PRODUCT DATASHEET

NORTECH SENTINEL
Fiber Optic Direct Winding Temperature Monitoring System with Datalogging and Relays

With more than 200 systems installed and used worldwide, FISO's Nortech Sentinel optical signal conditioner is a flexible, multi-channel fiber optic signal conditioner designed specifically for direct, accurate and real-time temperature monitoring of transformer windings.

FISO's Nortech product line offers accurate and repeatable measurements, reliability and long term performance. The Nortech solution provides its worldwide users with tangible benefits and distinct features.

Benefits

- Accurate, direct and real-time knowledge of hot spot temperature.
- Provides assistance in transformer design and rating verification.
- Safely maximizes loading and overloading.
- Prevents premature failure.
- Avoids equipment outage and undesirable failures.

With up to six channels per unit, an analog output for each channel, and user programmable event relays, the Nortech Sentinel provides the transformer industry with a powerful diagnostic tool. The Nortech Sentinel and its accompanying software, Nortech Commander, perform automated data collection and seamless data exchange with standard spreadsheet programs such as Microsoft Excel™. Through data analysis and graphing, users can maximize loading and transformer lifetime, while optimizing scheduled maintenance. This valuable information can be easily classified and retrieved anytime allowing comprehensive data analysis and comparisons throughout the lifetime of the transformer.

Multiple data logging, event recording, and trend-tracking features provide the critical information that you need. The Megalogger tracks transformer temperature over extended periods of time, while the triggered logger supplies detailed short-term data from a pre-programmed event such as a temperature alarm and/or relays. Our event logger will provide you with a history for your Nortech Sentinel, recording alarms, data downloads, and all other events.

The Nortech Sentinel can be used on-site and send collected data directly through the unit's analog outputs. Remote communication is also possible with its modem or RS-232 interface and the Nortech Commander software. Moreover, up to 32 units can be networked with the RS-485 interface, providing integrated access to 192 points of temperature data from transformers, LTCs, and bushings.

A 19-inch rack mount chassis (optional) or NEMA-4 enclosure (optional) allow you to place the Nortech Sentinel where you need it most. The Nortech Sentinel signal conditioner offers full compatibility with our TPT-32 sensors without any re-calibration. This product joins our cost effective Nortech TT solution for small, medium and distribution transformers. FISO offers a 4 year warranty on all Nortech signal conditioners.

Key Features

- **1 to 6 channels**
- **Up to 225ºC**
- **Accuracy ±1°C**
- **User selectable analog outputs (0–10 V, 4–20 mA)**
- **Six form-C relays for one system fault relay**
- **RS-232 & RS-485 ports**
- **Built in non volatile memory**
- **Nortech Commander Software**
- **Modem capabilities**
- **Network capabilities**
- **PLC and SCADA compatible**
- **Large, easy to read LED display**
- **Internal real time clock**
- **Compact, robust signal conditioner with optional 19-inch rack mount or NEMA 4 enclosure**
- **EMC compliant**
- **4 year warranty**

Applications

- **Power transformer temperature monitoring**
  - Core
  - Windings
  - Bushings
- **Load Tap Changer temperature monitoring**
  - Contacts
  - Oil
- **High voltage testing**
- **Generators**
- **Transmission lines**
- **High voltage cables**
- **Switchgears**

Specifications

Number of channels	1 to 6
Reading temperature range	−40°C to 225°C
Resolution	0.1°C Analog, 1°C Digital
Conditionner accuracy	±1°C
Sampling rate	0.1 Hz
Display	Large 1.56 cm (0.614 in) LED display
Relays	6 form C (SPDT) 3A, 24 VAC with user-configurable set points 1 form C (SPDT) 3A, 24 VAC. Fail-Safe system fault relay
Serial ports	1 × RS-232, 1 × RS-485
Communication protocol	Proprietary protocol, Modem capabilities
Analog outputs	1 to 6 user field-selectable 4–20 mA or 0–10 V
Power supply	15 V DC, 85-264 VAC, frequency 45–65 Hz
Power requirement	15 V DC, 2 A
Light source	Life expectancy >25 years
Installation	Wall-mount (L brackets) Optional rack-mount chassis or NEMA-4 enclosure

Physical
  Weight
  Dimensions (H × W × D)
	
	2.5 kg
	305 × 203 × 81 mm

Environmental
  Operating temperature
  Storage temperature
	
	−20°C to 60°C
	−30°C to 85°C

Immunity	EMC compliant
Part number	NOR
Warranty	4 years

Complete Nortech Solution Includes

- Nortech Sentinel
- TPT-32 temperature sensors
- NOR-EST EasyThroughs
- Fiber optic external extensions
- Other optional available accessories

Nortech Sentinel Dimensions