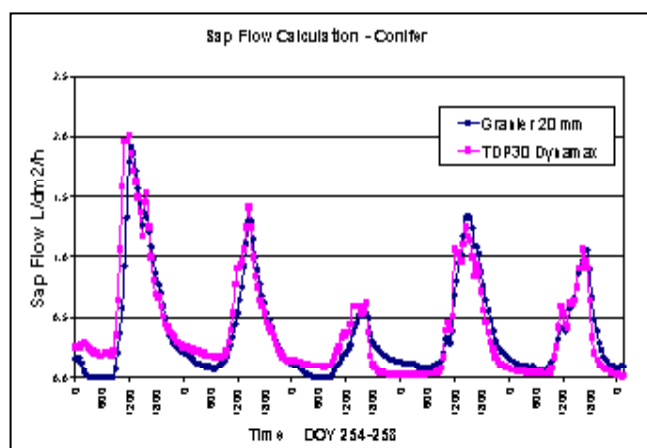
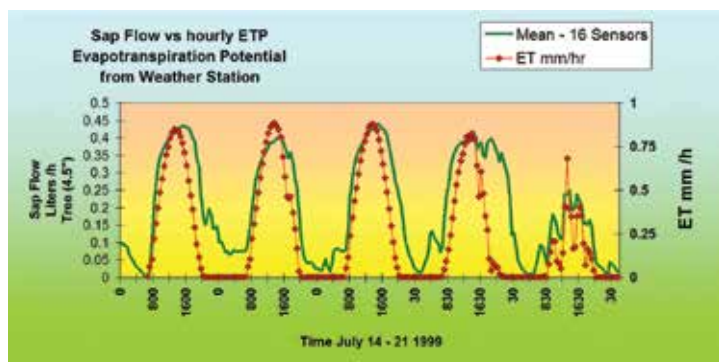
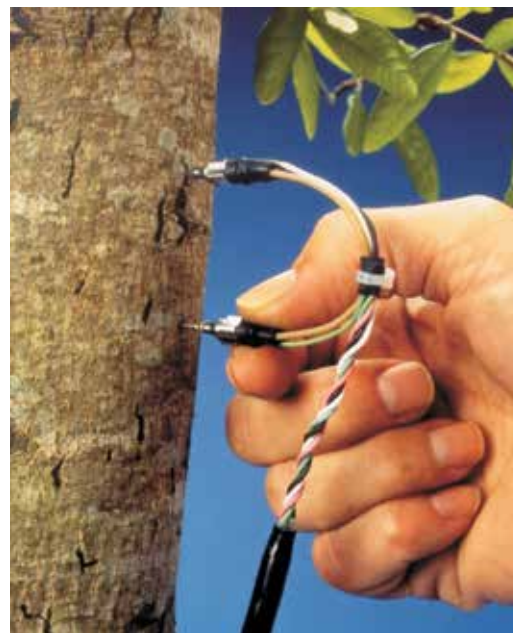


TDP Sap Velocity Probe



The Thermal Dissipation Probe (TDP) transpiration sensor measures sap velocity which is converted to volumetric flow rate. TDP is a simple and affordable device originally proposed by Granier. The basic TDP probe has two thermocouple needles inserted in the sapwood, the upper one containing an electric heater. The probe needles measure the temperature difference (dT) between the heated needle and the sapwood ambient temperature below. The dT variable and the maximum dT_m at zero flow provide a direct conversion to sap velocity.

For uniform trees in a closed canopy, only one sensor per tree is needed. For irregular canopies or with mixed species, sap flow varies around the circumference of large trees. Thus multiple probes are recommended in a single tree to make flow calculations accurately. Normally, install two probe sets per tree for trees 3" to 6" (75 to 150 mm) in diameter, and four probe sets per tree for trees 6" to 18" in diameter (>150 mm). Calibration is recommended for new species.



Features

- Dual needle, patented Granier design with Dynamax upgrades
- Easily inserted & removed for reuse
- Constant heat, thermal dissipation method; not heat pulse
- Continuous measurement method
- No waiting periods & no heat pulses
- Stainless steel needles are Teflon coated for durability and longevity
- Compatible with most data loggers
- Differentially wired T- type thermocouples
- Electronics and connectors are sealed and weatherproofed
- Wires directly to data logger, one differential channel each



Specifications

Model	TDP-10	TDP-30	TDP-50	TDP-80	TDP-100
Length	10 mm	30 mm	50 mm	80 mm	100 mm
Diameter	1.2 mm	1.2 mm	1.65 mm	1.65 mm	1.65 mm
T-Type T/C's	1 each	1 each	1 each	2 each	3 each
Probe Spacing	40 mm	40 mm	40 mm	40 mm	40 mm
Power	.08 - .12 W	.15 - .20 W	.25 - .30 W	.45 W	.50 - .60 W
Cable	10 ft/5 Cond	10 ft/5 Cond	10 ft/5 Cond	10 ft/6 Cond	10 ft/7 Cond
Heater Resistance	26 Ohms	52 Ohms	77 Ohms	122 Ohms	144 Ohms
Operating Volts @~7° C	2.0 V	3.0 V	5.0 V	7.0 V	8.5 - 9 V
Signal Out	40 μ V/°C	40 μ V/°C	40 μ V/°C	40 μ V/°C	40 μ V/°C

Ordering Information

TDP-30

Sap Velocity Thermal Dissipation Probe 30 mm, 10 ft cable with connector

TDP-50

Sap Velocity Thermal Dissipation Probe 50 mm, 10 ft cable with connector

TDP-80

Sap Velocity Dual T/C Thermal Dissipation Probe 80 mm, 10 ft cable with connector

TDP-100

Sap Velocity Profile Probe. 100 mm, 10 ft cable with connector

FLDL-TDP

TDP Sap Velocity System, fully assembled, DL2e based

FLGS-TDP XM1000

TDP Sap Velocity System, fully assembled, CR1000 based

FL32-GS8

Flow32 expansion kit for TDP probes with 8 TDP-30 sensors

FL32-GS16

Flow32 expansion kit / same as above with 16 TDP-30 sensors and cables

TDPJ1

Installation kit. Drilling jig, drill bits (4), removal prybar

TDPJ2

Drilling jig, drill bits (4), battery power drill, 120 Vac charger, removal pry bar

EXTP-25 Extension cable, 5 Wire/25 ft (7.6 m)

EXTP-50 Extension cable, 5 Wire/50 ft (15 m)

EXTP-75 Extension cable, 5 Wire/75 ft (22.8 m)

EXTP-100 Extension cable, 5 Wire/100 ft (30.5 m)

EXTP-25D Dual T/C extension cable for TDP-80, 6 wire 25 ft

EXTP-50D Dual T/C extension cable for TDP-80, 6 wire 50 ft

EXTP-75D Dual T/C extension cable for TDP-80, 6 wire 75 ft

EXTP-100D Dual T/C extension cable for TDP-80, 6 wire 100 ft

EXTP-25T Extension cable, 7 Wire/25 ft (7.6 m)

EXTP-50T Extension cable, 7 Wire/50 ft (15 m)

EXTP-75T Extension cable, 7 Wire/75 ft (22.8 m)

EXTP-100T Extension cable, 7 Wire/100 ft (30.5 m)

AVRD

Dual adjustable voltage regulator for 6-12 V battery