Me come Welcome Me come Welcome





Predictive Maintenance Wireless Pressure Monitoring

10.04.2025 +++ Sascha Burmeister



AGENDA

Wireless Pressure Monitoring of Gas Springs

- + Wireless Pressure Monitoring The Idea
- + The Benefits
- + The Components
- + The System
- + The Starter Kit
- + The method of operation
- + The summary





INTRO

Industry 4.0 at the highest Level

The vision of the Wireless Pressure Monitoring (WPM) system is the intelligent, networked and automated monitoring of gas springs. The aim is to reduce tool failures and defective parts by detecting pressure losses at an early stage - similar to tire pressure monitoring systems in vehicles.

The WPM system enhances process reliability and efficiency in manufacturing through innovative sensor technology and wireless communication. By integrating with cloud and IoT systems, it enables predictive maintenance and improves quality assurance in production.







OVERVIEW

The Benefits



Fully exploit optimization potential with complete control and transparency, maximum productivity and zero-defect production



Savings by reducing gas spring-specific press downtime and maintenance and servicing costs



One-off investment costs with a short amortization period thanks to early fault detection and increased process stability



FIBRO

The components



Determine values via Bluetooth

Sensors in the tool transmit the pressure and temperature values in the gas springs wirelessly.



Manage Data When using the WPM app, the data part manages the data of the tool sensors (optional).



Collect and transfer data

The FIBRO WPM repeater receives the data from the sensors and passes it on to the WPM cloud software. It establishes communication in all areas where you want to monitor your tools.



Communication for control

The fieldbus coupler acts as an interface between the WPM cloud software and the system control of a power press or press line. It translates the MQTT protocol into an EtherCat or ProfiNet protocol and thus enables error-free communication within your systems.



The Eco Packet

Customer with Mobile App

- Customer has/requires a data holder in addition to the sensors
- + Sensors and data holders are configured by FIBRO
- + WPM software and cloud is not required
- + Customer does not require a license to operate the mobile APP



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FUNCTION The Premium System





Web application

The comparison

Feature

System Type

Hardware Requirements

Data Storage

Installation

Software Requirement

Mobile Access

Predictive Maintenance

System Integration

Scalability

Future Expansion

Cost

Eco Packet

Standalone, offline monitoring

Pressure sensors + data holder

Local (in data holder)

Pre-configured, plug & play

No software or cloud required

Free app, no license needed

Manual analysis

Not connected to machinery

Ideal for small-scale or basic setups

Limited, but battery-ready for upgrades

Cost-effective, no recurring fees

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Premium Packet

Cloud-connected, intelligent monitoring

- Pressure sensors + repeater + fieldbus coupler
- Centralized (cloud-based)
- Professionally integrated with cloud and control systems
- Requires WPM cloud software
- Mobile & desktop apps with advanced features
- Automated via cloud analytics
- Integrated with industrial protocols (MQTT, EtherCAT, ProfiNet)
- Scalable for smart factories and automated environments
- Continuous updates, IoT-ready
- Higher investment with extended capabilities

The Starter Set

Available as a preconfigured starter kit.

You'll receive all the components from us preinstalled in one package, allowing you to start monitoring your gas springs directly without any IT support of your own.

- + Easy integration, possible without IT support Plug & Play!
- + Deliverd with two sensors for monitoring two tools and a five-user license
- + Local monitoring via Bluetooth completely cable-free
- + For monitoring only or with integration to the press (via MQTT signal)
- + Increased productivity & quality



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Method of Operation

Web-based software for setting up and evaluating the sensors

The WPM system monitors the gas springs for error-free production before and during the use of the tool in the press. The cloud software manages and controls your tools centrally and across locations. Installed on your server, you can create different plants or even different production areas such as press shop, maintenance workshop, warehouse or tool shop.



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Method of Operation

- + Setup and configuration of the tool sensors and the data part
- Trend detection and data analysis of the pressure and temperature gradients
- + Proactive mailing functions to the user
- Option for integration into the press control system (as well as Beckhoff PLC and the Siemens PLC)
- + Platform-independent web interface
- + On Premise Integration into the company network locally at the customer's site
- + Customer Cloud Integration
- Interface to the system network/company network via: EtherCat, Profinet, OPC-UA, Ethernet/WLAN/LAN, MQTT

FIBRO WPM-Cloud



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Tools total	2	0		13
TP1	0	0	Δ	10
Werkzeuglager	0	0	۵	12
Linie 5	2	0		2
Buero_LAG_Entwicklung	0	0		1



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OVERVIEW

The Summary



The patented FIBRO WPM system monitors the pressure and temperature in gas springs.



The built-in sensor technology transmits the collected data via the web to the customer's end devices.



The specially developed software analyses your data for process control and preventive maintenance. Your defined measures ensure fault-free production.

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4.0
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The WPM forms the basis for a technology upgrade, all the way to Industry 4.0, which makes your production data available to you in a central location. Our WPM system supports the networking of intelligent objects as well as machines and tools.



precision is our standard

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hanks Merc Gracias Graze

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