

FLOW MEASUREMENT TO MAINTAIN THE BIOMASS CONCENTRATION

MEASUREMENT TASK

Repeatable, precise flow measurement of raw and surplus activated sludge (RAS/SAS) is important to maintain constant biomass concentration in wastewater treatment. Katronic UK supported its partner Z-Tech in Southern England, commissioning six KATflow 150 clamp-on flowmeters procured via ABB to measure RAS/SAS in grey cast iron pipes.

For the first time, the flowmeters featured Profibus PA modules. The measuring systems were installed in compliance with all prescribed distance and safety regulations during the first Covid-19 pandemic peak phase, for which Katronic was classified and approved as a "system relevant supplier" especially for this project.

SOLUTION

The total of 16 grey cast iron pipelines with diameters ranging from 80 to 440 mm were laid between 1930 and 1950. The measurements were complicated by sludge residues inside the pipes, so a trial was conducted using portable ultrasonic flowmeters type KATflow 210 and KATflow 230 to record measured values in a 24-hour trial period to confirm the reliability of the measurement.

In the core phase of the project, the sensors of the six fixed-installed KATflow 150 flowmeters were mounted on the pipe, each at a distance of approx. 50 m from the analysis units. Katronic's *Audible Sensor Positioning Assistant* helped to determine the correct sensor positioning on the pipes to generate reliable, accurate readings with an optimal measurement signal. During the installation, the *Positioning Assistant* of a KATflow 200 portable flowmeter was used, allowing the sensors to be pre-positioned on the pipe before being connected to the main control unit. The Katronic technician also set up the Profibus PA cards in each meter so that they could be successfully connected to the plant's control system.

ADVANTAGES

- Continuous monitoring of biomass concentration in sludge treatment
- "Clean" installation without intrusion into running processes
- Continuous communication from the field level to the corporate management level with Profibus PA
- Simultaneous measurements at two measuring points possible
- Quick and easy installation of clamp-on technology
- *Audible Sensor Positioning Assistant* for optimum measuring signal

SPECIFICATIONS

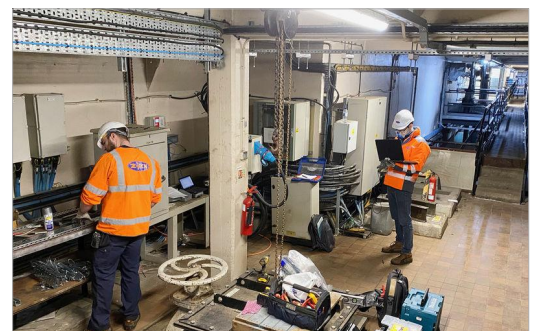
Installation type	Fixed installation
Medium	Wastewater (RAS/SAS)
Pipe material	Grey cast iron
Pipe diameter	80 to 440 mm
Temperature	Normal range
Flow rate	Varies

APPLICATION



KATflow 150 non-invasive clamp-on flowmeters measuring raw activated sludge at a wastewater treatment plant in South England.

INSTRUMENT SOLUTION



Installation of six KATflow 150 flowmeters at a wastewater treatment plant to monitor raw activated sludge/surplus activated sludge.