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AQUEDUCT CONSULTANCY
Irrigation Design and Water Harvesting

Aug 2015 V2

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Irrigation Technical Notes
IRRIGATION CONTROLLER DOSMESTIC

Irrigation Controllers
DOMESTIC RECORD SHEET

Basics

An irrigation controller is a switching device that turns an electronic (solenoid) valve ON to allow water to be applied to your garden and after a pre determined period of time, turns the valve off.

A controller may activate one or more valves.

Controller programming needs to take into account the type of plants, soil texture /depth and the irrigation application rate.

Types of Controllers

There are many different brand names and types ranging from tap timers to completely electronic. Some are able to have SENSORS attached to interrupt an irrigation schedule e.g. rain sensor. soil moisture sensor, wind sensor

CONTROLLER DETAIL

All controllers work along the lines of :

RUN DAYS - This is how often the controller comes on. Day of the week, odd days, even days, interval.

START TIME - This is the time of day the system comes on. Multiple start times are often available.

RUN TIME - This is how long each station or area will run. Increments are generally in minutes although some controllers offer hour run times.

A PROGRAM determines what time and day a system will operate and for how long each station or area will operate. Many controllers have multiple programs. These are generally given a letter (A, B, C, D) and this is like having additional controllers to allow for different water requirements on the one site.

Irrigation controllers generally operate the stations sequentially, there is no need to provide a start time for each station or area. These will automatically operate in sequence once the system starts.

Plant Types

Plant water use can be described as:

- Low.
- Average.
- High.

How and where the plant obtains water is primarily related to the soil texture and type, the depth of the soil and depth of the plants roots.

BASIC PROGRAMING

Programming is about grouping plant types and water needs of plants.

First consider your area:

1/ What type of plants are located within an irrigated area or zone (Low, average or high water use).

2/ What is the irrigation type (drip, micro, spray etc) and estimated application rate. (in millimetres per hour).

3/ Estimate how much water the soil holds (in mm of water per square meters) (See Tech Notes Soil Texture and Water Holding Capacity)

4/ Take an average evaporation rate for your area (available from BOM).

http://www.bom.gov.au/watl/eto/

This will give you:

1/ Plant water needs.

2/ Application rate.

3/ Soil water holding capacity

4/ Water loss estimate

HOW TO USE THIS DATA

HOW OFTEN:

This is determined by the plant type and the evapotranspiration rate.

WHEN:

Determined by numerous factors -AM or PM.

HOW MUCH:

Or how long to water is determined by the application rate, the soil water holding capacity, the plant root depth, the plant type and the efficiency of the irrigation system.

Remember

1mm = 1L / m2

Remember there are other factors affecting how water enters and moves through the soil. E.g., Water repellancy, rainfall, rain shadows , etc

Controller							
Date Installed / Inspected							
Status Rain sensor / other Battery Types etc							
	As Entered			**Changed**			
Date							
Time							

Program	**Start Time 1**	**Start Time 2**	**Start Time 3**	**Start Time 4**	**Start Time 5**	**Start Time 6**	
A							
B							
C							
D							
Program	**Run Time 1**	**Run Time 2**	**Run Time 3**	**Run Time 4**	**Run Time 5**	**Run Time**	**Days of week**
A							
B							
C							
D							
WIRE							
Description							

Controller							
Date Installed / Inspected							
Status Rain sensor / other Battery Types etc							
	As Entered			**Changed**			
Date							
Time							

Program	**Start Time 1**	**Start Time 2**	**Start Time 3**	**Start Time 4**	**Start Time 5**	**Start Time 6**	
A							
B							
C							
D							
Program	**Run Time 1**	**Run Time 2**	**Run Time 3**	**Run Time 4**	**Run Time 5**	**Run Time**	**Days of week**
A							
B							
C							
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Descrip-tion							