

Typical temperature probe installation in transformer windings

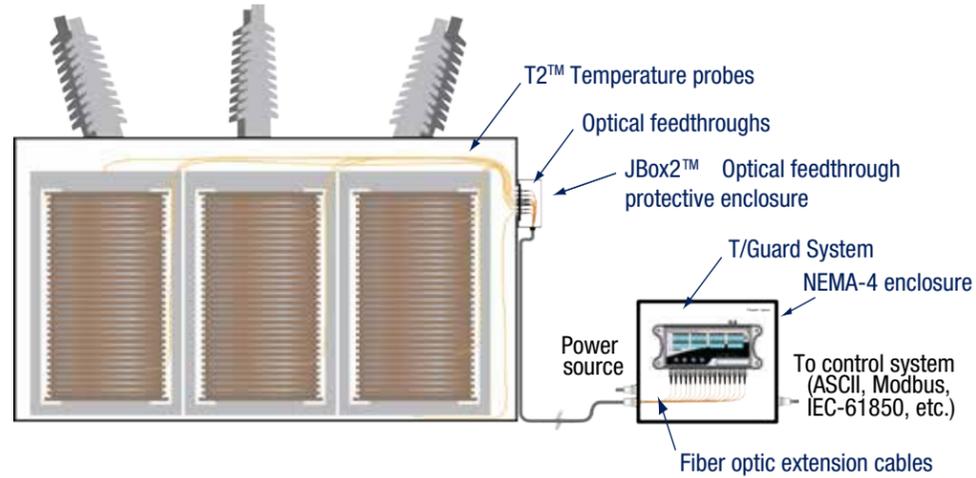
Advantages and features

Accurate, direct temperature reading of winding's hot spots:

- Predicts or adjusts dynamic loading of high voltage transformers
- Prevents premature failures
- Provides cost effective monitoring of transformer

Extends transformer life:

- Helps estimate insulation degradation rate
- Complements predictive hot-spot algorithm simulations



Qualitrol-Neoptix other services and products

Complete range of accessories

Neoptix offers several accessories to use with your temperature system, from the transport cases to ultra resistant Kevlar™ reinforced patch cords. We will provide everything you need for a complete and fully operational installation.

Calibration certificate

If needed, Neoptix will service and repair your fiber optic temperature system and we will provide you with a NIST traceable calibration certificate.

Extended warranty

Neoptix also offers extended warranty for complete coverage of your signal conditioners and accessories.

No matter where in the world you are located, there are two things you can count on from the services you receive from Neoptix: high professional standards and the ability to deliver quality products. Neoptix grows progressively by ensuring that each new member of the team embodies the culture of dedication to excellence that is part of the firm's reputation.

QUALITROL® Field Services :

QUALITROL® provides on-site commissioning/ start-up and comprehensive maintenance contracts to all customers worldwide. To further improve reliability, an extended warranty is available on selected products commissioned by QUALITROL®.

About QUALITROL® :

QUALITROL® manufactures substation and transformer monitoring and protection devices used by electric utilities and manufacturing companies. It is the global leader in sales and installations of transformer asset protection equipment, fault recorders, and fault locators. Established in 1945, QUALITROL® produces thousands of different types of products on demand, each customized to customers' unique requirements.

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QUALITROL®
Defining Reliability

Fibers by **neoptix**

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Defining Reliability



Product Overview

Fiber optic temperature measurement
for the T&D industry



The most complete product line of optical temperature sensors for the T&D industry

Qualitrol / Neoptix instruments and probes are field proven for reliable and accurate solutions, from design and testing up to online transformer hot spot measurement.

Systems for QC and testing facilities

Systems for your dry/oil filled transformers and LTCs

Multi-Channel OmniFlex-2



- Field upgradeable, up to 104 channels
- Hot swappable modules
- Selection of modules, to suit your needs:
 - Fast 4-channel modules (10 Hz)
 - Sequential 4- and 8-channel modules (250 msec per channel)
- CPU module, with web server and TCP/IP connectivity
- Color and touch QVGA LCD display
- Chassis can accommodate 6 or 13 modules
- Optional analog output module (16 ch per module)
- Built-in datalogging (7 GB)

Portable Nomad-Touch



- Portable battery-operated fiber optic signal condition with USB and datalogging
- One optical channel
- Runs on internal Li-ion batteries
- Optical power meter, ideal for testing probes
- Color and touch QVGA LCD display
- USB communication port
- Internal 32 MB datalogging
- Compatible with Neoptix OptiLink™ and OptiLink-II™ control and datalogging software

T/Guard Link



- Small form factor fiber optic signal conditioner for winding monitoring for all size transformers
- 2 versions: Fluorescence and GaAs technologies
- Available with 1 to 8 optical channels
- Multiple modules can be linked together with Modbus (up to 256 channels)
- Small footprint (190 x 113 mm)
- 4-20 mA analog outputs
- RS-485 port, with ASCII and Modbus communication
- Compatible with Neoptix OptiLink™ and OptiLink-II™ control and datalogging software

T/Guard 405



- Cost-effective fiber optic signal conditioner for winding monitoring
- Replacement for the original Neoptix T/Guard system
- Available with 2 to 16 optical channels
- Large LED high visibility display
- 4-20 mA analog outputs
- RS-485 port, with ASCII and Modbus communication
- 32 MB datalogging is standard
- Compatible with Neoptix OptiLink™ and OptiLink-II™ control and datalogging software

T/Guard 408 & 408XT



- Full-featured multi-channel system for transformer monitoring, with alarm and cooling control
- Available with 4, 6, 8, 10, 12 or 16 optical channels
- Large LED high visibility display
- 8 Form-C relays with galvanic isolation
- 4-20 mA analog outputs
- Serial protocols including Modbus and 61870
- Smart Grid protocols (XT) including IEC 61850
- Light source superior to transformer's life
- 2 or 4 GB data logging on-board memory
- Integrated Web Server with IP address (XT)
- Compatible with Qualitrol OptiLink™ and OptiLink-II™ control and datalogging software
- 100BASE-FX fiber communication option

507DW & 509DW



- Intelligent transformer monitor with direct winding
- All the features of the QUALITROL 509 ITM
- Real time comparison of calculated and direct hot spot winding temperatures for verification of transformer operation to OEM specification
- Available with 1 to 16 optical channels
- 4 X 20 display with backlight
- Cooling monitor model 509-200 for advanced control or load tap changer monitor model 509-300 for detailed performance monitoring
- Now supports GaAs and Fluorescence technologies

Optical sensors and accessories

T2™ oil-immersed probe



- Ruggedized temperature probe specifically designed for oil filled and dry type transformers
- 1 to 25 meters length
- Dielectric connectors and probe tips with disks are available
- Oil-permeable PTFE Teflon™ jacket with 3 mm Teflon™ spiral-wrap reinforcement
- Surpass ASTM D149 and D2413

TX panel feedthrough temperature probe



- Tx model panel feedthrough fiber optic temperature probe has been specifically designed for monitoring temperature through panel or tank walls.
- Built-in ST connector
- No moving parts
- Vacuum or pressure
- Compatible with all systems

Optical feedthrough



- Transformer tank wall optical feedthrough for T2™ temperature probe
- Based on solder glass bonding technology for a permanent oil-tight sealing
- Uses no epoxy or O-ring
- 1/4 NPT-M ANSI threads

Transformer tank wall plate



- Transformer tank wall plate
- Up to 24 feedthroughs on a single plate
- Designed to mate with our JBox2™ feedthrough protective enclosure
- Custom-made upon your specifications
- Carbon steel, stainless or aluminium

External extension cable



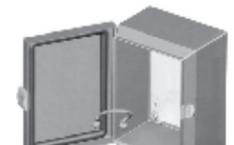
- Ruggedized optical extension cable for linking transformer to signal conditioner
- 1 to 500 meters length
- 3 mm O.D. polyurethane jacket reinforced with Kevlar threads
- ST connectors

JBox2™ protective box



- Tank wall plate and feedthrough protective junction box
- Up to 24 feedthroughs in same enclosure
- Flat section for conduit flange installation
- Specifically designed to mate with Neoptix transformer tank wall plate
- Storage space for up to 150 meters of extension cable

NEMA protective enclosure



- NEMA 4-12 protective enclosure custom made for the T/Guard product family
- Protects equipment against water, dust, dirt and oil splashing
- Available with automated environmental control
- Meets NEMA 4-12/IP66 standards