



# Digital Pressure Monitor

DATA DRIVEN DIFFUSER MAINTENANCE



**SANITAIRE**

a xylem brand

The Digital Pressure Monitor (DPM) measures diffuser health by calculating diffuser fouling. The DPM system not only monitors diffuser pressure, but displays user-friendly and actionable data on a color HMI. 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 monitor pressure readings and trends on a user-friendly color HMI.

- Digital readings provide operators with trends and insights on the health of the diffusers
- Pressure readings from multiple grids can be tracked from a single DPM controller and HMI
- Historical data can easily be exported

### Empowering 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 replacements.

- DPM automatically calculates the annual energy savings if diffuser cleaning is required
- Plan ahead for capital spending as the DPM will display the ROI associated with diffuser replacement based on the fouling
- Knowing when to perform diffuser cleaning and remove fouling increases oxygen transfer efficiency which leads to reduced operating aeration costs.

### Proven history of reliability

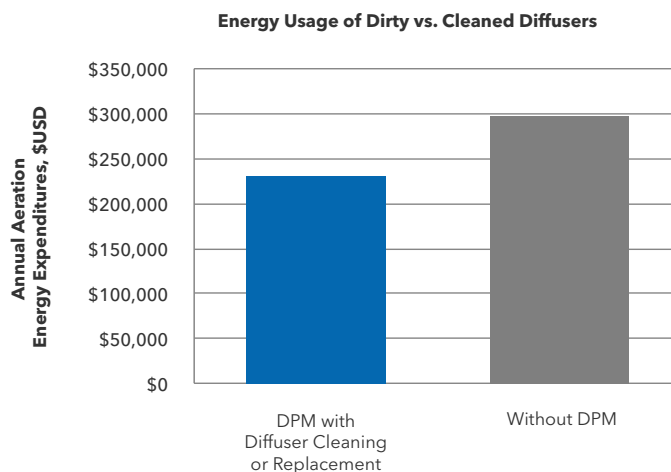
The DPM controller and HMI are based on the existing Xylem IQ SensorNet platform that has been installed in thousands of plants.

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

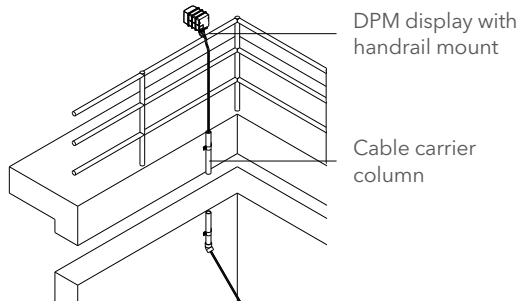
Grid 01 Details		Jan-16-2020 15 37
DWP rise	20.9	in w.c.
System pressure	9.8	psi
Diffuser Air flow	2.0	SCFM
Potential annual energy savings	6691	US-\$
Diffuser replacement payback	11	months

**Consider diffuser cleaning**

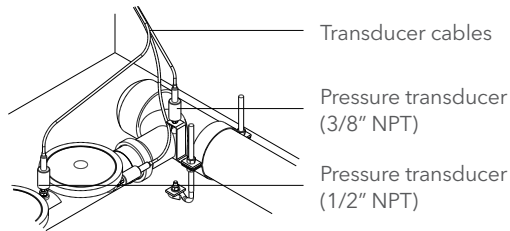
Example HMI display screen shows monitor pressure readings, system status, and recommendations on cleaning.



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



**DPM is at the top of the aeration tank**



**Diffuser is at the bottom of the aeration tank**

**DPM Controller / Display + IC2 Junction Boxes (x2)**

Proven hardware that has thousands of installations with integrated overvoltage protection. An integrated color HMI allows operators to quickly view the performance of their aeration diffusers.

**Cable carrier column (installed by customer)**

Cables are mounted on the aeration tank wall through a cable carrier column to protect from turbulence.

**Digital pressure transducers**

Mounted onto the diffuser grids to measure air distributor, air plenum and static water pressures. Two pressure transducers are acid-resistant treated to allow for acid cleaning of the diffusers without removing the transducers from the aeration tank.

**Multiple installation options available**

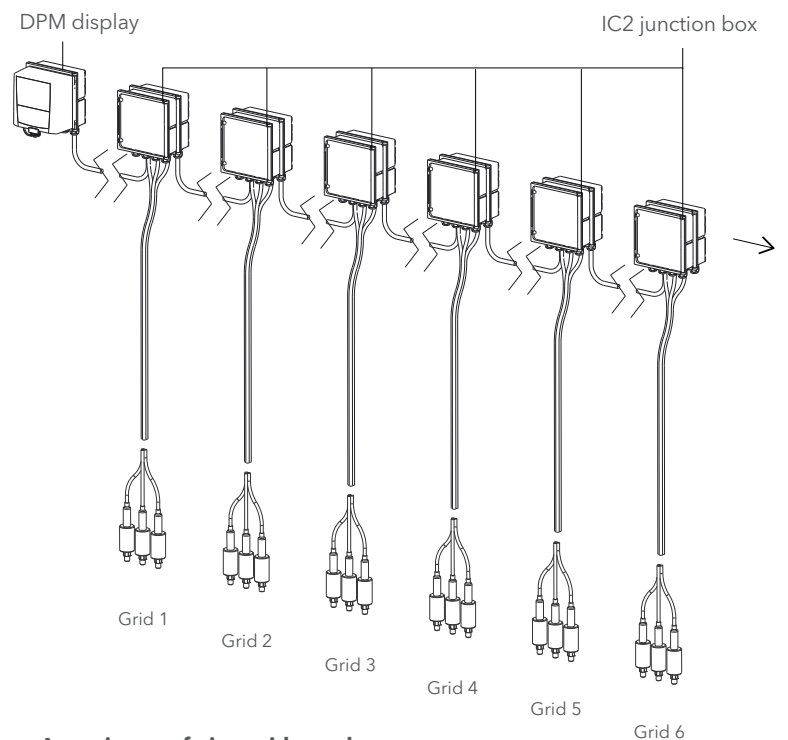
DPM can be installed into new or existing aeration tanks.

- Monitor single or multiple aeration grids and display data on a single HMI
- Installation into existing aeration grids can be performed with a simple integration kit in one day

**Reduce maintenance time with cleaning services**

Xylem provides diffuser cleaning services to reduce aeration energy costs.

- Xylem offers cleaning services as part of the DPM solution to simplify your asset management process
- Spend less time on optimizing your aeration efficiency with the support from Xylem’s professional service team



**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 DWP data logged
Display	Graphic color display; resolution 320 x 240 pixels; visible area 77 x 64 mm (3.03 x 2.52 in); backlight
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: -4 to 131 °F (-20 to 55 °C) Storage Temperature: -13 to 149 °F (-25 to 65 °C)
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 remote access and cloud connection

## Pressure Transducers

		Holder / Piping Transducer	Static Water Column Transducer
Input	Pressure Range Proof Pressure Burst Pressure Fatigue Life	0 to 415in wc (0 to 15psi) 100psi 145psi 10 million FS cycles	0 to 415in wc (0 to 15psi) 30psi 525psi Designed for more than 100 million FS cycles
Performance	Long Term Stability Accuracy Thermal Error Compensated Temperatures <b>Operating Temperatures</b> 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 -4°F to +140°F (-20°C to +60°C) -5°F to +120°F (-20°C to +50°C) 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 -5°F to+ 180°F (-20°C to +80°C) -5°F to+ 125°F (-20°C to +50°C) 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	1/2in 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 42.5 feet (13 m)	3/8in 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 49 ft (15m)