

- Relatively high level of precision when ionic concentration of the soil does not change
- Can be read by remote methods

### Resistive Sensor (Gypsum)

#### 1. Description:

One of the most common methods of estimating matric potential is with gypsum or porous blocks. The device consists of a porous block containing two electrodes connected to a wire lead. The porous block is made of gypsum or fiberglass. When the device is buried in the soil, water will move in or out of the block until the matric potential of the block and the soil are the same. The electrical conductivity of the block is then read with an alternating current bridge. A calibration curve is made to relate electrical conductivity to the matric potential for any particular soil. Using a porous electrical resistance block system offers the advantage of low cost and the possibility of measuring the same location in the field throughout the season. The blocks function over the entire range of soil water availability. The disadvantage of the porous block system is that each block has somewhat different characteristics and must be individually calibrated. The main disadvantage of the gypsum block is that the calibration changes gradually with time, limiting the life of the block (Phene, 1988).

2. Measured Parameter: Soil moisture tension

3. Response Time: 2 to 3 hours

#### 4. Disadvantages:

- Each block requires individual calibration
- Calibration changes with time
- Life of device limited
- Provides inaccurate measurements

5. Advantages: Inexpensive

#### 6. Related Literature:

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