



Industry  
DATA CENTERS

### APPLICATION CHALLENGE:

Precision control of coolant liquid is crucial for data center operations, directly impacting efficiency, reliability, and the lifespan of IT infrastructure by ensuring optimal thermal performance and protecting hardware. In direct-to-chip cooling systems, maintaining a constant differential pressure across server cold plates helps ensure consistent flow rates to each component, even as servers are added or removed from a rack. This prevents both insufficient flow (which causes overheating) and excessive flow (which wastes energy and can cause erosion).

A major solutions provider that designs and distributes technology for direct liquid cooling of server banks required a differential pressure instrument for measuring water flow through a strainer. The instrument would provide feedback to a controller, notifying facility personnel that flushing and maintenance was required. The customer considered mechanical switches but had concerns about hysteresis of mechanical devices and the challenges of making precise set point and deadband settings in order to minimize potential switch bouncing.



IMPROVED OPERATIONAL UPTIME



ENHANCE OPERATIONAL VISIBILITY



BETTER MAINTENANCE EFFICIENCY

## CASE STUDY

# EXCELA: FLOW MEASUREMENT FOR SERVER LIQUID COOLING IN DATA CENTER



EXCELA™



### SOLUTION:

The customer chose UE's Excelsa Differential Electronic Switch over mechanical switch and transducer options because it installs like a mechanical switch – with only two wires – yet it provides the performance typically seen only in electronic products. With standard features such as 316L stainless steel, welded diaphragms, piezo-resistive strain gauge silicon element and silicone oil fill, Excelsa provides a rugged and reliable solution that alleviated the customer's concerns about hysteresis, precise set points and dead bands.

Excelsa's performance allows operators to focus on other demands without concerns that the coolant system was not working properly. Rather than flushing the filters more frequently than necessary in order to avoid potential problems, the operator is able to perform maintenance when truly needed, saving time and money.

