

Introduction to Soil Moisture Sensors

A soil moisture sensor is a water conservation accessory for conventional automatic irrigation controllers or “time clocks” with the potential for eliminating excessive irrigation cycles. The device connects to a typical residential system and consists of a sensor that is buried in the root zone of the irrigated area and a control unit that is placed near the irrigation time clock. The irrigation time clock is programmed normally, but when irrigation is scheduled to occur, the soil moisture sensor is queried. If soil moisture is at or above a preset threshold, the soil moisture sensor will prevent the irrigation system from operating, eliminating an unnecessary irrigation cycle. If the prevailing soil moisture is below the threshold level, irrigation will occur as normal. Since soil moisture conditions are continuously monitored, day to day as well as seasonal changes are automatically compensated for.

Independent university research studies have demonstrated water savings from 5% to 88% and an average of 59% compared to a well managed time based controller only. Adjustment time is necessary to fine tune the settings for optimum performance in each installation due to variables in soils, drainage patterns, sun exposure, etc. The technology has been available for over a decade but has not been widely used.

Soil moisture sensor equipment is available from several manufacturers with varying numbers of sensors and levels of sophistication ranging in price from less than \$100 to over \$300.



Picture is shown for an example of a soil moisture sensor. Several styles and brands are available and no endorsement of any manufacturer is intended.

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