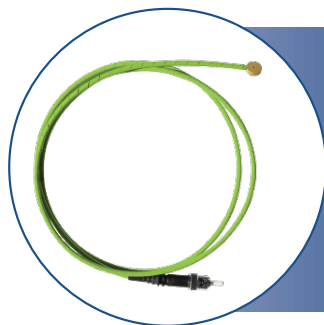


# TSENS

## Fiber Optic Temperature Sensor



A specially designed innovative patented probe with robustness and ease of installation can attract much attention from transformer manufacturers. While the transformer operators get reliable and long term temperature data essential for precise transformer aging evaluation.

Rugged Monitoring TSENS probes have been designed and built to give precise results when installed in transformers by measuring temperature directly. The sensing technology is based on the proven zero-drift GaAs technology. They are completely built using first quality materials, 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 factory heat run tests these probes will give both transformer manufacturer and operator invaluable information regarding the transformer expected MVA performance. The patented 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  $\mu$  Ø fiber offers the highest probe pulling force in the industry. The spiral-wrap cable is especially constructed to allow complete oil penetration assuring 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

## » Benefits

- Calibration free Sensors
- High Stability and No shift over time
- PTFE Teflon spiral-wrap reinforcement
- Robust fiber optic temperature sensor tip
- Available with disc and without disc
- Surpass ASTM D2413 and D149 standards
- Very low PD performance
- Designed to exceed transformer life

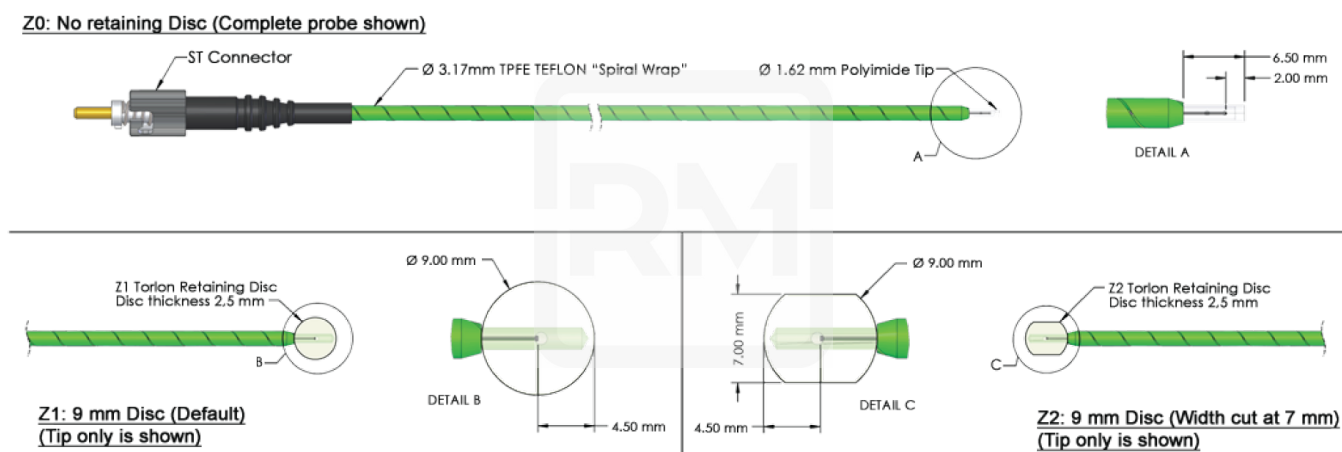
## » Applications

- Oil Filled or Dry Type Transformers
- Ideal for direct measurements of temperature
- Suitable for high voltage environments (1 MV, or more)
- Suitable for HVDC windings
- Standard radial spacers
- Withstands kerosene desorption
- Compatible with all types of transformer oil including ester type
- Can be Integrated with all Rugged Monitoring instruments

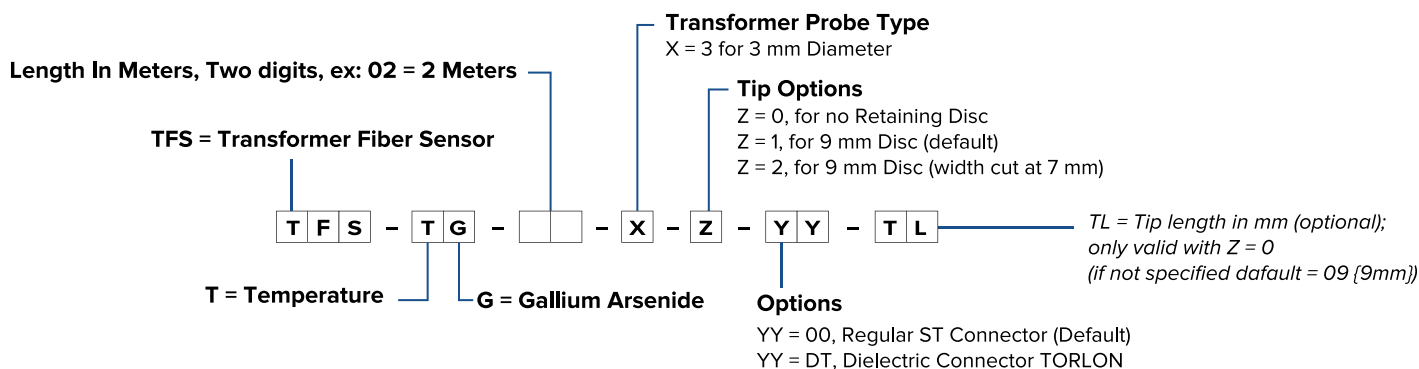
## » Technical Specifications

|                               |  |
|-------------------------------|--|
| Temperature range             | -80°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   |
| Tip material                  | Torlon (with disc) or Polyimide (no disc)  |
| Connector                     | Stainless alloy ST with zirconia ferrule<br>(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



### CERTIFICATIONS



ISO 9001:2015



ISO 14001:2015



ISO 45001:2018



Lloyd's Register



Atex Certification



NIST Certification



1415 Frank-Carrel, Sulte , 230, Quebec, QC-G1N , 4N7, CANADA

Asia Pacific | China | India | Middle East & Africa | Europe | North America | Latin America

+1-418-767-0111

info@ruggedmonitoring.com

www.ruggedmonitoring.com