MiniOBSERVER

Smart condition monitoring sensor for spindle monitoring

When the motor spindle fails, the machine tool stands still. However, malfunctions of the spindle can be detected at early stage by continuous condition monitoring and failures can be prevented. The MiniOBSERVER records relevant variables for monitoring, such as vibration, temperature and shaft displacement, and evaluates these in relation to speed and position. Due to its compact design, the MiniOBSERVER can be flexibly integrated into the smallest installation spaces.

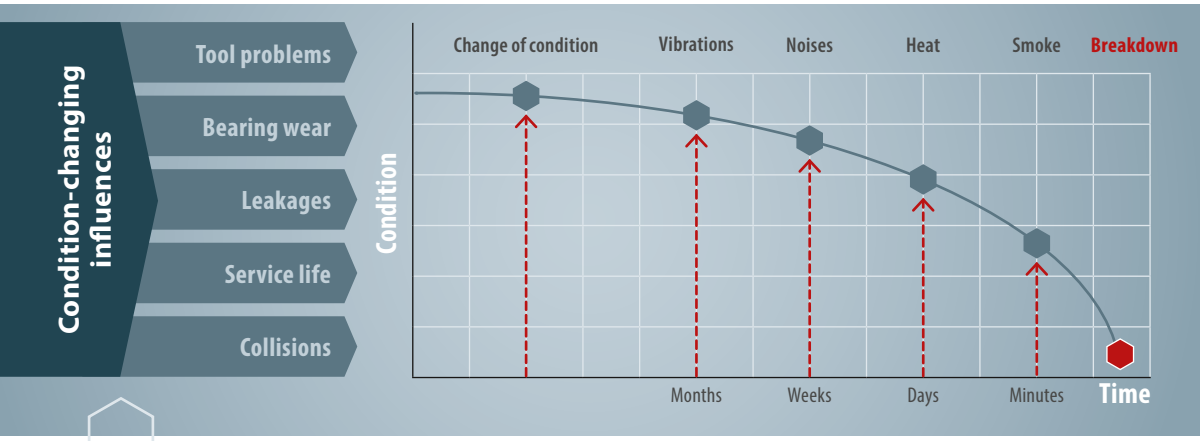
Your advantages

- Avoid breakdowns and save costs through permanent condition monitoring
- Early detection of faults by evaluating relevant parameters in time and frequency range
- Easy integration into machine network thanks to digital interface
- Intuitive set-up and parameterization with SensorDEVICE M
- Robust design for reliable operation
- Compact design enables ideal utilization of existing installation spaces

Product features at a glance

- Integrated 3-axis MEMS
- Vibration analysis in the time and frequency range
- Real-time data transmission
- Configurable alarm and warning limits
- Intelligent evaluation functions
- Degree of protection IP 68

Recognize errors, prevent failures, save costs



Failures in the motor spindle often announce themselves in advance. With the MiniOBSERVER's integrated condition monitoring, anomalies can be detected at an early stage, allowing failures to be prevented.

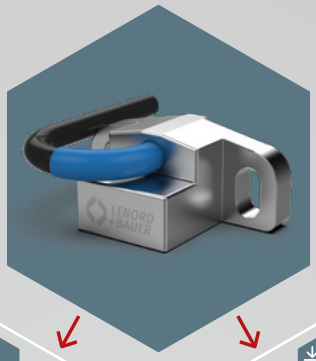
Application examples MiniOBSERVER

Vibration (3-axis MEMS)

Various parameters and analytical functions are available for evaluating the machine conditions:

- FFT: Frequency analysis
- vRMS: Vibration speed as per DIN ISO 10816-3
- aPeak: Maximum value of acceleration
- aRMS: Effective value of acceleration
- aCrest: Ratio between maximum and effective value

RS485



Rotational speed/ Position (1)

State variables are recorded and analyzed in relation to speed and position

Temperature

Integrated temperature measurement

Shaft displacement (1)

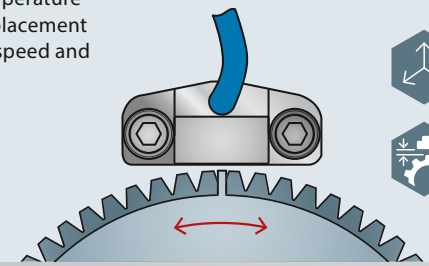
Measuring the change in the air gap between the sensor and the measuring scale in µm

Events

Alarm & warning messages and saving of operating statuses (histogram)

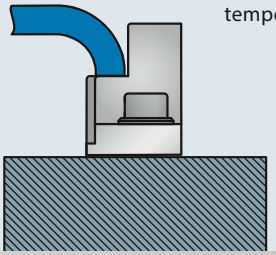
Application 1

Integrated analysis of vibration, temperature and shaft displacement in relation to speed and position



Application 2

Integrated analysis of vibration and temperature



Technical data	
Supply voltage U_B	5 V DC ± 5 %, reverse polarity protected, overvoltage protected
Operating temperature range	-30 °C to +105 °C / -22 °F to 221 °F
Housing material	Zinc die casting
Degree of protection	IP 68
Interface (2)	RS485 (Modbus RTU)
Integrated 3-axis MEMS	
Measuring range	± 16 g
Frequency range	0 to 6 kHz
Sampling rate	25 kHz

(1) For measurement, the sensor must be mounted on a ferromagnetic measuring scale (target wheel). (2) Other interfaces on request

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