

## Intellisonde™

### Direct Insertion Sonde and Data Logger for Network Monitoring

*Real time water quality and multi parameter data at your fingertips.*

The Intellisonde™ provides revolutionary live monitoring of water flow, pressure and water quality in one lightweight, easy to install, unit. By utilising the latest third party communication technologies, remote data retrieval of 12 measurands can be transmitted to anywhere in the world in real time. The potential benefits of this wireless water data transmitting device are ground breaking.

#### The Benefits

- A pro-active approach to water quality management
- Ability to monitor real time data for actual or impending water quality problems at a local level
- Ability to appraise and minimise risk of contamination posed by bursts or repairs
- Integration with operational network modelling providing real time data for operational control and risk assessment related to water quality
- Ultimate provision of cyclic reviews in line with DOMS

Drawing on the company's multi-patented technology coupled with advanced micro-electrode design the Intellisonde™ offers robust data with no waste stream.

The integral stirrer/generator feature enables a constant water flow to be generated around the sensor head by scavenging power during peak flow to help generate flow during off-peak/no flow periods. This unique, patented feature along with advanced materials technology helps to reduce the risk of fouling and associated maintenance visits as found with existing chemical alternatives.

With micro-technology open platform design the whole system is lightweight and easy to install with the electronics enclosure waterproof to IP68.

#### Low-cost Installation

Within just ten minutes, the Intellisonde™ can be installed into a distribution system, including calibration and testing. It can also be removed within five minutes, if the extension piece remains in the valve.

The probe can fit into large pressurised pipes (via a 3.8 or 5cm valve) as well as pipes as small as five centimetres in diameter, for street level monitoring. The threaded extension and shaft adaptor is located in the valve and securely tightened. The adjustable collar allows the sonde to be set to a pre-determined depth, ensuring the sensor head sits in the middle of the flow. The depth can be adjusted whilst the valve is opened. An additional feature is incorporated via a chain to provide pressure safety back up.



## Low Cost Ownership

Power is provided via battery pack or external 9-24DC or AC (50-60Hz) power supply. Due to advanced power consumption technology the Sonde is able to run on internal battery supply for a minimum of six months providing low cost of ownership. The probe is calibrated to instructions provided and has a total weight of 3.5kg and overall dimensions of 600mm.

## Sensor Performance-next generation

Using the company's patented Microbanding technology, the Chlorine, Mono-chloramine and Dissolved Oxygen Sensors are made using a novel solid state technology for long life and accuracy. The sensors are membrane free and insensitive to pressure and flow. They have a fast response time, typically <20 seconds, 95% of step change.

## 12 Water Parameters Monitored

### Physical:

- Flow
- Pressure
- Temperature

### Optical:

- Turbidity
- Colour

### Chemical:

- Chlorine
- Chloramines
- Dissolved Oxygen
- Conductivity
- pH
- ORP (REDOX)
- ISE (e.g. Fluoride)
- Spare port\*

\*The sonde has a spare port for developing specific sensing parameters. The company is currently looking at water security and bacterial specific detection.

## Communication Interfaces Supported

- Wireless USB
- Modbus RTU
- Modbus TCP/IP
- Voltage Out
- Ethernet
- GPS (assettracking)
- Options:
- GPRS
- Local Area Radio Network

## Data Logging

- Twelve parameters logged every 5 minutes for 3 months
- Values measured and logged at intervals from 1/minute to 1/hour
- Maximum, minimum and average values maintained for each parameter
- Option to log average values over 24 hours
- Alarm settings for each parameter and transmitted in real time (via GPRS or Radio Network)



## Specification

Parameter	Performance	Parameter	Performance
Flow(forward/reverse)	0 --2m/s, $\pm$ 5% reading	Pressure (standard)	0 - 450 psig, $\pm$ 2%
Temperature	-5 to +50°C, $\pm$ 0.1°C	Turbidity	0 - 100 NTU, $\pm$ 0.1NTU
Colour	0 - 50 Hazen, $\pm$ 0.2 Hazen	Conductivity	0-100mS/cm, $\pm$ 0.001mS/cm
pH (Glass)	0-14pH, $\pm$ 0.1	ORP (REDOX)	-1.4V to +1.4V, $\pm$ 0.001V
Dissolved Oxygen	0 - 20mg/l, $\pm$ 0.2mg/l	Chlorine	0-5mg/l, $\pm$ 0.2 mg/l
ISE	0 - 1V, $\pm$ -0.001V	Pressure Transducer input	
Mono-chloramines	0 - 5mg/l, $\pm$ 0.2 mg/l	External flow meter input	