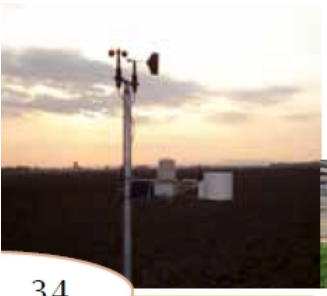


Sap Flow Sensor

SF-L

The well-known Granier sap flow sensor, i.e. thermal dissipation probe (Granier, 1985) uses heat as a tracer of sap flow. Due to its simplicity, reliability and affordability the Granier technique is used all over the world. The SF-L Sap Flow Sensor therefore considerably enhances accuracy and reliability in sap flow measurements through continuous correction of natural temperature gradients of the sapwood. In contrast to the original Granier technique, SF-L sensor provides a very stable and more accurate value between the heated needle and the sapwood ambient temperature.

Power consumption:	0.2W +/-5% when using the UP power-supply,
Constant current output:	82mA stabilized (ccs2)
Heating resistance:	34.5 Ohm +/-0.4 Ohm
Heating wire:	special material, ultra-thin, completely covered with isolating varnish for smooth surface
Needle-length:	33mm standard, other lengths 10..63mm available on request
Heating-zone:	20mm from top of the needle, needle marked with yellow-band
Sample-size:	the sensors may be used for trees from 70mm diameter on,special sensor-configurations for smaller plants are available
Signal-output:	40µV/K between 0..40deg C, copper-constantan thermocouple (Type T) (see Appendix B for details).
Needle-distance:	up to 15cm, vary distance dependend on type of plant/tree, check with calibration if standard calculation is suitable for your measurements
Powersupply CCS2:	Uv = 12V-18Vdc, < 90mA total, robust IP68 alu-housing sup plies 82mA for sensor line, 2.9 V Voltage drop over each sensors, thus maximum 3 sensors when supplied with 12V batteries