

Servicing Mobile Concrete Mixers According to Actual Needs

Vibration Sensors Monitor the
Status of Critical Components

At a Glance

- Measured-variable-based predictive maintenance replaces fixed service intervals
- Optimization of maintenance with reliable need recognition
- Rugged measurement plus option for differentiated diagnosis
- Compact device for easy mechanical and electronic integration



The Application

Mobile concrete mixers (truck mixers) deliver liquid concrete mixture to construction sites both large and small. They therefore play a key role in practically all construction projects, since in addition to walls and ceilings, foundations are primarily cast from the material these truck mixers supply. The motorized movement of the mixer drum, which is equipped with spiral blades on the inside, continuously mixes the load and prevents the concrete from solidifying. At the construction site, the direction of rotation is reversed so that the blades transport the concrete out. Truck mixers with integrated concrete pumps are used for applications in which the usual concrete chute is not sufficient. This essential building material can only be provided if these components are functioning correctly.

The Goal

The punctual delivery of the concrete must not be prevented by the failure of machine parts. The mixer and pump motors and the drum gear are subject to mechanical wear, which may vary depending on the amount and type of concrete. The actual mechanical load during operation should be recorded as accurately as possible to trigger timely, need-based servicing of the components.

The Solution

VIM3 vibration sensors detect the vibrations of critical vehicle parts. The vibration pattern changes based on wear, which allows a precise conclusion to be drawn about the actual condition of the component in question. When a defined limit value is reached, an automatic servicing notice is issued. Servicing is therefore only carried out when there is an actual need, but always in a timely manner. The sensor also detects sudden changes in the vibration pattern, which may indicate acute damage.

The Benefits

Conventional predictive maintenance for such machines is time-based and depends on operating hours. In comparison, the measured-variable-based procedure can significantly reduce maintenance. At the same time, machine availability is improved, because the actual state of wear of the critical components is known. Unplanned failures, which can cause construction to come to a standstill and lead to high consequential costs, are ruled out with great reliability. The vibration sensors are compact, rugged, and easy to integrate into the machine environment and the control panel.

Technical Features

- Vibration measurement using root mean square (RMS)
- Optional IO-Link interface for process data, parameterization, and diagnosis
- Easy to mount
- Simple commissioning process
- Robust stainless-steel housing
- Degrees of protection IP66/IP67 (when connected)

