

Substation Advisor[®] System

Model TSS and TSA Temperature Sensors



Use model TSS Temperature Sensors to measure the surface temperature of a device. Typical applications include transformer LTC tanks and transformer main tanks.

Use model TSA Temperature Sensors to measure ambient air temperatures.

Overview

Model TSS and TSA sensors provide an analog current that is proportional to the surface on which the sensor is mounted (TSS) or to the temperature of the ambient air (TSA). The sensor is powered from the loop current and therefore it does not require a separate power connection. The sensors may be used as-is or with a custom 4-20 mA signal conditioner. The sensor can be installed alone or as part of a Substation Advisor[®] System.

Functionality

The TSS and TSA sensors limit the current in a 24 VDC wetted loop to 1 μ A per degree Kelvin. For the range of -50° to +150°C, the sensors conduct 0.223 mA to 0.423 mA, respectively.

The TSS sensor may be used with the TSCA (Ambient) or TSCX (Transformer) signal conditioners, which convert the sensor current range to a standard 4 to 20 mA range. Which conditioner is used depends on the range of temperatures the sensor expects to see.

When the TSS sensor is used with a TSCA signal conditioner, the output current varies from zero to full scale for a temperature range of -50°C to +50°C. A typical application for the TSCA signal conditioner is approximating SF6 gas temperatures.

When the TSS sensors is used with a TSCX signal conditioner, the output current varies from zero to full scale for a temperature range of -50°C to +150°C. A typical application for the TSCX signal conditioner is sensing transformer or LTC tank wall temperatures.

The TSA sensor may be used with the TSCA signal conditioner for sensing ambient temperature.

Features

- Self powered by the I/O analog input 24 VDC loop supply voltage. No external power connection is required.
- Output is diode protected for reverse connections.
- Equipped with surge suppression circuitry.
- May be suspended by its cable, nylon tied in place, or surface mounted with industrial tape.

Specifications

Electrical

- Three pole compression terminal block, 14 to 26 AWG

Housing

- Water resistant polycarbonate case



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