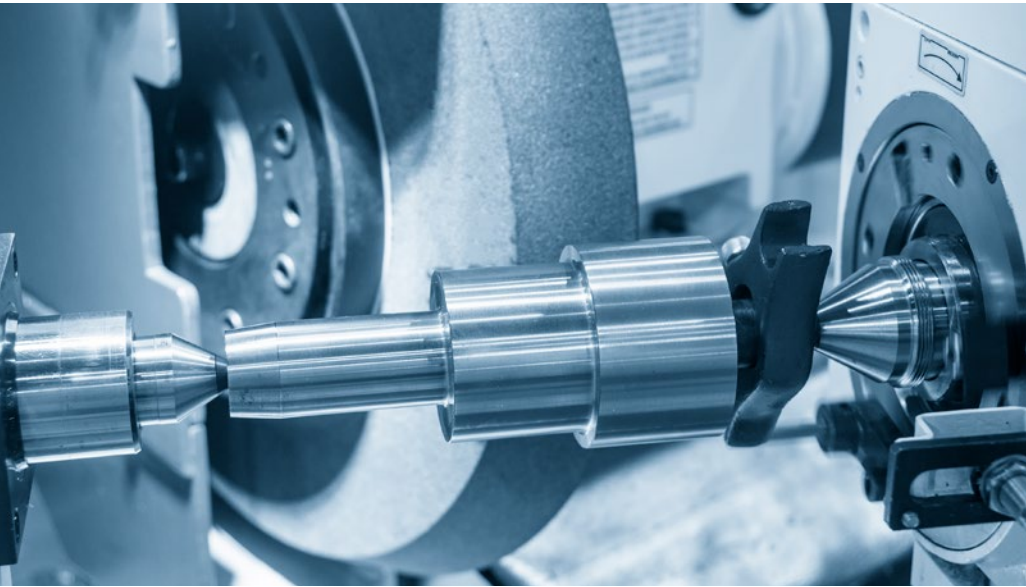




Measurement of the crankshaft position in grinding machines

Eddy-current based inductive sensors are ideal for measurements in harsh industrial environments. The measuring principle and design are resistant to oil and dirt as well as high pressure and high temperatures. The sensors achieve accuracies in the single-digit micrometer range here.

Inductive sensors measure the crankshaft position in grinding machines

During the grinding process, the position between the grinding tool and the workpiece must be constantly monitored. This prevents excessive stress, damage and destruction of the workpiece and the grinding tool.

This task involves the position measurement of the crankshaft with micrometer precision using eddy current-based inductive sensors. Both a continuous distance control and a consistent distance from the grinding tool are required. The analog sensor signal is therefore transmitted to a PLC. It adjusts the position of the grinding tool based on the measured values. Since cooling liquid (oil) is used for the grinding process, inductive sensors are perfectly suited. The application solution can also be integrated into existing systems as a retrofit.

Requirements for the measuring system

- Measuring range: 0.8 mm
- Accuracy: 2 μm
- Output signal: analog voltage output

Ambient conditions

- Harsh environment with fluctuating temperatures and heavy soiling
- Measurement under influence of cooling liquid (oil)

System design

- High-performance eddyNCDT 3060 controller and ES08 sensor with 0.8 mm measuring range

Advantages

- Robust sensors: ideal for use in harsh environments
- No influence of oil, dust or dirt on the measuring result
- Small sensor design: can be integrated almost anywhere
- Precise system with high measurement speed and process-stable output signal

