



FCI ST100 in  
wastewater  
treatment plant

# Aeration Air Flow on PROFIBUS Communications-Based DCS in Wastewater Treatment Plant

*Application Note Case Study ANCS008*

## **Problem**

A major municipal wastewater treatment plant in Scandinavia was incrementally upgrading and converting the plant's control system from a traditional analog-based system (e.g. 4-20 mA) to PROFIBUS-based digital bus communications. The plant was very successful using, and has installed, FCI constant power technology thermal flow meters, Models AF88 and ST98, in the aeration lines for many years. Can FCI help them convert and upgrade the aeration flow control to PROFIBUS utilizing the same constant power technology thermal flow meters?

## **Flow Conditions**

- Pipe diameter: 8.5" [215.1 mm]
- Flow rate: 2,520 NCMH [1 483 SCFM]
- Temperature: 113 °F to 140 °F [45 °C to 60 °C]
- Pressure: Atmospheric
- Media composition: Air (from blower)
- Straight run: 20 d

## **Solution**

Replace the now several-years-old FCI AF88s and ST98s with FCI Model ST100 with its PROFIBUS PA bus communications I/O option. The ST100 utilizes the same constant power technology the customer wanted and its same insertion-style sensor could be installed in the same process connections from where the older meters were removed. All ST100 Profibus I/Os are connected to a PA segment which are then connected to PA/DP coupler which connects to DP segments to DCS. FCI provided site start-up assistance to verify the meter's installation and communications in the customer's PROFIBUS network.

### **FCI Model ST100 with Profibus PA**

## **Benefits**

- 100% confidence and assurance of accurate and repeatable measurements with installation of same site proven constant power thermal flow meter technology.
- Time and cost savings with seamless and bump-less integration into PROFIBUS network, and supported by FCI field service.
- Significant time and cost savings with simple removal and replacement into exact same process/pipe tap connection.