

DATASHEET LUFTZUFUHRKONTROLLE IN DER ABWASSERBEHANDLUNG

APPLICATION NOTE

Aeration Control in Water Treatment

Effluent treatment is the process of removing contaminants from waste water, primarily from household sewage. It includes physical, chemical, and biological processes to remove these contaminants and produce environmentally safe treated wastewater.

An important stage of most treatment processes is the use of microbes to break down and consume pollutants rendering the water sufficiently clean for discharge to rivers and lakes.

These microbes require oxygen for effective growth. Traditionally this oxygen is supplied from the air in the environment and is pumped in to form air bubbles or introduced by agitation. Both of these processes are expensive from an energy perspective and wasteful as only a small proportion of the air is used by the microbes.



Membrane Aerated Biofilm Reactors (MABR)

A recent innovation is the use of **Membrane Aerated Biofilm Reactors** (MABR) to control the biological treatment through an attached growth system made of an array of hollow fibre gas permeable membranes. The MABR habitat creates an ideal environment to support a robust biofilm which absorbs and consumes carbon and nitrogen based pollutants.

Air from the environment is supplied at low pressure and oxygen required by the microbes is supplied directly by diffusion across the membranes.

The MABR is deployed in a modular cage design which is supplied as a packaged plant or retrofitted directly into an existing aeration tank. The successful operation of these systems depends on the careful monitoring of air supplied and estimation of the oxygen consumed by the microbes.

Thermal mass flow meters using the CTA (Constant Temperature Anemometry) principle

A leading manufacturer of these systems has turned to [Flowcon](#), distributor of Bronkhorst in Ireland, to provide Mass Flow metering technology for their control systems.

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The MASS-VIBRAM™ thermal mass flow meters offer the widest absolute range of flow measurement from 100 ml/min to 1000 l/min. They are designed for use in a wide range of applications where reliable, accurate and repeatable measurements are required. They are designed to operate across the full range of gas types and pressures, and are available in a range of sizes to suit your application. The MASS-VIBRAM™ thermal mass flow meters are designed to be used in a wide range of applications where reliable, accurate and repeatable measurements are required. They are designed to operate across the full range of gas types and pressures, and are available in a range of sizes to suit your application. The MASS-VIBRAM™ thermal mass flow meters are designed to be used in a wide range of applications where reliable, accurate and repeatable measurements are required. They are designed to operate across the full range of gas types and pressures, and are available in a range of sizes to suit your application.

These [thermal mass flow meters](#) utilise the CTA ([Constant Temperature Anemometry](#)) sensing technique and benefit from a relatively low pressure drop and IP65 ingress protection.

Process solution

Flow meters from the MASS-STREAM™ series are modern digital instruments offering RS232 and Analog signals as standard. PROFIBUS DP, DeviceNet™ and Modbus are available as options. Air and Gas flows from 10 l/min up to 5000 l/min can be monitored using one of the six models in the MASS-STREAM™ range. All instruments have an integrated PID control system that can be utilised to offer flow control features in combination with an appropriate proportional flow control valve. An optional integral TFT display can offer local readout and control of important parameters such as Set point (flow control applications). Instantaneous flow rate reading, low or high flow alarms and totalised flows.

Auswahl erlauben

Furthermore, these flow meters and flow controllers offer a robust and economic solution to gas metering and control requirements.

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Recommended Products



MASS-STREAM D-6310 MFM

Min. Bereich 0,01...0,2
l/min
Max. Bereich 0,1...2 l/min
Druckstufe bis zu 20 bar
Robuster Sensor, IP65
Gehäuse
Option: integriertes TFT-
Display



MASS-STREAM D-6370 MFM

Min. Bereich 2...100 l/min
Max. Bereich 10...1000
l/min
Druckstufe bis zu 20 bar
Robuster Sensor, IP65
Gehäuse
Option: integriertes TFT-
Display



MASS-STREAM D-6390 MFM

Min. Bereich 40...2000
l/min
Max. 100...10000 l/min
Druckstufe bis zu 20 bar
Robuster Sensor, IP65
Gehäuse
Option: integriertes TFT-
Display



**MASS-STREAM D-6361/002BI
MFC**

Min. Bereich 0,4...20
l/min
Max. Bereich 4...200 l/min
Druckstufe bis zu 20 bar
Robuster Sensor, IP65
Gehäuse
Option: integriertes TFT-
Display



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