

WASTE WATER TREATMENT AERATION AIR MONITORING & CONTROL



The Kurz Insertion Mass Flow Meters provide fast response and extremely reliable measurements for aeration basin applications that require precise dissolved oxygen content ratios resulting in increased efficiency and lower overall costs



complex technology
MADE SIMPLE

Waste Water Treatment: Aeration Air Monitoring & Control



Aeration Process Introduction

Waste Water Treatment removes impurities and contaminants from a community's sewage utilizing a number of different processes and a variety of equipment. One of the processes is the use of surface aerated basins that use aerobic micro-organisms to remove 80 to 90% of organic matter in waste water. Oxygen concentration in the water basins is a critical factor to promote the optimum micro-organism growth rate needed to treat the water in the shortest amount of time. As a result, large compressors are used to force air through hundreds of air diffusion filters at the bottom of the aeration basins, providing a constant 24/7 supply of oxygen to the micro-organisms in the water.

There are several primary challenges facing Waste Water Treatment Plants in the aeration process. The first is the energy management of the blower in order to contain operating expenses. Secondly, the dissolved oxygen content in the water basins must be monitored. Lastly, plants need to monitor and correct for the temperature and climate factors throughout the day that affect the open water basins. These measurement readings are all very important in order for the plant to ensure the aeration process is running at peak performance.

Benefits of the Kurz Solution

- *Fast Meter Response Time*
- *Exceptional Customer Service from Specification through Operation*
- *Accurate and Reliable Readings*
- *Multi-point Capability for Compressor Main Headers*
- *Ease of Installation and Operation*
- *Long Product Life*

Customer Application and Performance Issues

A Southern California Municipal Waste Water Treatment Plant has been using Kurz 450 Insertion Mass Flow Meters with the Adam 155 Computer with great success for over 10 years. The City runs six extremely large compressors with output pipes up to 96" in diameter. Air is pumped through the system to the diffusion filtration system at the base of 25 aeration basins.

The customer wanted to update all their original Kurz flow meters to take advantage of digital controls and outputs to their main control center. They recognized the improved performance and advanced features of the Kurz 454FTB and decided to upgrade their plant to the new devices.

The Kurz Solution

The customer plant was equipped with over 40 of the Kurz 454FTB Insertion Thermal Mass Flow Meters. Each flow element totalizes the flow rate readings and sends a 4-20 mA output signal proportional to the flow rate to the control station.

In addition, Kurz K-Bar 2000B devices were installed for multi-point monitoring of compressor air at the main headers of each compressor unit.



Performance Results with the Kurz Solution

As a result of the Kurz 454FTB installation the plant was able to:

- Achieve high reliability and repeatability in low flow and low velocity situations
- Obtain fast response to changing climatic and air quality conditions
- Increase efficiency of compressor air delivery by 20% during the entire year
- Decrease overall aeration processing time through a more precise delivery of dissolved oxygen that optimized the micro-organism efficiency
- Provide a lower overall cost of operation over time due to increased service and virtually no maintenance of the Aeration Air measurement systems



Enormous compressors feed a constant flow of air to the diffusion filters at the base of the aeration basins, providing a perfect oxygen rich environment for micro-organisms in the water

About Kurz Instruments

Kurz Instruments is the industry leader for designing and manufacturing Thermal Mass Flow Transmitters for industrial air and gas flow applications. Our engineers, product development specialists and management staff have developed products to operate in the harshest of environments. For more than 30 years, our entire team has provided solutions to our customers most demanding and difficult applications.

Kurz products are used in a wide variety of industrial applications including combustion air, aeration air and digester gas, nuclear power plants, pump protection, flare stack monitoring and compressed air, to name only a few.

Kurz headquarters is located in Monterey, California, and in addition, Kurz offers advanced services through Kurz Technical Services based in Tennessee.

Kurz Instruments, Inc.
2411 Garden Road
Monterey, CA 93940
800-424-7356 Toll Free Phone
831-646-5911 Local Phone
831-646-8901 Fax
sales@KurzInstruments.com
www.KurzInstruments.com