

TECHNOLOGY UPDATE: rain sensors



SportsTurf asked Jeff Kremicki, product manager—controllers/sensors, for Hunter Industries to share what's new in the world of rain sensors:

ST: How do rain and moisture sensors work?

Kremicki: Sensors for commercial irrigation systems include rain, freeze, wind, and flow sensors. Each sensor is designed to activate or deactivate automatic irrigation when it reaches a threshold level.

Rain sensors are the simplest and most effective way to prevent sprinklers from coming on during or after precipitation. Our models at Hunter can be easily installed on any automatic irrigation system. They shut the sprinklers off in a storm and keep them off, automatically compensating for the amount of rainfall that has occurred. There are disks inside the rain sensor that absorb water and expand proportionally to the amount of rainfall that fell (e.g. a small cloudburst would result in little absorption, a large thunderstorm would lead to more absorption and expansion). As moisture-laden disks expand, they eventually activate a switch that interrupts the circuit from the controller to the solenoid valves. Once they dry, the disks contract and release the switch. Thus the rain sensor resets automatically without affecting your controller.

The Rain-Clik model overcomes an issue inherent with most rain-sensing devices that must first accumulate a set amount of rainfall before a switch is activated that interrupts watering. In that "accumulation time," the system will continue to water, giving the appearance a precious resource is being wasted, which is exactly the opposite impression a turf manager would like to convey. This model can command a controller to shut off immediately, not after a quarter- or a half-inch, but right when it starts to rain.

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IRRIGATION & DRAINAGE

ST: Is there a certain level of irrigation system turf managers must have to employ these sensors?

Kremicki: You will find these sensors on irrigation controllers ranging from a small residential controller up to a large commercial controller. Many controllers on the market today are designed with sensor terminals that can support one or more sensor inputs.

ST: How can turf managers use this tool to his or her best advantage?

Kremicki: Install them! They are really a cost effective way to save water and prevent potential site damage. In addition to rain sensors, flow sensors can prevent significant site damage due to a ruptured pipe or broken sprinkler that is left undetected. These sensors can help identify a break and shut the irrigation off before any damage can occur. Freeze sensors can prevent systems from activating by automatically stopping the flow of water when the outdoor temperature drops to near freezing.

ST: Where's the technology with these sensors headed? What are you developing now?

Kremicki: Irrigation sensors have been around for many years. Their popularity is due to the ease of use and cost effectiveness. We've evolved the sensor product line from sensors that are wired directly to the irriga-

tion controller, which are still in use today, to sensors that send wireless signals to the irrigation controllers from up to 1,000 ft away.

For example, our wireless rain sensor attaches by simply installing the receiver unit next to your irrigation controller, and then installing the transmitter anywhere that the device can receive representative rainfall. No ladders needed to attach to a high outcropping on a building, no messy wires to hide out of view, and the transmitter can be placed out of reach of vandals.

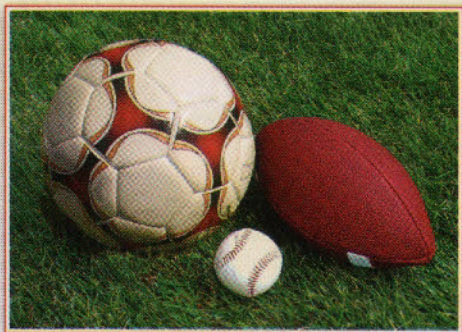
Hunter has also spent a significant amount of time developing and testing new sensors that actively take over the irrigation scheduling of controllers.

The Hunter ET System uses a sensor that gathers weather data on site, and continuously self-adjusts to calculate the ideal program for your field. This type of sensor takes the guesswork out of irrigation scheduling, by using your own state-of-the-art weather station to track your local microclimate and automatically calculate a scientific irrigation program.

Your local Evapotranspiration (ET) factor, the combination of two separate processes whereby water is lost from the soil surface by evaporation and from the plant by transpiration, can be taken into account. Measuring the rate at which water is consumed by weather conditions, the ET System will initiate a new schedule to replenish only the water that is actually needed for your sprinkler system, plants, and soil conditions. ■

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