

HOW ONE AUTOMOTIVE APPLICATION CONQUERED EXTREME TEMPERATURES

When Standard Sensors Hit Their Limits, Standex Detect Responds





The Challenge:

Not all fluid-monitoring applications operate under ideal conditions.

An automotive system designer needed a liquid-level sensing solution capable of operating across a wide range of environmental conditions. The application involved fluids with dramatically different densities and viscosities, while operating temperatures could range from -40°C to 180°C, creating significant challenges for conventional sensing solutions.

In addition, the system required:

- Multiple sensing points
- Reliable operation in hot and cold fluids
- Compatibility with different media types
- Long-term durability in demanding operating environments

The Solution

Rather than forcing the application to fit a standard sensor, Standex Detect engineered a configurable liquid-level sensing platform capable of supporting multiple sensing points and multiple float configurations within a single assembly.

The solution was designed to:

- Operate in temperatures ranging from -40°C to 180°C
- Support multiple liquid types and viscosities
- Accommodate multiple sensing positions
- Provide reliable switching in harsh operating environments

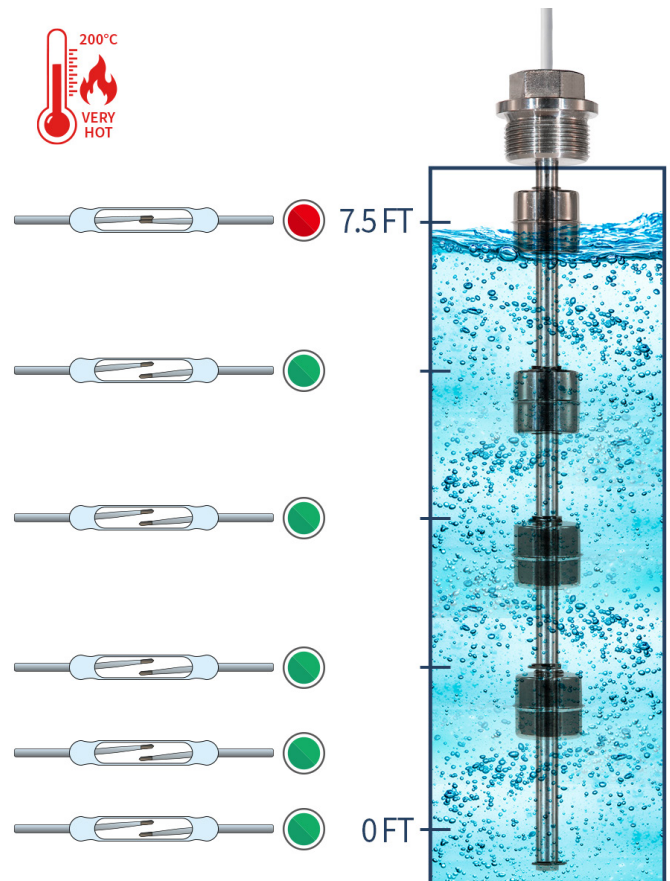


Figure 1. Shows the LS05 operating at different levels of liquid detection.

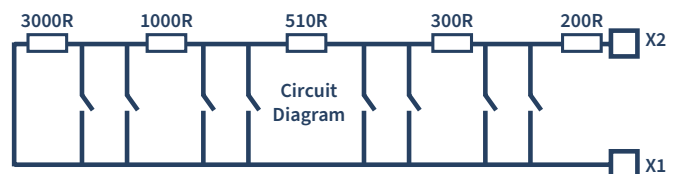


Figure 2. Example of an internal PCB configuration showing multiple switching points.



Standex also optimized materials based on the application requirements, including configurations suitable for oils, gasoline, petrol, water, and dilute acidic liquids.



Why It Matters

Extreme temperatures can impact sensor performance, reliability, and lifecycle expectations.

By tailoring the sensing solution to the fluid characteristics, material compatibility requirements, and operating environment, engineers were able to achieve reliable performance under conditions where a standard sensor may struggle to operate consistently.



Key Takeaway:

When applications involve extreme temperatures, multiple fluids, and demanding operating conditions, the right solution often starts with engineering the sensor around the environment, not the other way around.



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