

eddyNCDT 3700

Eddy-Current displacement sensors

The measurement principle

Non-contact displacement sensors, series NCDT 3700 are based on the eddy current principle and are used for measurements against electrically conductive, non-ferromagnetic materials. A high frequency alternating current is fed through a coil embedded in a sensor housing. The electromagnetic field from the coil induces eddy currents in the conductive target. As a consequence, the alternating current resistance of the coil changes. This change of impedance produces an electrical signal proportional to the distance of the target to the sensor.

Highest resolution

Measurement results down to 0.09 nanometers (0.0000000009 m) have been established with eddyNCDT displacement sensors in the series 3700. The system has been specifically developed and rated for applications with high and ultra-high requirements of resolution.

Designed for OEMs

eddyNCDT 3700 is intended for use in production systems for machine monitoring as a customized system for OEM applications, particularly when extreme resolution is demanded. Due to the high repeatability the system can be further optimized by computed linearization.

Positioning and closed-loop control tasks are solved with the highest precision.

ADVANTAGES

- extremely high resolution
- miniaturized design
- low current consumption
- versatile OEM system
- stable eddy current technique



TYPICAL APPLICATIONS:

- **Wafer:** Positioning in semiconductor manufacture
- **Photolithography:** Positioning of the exposure unit
- **VLT telescope:** Mirror positioning
- **Microscopy:** Positioning of the optical system
- **Target tracking:** Positioning of the optical system
- **Air-gap monitoring** in magnetic bearings
- **Spindle movement** in machine tools
- **Alignment** of stepper systems



