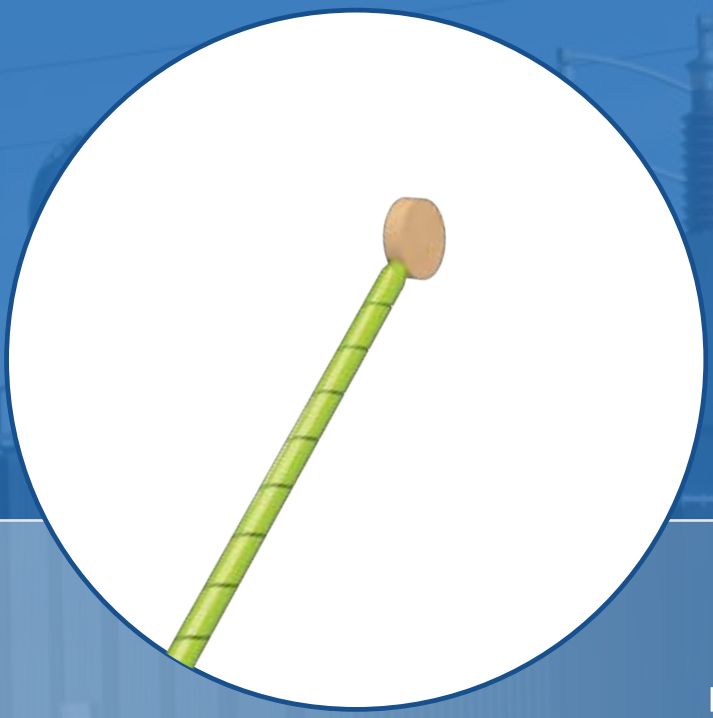
RUGGED MONITORING

MONITORING SIMPLIFIED

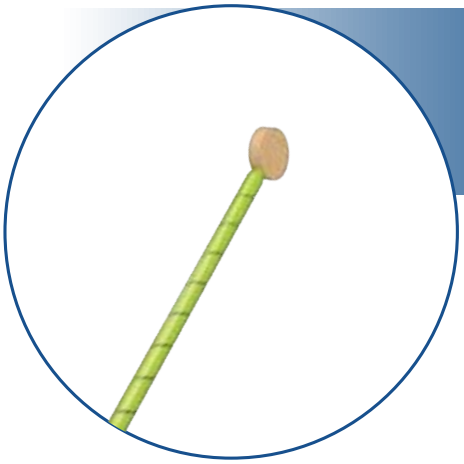


TSENS-K

Fiber Optic Temperature Sensor

RUGGED | ROBUST | RELIABLE

TSENS-K Fiber Optic Temperature Sensor



Transformer operators then get reliable and longterm temperature data, essential for precise transformer aging evaluation.

The Rugged Monitoring TSENS-K probes have been designed and built so they can be incorporated in your transformers to give precise results (direct measurements of temperature). The sensing technology is based on the proven zero-drift GaAs technology. They are completely built using first quality materials, all with very high dielectric strength, so your transformers can benefit from accurate temperature readings, which is essential to a good knowledge of transformer aging rate. During a factory heatrun tests these probes will give both transformer manufacturer and operator invaluable information regarding the transformer expected MVA performance. The tip construction makes them extremely robust, while being very easy to install in radial spacers or in other pressboard material (such as for temperature measurements in cores or other transformer components). This tip along with a 200 µ Ø fiber offers the highest probe pulling force in the industry. The spiral-wrap cable is especially constructed to allow complete oil penetration so you can be assured that no air can be present. All materials used in the probe construction are compatible with high temperature kerosene desorption processes.

Features

- Optimized for easy installation in oil-filled and dry-type transformers and reactors
- Rugged and robust construction built to outlast your transformer life
- Outstanding repeatability, zero-drift GaAs technology
- 9 mm disc design, suitable for all locations in a transformer (windings, cores, busbars, tap changers, etc.)
- Solvent and chemical resistant
- Kevlar on the entire length of the probe

Benefits

- Sensors do not require any calibration, ever
- No shift over time, high stability
- Double PFA Teflon reinforcement
- Robust fiber optic temperature sensor tip
- Available wth disc and without disc
- Surpass ASTM D2413 and D149 standards
- Very low PD performance
- Designed to exceed transformer life

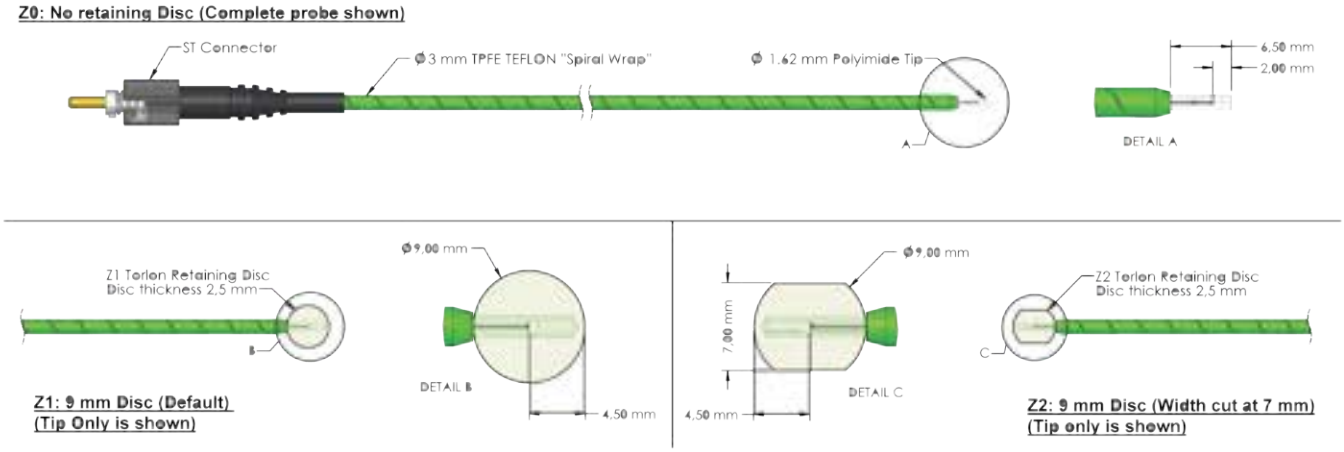
Applications

- Power transformers, oil-filled and dry-type
- Ideal for direct measurements of temperature
- High voltage environments (1 MV, or more)
- Suitable for HVDC windings
- Mounts in standard radial spacers
- Withstands kerosene desorption
- Compatible with all types of transformer oil, including ester type
- Compatible with all Rugged Monitoring instruments

Technical Specifications

Temperature range	-200 °C to +250 °C
Repeatability	0.2 °C
Accuracy absolute temperature	+/- 0.8 °C
Accuracy relative temperature	+/- 0.2 °C
Probe sheathing material	Teflon spiral-wrap with Kevlar
Tip material	Torlon (with disc) or Polyimide (no disc)
Connector	Stainless alloy ST with zirconia ferrule (Optional: Dielectric Torlon ST with zirconia ferrule)
Probe length	Up to 25 meters
Response time	Up to 0.2 sec without disc. About 2 sec with disc
Longevity	Probe accuracy and repeatability constant over time

Product Drawing



Ordering Code

TFK = Transformer Fiber Sensor with Kevlar

Probe length, Ex: 05 = 5 Meters

Transformer Probe Cable Diameter
X = 3 for 3 mm

Tip Options
Z = 0, for no Retaining Disc
Z = 1, for 9 mm Disc (default)
Z = 2, for 9 mm Disc, cut to 7 mm

T	F	K	–	T	G	–			–	X	–	Z	–	Y	Y	–	T	L

TL = Tip length in mm (optional); only valid with Z = 0 (if not specified default = 09 (9mm))

G = Gallium Arsenide

T = Temperature

Connector Options
YY = 00, Metal ST Connector (Default)
YY = DT, Dielectric Connector (Torlon)

CERTIFICATIONS

ISO 9001:2015 ISO 14001:2015 ISO 45001:2018

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