



# Crystal Ball

## Cellular Sewage Lift Station Monitor and Backup Pump Controller

OmniSite lift station monitors are the industry's easiest to install, set-up and use!

The Crystal Ball combines two essential functions of wastewater treatment into one product: monitoring lift stations and being a backup pump controller. The key difference between the Crystal Ball and OmniSite's other products is that the Crystal Ball can also be used to turn pumps on or off – either automatically or manually. By simply adjusting the set points on your level transducer or setting the float balls higher than your main pump controller, the Crystal Ball will control the pumps for you if your main controller fails!

The Crystal Ball offers the same highly effective monitoring and analyzing tools as OmniSite's other products: the ability to track pump run time, pump cycles, GPM, drawdown times, inflow, rainfall and pulse from a flow meter. As an added feature, this unit can monitor pump current by connecting an external amp probe into one of its four analog inputs. Most operators who purchase the Crystal Ball will use one of the analog inputs to monitor tank level and the other three inputs to monitor pump amps. The Crystal Ball's 4 x 20 LCD screen and tactile keypad makes setup especially easy.

OmniSite's Crystal Ball gives operators of sewage treatment facilities peace of mind that pump stations within their system are running correctly all of the time. When an alarm occurs at a station monitored by OmniSite, you'll be notified within seconds – quickly enough to correct the situation and avoid costly, environmental problems.

### Quick Overview

#### The Essentials:

- (11)\* Universal Voltage inputs
  - (4) Analog inputs
  - (4) Relay outputs for pump control
  - (3) Inputs to monitor pump activity
  - (2) Pulse inputs (i.e. flow meters)
  - (1) Input to analyze rainfall
- Transmits/Receives using GSM  
Optional NEMA 4X enclosure

\*Includes Rain and Pulse inputs as these can also be used as alarm inputs

#### Website Features:

- Quick setup and easy to use
- Intuitive navigation
- Interactive Mapping by Yahoo!™
- Detailed graphs and charts
- Real time weather updates
- Easy to organize and print reports

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*OmniSite is the only patented product of its kind and was developed specifically for wastewater treatment systems. Because it's simple to setup and use, requires no additional software and minimal maintenance, OmniSite is the most affordable solution for monitoring lift stations.*



The Crystal Ball includes OmniSite's "plug and play" GuardDog software, which eliminates the need for custom programming.



OmniSite's GuardDog web interface provides simple web navigation for monitoring pump stations.

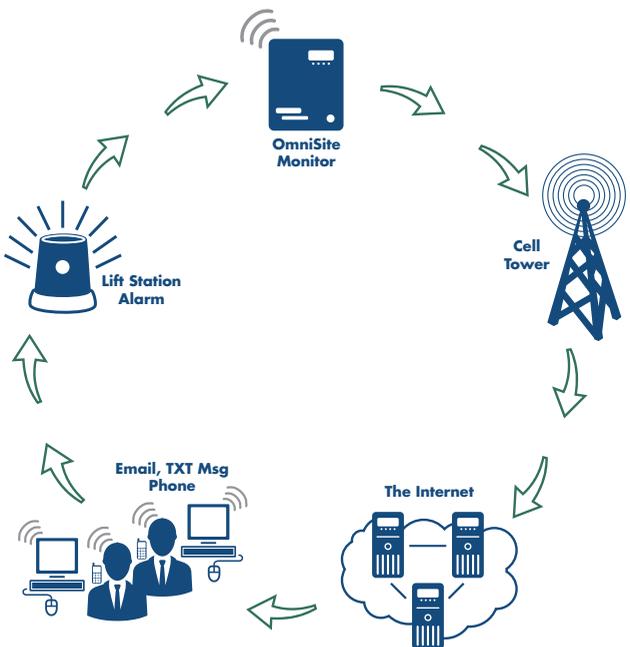
### Critical Data Available Online:

- Pump run time
- On/Off cycles
- Drawdown time
- Inflow rate
- Rainfall
- Total station flow
- Alarm events and deliveries
- Measured GPM
- Pump amp draw

### How OmniSite Works

OmniSite relies on a combination of cellular telephone and web-based technology. The Crystal Ball is installed at pump stations and sends a wireless signal to the local cellular tower.

That signal is bounced to OmniSite's web interface, where customers can log on – any day, any time, from any computer – and see how each pump station is operating. A "call out" list is set up online, so that when an alarm is triggered at a lift station, identified operators are contacted immediately. Because OmniSite engineers recognize today's fast-paced busy world, that notification comes by way of text message, email or call to your cellular or hard-wired phone.



### Specifications

I/O: Accepts (14) Universal Inputs- any voltage in the range of +12VDC or VAC to +120VDC or VAC. Opto-isolated 4000 VAC isolation

(4) 20A form C relay outputs

(4) 4-20mA analog inputs. Analog input-1 includes 4000V opto-isolation

(3) Pulse Inputs: 0-5hz from dry contact or open collector device (1 pulse input reserved for 0.01" pulsing rain gauge)

Input Power: 85-240 VAC +/- 10% @ 0.5A max or optional 12 VDC @ 2A max

Terminal Blocks: gray color, removable style, spring-clamp accepts #14-22 AWG solid or stranded wire

External Power Source: 15 VDC @ 100mA battery backed internal power source available for powering external un-powered alarm contacts, and non-battery-backed for powering 4-20mA loop powered devices

SD Memory Card Slot: on-board SD memory card slot for data logging and software updates

Battery Backup: Internal 12 VDC, rechargeable 800mA/hr sealed lead acid battery rated for 4 hours backup during AC power loss

Operating Temperature: -20 – 150 Degf

Operating Humidity: 0-90% RH, non-condensing

Radio: Quad Band GSM cellular transceiver 850/900/1800/1900, -106 dB sensitivity (typical), Class 4 (2W @ 850/900 MHz) class 1 (1W @ 1800/1900 MHz). Certification FCC Parts 15,22,24, GCF Ver 3.2.1.1, PTCRB Ver 3.7.1

Antenna: Internal 3 dBi omni-direction Phantom antenna suitable for most applications. Optional remote mount high gain antennas and cables available

Display: 4 line X 20 Char white background LCD w/ backlight. Includes "easy-use" navigation buttons

Personal ID Key Reader: Smart key reader to identify maintenance personnel. (1) smart key included

Enclosure: Standard unit is hinged painted steel design w/ remote mount keypad suitable for direct panel mount. Optional NEMA 4X polycarbonate enclosure w/ stainless locking hasps and solid or clear cover available

Dimensions: panel mount – 8.5"W x 8.2"H x 3.5"D – with optional NEMA 4X enclosure – 12"H x 10"W x 4"D

Weight: Standard panel mount - 7.0 lbs, with NEMA 4X enclosure - 7.5 lbs

Certification: UL pending

Protection: US Patent #7,228,129

The Crystal Ball is perfect for monitoring digital alarm inputs and analyzing trends at a lift station. The Crystal Ball also includes analog process variables and actual pump control.