PNEUMERCATOR
Liquid Level Control Systems

PHONE: (631) 293-8450
FAX: (631) 293-8533
www.pneumercator.com

INSPECTION & TESTING

HS100ND DRY CONTAINMENT LEAK SENSOR

Principle of Operation

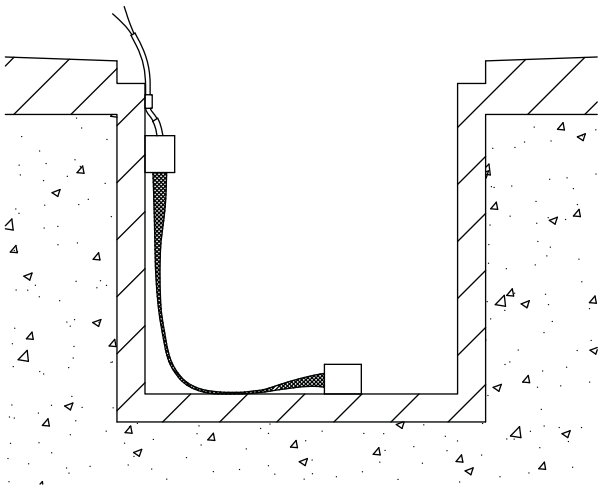
The HS100ND sensor is intended for use in secondary containment locations where water may or may not be present, and the release of liquid hydrocarbon would constitute a leak. The sensor incorporates a specialized polymer strip that continuously provides a resistive output with an applied voltage. This polymer strip physically swells on contact with liquid hydrocarbon anywhere along its sensing length, this swelling resulting in a dramatic increase in resistance, typically in the tens of megohms. This high resistance is interpreted by the TMS or LC2000 as a LEAK condition. The sensor will return to its normal low resistance state once the liquid hydrocarbon is removed. Sensor resistance is unaffected by the presence of water.

⚠ WARNING

Inspection and Maintenance MUST be done by qualified personnel familiar with classified hazardous locations and all associated safety practices. FAILURE TO COMPLY MAY RESULT IN PERSONAL INJURY, PROPERTY LOSS AND EQUIPMENT DAMAGE.

Inspection

Confirm that the sensor is installed in a manner so that a hydrocarbon release would contact the sensor along its sensing length. Confirm that the sensor is currently not contaminated with hydrocarbon liquid. Confirm that the sensor and associated cabling are free of mechanical damage, and that any field wiring splices are intact, properly sealed and free of moisture. Replace sensor if it has lost its flexibility.



Testing

Turn off console power, disconnect one or both sensor wires at the console and measure the DC resistance across the sensor wires. The reading should be nominally 50K ohms, but may vary by as much as +/- 15k ohms. Re-connect sensor wires at the console and re-power. Disconnect one wire at the field connection closest to the sensor. Console should alarm. If not, check console programming and field wiring.

Note: Sensor may be tested by exposure to liquid hydrocarbon, but due to the intrinsic physical property of the polymer strip, this is generally not required. If a liquid hydrocarbon test is desired, care must be taken to completely remove all hydrocarbon contaminant prior to returning to service. Keep exposure to as small a section as practical, i.e. ¼" to ½". If a volatile hydrocarbon such as gasoline (including E10/E15) is used, air-drying should be sufficient to return the sensor to its normal state. Non-volatile hydrocarbons such as

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diesel, heating oil, kerosene, etc. will require cleaning by soaking in a detergent/water mixture overnight, or by dipping contaminated section in a volatile hydrocarbon such as gasoline for 10 to 20 minutes, then allowing to air dry prior to returning to service. Be aware that when testing with non-volatile hydrocarbons, there is the possibility that if exposure is allowed to continue for more than 10 to 20 minutes, the sensor may not be restorable to service. Please contact Technical Support at 800-209-7858 with any questions.

⚠ WARNING

Extreme care must be taken when working with volatile hydrocarbons. This should only be done outdoors, clear of all building structures and any sources of ignition, including cigarettes! Wear appropriate eye protection and gloves to avoid splash contact. FAILURE TO COMPLY MAY RESULT IN PERSONAL INJURY, PROPERTY LOSS AND EQUIPMENT DAMAGE.