xylem
Let's Solve Water

Digital Pressure Monitor

DATA-DRIVEN DIFFUSER MAINTENANCE

SANITAIRE
a xylem brand

The Sanitaire® Digital Pressure Monitor (DPM) measures diffuser health by calculating diffuser fouling. It then provides actionable data regarding diffuser maintenance.

Operators can easily review the potential energy savings and return on investment if the diffusers were cleaned or replaced.

Know your fouling trend
Get continuous airflow and pressure readings and monitor trends with easy-to-read outputs.

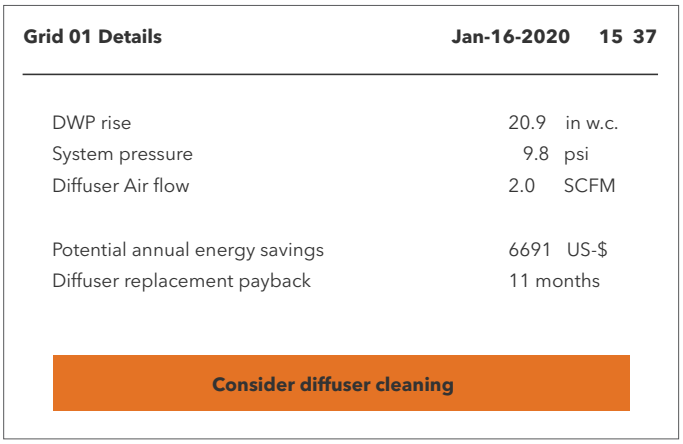
- Digital readings provide operators with trends and insights on diffuser health
- Diffuser pressure is monitored using pressure transducers
- Pressure readings from multiple grids can be tracked from a single DPM controller and user-friendly color HMI
- Data can be sent to plant SCADA systems via secure Modbus TCP communication
- Historical data can be easily accessed via USB export or SCADA integration

Empower decision making
The DPM provides easy-to-understand data about your aeration system by displaying potential energy savings and the return on investment (ROI) for diffuser cleaning or replacement.

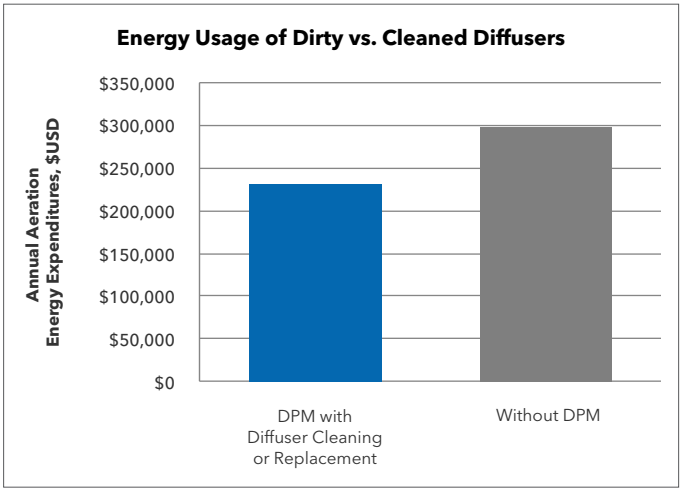
- Get automatic calculations of the annual energy savings that diffuser cleaning could provide, based on the level of fouling
- Plan ahead for capital spending based on data trends, and see the estimated payback period for diffuser replacement

Proven history of reliability
The DPM controller and HMI are based on the Xylem IQ SensorNet platform that has been installed in thousands of plants.

- Hardware can be installed indoors or outdoors (IP-66 rating)
- Integrated lightning protection prevents unexpected electrical issues
- Large family of accessories available (e.g., sun shields, mounting kits)

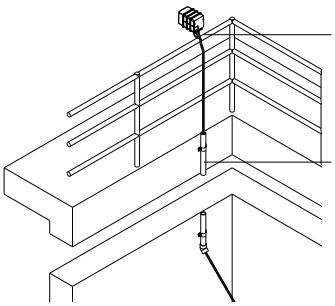


Example HMI display screen shows pressure readings, system status, and recommendations on cleaning.

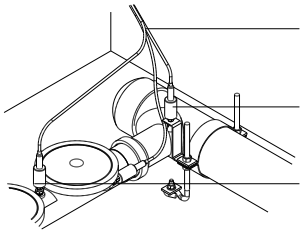


Example of potential savings using DPM combined with diffuser cleaning at a 0.75 MGD (118 m^3/hr) plant.

Xylem Diffuser Liquid Cleaning Service increases oxygen transfer efficiency and reduces aeration operating costs – without interrupting the treatment process.



DPM is at the top of the aeration tank



Diffusers and pressure transducers are at the bottom of the aeration tank

DPM controller / display + IC2 junction boxes (x2)
Proven hardware that has thousands of installations with integrated over-voltage protection. An integrated color HMI and SCADA connectivity allow operators to quickly view the performance of their diffusers.

Cable carrier column (installed by customer)
Cables are mounted on the aeration tank wall through a cable carrier column to protect them from turbulence.

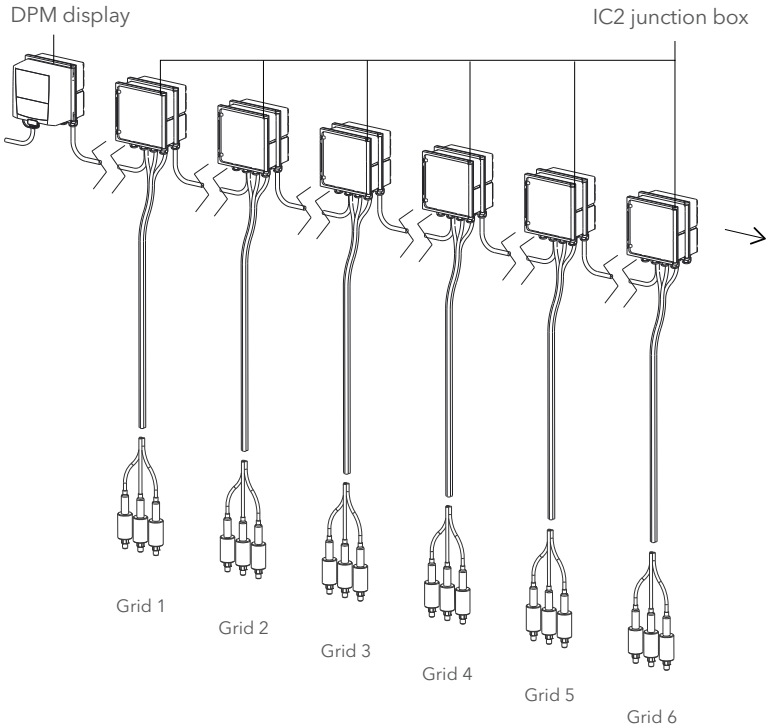
Digital pressure transducers
Mounted onto the diffuser grids to measure air distribution, air plenum and static water pressures. The two pressure transducers monitoring pressure inside the piping are acid-resistance-treated to allow for acid cleaning of the diffusers without removing the transducers from the aeration tank.

Multiple installation options available
The DPM can be installed into new or existing aeration tanks.

- Monitor single or multiple aeration grids and display data on a single HMI
- Use secure Modbus TCP communication and ethernet connection to integrate with other plant data
- Installation into existing aeration grids can be performed with a simple integration kit in one day

Maximize uptime with preventative maintenance
Xylem offers lifecycle services as part of the DPM solution to help simplify your asset management. As the world leader in diffused aeration, we offer unparalleled technical and field service, including our convenient Liquid Diffuser Cleaning Service.

Preventative maintenance agreements (PMAs) can be tailored to plant requirements to enhance the service life and efficiency of your equipment.



A maximum of nine grids can be monitored by one DPM controller

Digital Pressure Monitor TECHNICAL SPECIFICATIONS

DPM Controller & IC2 Module

Certifications	ETL, cETL (conforms with relevant UL and Canadian standards), CE
Electromagnetic Compatibility	EN 61326, Class B; FCC Class A, EMC for indispensable operation
Integrated Lightning Protection	According to EN 61326 enhanced over-voltage protection for entire system
Cable	2-wire with shield for power supply and communications; resistant to polarity reversal; comprehensive EMC shield control; cable topology within network can be in the form of a line, tree, star or multiple star Total cable length max. is 250 m (820 ft.)
Data Logger	5 years of dynamic wet pressure (DWP) data logged; 30-minute sampling time
Display	Graphic color display; resolution 320 x 240 pixels; visible area 77 x 64 mm (3.03 x 2.52 in); backlit
Control Keys/Buttons	Five operation keys: three master keys for Measurement (M), Configuration (C), System settings (S); two function keys for confirmation/switching menu: OK (OK) and Escape (ESC) Four directional buttons for quick selection of software functions
Electrical	100 to 240 VAC (50/60 Hz)
Temperature Conditions	Operating Temperature: -20 to 55°C (-4 to 131°F) Storage Temperature: -25 to 65°C (-13 to 149°F)
Enclosure	Material: PC-20% (Polycarbonate with 20% fiberglass) Rating: IP-66 (not suitable for conduit connection) Dimensions for DPM Controller: 144 W x 144 H x 120.2 D mm (5.67 W x 5.67 H x 4.73 D in) Weight for DPM Controller: 1.2 kg (2.6 lbs.) Dimensions for Transducer Junction Box: 144 W x 144 H x 52 D mm (5.67 W x 5.67 H x 2.06 D in) Weight for Transducer Junction Box: 0.4 kg (0.9 lbs.)
Warranty	3 years
Module	Coupling is located at the rear for combined mechanical and electrical connections; maximum docking is three modules for a stacked mounted unit
Terminal Connections	Screw terminal strips; terminal area for solid connectors 0.2 to 4.0 mm for flexible connectors 0.2 to 2.5 mm; accessible through cover Used for connecting transducers or as an input/output or for looping through/branching of the IQ SensorNet cable
Outputs	Ethernet interface for Modbus TCP connectivity; USB port for software updates and export of data log

Pressure Transducers

		Holder / Piping Transducer	Static Water Column Transducer
Input	Pressure Range Proof Pressure Burst Pressure Fatigue Life	0 to 415 in wc (0 to 15 psi; 0 to 100 kPa) 690 kPa (100 psi) 1000 kPa (145 psi) 10 million FS cycles	0 to 415 in wc (0 to 15 psi; 0 to 100 kPa) 210 kPa (30 psi) 3620 kPa (525 psi) Designed for more than 100 million FS cycles
Performance	Long Term Stability Accuracy Thermal Error Compensated Temperatures **Operating Temperatures** Electrical code M Zero Tolerance Span Tolerance Mounting Effects Response Time Supply Voltage Sensitivity	0.25% span/annum 0.2% span max 2% span max -20 to 60°C (-4 to 140°F) -20 to 50°C (-5 to 120°F) 1% of span 1% of span 0.25% span max 5 ms 0.01% span/volt	0.2% FS/year (non-cumulative) 0.25% FS typical 1.5% FS typical -20 to 80°C (-5 to 180°F) -20 to 50°C (-5 to 125°F) 1% of span 1% of span n/a 0.5 ms n/a
Mechanical Configuration	Inconel Pressure Ports Wetted Parts Electrical Connection Enclosure Vibration Acceleration Approvals Weight Output Supply Voltage (Vs) Max. Loop Resistance Cable Length	1/2 in NPT External (male) 318 Duplex SS, Ceramic, Nitrile (Viton® optional) Immersible Cable Assembly, IP68 Code M IP68 Submersible 35g, peak 5-2000 Hz, MIL STD 810, Method 514.2, Procedure I 100g, MIL STD 810C, Method 513.2, Procedure II CE, Lloyds Register 330 g (excluding cable) 4-20 mA (2 wire) 9 - 35 VDC (ExII 1G 9-28 Vdc) (Vs-9) x 50 ohms 13 m (42.5 ft)	3/8 in NPT External (male) 17-4 PH Stainless Steel Immersible Cable Assembly, IP68 Code M IP68 Submersible 70g, peak to peak sinusoidal, 5 to 2000Hz 1 DOg steady acceleration in any direction 0.032% FS/g CE, UR (221C, 261C, 22CS, 26CS) Approx. 100 g (excluding cable) 4-20 mA (2 wire) 24 VDC, (7-35 VDC) (Vs-7) x 50 ohms 15 m (49 ft)

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