



## Compensating for axial extension of milling spindles

When processing materials using milling spindles (mainly motorised spindles), the demands for high precision are continuously increasing. In order to compensate for the axial extension of the spindle caused by thermal heating and centrifugal forces, the eddyNCDT SGS4701 measures the displacement deviation of the spindle.

This specially developed measurement technology is designed for integration into the spindle head, where the non-contact sensor measures on the labyrinth-ring, acquiring the axial movements to sub-micrometre accuracy.

The output signal of the eddyNCDT SGS4701 is transferred to the downstream control system and used directly to compensate for any axial extension.

### Requirements for the measurement system

- Measuring range: < 500µm
- Accuracy: ± 2µm
- Resolution: 0.5µm
- Frequency response: 2000Hz

### Advantages

- Miniature controller integrated into the spindle
- Different miniature sensors available
- Non-contact and wear-free measurement
- Very good resolution
- High temperature stability
- Low cost, customer-oriented solution

### Ambient conditions

- Temperatures
  - Sensor: 0...90°C
  - Controller: 10...70°C
- Medium: lubricants/oils
- Interference fields: motor drives

### System design

- SGS4701 (xxx)-customer
- PC4701-10
- Clamping bracket