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Thermal Differential Switches

Brand: Kenco Engineering

Short Description

KENCO’s Thermal Differential Switches are designed for a wide range of flow and level applications. These switches can be used to direct either the overall liquid level or a liquid-liquid interface. They can also be used to detect a specific flow rate or flow/no flow condition in liquids and gasses. Level and Interface Detection Flow Detection for Liquids and Gasses Fast Response Time No Moving Parts Temperature Compensation

Description

The sensor consists of two Resistance Temperature Detectors (RTD’s). One RTD measures the temperature of the fluid around the sensor. The other RTD is self-heated. This provides a temperature differential between the the two RTDs. In a level application, the thermal conductivity of the liquid level is higher than the gaseous layer above the liquid. When the RTDs make contact with the liquid, there is a cooling effect with the liquid absorbing the heat from the heated RTD. This reduces the temperature differential increases, causing the relay to reset. This will also work in a liquid-liquid interface when the two liquids have different thermal conductivity (ex. oil and water). In a flow application, there is a temperature differential during a no-flow or low-flow condition (the actual setpoint is adjusted during the calibration procedure). As the flow rate increases, the temperature between the RTDs decreases, causing the relay to change state. When the flow rate decreases, the temperature differential increases, causing the relay to reset.