

IRROMETER CO  
Box 2424  
Riverside CA 92516  
Brian Lennon  
951 689 1701

<b>DOCKET</b> <b>09-AAER-1A</b>
DATE _____
RECD. <u>July 13 2009</u>

Comments regarding the June 30 Energy Commission's workshop on efficiency standards and labeling for irrigation equipment:

We support the Energy Commission's efforts to define terms and develop efficiency standards and labeling for irrigation equipment. During the June 30<sup>th</sup> workshop in Sacramento we saw several presentations, heard many comments, and had numerous conversations with individuals regarding so called "smart" irrigation management. As a result we are compelled to make comments on what seems to be the general direction of the CEC's efforts and how we as a manufacturer of "smart" irrigation management equipment can help to ensure a comprehensive approach to reducing landscape irrigation waste.

For some people the term "smart" irrigation management is analogous with weather based or ET controllers as they are often referred to. The amount of discussion surrounding these products during the workshop seems to reflect the general perception that all smart irrigation management is tied to weather conditions. Actually the Irrigation Association states it best in their definition: "*SMART controllers estimate or measure depletion of available soil moisture in order to operate an irrigation system, replenishing water as needed while minimizing excess water use*". We realize that much of the focus and marketing effort on the part of the major irrigation equipment manufacturers has been on ET controllers and we understand how that can impact the perception of the consumer. But we believe it is incumbent upon the CEC as a public agency to embrace all available technologies and provide awareness for those technologies to be equally represented.

As a company that is very involved in the landscape, agricultural, and research markets, we continually hear opposing views on the correct way to estimate evapotranspiration (ET) or the numerous factors that influence an irrigation schedule. The basis for this technology's scheduling adjustments is ET and/or some factor of ET. We don't argue the value of this science; however we do see how it can be open to interpretation from different perspectives. Moreover the recent revision of the results from a large scale study on water savings from ET controllers left many people disappointed and confused because the study revealed a net savings of just over 6%. Our experience as well as published research studies show significantly greater water savings when using demand based technology (soil moisture management). In fact we have seen many applications where combining soil moisture management with ET scheduling has been very effective in maximizing efficiency.

Our intent is not to criticize weather based scheduling technology, but just to remind open minded people that there are other technologies out there and that some “smart” controllers may be more complex than the typical operator is willing to take the time to learn how to program correctly. The lesson from this study tells us to keep it simple. We do this by offering the operator one dial to adjust for soil conditions and plant health. Once acclimated to the site our device requires no seasonal adjustments.

Actually both soil moisture and ET technologies have something in common in that they are sensor based. All weather based controllers use some kind of sensor (temperature, solar radiation, wind, etc.) as a basis for which they estimate soil moisture depletion and subsequently adjust the irrigation schedule. Our soil moisture managed systems also use a sensor, and limit the irrigation schedule based on a measurement of the soil moisture status. We are not suggesting that estimating soil moisture depletion via ET is a bad thing, but we know that actually measuring soil moisture depletion is a very “smart” and effective alternative technology to ET. If the CEC encourages competing technologies, better products will likely be the result from both camps.

Two other issues we would like to address are the definition and inclusion of add-on devices and the characteristics of irrigation controllers that will allow add-on devices to enhance the effectiveness of irrigation controllers. We agree with the Commission’s view that add-on devices could provide an affordable smart irrigation control alternative for the consumer.

The Commission may be aware that the Irrigation Association is currently reviewing public comments regarding requirements for “Add-on” Type Smart Irrigation Control Devices. We would recommend that the CEC review these proceedings in order to avoid duplication of effort. The main point from our perspective is the recognition that add-on smart control devices can improve irrigation efficiency when used with standard 24VAC powered controllers, battery powered controllers, or even weather based controllers. Our concern is that the focus on so called “smart controllers” could overshadow the positive impact add-on devices could have in overall water savings. We would like to see the Commission address this issue and provide a clear statement on the role that add-on devices will play in this program. If the CEC is planning on categorizing smart controllers into four groups (Direct-sensing, Indirect –sensing, Pre-calibrated, Manually-calibrated) where would add-on devices fall? How would the consumer be made aware that an add-on device can update a conventional controller to “smart” status?

Below we have listed the characteristics of irrigation controllers that will allow add-on devices to enhance their effectiveness. We do not think that a minimum standard should include some kind connection to, or capability of connecting to, weather sensors or broadcasted ET data. This would add unnecessary cost for the consumer and suggest that this is a preferred technology. We believe that the CEC should stay neutral on mandating any particular kind of sensor data (weather, soil moisture, or ???) as this would appear to be an endorsement of that technology and limit innovation and emerging technologies. Sensor data or interrupt commands, regardless of their source, can easily be introduced via the sensor port or valve common wiring for add-on devices. Most controllers on the market today already offer the features recommended below so the cost impact to the consumer in most cases is nominal.

Suggested characteristics (feature set) of an irrigation controller:

- It should have non-volatile memory.
- It should have run time increments of one minute.
- It should be capable of accepting one or more sensor based signal interruptions to limit programmed irrigation events. The add-on device connection should not be exclusive to the controller manufacturer.
- It should be capable of initiating multiple irrigation events. This can be accomplished via any combination of start time, program and/or cycle & soak events.

We appreciate your consideration on these matters and offer our fifty-eight years of experience in optimizing irrigation efficiency and maximizing water conservation to you. Let us know if we can help in any way.