

ProReact Linear Rate-of-change Linear Heat Detection



Highly sensitive and reliable solution for monitoring the liquified gas industry

For all aspects of the liquified natural gas industry including LNG storage tanks, equipment and pipelines.

The system comprises an ultra sensitive detection cable and intrinsically safe interface module housed in a tough polycarbonate enclosure. A **rapid drop** in temperature, for example caused by a leak of liquified natural gas onto the sensor cable, will trigger an alarm. Equally, a **rapid increase** in temperature, for example caused by the ignition of a gas will trigger an alarm. The threshold rate of change can be adjusted to suit ambient conditions. Installation and commissioning is extremely simple achieved through automatic self calibration at switch on. Alarm and fault volt-free outputs are provided to connect to any SCADA system, BMS or fire alarm control panel.

Operation

The ProReact Rate-of-Change Detector uses the latest digital signal processing techniques to continuously monitor the entire length of sensor cable. A rapid change in temperature anywhere along the cable will trigger an alarm. The interface unit continuously monitors ambient temperature, dynamically adjusting the threshold levels to maintain the highest sensitivity and prevent false alarms.

An alarm is triggered when a portion of the cable suddenly changes in temperature. For a greater change in temperature, a smaller portion of the cable is required to trigger an alarm.

Typically, a 45°C (113°F) temperature change at >20K/min is required for 2% of the zone length to trigger an alarm.



Benefits

- Patent Protected
- Qualified for use in hazardous areas (ATEX/IECEX)
- Cable based sensing allows detection at the point of risk
- Advanced signalling reduces the risk of false alarms
- Low installation and maintenance costs reduce total cost of ownership

Features

- Self restoring - no need to replace detection cable
- Intrinsically Safe for use in: Zones 0, 1 & 2 Gas Group IICT Class T5
- Fault output for open circuit/short circuit conditions
- Simple installation and commission (Automatic self-calibration)
- Integrated shield to reduce RFI susceptibility
- High sensitivity with specially chosen materials
- Improved circuit design decreases response time

Sensor Cable

- 4 temperature sensitive cores
- Metal braid for reduced RFI
- Zone lengths: 10m (33ft) -153m (500ft)

Typical Applications

- LNG floating roof storage tanks
- Landfill sites
- Liquified CO₂ & liquified methane recovery plants
- CO₂ Cylinder leak monitoring
- LNG pipeline monitoring
- LNG Ship-to-Ship transfer



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