



The Future of Controllers

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How much do you water? This is the eternal question of homeowners, landscape contractors, parks employees, municipal employees, irrigation consultants, conservation professionals, and just about everyone else.

Traditionally, all of these groups use similar methods to create their irrigation schedule. They have one schedule for the grass with pop-ups, another for grass with rotors, another for desert landscaping with drip and so on. The schedules are the same regardless of what part of town they are in, what the site characteristics are, and the uniformity and efficiency are rarely taken into account.

Most irrigation systems are changed every two to three months. This corresponds with the changing seasons, which remind us to adjust the controller. This is not nearly often enough. We have different weather conditions occurring on a weekly and sometimes daily basis. Unfortunately most professionals don't even have the time adjust irrigation schedules this often at their own homes let alone the dozens or hundreds of systems they manage.

To everyone's benefit, irrigation companies have responded by developing technology that takes the guesswork out of creating an irrigation schedule. Similar to what golf courses have used for years, these new controllers take into account site-specific parameters such as plant type, sprinkler type, soil type, slope, and sometimes soil moisture levels along with local weather conditions to create an irrigation schedule.

These new controllers, referred to as "smart controllers," come in a wide variety of configurations and work in a variety of different ways. But they all have the same core purpose: create an irrigation schedule based on the needs of the plants being watered and adjust that schedule based on changing conditions.

There are four main categories of smart controllers: signal-based; historical-adjusted; on-site weather station, and soil moisture sensor.

SIGNAL BASED

Companies that manufacture signal based smart controllers include Hydropoint, Toro, Irritrol, ET Water, Accurwater, Rain Bird, Irrisoft, Signature and Rain Master among others. These controllers ask the user to input characteristics of the site such as plant type, soil type, etc. and then receive a signal through a paging device or the Internet with current weather conditions and creates a watering schedule based on the combination of data. Some companies charge a fee for the signal while others do not.

Hydropoint, Toro and Irritrol use a program called WeatherTrak. This program receives weather data from all across the United States and sends a daily signal to each controller with the weather data of those weather stations closest to the controller. WT Water and Accuwater are both controlled and programmed via the Internet with weather information also sent from local weather stations on a daily basis.

Rain Bird and Irrisoft manufacture a receiver that attaches to existing controllers allowing the user to keep their current controller. The receiver is programmed with the site specifications and parameters for watering and gets a signal hourly of weather info to adjust the irrigation schedule.

All the above-mentioned controllers make products for all sizes of properties. Signature Control Systems and Rain Master both make controllers that are generally used in small commercial and larger properties rather than single-family homes. These systems work as either stand alone controllers or central control systems.

HISTORICAL-ADJUSTED

The two major manufacturers of smart controllers that use historical-adjusted programming are Alex-tronix and Aqua Conserve. Because these products do not receive a signal or have additional hardware to purchase, they are generally the least expensive. They both have historical weather patterns for areas across the country built into the software and the user inputs their latitude or zip code to access their local weather pattern. The controller is then set for the maximum watering schedule, such as July, and then the schedule is modified throughout the year.

Both controllers come with an on-site temperature sensor to make real time adjustments to the schedule. The Alex-tronix controller is a battery-operated controller.

ON-SITE WEATHER STATION

Manufacturers of these controllers include Weathermatic, Accurate Weather-Set, Hunter and Calsense. These controllers come with peripheral devices that are connected to the irrigation controller directly. These devices collect weather data from the same location that is being irrigated such as solar radiation, rainfall, temperature and wind speed. The user inputs site information such as plant type, precipitation rate and soil type. Then an

irrigation schedule is created specific for the site and is continually adjusted with changing weather conditions.

SOIL MOISTURE SENSOR

These manufacturers make devices that read the actual soil moisture level in the area(s) being irrigated and adjust the irrigation schedule accordingly. Manufacturers include Irrrometer, Acclima, Nelson Turf, Dynamax and Baseline. All these manufacturers make devices that can be used with any manufacturer's controllers. The irrigation follows the schedule in the controller but the soil moisture sensor interrupts the common wire if moisture levels are high. Acclima, Nelson Turf and Baseline also make controllers that use soil moisture patterns to create the irrigation schedule.

There have been multiple studies that show that Smart Controllers can reduce water use by 15 - 40 percent. Of course results vary based on previous usage, what types of plants you are watering, how well the system was installed and maintained, etc. Because of the water savings, many water utilities throughout the U.S. offer incentives to install many of the smart controllers listed here.

These devices work well as water management tools and all are capable of working with the various restrictions that most western cities are currently enforcing. They are also a great business tool for landscape professionals, giving an advantage to your company by saving water and keeping the plants healthy with limited staff time spent going to sites to change the irrigation schedule. More information can be found at www.irrigation.org/SWAT.

The Southern Nevada Water Authority is hosting a series of product seminars from most of the manufacturers listed in this article, 15 manufacturers in total. These seminars will provide the manufacturers a forum to explain what is unique about their product, how it benefits you and your customers and how to use them. The seminars will be every Tuesday and Thursday starting January 9 and ending February 1. The classes will last from 8 a.m. to noon.

Manufacturers scheduled to present include: Signature Control Systems and Toro on January 9, Acclima and Dynamax on January 11, Accurate WeatherSet and ET Water on January 16, Weathermatic and Irrrometer on January 18, Alex-tronix and Hydropoint/WeatherTrak on January 23, Rain Master and Calsense on January 25, Hunter and Baseline on January 30 and Rain Bird on February 1. To reserve a seat or to get more information, please contact me at 702.862.3742 or jason.eckberg@snwa.com