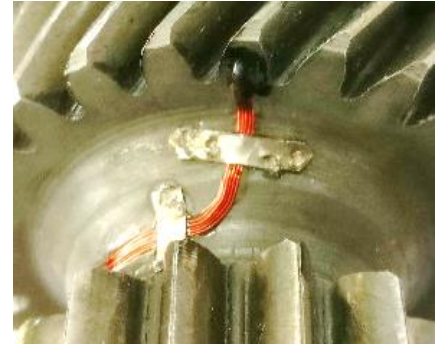


## In-Gear NVH-Sensor

### Intention:

Today, energy efficiency and comfort are self-evident criteria for the purchase of an automobile, not only for private individuals but also for commercial vehicles. The transmission, as a central and weighty component in the vehicle, is exposed to the constant pressure to become lighter, smaller and quieter. In order to optimize the design of a gearbox, routine simulations are routinely used, but the real implementation and the evaluation of the lifetime also require a metrological verification.

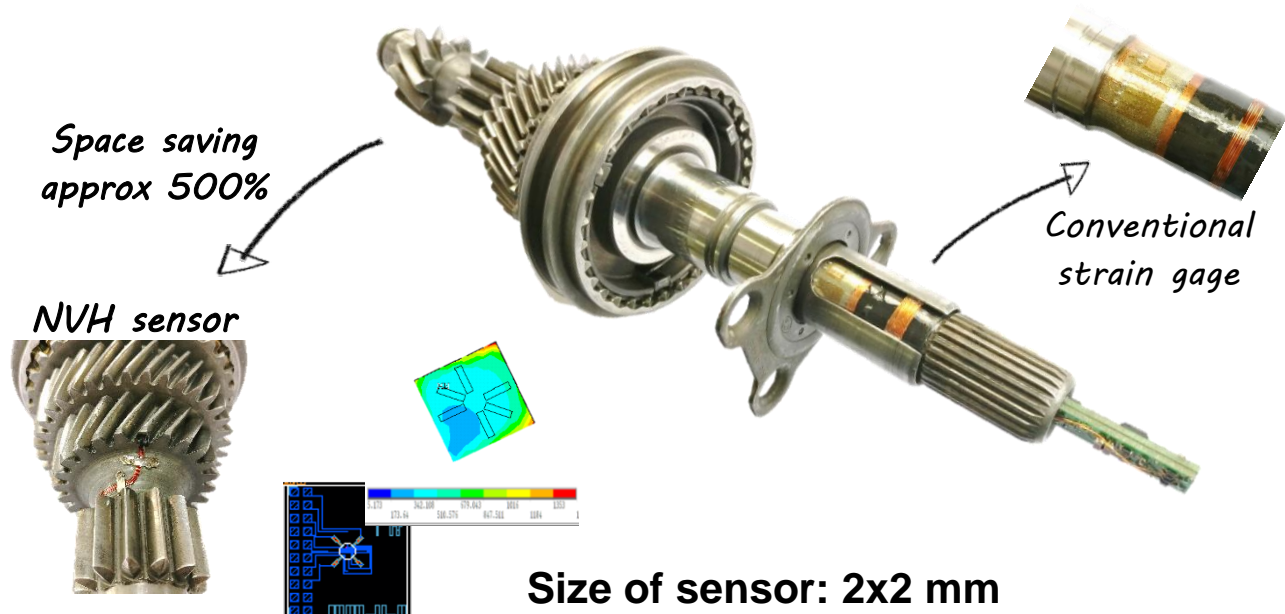


The result of our efforts is a sensor combining all necessary components enabling the in-situ measurement of strain and acceleration in the area of the tooth base. A unique mounting technique for the robust connection of the sensor with the measuring body is available as well as its protection by highly developed covering materials.

**We are looking forward to presenting this unique development in the near future and look forward to your opinions and suggestions.**

## Space Minimization

In a direct comparison between the NVH sensor and a solution using conventional strain gauges on film substrate, the NVH sensor results in a space saving of minimum 500%.



## Specifications:

The following measuring characteristics are applied to the sensor without telemetry:

Parameter	Range of values (tolerance)
Size of sensor	2 x 2 mm
K-factor strain gage	40.. 100 (< 2 %)
Resistance strain gage	350.. 1000 Ω (< 5 %)
Load cycles (fatigue strength)	>> 10 <sup>7</sup>
Max. Elongation (fatigue strength)	±1000 µm/m
Max. Measuring range Acceleration	± 100 g
Cut-off frequency acceleration	> 10 kHz
Operating temperature range	-40 °C.. +150 °C:
Linearity deviation	< 0,1 % (of f. s.)
Hysteresis	< 0,1 % (of f. s.)
Temperature drift	< 0.1 % (of f. s.) / 10 K

(of f. s.)– of full scale)

**Feel free to ask our experts after more details.**

*Note: Custom measurement ranges, accuracies and mechanical configurations available. Continuous development and refinement of our products may result in specification changes without notice - all dimensions nominal.*