



## Application Note 106

### Waterman Irrigation Controller - GSM Communications

#### HIGHLIGHTS

**2-way SMS messaging between any mobile phone and the Sixnet PLC**

**Continuous RS232 link between a computer and the remote Sixnet PLC via the data channel - initiated by the computer or by the PLC**

**Automatic changeover between Sixnet communication ports upon data channel connection**

**Send an SMS message from your mobile phone and receive valuable system data back from your control system**

**Sixnet PLC automatically sends meaningful alarm messages to the on-duty technician or operator via SMS**

**SMS technology ensures that messages reach the destination every time**

#### INTRODUCTION

The development of the Waterman Irrigation Controller was an Industrial Automation initiative in response to a growing need for City Councils to have more advanced control over the irrigation of their parks and reserves. Through extensive marketing surveys it became more and more apparent that control and communication systems currently adopted by Councils throughout Australia were expensive and unreliable, with a lack of support and maintenance from the retailers.

#### SCOPE

Having already developed the Waterman Irrigation Controller, Industrial Automation is to design and develop a communications system that will allow for the following:

- Reliable connection to each individual park via a remote computer terminal(s);
- Remote control of the park's controller via a wireless hand-held device;
- Low initial costs;
- Easy upgrade path (ie it must be easy to add new parks to the system);
- Automatically alarm the on-duty technician/supervisor on the occurrence of a fault;

#### EQUIPMENT USED

- Waterman Irrigation Controller (powered by a Sixnet Mini-VersaTRAK PLC);
- GSM Modem and antenna;
- Mobile Phone(s).

#### END RESULT

The solution was simple: use mobile phone technology! Through the addition of a GSM modem to the Waterman Irrigation Controller, and making use of the Sixnet PLC's advanced communication and text-handling capabilities, wireless communications to each park was able to be achieved. The standard Waterman Irrigation Controller now includes the option to automatically send alarm messages to the on-duty technician(s) via meaningful SMS messages on his/her mobile phone. Similarly, the technician or operator can use his/her mobile phone to send an SMS message to the Controller to turn the sprinklers on or off (or even request a detailed report on the status of the system). The possibilities are endless!

The GSM Modem also provides a data channel, allowing an operator of a remote computer terminal(s) to dial-in to the Waterman controller for real-time control and monitoring. Industrial Automation has developed a Visual Basic program that allows a remote operator to connect to any park in the council, and perform the following (via a graphical user interface):

- View system alarms/events (time and date stamped);
- Change start/stop times;
- View monthly totals;
- Check current status;
- Select duty technician(s).