

# FORCE- / TORQUE Sensor

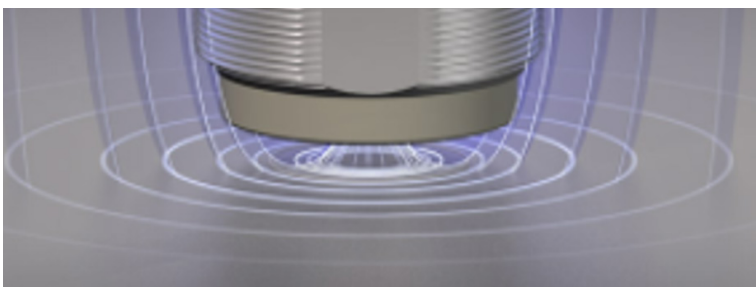
## based on inductive technology

AST's inductive Force- / Torque sensors make it possible to use structural components to measure forces and torques. The acting forces and torques lead to **minimal deformations of the structure**, which can be precisely detected by the sensitive sensors. The sensor electronic can be integrated into the sensor element or can be connected via a cable. Especially in **high temperature environments** it makes sense, to keep the electronic box separated. The sensor is qualified according ASIL B.



- Structural component used as measuring element
- Inductive sensor technology
- Designed for harsh environment
- Long term stability
- Resistant against high temperature
- ASIL B qualified

The measuring principle is based on **eddy currents** and can detect changes in geometry in the **nanometer range**. High-frequency alternating current flows through 2 coils built into a sensor housing. The **electromagnetic coil field induces eddy currents** in the conductive target, which changes the resulting alternating current resistance of the coils.



This change in impedance produces an electrical signal that is proportional to the distance between the target and the sensor coils. The use of 2 coils results in a **fully differential system** that is very robust against external interference.

### Technical data:

Measuring range	depends on application
Measuring accuracy	± 1% of full scale
Operating Temperature range	-40°C to +125°C
Sampling rate	100Hz
Interfaces	CAN/LIN/SENT/ 0-5V/4-20mA
Geometry	depends on application

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