

Technical Disclosure Commons

Defensive Publications Series

March 27, 2019

ELECTRONIC / CAPACITED CLEARANCE MEASURING SYSTEM

Verena Schwaiger

Bertrandt Ingenieurbüro GmbH

Follow this and additional works at: https://www.tdcommons.org/dpubs_series

Recommended Citation

Schwaiger, Verena, "ELECTRONIC / CAPACITED CLEARANCE MEASURING SYSTEM", Technical Disclosure Commons, (March 27, 2019)

https://www.tdcommons.org/dpubs_series/2092



This work is licensed under a [Creative Commons Attribution 4.0 License](https://creativecommons.org/licenses/by/4.0/).

This Article is brought to you for free and open access by Technical Disclosure Commons. It has been accepted for inclusion in Defensive Publications Series by an authorized administrator of Technical Disclosure Commons.

ELECTRONIC / CAPACITED CLEARANCE MEASURING SYSTEM

Technical task:

The task of the technical innovation is to optimize the measurement of distances in order to generate greater time savings, especially with gaps.

Initial situation:

When measuring gap dimensions with an eddy current sensor, different measurement results result depending on the material properties and microstructures. In addition, irregularities in the material structure can lead to falsified measurement results.

A repeatability of the measurement is currently not given. The sensor is calibrated to the respective material before each measurement. Defects (pores / voids etc.) in the material can lead to an incorrect measurement result.

Solution:

The technical innovation is an encapsulation of the eddy current sensor in a metal housing with spring-loaded cover. Due to the encapsulation the eddy current sensor always measures on the same cover and thus always on the same material with constant characteristics. The use of a chamfered lid facilitates entry into the measuring range. In order to be able to measure in hard-to-reach places, a flexible style is applied. With a simple calibration unit, the encapsulated system can be quickly checked for accuracy.

The following figure shows the device for the electronic measurement of the strength (block out) of sliding plates. The sensor is protected from dirt and damage by a lower and upper part. This always measures "on" the same material. The two parts are pushed apart by springs and secured by 1.5 mm stroke by lateral screws.

Advantages:

- Material-independent measurements can be performed without presetting.
- A repeat accuracy of +/- 0.01 is given.
- Hard to reach places can be measured easily.
- Defects in the material have no influence on the measurement result.
- Even pressure distribution through sprung lid.
- Time savings by quickly checking the measuring sensor based on the calibration unit.

Possible application:

- Electronic distance system.