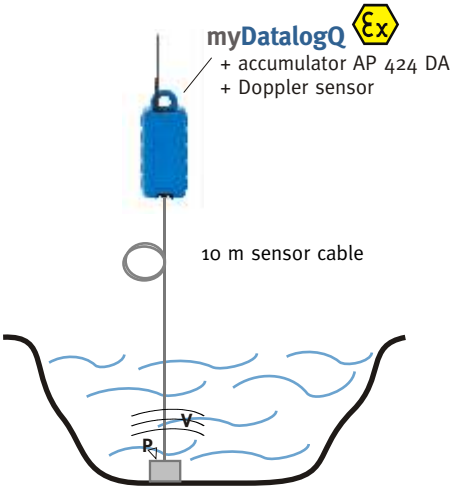
Sewage Treatment Plant in Groß-Enzersdorf (A): Accumulator Operated Flow Measurement in Explosive Atmosphere

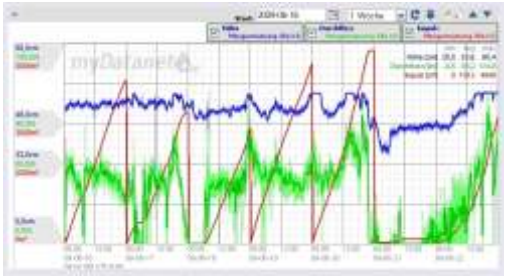
Background

With myDatanet Microtronics Engineering GmbH has developed an innovative wireless measurement acquisition system which is suitable for a wide range of applications. Due to wireless measuring instruments and data transfer via GPRS the collected data is available via the internet in real time at any time.



Problem

The central sewage plant Groß-Enzersdorf was activated in 1991 as the most modern and first fully biological sewage plant. Besides the city itself also the village of Raasdorf is connected to the plant. To ensure that the participation in costs meets the actual input of waste water, the quantity of fed waste water from the different “customers” had to be acquired. A measurement system simply to install and to maintain had to be found.



Solution

Due to accumulator powered measurement instruments combined with myDatanet the fed waste water quantity is recorded without gap. The measurement instruments have been installed in ATEX zone 1 swift and easily, without expensive radio equipment or power supply. The data acquired are accessible in real time as graphs or figures at any time and can be used for balancing accounts with the villages any time. In the office the technical team is informed about the state (e.g. meter failure) of all measurement points at a glance. On-site inspection is only necessary for calibration and cleaning of the sensors.
The system myDatanet gives you the possibility to replace devices, removed for calibration or repair, without any loss of data or settings.

Measuring Points

The myDatalogQ-devices used apply the Ultrasonic-Doppler-Principle. They are certified for ATEX zone 1. To avoid observational errors the incoming signals - even reflections of distant particles - are handled equally. Therefore a representative flow velocity signal for the complete flow profile is acquired. In the logger the sensor signals are computed to a quantity signal and stored.
For acquiring the flow level pressure sensors with great accuracy (+/-0.25 %) are used. The special feature of the myDatalogQ-sensor is that the lower edge of the sensor is casted with the pressure transducer. Thus the flow level can be measured from a water depth of 1 mm on.
The power supply for the sensor is provided by the measurement instrument. The rechargeable accumulators can be changed without tools in the ATEX zone 1.
Besides the reconfigured profiles of circle, oval, trapezium and rectangle also user-defined profiles can be applied for flow velocity measurement.