

Analyzer system flow monitoring



Chemical Case Study 103-2

Application

Analyzer systems usually include flow switches and rotameters to monitor flow through the sampling lines. Flow monitoring is necessary to insure fresh samples are obtained for safety, accuracy and product quality verification. Maintaining specified process temperature ranges is also a requirement for analyzer system operation and efficiency.

Challenge

Mechanical switches have moving parts and are susceptible to wear, corrosion and fatigue. Rotameters are inaccurate at the very low flow rates required by sampling lines. Continual maintenance and replacement of these failure prone instruments negatively impacts maintenance department limited budgets. Loss of flow in a sampling system must be quickly detected in order to prevent dangerous gas accumulation or unwanted product waste. RTD devices require another process penetration for installation further increasing installation and maintenance costs.

Project parameters

User	Analyzer systems
Location	Various locations
Media	Gas or liquid
Line Size	.75 inch
Flow Range	1 cc/sec
Pressure Range	Various pressures
Temperature Range	Various temperatures

Solution

FCI's FLT93L FlexSwitch® inline thermal flow switch features no moving parts, all welded 316L stainless steel materials of construction, two relay alarms, two voltage outputs and fail-safe design as a reliable, inexpensive and proven solution for analyzer systems. The FLT93L is installed to monitor the process flow and confirm sampling system integrity. The second voltage output can also be used to monitor process temperature. The FLT93L's versatility eliminates the requirement for other flow and temperature instrumentation resulting in reduced installation and maintenance costs.

FCI flow switch specifications

Model	FLT93L FlexSwitch®
Media	Water and hydrocarbon-based liquids
Line Size	0.75 inch
Flow Range	0.015 to 110 cc/sec [0.0009 to 6.6 lps]
Pressure Range	to 3500 psig [241 bar(g)]
Temperature Range	-100° to +500°F [-73° to +260°C]

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FCI is ISO 9001 certified/conformance to AS9000