

TELEMETRY RING

WITH INTEGRATED SPINDLE MONITORING SENSORS

High performance spindles are among the most important functional components in machine tooling. Early detection of wear in the bearing, one of the spindle's main components, is therefore vital. Conventional methods, however, can only measure and monitor the outside temperature of the bearings.

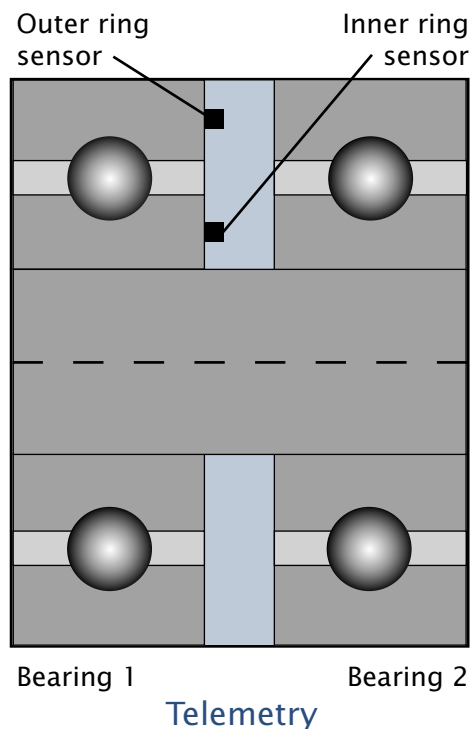
The incorporation of sensors into the telemetry ring has finally made it possible to measure both the inner and outer bearing temperature in a straightforward way. We can now offer you comprehensive bearing monitoring.

This new, patented technique eliminates the need for complicated wiring, making it unnecessary to modify the shaft. The ring reliably transmits data from the rotating spindle, irrespective of any environmental influences, which means that one can even measure the actual intensity of rapid changes.

The telemetry ring consists of two concentric split rings. The temperature sensors positioned in the rings can measure both inner and outer bearing temperature and securely transmit the readings digitally.

Our telemetry ring transmits data from the sensors with a consistently high signal quality - precisely and without interference – to ensure that your bearings are monitored reliably.

Diagram of bearing monitoring principles



- Possible installation positions:
- A telemetry ring between two bearings (the initial load is transmitted into the telemetry ring)
 - Two telemetry rings between two bearing to measure the inner and outer bearing temperatures of both bearings
 - A telemetry ring between a bearing and the end stop

Integration into the spindle

In terms of inner and outer diameter, the telemetry rings are the same size as standard ball bearings, making them easy to incorporate into the spindle, with just one cable ($\varnothing 2\text{mm}$) leading away from the stator ring.

Data registration and evaluation

The telemetry ring can be connected directly to a data logging unit integrated in the spindle, providing the operator with online monitoring data on the condition of the individual bearings.