

FLT93C Thermal Flow Switch Keeps It Clean In Demanding Sanitary CIP Processes

Helps Assure Continuous Liquid Flow Rate in Cleaning Systems

San Marcos, CA — Design, process and plant engineers responsible for maintaining a sanitary environment in pharmaceutical, biotechnology and food/beverage plants will find that the FLT93C flow switch from Fluid Components International (FCI) provides accurate liquid flow rate measurement for clean in place (CIP) system operational integrity.

With its stainless steel wetted materials and standard 20Ra finish, available in either mechanical polish or electro-polish finishing, the sanitary FLT93C thermal flow switch supports both skid-mount and stationary clean-in-place (CIP) systems. The primary purpose of these systems is to ensure all process piping and equipment is thoroughly cleaned per ASME BPE standards.

The FLT93C flow switch monitors the process cleaning solution's minimum liquid flow rate to ensure it is maintained during the entire cleaning process runtime. Operating over a wide liquid flow range of 0.01 fps to 3.0 fps [0.003 mps to 0,9 mps], the FLT93C flow switch offers excellent accuracy of $\pm 0.5\%$ reading or ± 0.04 fps [± 0.012 mps].

Designed with unique temperature compensation technology, the FLT93C flow switch is the industry's only thermal switch that ensures set point accuracy for process temperatures that can vary up to ± 100 °F [37,8 °C]. The FLT93C is easily field-configured or factory preset, providing unparalleled flexibility, accuracy and stability for all multiple process sensing and switching requirements.

The FLT93C flow switch is suitable for 0.7 inch to 4 inch [19,05 mm to 101,6 mm] sanitary tubing process lines, and it connects with a secure tri-clamp fitting for easy removal for inspection and servicing. The 316L stainless steel wetted materials are available in both mechanical polish (SF0 to SF3) and electro-polish (SF5 and SF6) surface finishes with 20 Ra maximum (μin) finish; 10 Ra maximum (μin) electro-polish finish (SF 4) is available upon request. The FLT93C construction complies with ASME BPE requirements.

In addition to CIP systems, other pharmaceutical uses of the FLT93C flow switch include compendial water systems (WFI, PW, and HPW) and solution preparation systems (buffer solution). Special options



are available for applications requiring more corrosion resistant, wetted materials such as Hastelloy-C and Class 1, Div 1 and 2 hazardous areas.

The FLT93 Series switch is a dual-function instrument that indicates both flow and temperature, and/or level sensing in a single device. Dual 6A relay outputs are standard and are independently configurable to flow, level or temperature. Based on FCI's thermal dispersion expertise, the unique sensor technology of the FLT93 Series switches, combined with FlexSwitch™ temperature-compensation circuitry, introduces unparalleled performance capabilities:

- Liquid level resolution of ± 0.1 inch (± 2.5 mm); repeatability of ± 0.05 inch (± 1.3 mm)
- Standard temperature accuracy $\pm 2.0^{\circ}\text{F}$ ($\pm 1^{\circ}\text{C}$); repeatability is $\pm 1.0^{\circ}\text{F}$ ($\pm 0.6^{\circ}\text{C}$); improved temperature accuracy is available with factory calibration

One standardized, field-configurable FLT93 FlexSwitch control circuit satisfies virtually any combination of application requirements. FCI's advanced FlexSwitch technology can be packaged in integral or remote configurations for installation flexibility.

The FLT93C switch beats the heat, too. It is available with a choice of sensors including one that is suitable for process temperatures up to 350°F [$176,67^{\circ}\text{C}$] and one that is suitable for temperatures up to 500°F [260°C]. Hazardous approvals available for the FLT93C switch include ATEX and EAC/TR CU.

Fluid Components International is a global company committed to meeting the needs of its customers through innovative solutions for the most challenging requirements for sensing, and measuring flow, pressure and temperature of gases.