

SMART CONTROLLERS, SMART CHOICE

New systems automate how much water is used where and when.

BY **RON HALL** EDITOR-AT-LARGE

IRRIGATION CONTROLLERS, OFTEN referred to as timers, are essentially clocks. Although the technology designed into the latest generation of controllers — so-called “smart controllers” — is sophisticated, their task remains humble: They tell valves on irrigation systems when to open to allow water to flow through pipes and to exit sprayheads, rotors or emitters.

Controllers, including smart controllers, are available in a range of prices and different levels of sophistication. Homeowners typically opt for relatively inexpensive, standard controllers they buy at retail garden centers and big box stores. In spite of their modest price, it's inaccurate to

describe these units as “dumb.” They dispense water efficiently, assuming that the remainder of the system is well designed, installed, is intelligently maintained and the clocks are adjusted to meet climatic conditions.

These are big assumptions. The biggest is the belief (hope?) that property owners regularly adjust timers to account for changes or seasonal differences in the weather. This is seldom the case.

Chris Spain, chairman of the board and chief strategy officer of Petaluma, CA-based HydroPoint Data Systems, offers this analogy to this “set-it-and-forget-it” syndrome: Envision that instead of a thermostat to control the heat in your home, you install a timer that turns on your furnace at the same time for the same period of time every day, every season. Wouldn't make much sense, would it?

Get smart

Introduced into the golf and sports field markets 20 years ago, smart controllers are now turning up on commercial and residential properties.

For the most part, they take humans out of the day-to-day landscape irrigation picture by using weather information and/or sensors to manage watering times and frequencies — how much water is dispersed where and when. As environmental conditions vary, they increase or decrease irrigation, by measuring factors such as precipitation, humidity, wind, solar radiation and soil moisture.

Smart controllers have come to the attention of the U.S. Environmental Protection Agency (EPA) and water

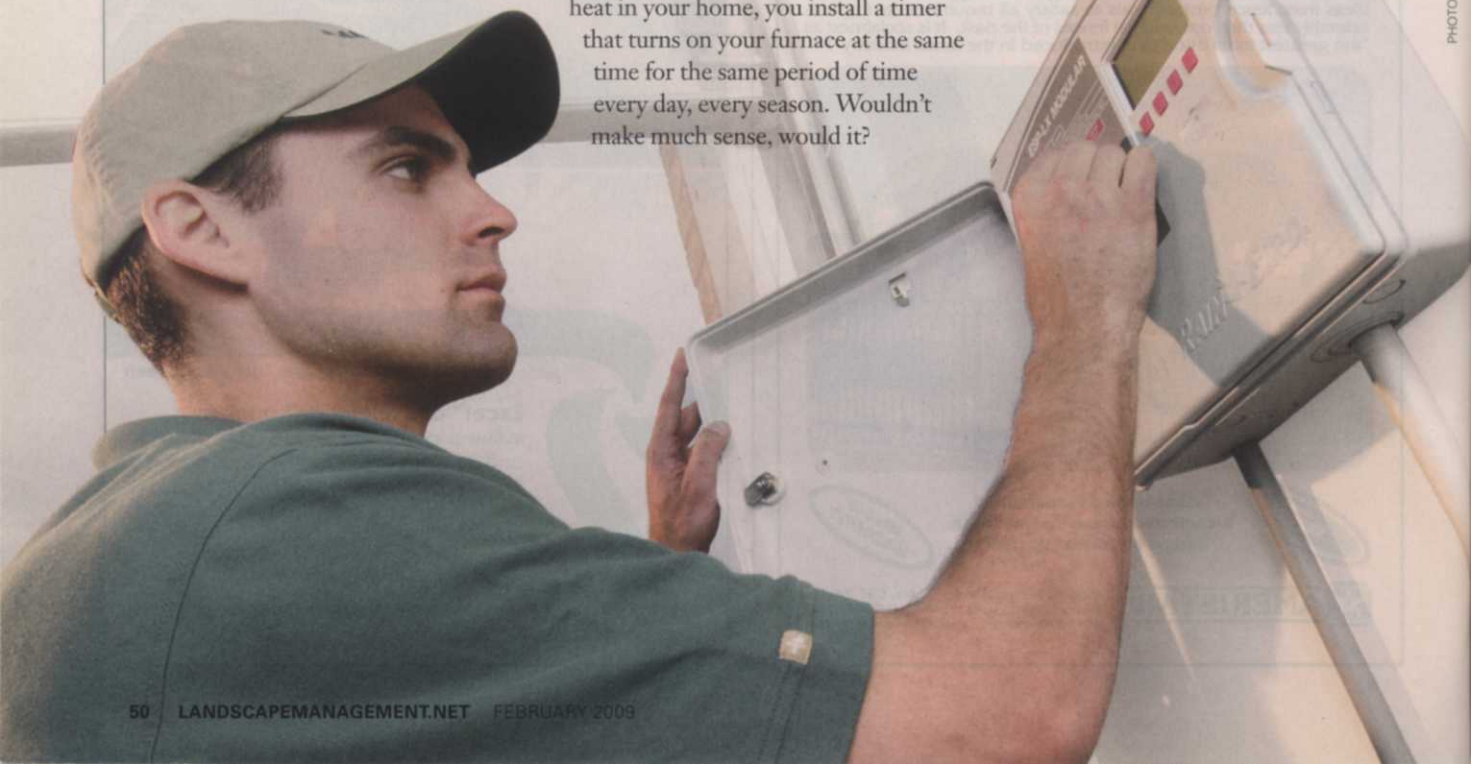


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agencies eager to reduce water waste and runoff from irrigated landscapes.

Some communities offer cash incentives to encourage homeowners to replace their older controllers with smart units. The San Diego County Water Authority (SDCWA), for example, gives homeowners \$350 rebates for replacing their standard timers with smart controllers. Other water purveyors, most of them located in the arid Southwest U.S., have similar programs.

All major irrigation suppliers offer smart controllers. Years of testing have shown that when properly installed and tuned, the units cut related water consumption and costs 15% to 30%.

Interaction still important

While replacing an older clock with a smart controller generally reduces water use, occasionally property managers are surprised when irrigation water use goes up. In some instances, older clock actually might have been providing too little irrigation, or the coverage was so uneven that large portions of the landscape were under-watered.

"It took some time for us learn how to use it, But we're getting really good in setting up these systems and managing these controllers now," said John Gachina of his company's experiences. "I think there is a misconception by some people that you buy these smart controllers and they take care of themselves. They need care and feeding as you're gaining experience with them."

Gachina, owner of Gachina Landscape Management, Menlo Park, CA, says that his irrigation technicians recommend smart controllers to customers — but only where they're appropriate.

"When we look at a system, we want to know whether it's a good candidate for a smart controller. If it's not because of a poorly designed system, then we'll talk to the customer about how to upgrade the system," he says. "The controller won't adjust for bad system design."

Landscape irrigation efficiency is increasingly important because of environmental and financial considerations. The U.S. EPA estimates that as much as

50% of water used for landscape irrigation is wasted. Overwatering results in runoff and non-point source pollution; wasted water and energy (including the cost of infrastructure to meet peak demands); damage to hardscapes and foundations; added liability; higher water bills; and damage to turfgrass and ornamentals.

Will Johnson, owner of Seco Land-

scape in San Diego, says his passion for installing water-efficient landscapes is reflected in the name of his company — seco is the Spanish word for dry.

"A smart controller is a tool, and like any other tool, you have to use it correctly," Johnson says. "The beauty of this tool is that after I've programmed the timer and I leave the homeowner's

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property, I know that, at least this season, the landscape will be watered appropriately and that water is not going to run into the street."

But even with smart technology, you can't "set it and forget it" — at least not in the \$300 to \$500 price range most customers are willing to pay for a timer.

Compare features

In pursuit of water savings and to reduce non-point-source pollution, the U.S. EPA has partnered with the Irrigation Association (IA) to test water-efficient products that can be promoted through its voluntary, three-year-old WaterSense program.

AT A GLANCE

Smart controllers

- › The technology is established on golf courses and sports fields.
- › All major irrigation manufacturers offer them.
- › There are two basic types: climate-based and sensor-based.
- › Climate-based controllers receive regular signals of prevailing weather conditions from local weather stations that update the current evapotranspiration rate to the units.
- › Sensor-based systems typically have historic weather data programmed into their memories for baselines and adjust irrigation as they receive real-time data on rainfall, temperature, sunlight, humidity, slope and soil moisture.
- › When properly set up on well-designed systems, they can save up to 30% of water usage.
- › The U.S. EPA will consider them for the first irrigation product for its WaterSense labeling program.

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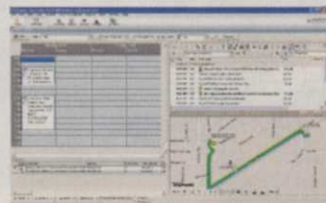
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That process is under way for smart climate-based controllers, the first irrigation product category being considered for WaterSense labeling. You can compare the capabilities of tested smart controllers — climate-based and sensor-based — online at www.irrigation.org.

Do your research. Manufacturers offer valuable information online, but you'll get a better idea of how these units work by visiting sites where they're being used and talking with end users. LM

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