



## Soil Moisture Sensor

### S1201Z

- Fully solid state
- Linear accuracy even in moist soils (below 50 centibars)
- Range from 10 to 200 centibars

The Soil Moisture sensor consists of two concentric electrodes buried in a special reference matrix material, which is held in place by a synthetic membrane. The matrix material has been selected to reflect the maximum change of electrical resistance over the growth range of production crops. In operation, soil moisture is constantly being absorbed or released from the sensor. As the soil dries out, the sensor moisture is reduced and the electrical resistance between the electrodes is increased. This resistance is read by the soil moisture sensor.

The soil moisture sensor is a solid state, electrical resistance type sensor. This sensor provides accurate readings from 10 centibars to 200 centibars, which covers the entire soil moisture range required in irrigated agriculture, even in heavier clay soils.

The sensor includes internally installed gypsum, which provides some buffering for the effect of salinity levels normally found in irrigated agricultural crops and landscapes. Because this sensor is unaffected by freezing temperatures, it does not require removal during winter in cold climates.

The basic procedure for sensor installation is to make a hole with a  $\frac{7}{8}$ " diameter rod to the desired sensor depth. With coarse or gravelly soils, it is sometimes difficult to get a snug fit between the sensor and the soil. With this situation, making an oversized hole (1" to 1 $\frac{1}{4}$ ") may be necessary. Then prepare a "grout" of the soil and water, and pour it down into the bottom of the hole. Push the sensor down to the bottom of the hole (a piece of  $\frac{1}{2}$ " class 315 PVC pipe is handy) to ensure it bottoms out and snugly fits into the soil. Carefully backfill the access hole, and tamp the soil down sufficiently to prevent water channeling down the hole to the sensor. (Specific instructions are included with each sensor.)

Once the sensors are installed, there is no further need for maintenance. With permanent crops such as trees and vines, the sensors may be left in place all winter. With annual crops, where field operations are required, removal of the sensors prior to harvest is a standard practice. If the sensors are removed, simply clean them off and store them in a dry area.





## Technical Specifications

S1201Z

Sensor Excitation Current: 5 VAC, 100 - 120 Hz (square wave)  
Sensor Output: 500 - 30,000 ohms of electrical resistance, which equates  
10 - 200 centibars of soil water suction (linear)

### PHYSICAL

Diameter:  $\frac{7}{8}$ "  
Length: 2"