

# AQUARIUS

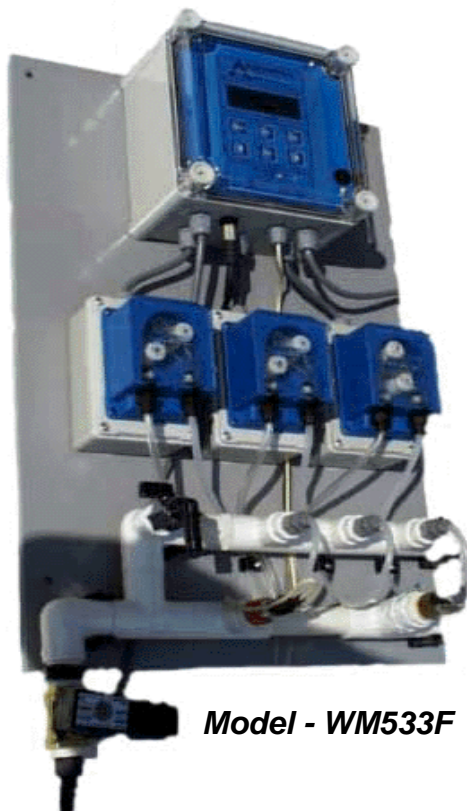
## Water Meter Controlled Inhibitor Dosing

Microprocessor Control of Liquid Inhibitor Dosing based on Water Meter Pulse Control

Control can be used for a multitude of different Water Meter types and Dosing Pump capacities to provide exact dosing rates.

Water Meter connects directly to a socket at the base of the controller for ease of installation

A visual indication is provided when impulses are being received from the Water Meter.



Model - WM533F



**Advanced Technology For The New Millennium**

# Water Meter Controlled Inhibitor Dosing

## Introduction

This operating instruction provides additional relevant information pertaining to the Water Meter controlled inhibitor dosing option and should be read in conjunction with the main controller instructions. The Water Meter controlled inhibitor dosing option can be fitted to any Aquarius Technologies cooling tower controller. Within this instruction, the set and read windows of the Water Meter controlled inhibitor dosing program are explained and are followed by water treatment calculations relevant to water meter controlled inhibitor dosing.

## The Set Inhibitor Screen

The Set Inhibitor screen is used to set the requirements for water meter controlled inhibitor dosing. This screen is used to set inhibitor options. The default settings are shown below.

```
S T D      I N H I B I T O R      R L 2
P u m p   C a p . =      0 . 4 0   I / h
P P M =    1 2 5                A U T O
P u l s e s / L = 4 . 0
```

The Pump Capacity may be set from 0.10 to 9.99 Litres per hour and is used in the dosing calculation to determine when the pump is to turn on.

The PPM Dose Rate is also used to determine when the pump is to turn on. The PPM dose rate can be set from 1 to 999ppm.

Overriding of the water meter input can be achieved by changing the next field from AUTO to MANUAL. Note that when in MAN mode, the inhibitor dosing pump operates at all times.

The Pulses per Litre coming from the water meter are set in the last field. Options are 4 impulses per litre (4), 1 impulse per litre (1), and 1 impulse per 10 litres (0.1).

## Reading Details of the Inhibitor Dosing Program

To move from a set program screen to the corresponding read-only screen, press the READ key on the keypad.

Similarly, to move from a read-only screen to the corresponding set program screen, press the SET key on the keypad.

## Inhibitor Status Screen

This screen displays the inhibitor status. An example is shown below. For descriptions and information on setting these items, refer to the section Set Inhibitor.

```
4      I N H I B I T O R      R L 2 = O F F
P u m p   C a p . =      0 . 4 0 I / h
P P M =    1 2 5                A U T O
P u l s e s / L = 4 . 0      D E T E C T
```

Note that whenever an impulse is detected from the water meter, the bottom right hand side of the display will flash the DETECT response. When the microprocessor has detected that dosing should commence, the pump will activate and the top right hand section will display "ON" for a 5 second period.

## Calculations

Dosage is calculated on the concentration maintained in the system, and if system is prone to periodic overflows then dosage should be calculated on the lowest likely concentration. This will result in overdosing at times of smaller losses.

If a system should run at a concentration of 10 and maintain a level of 100 ppm of inhibitor, then the dosage of inhibitor is 100/10 ppm on the dosage rate, that is, 10 ppm. If overflows are such that a concentration of only 4 is maintained, then the dosage of inhibitor is 100/4 ppm on the make-up rate, that is, 25 ppm. Because overflows are not prevented, chemical usage is 150% higher than necessary.