

BIOFILM MONITOR (BFM)

An IoT-Based System for Early Detection of Biofilm Formation, Organic Fouling and Scaling.



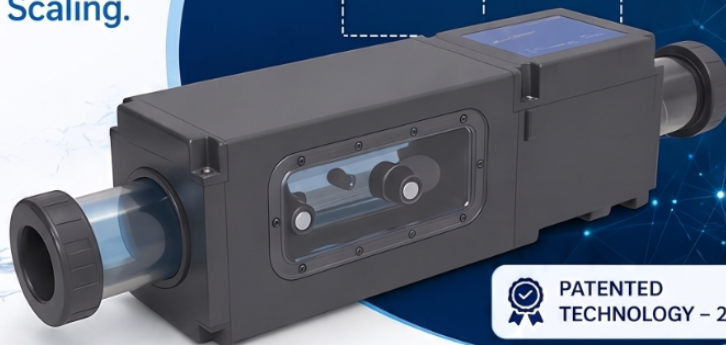
REAL-TIME
MONITORING



EARLY WARNING
DETECTION



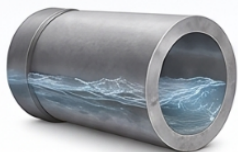
PROTECT YOUR
SYSTEMS



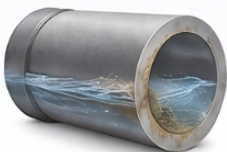
 **PATENTED
TECHNOLOGY – 2025**

WHAT IS BIOFILM?

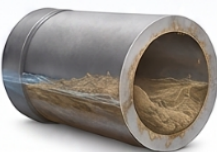
CLEAN PIPE



EARLY BIOFILM



MATURE BIOFILM



Bacteria



EPS
(Ectracellular
Polymeric Substances)



Deposits on
Pipe Walls



Reduced
Water Flow

Biofilms are communities of microorganisms that attach to surfaces and produce protective layers of extracellular polymeric substances (EPS). Biofilm formation can lead to:

- ✓ Reduced heat transfer efficiency
- ✓ Increased operational costs
- ✓ Potential pathogen development
- ✓ Reduced membrane performance
- ✓ Microbial influenced corrosion (MIC)

HOW THE BFM WORKS

1



Water flows through the transparent measuring teise

2



Four optical sensors continuously measure transmitted light.

3



Biofilm growth reduces light transmission.

4



Measurements are sent via WiFi to the cloud.

5



Intelligent analytics determine system status.

6



Automatic alarms are generated.

KEY FEATURES



Real-Time Monitoring
24/7 continuous measurements.



Multi-Sensor Technology
Four independent optical sensors.



Cloud Dashboard
Secure web-based monitoring.



Automatic Notifications
Email and Telegram starts.



Historical Trend Analysis
Long-term data storage and reporting.



Early Warning Detection
Detects fouling before various problems occur.

SYSTEM ARCHITECTURE



BFM DEVICE



WIFI



SECURE CLOUD



DASHBOARD



OPERATOR



ALARM
NOTIFICATIONS

APPLICATIONS



Cooling Towers



Potable Water Systems



Food & Beverage



Pharmaceutical Industry



Reverse Osmosis Systems



Livestock Farming



Swimming Pools



Industrial Process Water

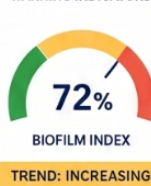
INTELLIGENT ANALYTICS & DECISION SUPPORT

The Biofilm Monitor continuously analyzes historical and real-time sensor data to identify trends associated with biofilm formation, scaling, and fouling. By evaluating percentage changes, growth rates and long-term behaviour, the system provides actionable insights that support preventive maintenance and optimization of cleaning schedules.

TREND ANALYSIS



WARNING INDICATORS



DASHBOARD EXAMPLE



DATA ANALYTICS



SEE BIOFILM BEFORE IT BECOMES A PROBLEM



EARLY DETECTION



REDUCED DOWNTIME



LOWER MAINTENANCE COSTS



IMPROVED WATER SAFETY

www.biofilmmonitor.com