

Position checking on robots

The introduction of the international standard ISO 9283 demands new non-contacting measurement methods. The measurement system for the position measurement is composed of a measurement cube with a defined weight, a sensor and a support. The sensor is equipped with six U15 eddy current sensors. During the measurement the robot moves the measurement cube into the sensor range. The data from the eddy current sensors is passed via a fast interface to the PC where it is processed. Measurement inaccuracies due to linearity and tilting errors (parallelism between the sensor and measurement object) and thermal effects are additionally compensated in the measurement software.



Technical details

- Measuring range: 0 - 15 mm
- Accuracy: $10 \mu\text{m}$
- Band width: $\leq 2 \text{ kHz}$

Ambient conditions

- Temperature: Room temperature 15 - 25 °C
- Medium: Air
- Interference fields: EM fields due to the robot drive motors
- Measurement object may be slightly oily.

Reasons for the system selection

- Non-contacting method (preference for non-contacting systems in ISO 9283)
- High accuracy (bandwidth)
- Economical price
- Insensitive to dirt, oil, electrical and magnetic fields

Principle

