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Mimic In-House Article
Subject: Monitor Exhaust & Dust Filter Systems
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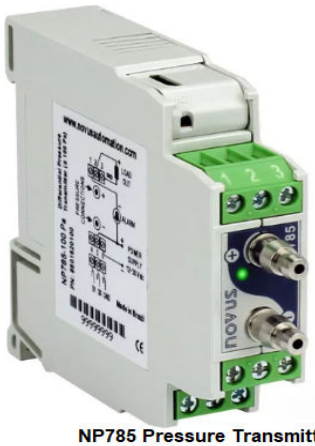
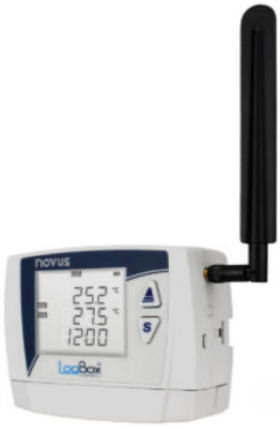
Differential Pressure Monitoring for High Performance Exhaust & Dust Filtration Systems



NP785 Pressure Transmitter



LogBox LTE

In industrial operations, efficient exhaust and dust filtration systems are essential for maintaining air quality including protecting equipment. One of the most effective ways to track filter health is through differential pressure monitoring. As filters collect dust, resistance increases, causing a rise in pressure difference. Without continuous monitoring, clogged filters can reduce airflow, that impacts on the environment and decreases product quality. This could lead to unexpected downtime, which doesn't happen just because a filter is 'dirty'; downtime happens because of 'how' a restriction affects the entire system.

For example, as dust builds up, the filter creates higher resistance to airflow, which increases the differential pressure, which means fans and blowers must work harder to push the air through. The airflow would eventually drop below required limits, fans could fail altogether from the overload rendering dust collection inefficient, ultimately creating a system imbalance capable of tripping equipment. Therefore, combining the NP785 ultra-low differential pressure transmitter, together with the LogBox LTE Multichannel IoT Datalogger, would provide a smart and connected solution from the outset.

The NP785 is built to measure very small pressure differences in air and gas systems with high precision. It offers stable, temperature-compensated readings and supports both analogue outputs (0–10 V or 4–20 mA) and Modbus RTU communication. Its bi-directional capability allows it to detect both positive and negative pressure changes, ensuring accurate insight into filter performance at all times.

The LogBox LTE enhances this setup by providing advanced data logging and remote monitoring. Designed for modern IoT environments, it uses MQTT protocol to transmit real-time data to local or cloud systems, ensuring full visibility and faster decision-making. It supports multiple signal types, including RTD, thermocouples, voltage, and current, making it highly versatile across applications. With a memory capacity of up to 140,000 records and a built-in rechargeable battery offering up to 80 hours of autonomy, it ensures reliable operation even during power interruptions.

In a cement plant, for example, dust collectors gradually clog as particles accumulate. The NP785 would continuously measure pressure changes, while the LogBox LTE records the data, triggering alarms via SMS or MQTT, and sending alerts when limits are reached. This allows maintenance teams to act proactively and timeously, resulting in improved efficiency, reduced downtime, secure data traceability, and smarter, data-driven operations.

Call us for more information on differential pressure transmitter devices.

JHB Branch
Mimic Components, Address: 5 Ramsay Street, Booysens, 2091, Johannesburg. Switchboard: +27(0)11-689-5700 | WhatsApp: 071-979-9999
PO Box 38493, Booysens, 2016, Johannesburg, South Africa. Email: info1@mimiccomponents.co.za | Website: www.mimiccomponents.co.za

Cape Branch
Mimic Cape. Address: Unit 41A, Stella Park, 57 Stella Road, Montague Gardens, 7441, Cape Town. Switchboard: +27(0)21-551-8185
WhatsApp: 071-979-9999. Po Box 36955, Chempet, 7442, Cape Town, South Africa. Email: info@mimic-cape.co.za | Website: www.mimic-cape.co.za