

# Technical Datasheet

## VibeSENSE P100 SMART VIBRATION SENSOR



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The Polwax VibeSENSE P100 is a high-performance industrial vibration sensor designed for accurate and continuous monitoring of rotating and critical machinery. Engineered with advanced sensing technology, it measures key vibration parameters such as velocity and acceleration, enabling early detection of faults like imbalance, misalignment, looseness, and bearing wear. In today's industrial environment, where equipment reliability and uptime are critical, the VibeSENSE P100 plays a vital role in predictive maintenance strategies.

## Features

- High Accuracy and Stability
- Wide Measuring Range
- Rugged Design
- Easy installation (stud/magnetic mounting)
- Low Power Consumption
- Compact and Durable Design
- User-Friendly Configuration
- Energy Efficient
- True RMS vibration measurement
- Excellent noise immunity
- Fast Response Time
- Long operational lifetime



## Why Choose VibeSENSE P100

- High accuracy and stable long-term performance
- Early fault detection for predictive maintenance
- Rugged IP-rated industrial design
- Easy integration with automation systems
- Suitable for wide industrial applications
- Low maintenance and long service life
- Cost-effective solution for machine health monitoring



## General Technical Details

<b>Model</b>	VibeSENSE P100
<b>Sensor Type</b>	MEMS / Piezoelectric
<b>Measurement</b>	Velocity / Acceleration (RMS)
<b>Velocity Range</b>	0 – 50 mm/s
<b>Acceleration Range</b>	0 – 16 g
<b>Frequency Range</b>	10 Hz – 5 kHz (up to 10 kHz optional)
<b>Accuracy</b>	±1.5% FS
<b>Sensitivity</b>	100 mV/g (typical)
<b>Output Options</b>	4–20 mA / 0–10 V / Rs485
<b>Supply Voltage</b>	12 – 30 V DC
<b>Power Consumption</b>	< 1.5 W
<b>Response Time</b>	< 1 second
<b>Operating Temperature</b>	-40°C to +80°C
<b>Storage Temperature</b>	-40°C to +100°C
<b>Humidity</b>	0 – 95% RH (non-condensing)
<b>Protection Class</b>	IP67
<b>Housing Material</b>	Stainless Steel / Aluminum
<b>Mounting</b>	Stud / Magnetic / Adhesive
<b>Connector</b>	M12 / Cable
<b>Storage Temperature</b>	-40°C to +100°C
<b>Axis</b>	Single Axis

## VibeSENSE P100 SMART VIBRATION SENSOR

Unlimited Applications

### Typical application fields of the SMART VIBRATION SENSOR

- Pharma & Hospitals (storage of medicines, vaccines, blood, monitoring of incubators and operating rooms)
- Greenhouses and agriculture
- Environmental analyses (Air quality, meteorology and hydrology)
- Monitoring of solar panels
- Museums and document archives
- Transportation of perishable goods
- Air conditioning
- Clean rooms
- Laboratories
- Industrial processes
- Buildings, offices, schools
- AHU, Industrial Fans
- Industrial Compressors

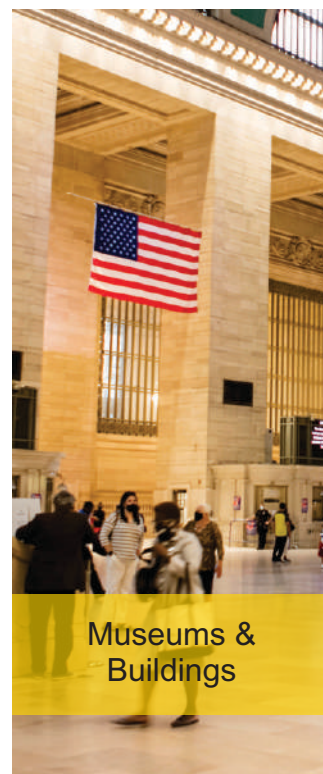
### Industrial Compressors



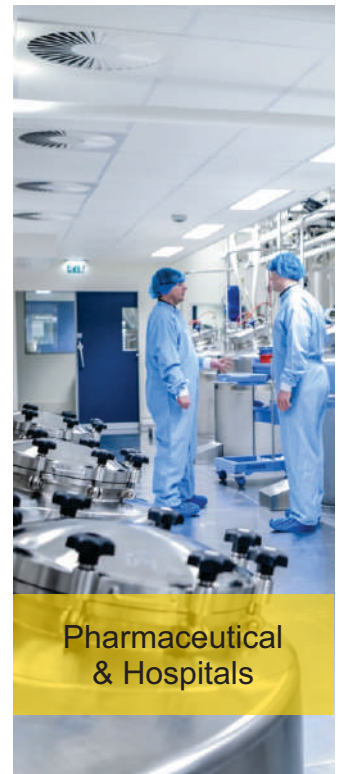
Storage & Warehouse



Food & Hotels



Museums & Buildings



Pharmaceutical & Hospitals

### Case Study 1: Motor Bearing Failure Prevention – Manufacturing Plant

**Customer Profile:** A leading automotive component manufacturer operating multiple high-speed CNC machines and induction motors.

**Challenge:**

- Frequent unexpected motor failures
- Increased production downtime
- No real-time vibration monitoring
- Reactive maintenance approach

**Solution:** Deployment of Polwax VibeSENSE P100 on critical motor bearings:

- Installed near bearing housings
- Integrated with PLC via 4–20 mA output
- Alarm thresholds configured for fault detection

**Outcome:**

Early detection of bearing degradation Prevented unplanned shutdowns  
Reduced maintenance costs by ~30% Improved overall equipment efficiency

### Case Study 2: AHU Vibration Monitoring – Data Center HVAC

**Customer Profile:** A Tier-III data center with mission-critical HVAC systems.

**Challenge:**

- Requirement for 24/7 uptime
- Risk of fan imbalance and bearing failure
- No vibration monitoring in AHU systems

**Solution:**

Installation of Polwax VibeSENSE P100 on AHU fan motors:

- Mounted on motor housings
- Integrated with BMS via 0–10 V output
- Real-time monitoring with alarm alerts

**Outcome:**

- Early detection of fan imbalance
- Avoided HVAC system failure
- Improved uptime and operational stability





POLWAX Group has got an experienced, highly-qualified project team conducting extensive R&D operations. Owing to that, goods holding the POLWAX brand feature customer-tailored flexibility and meet requirements of various industries.

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