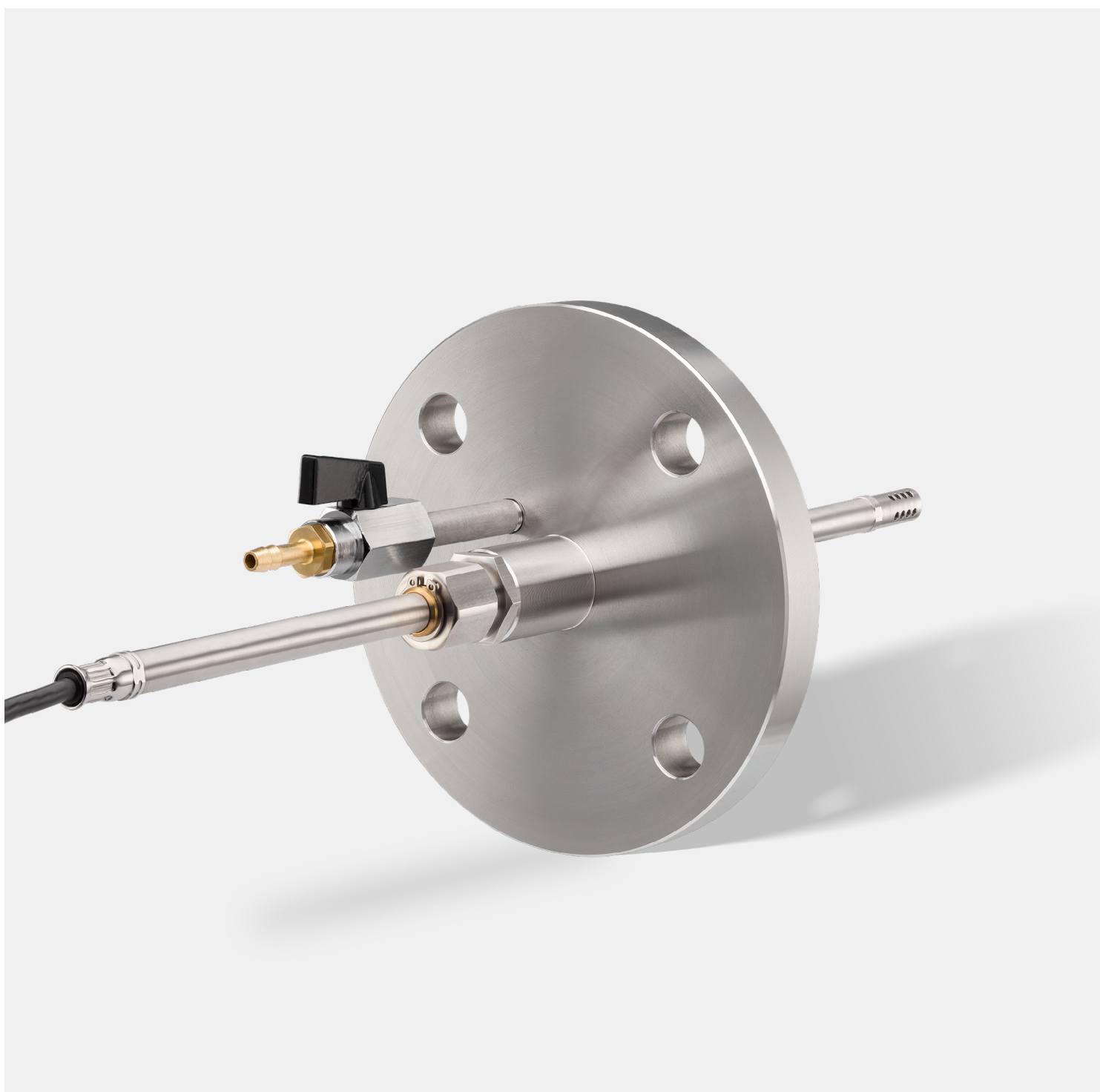




Monitoring of oil moisture and breakdown voltage – TFTX sensor

reinhausen.com



Who will send me a timely warning in the case of insulation problems?

Why a TFTX sensor for the transformer?

The transformer equipment consists of several components, each of which is subject to certain failure modes. To obtain a quick overview of the condition of individual transformer system, you use structured systems of condition assessment (cf. CIGRÉ TB 761, Condition Assessment for Power Transformers, March 2019) under the aspects of

- replacement of equipment
- safety of equipment
- maintenance of equipment
- oil treatment

In addition to temperature, the humidity and breakdown voltage of the insulating oil are essential parameters for assessing the condition of the insulating medium and allow conclusions to be drawn about the service life of a transformer. Too much moisture in the insulating oil or insulating paper impairs its insulating strength, i.e., the breakdown voltage decreases. Furthermore, water promotes degradation reactions of the insulating oil and the insulating paper and thus reduces the service life of a transformer. The TFTX sensor for the transformer, in combination with ETOS®, offers you a solid and cost-effective way to continuously monitor these important condition parameters.

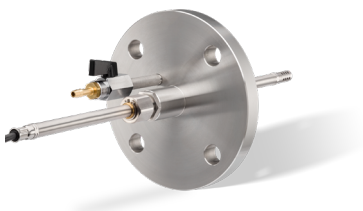
How does the TFTX sensor work?

A capacitive sensor and a PT1000 sensor are used to determine the relative humidity of the insulating oil and the oil temperature. The breakdown voltage is mainly influenced by the relative humidity in the oil and is calculated using an AI-based model approach. The calculation of paper moisture is based on a mathematical formula derived from a moisture equilibrium model. With the help of oil-specific parameters stored in the software, the absolute humidity in ppm (mg/kg) can also be calculated (cf. CIGRÉ TB 741, Moisture Measurement and Assessment in Transformer Insulation – Evaluation of chemical methods and moisture capacitive sensors). The breakdown voltage is displayed by means of a traffic light in classes based on DIN EN / IEC 60422.

The sensor can be used in mineral oil-based insulating oils as well as in synthetic and natural ester oils.

Your benefits

- Continuous monitoring of oil temperature and oil moisture (both relative and absolute)
- In combination with ETOS®, continuous monitoring of breakdown voltage
- With the ETOS® function Thermal Monitoring Pro, continuous monitoring of paper moisture
- Eliminates the need for regular, manual oil sampling
- Customer-specific parameterization of limit values
- Integration in ETOS®, the expert at your side for data analysis, evaluation, and recommendations for action
- We are there when you need us – global service network MR with 24/7 availability
- Personal support from your local MR Sales representative



Contact: sales@reinhausen.com