



Water Logix

by Gencon

**Water Feature
Control Technology**

**Project:
Basic Controller**

Table of Contents

Table of Contents 1

1. Water Logic Controller 2

 1.1 Introduction 2

 1.2 Gencon 2

 1.3 Control Modules 2

 1.4 Water Logic Control Panel 2

2. Operating Instructions 4

 2.1. Power Up 4

 2.1. Power Up 5

 2.2. Run Mode 5

 2.2.1 Display Pump shown in “Off” Mode 5

 2.2.2 Display Pump shown in “Hand” and “Auto” Modes 5

 2.2.2.1 Pumps On VFD Drives 6

 2.2.3 Next Screen 6

 2.2.4 Filter Pump shown in “Off” Mode 6

 2.3 Lighting shown in “Off” Mode 6

 2.4 Wind Speed Display 6

3. System Set Up and Configuration 8

 3.1 On Time 8

 3.1.1 Display Pump “On Time” Setup 8

 3.1.2 Off Time 9

 3.1.3 Display Pump “Off Time” Setup 9

 3.1.4 On Days 9

 3.1.5 Display Pump “On Days” Setup 10

 4.0 Anemometer Configuration 11

 4.1 Anemometer Setup 11

5.0 System Configuration 11

 5.1 System Parameters 11

 5.2 Using Information Mode 12

 5.2.1 The Main Menu 12

 5.2.2 Key Description 12

 5.3 Setting Time & Date 13

 5.4 Graphic Display when Changing Time of Day 13

6.0 Level Controls 15

1. Water Logic Controller

1.1 Introduction

The Water Logic Controller is a modular control system designed to control Commercial Water Features. Commercial Water Features vary in size and complexity but have basic building blocks from the control perspective. The Water Logic Controller is dedicated to meet the growing needs of the industry and provide a quality, robust and cost effective system with a modular building



block approach. Water Logic was designed in coordination with Advanced Aquatic Technology for use in their Commercial Water Features.

1.2 Gencon

Gencon has been integrating control systems for industrial manufacturers chemical and food processors since 1978. Gencon has designed and built control systems for Arco, Chevron, Coca Cola, Neutrogena, 3M, Baxter, Amgen, MTA, Metropolitan Water to name a few. All Gencon systems bear the UL label since 1985. Gencon brings this integration expertise to the Water Feature Industry, with the introduction of the Water Logic Control System.

1.3 Control Modules

Taking a product oriented approach to address basic control functions we have developed standard product offerings starting with the Water Logic Control Panel.

1.4 Water Logic Control Panel

Control panel includes:

Powder Coated NEMA 4 or FRP Non-Metallic NEMA 4X (recommended for underground vaults)

Main Switch – Fused or non-fused or Main Circuit Breaker

Water Logic Controller Manual

Finger Safe Power Distribution Blocks

Bolted on line and load lug circuit breakers and GFCI breakers

Motor Circuit Protector with overloads and IEC contactor for pump motors.

Water logic controller – Combined time clock, Programmable Logic Controller, and MMI with expansion I/O and Networking.

Distributed control capability using Canbuss

SMS messaging capability for remote alarm monitoring with cell phone technology

Built in anemometer controller. Just add low cost wind sensor.

DMX-512 Interface for Lighting and Show Control

Sound to Water Control (Water and Lights Dance in Response to Audio Signal)

Fog Controller

2. Operating Instructions

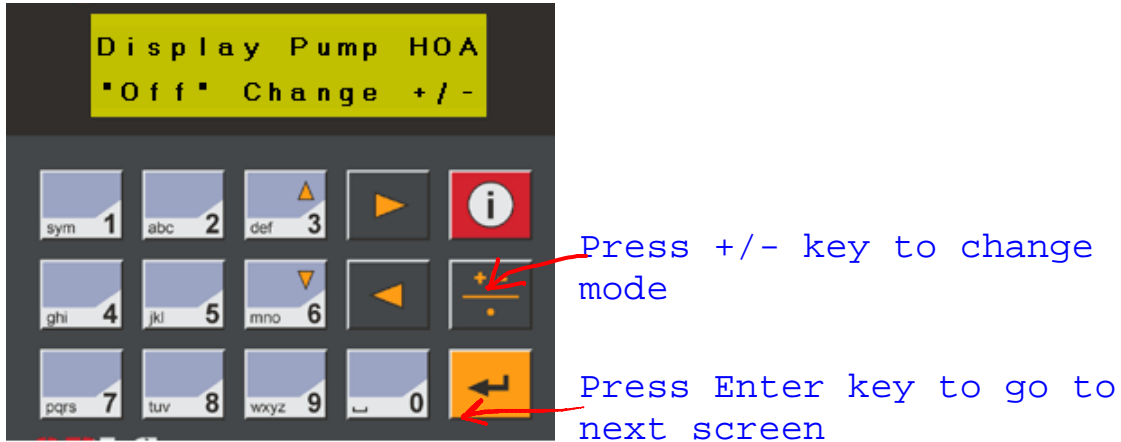
This instruction manual is intended to aid qualified personnel in configuring and operating the control system as a user. Refer to the appropriate safety, installation and maintenance manuals for additional information.

Caution: Risk of Electrical Shock!
Do not open the control panel door unless you are a qualified electrical maintenance worker. All user intended functions are accessible from the Operator Display.

2.1. Power Up

When the system is initially powered up, the Run mode display is shown on the Operator Interface Panel or Mind Machine Interface (MMI).

2.2. Run Mode



2.2.1 Display Pump shown in “Off” Mode

Pressing the +/- key will change the pump mode from “Off” to “Hand” to “Auto”.

Caution: The pump will Run when the mode is toggled to “Hand”

When in “Auto” mode the pump will run if the [On time](#) is set and all run conditions are met. When testing the pump for operation it is best to run in “Hand” mode.



2.2.2 Display Pump shown in “Hand” and “Auto” Modes



2.2.2.1 Pumps On VFD Drives

Any pumps that are on VFD drives will display the pump speed after the H-O-A screen. If there is an automated show this will be the Hand Mode Speed only.

If there is not an automated show for pump speeds then this setting will be for both the Auto and Hand Mode of operation.

Each time this screen is displayed a value must be entered into the speed field.

The value is 0-100% for the speed of the pump for 0-60HZ.

2.2.3 Next Screen

To go to the next screen on the MMI push the “↵Enter” key.



2.2.4 Filter Pump shown in “Off” Mode

The Filter Pump Mode is the next screen after the Display Pump. The H-O-A mode is changed the same as before by pressing the +/- key.

To go to the next screen on the MMI push the “↵Enter” key.



2.3 Lighting shown in “Off” Mode

The Lighting Mode is the next screen after the Filter Pump. The H-O-A mode is changed the same as before by pressing the +/- key.

To go to the next screen on the MMI push the “↵Enter” key.



2.4 Wind Speed Display

The Wind Speed Status is the next screen after the Display Pump. If the system has an anemometer attached the current wind speed is displayed as PV: and the current setpoint is displayed as SP1 for single stage controllers. If the current wind speed is below the

setpoint, the display will indicate OK. If the current wind speed is above the setpoint, the display will indicate Hi. See [anemometer configuration](#) for more information.

3. System Set Up and Configuration

To enter the Setup mode a pass code must be entered from the MMI keypad.

The pass code is entered by simultaneously pressing the “1” and “2” keys on the MMI keypad.

3.1 On Time



Enter desired On Time from keypad in 24 hour format

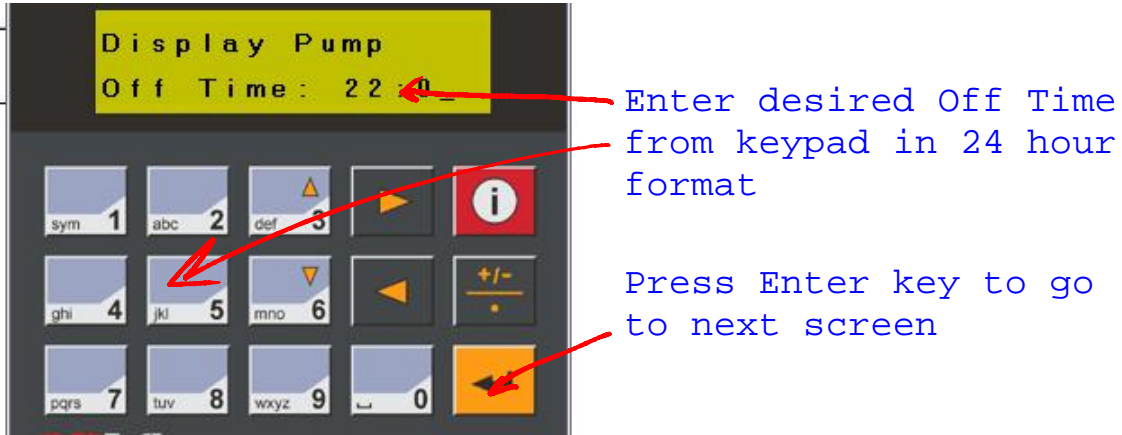
Press Enter key to go to next screen for Off time

3.1.1 Display Pump “On Time” Setup

To set the desired On Time for the Display Pump, enter the time from the numeric keypad in 24hour or military format. Leading zeros must be entered, the above figure shows 07:00 for a on time of 7:00 am. It has to be entered as 0700 from the keypad.

Pressing enter ↵ goes to the next screen which is the off time setpoint.

3.1.2 Off Time



3.1.3 Display Pump “Off Time” Setup

To set the desired Off Time for the Display Pump, enter the time from the numeric keypad in 24hour or military format. Leading zeros must be entered, the above figure shows 22:00 for an off time of 10:00 pm. It has to be entered as 2200 from the keypad. Pressing enter ↵ goes to the next screen which is the On Days setpoint.

3.1.4 On Days

Plus sign indicates “On” day.



3.1.5 Display Pump “On Days” Setup

Set the desired On Days for the Display Pump, by pressing +/- key to change from on to off. Change day of week by pressing Up/Down Arrow ▲▼ keys then press +/- key to change from on to off.

Pressing enter ↵ goes to the next screen.

4.0 Anemometer Configuration



4.1 Anemometer Setup

If the system has an anemometer attached, the current wind speed is displayed as PV: and the current setpoint is displayed as SP1 for single stage controllers. To change setpoint enter new setpoint from the Keypad. The units are wind speed in miles per hour.

An optional wind direction kit is available.

5.0 System Configuration

Caution: Risk of Unpredictable Operation!
Modifications to System Parameters can result in unpredictable operation.
This is intended for personnel who have been properly trained on the use of these parameters. Dangerous conditions could result if improper parameter values are entered!

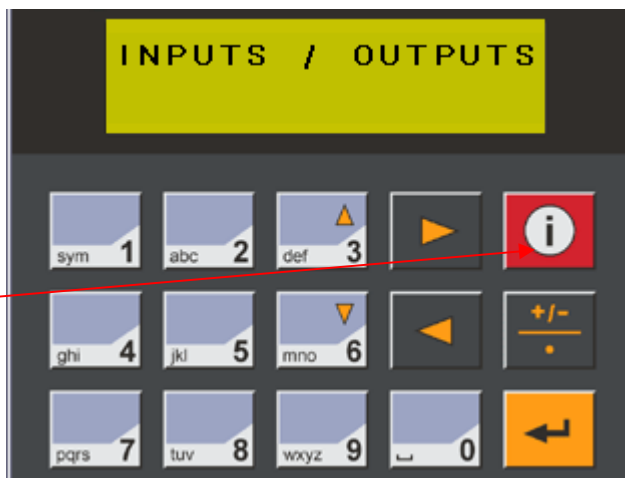
5.1 System Parameters

All variable data can be monitored from the status display panel in Information Mode

Information Mode allows you to display and edit data, and to perform certain preset actions. The system data is displayed on the LCD screen and may be edited via the keypad.

You can enter Information Mode at any time, without regard to what is currently displayed on the HMI screen. Viewing data does not affect the program. Note that when you are in Information Mode, the keypad is dedicated to that purpose. The keypad cannot be used for normal application functions until you exit Information Mode.

To enter Information Mode, press the <i> key for several seconds. The main category of data you want to view opens a



You navigate through the menu to reach the data you want. A category opens a

submenu.

The list below shows the categories of information that are available for viewing.

Using Information Mode, you can access:

- I/O status
- Analog Inputs: Operating range and current value
- Counter values
- MB and SB Status
- MI and SI current values
- Timers: Current timer value, preset value, and timer status
- PLC ID number
- RS232 Parameters
- Time and Date
- System Information

You can also restart your program, as well as initialize MBs and MIs.

For the purposes of this manual we will only cover how to change the Time and Date of the real time clock.

5.2 Using Information Mode

This section contains illustrated instructions that show you how to use the Information Mode menus.

5.2.1 The Main Menu

To enter the main menu, press the <i> key for several seconds. You navigate through the main menu to reach the category of data you want. Selecting a category opens a submenu.

Note that when you enter Information Mode, the Waterlogix keys take on the functions shown below instead of their normal application functions.

5.2.2 Key Description

Enter Information Mode and view the main menu.

If you are viewing the main menu, press <i> to exit information and display the program.

If you are viewing the submenu, press <i> to move back to the previous menu.

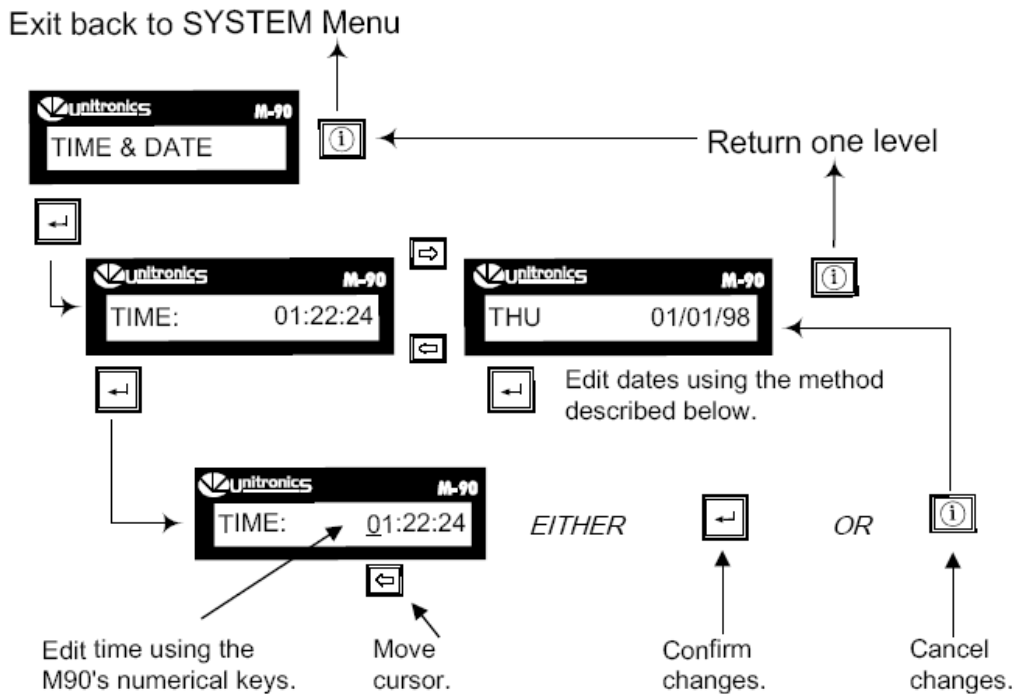
Move forward through the menu options with the Right arrow key.

Move backward through the menu options with the left arrow key.

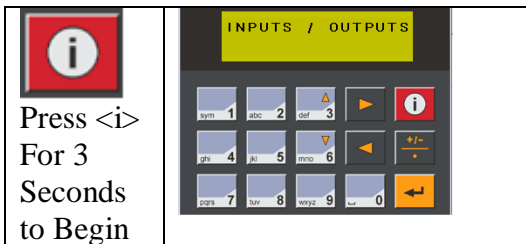
Select a menu option with Enter Key. Enter system changes from keypad and press Enter to save.














5.3 Setting Time & Date

Selecting Time & Date enables you to both view and change the current time and date as shown in Figure 19. These values are the real-time clock settings; the actual basis for the Waterlogix' time and date controlled functions. Note that when you are editing these settings, your changes are entered immediately into the system when you press the <Enter> key. Before you press the <Enter> key, you can exit without saving changes by using the <i> key.



5.4 Graphic Display when Changing Time of Day



| | | |
|--|--|--|
| <p>Press</p>  <p>To Scroll Right</p> |  | |
| <p>Press</p>  <p>To Scroll Right</p> |  | |
| <p>Press</p>  <p>To Scroll Right</p> |  | |
| <p>Press</p>  <p>To Scroll Right</p> |  | |
| <p>Press</p>  <p>To Drill Down to Time</p> |  | |
| <p>Press</p>  <p>Enter New Time From Keypad</p> |  | |
| <p>Press</p>  | <p>New Time will Be Saved</p> | |
| <p>Press</p>  | <p>Press Information key to exit backwards Press Until Normal Run Screen Appears</p> | |

6.0 Level Controls

6.1 The System could have up to three level Setpoints from point probes.

6.1.1 Low Level Probe

The low level probe is used as a low level cutout

When the level of the water goes below the probe the pumps will turn off and the lights will go off until the water level comes up above the probe.

6.1.2 Mid Level Probe

The mid level probe is used as a fill level.

When the level of the water goes below the probe the fill line solenoid will be turned on and will turn off when the water level comes up above the probe.

6.1.3 High Level Probe

The high level probe is used as a high level dump.

When the level of the water goes above the probe the Dump Valve solenoid will be turned on and will turn off when the water level goes back below the probe.