

Non-Invasive Sanitary Inline Flow Switch Combines High Accuracy & Fast Response Time

Clean Water, Bio-Technology, Chemicals, Food/Beverage, Pharmaceutical



San Marcos, CA

Process engineers looking for a sanitary/high-purity application flow switch with a wide flow range, superior accuracy and the industry's fastest response time in its class will find the NuTec™ FS2000L In-line Flow Switch from Fluid Components International sets the industry standard.

The NuTec FS2000L Flow Switch's advanced non-intrusive thermal mass flow sensor's design is constructed of 316L stainless steel, which isolates it from the process media. It is available with electro-polish finishes of 20 Ra and 10 Ra, making it suitable for sanitary and high purity applications in a wide range of applications in the clean water, bio-technology, specialty chemical, food/beverage, medical device, pharmaceuticals and other clean-process industries, such as semiconductor manufacturing.

The FS2000L provides precise, rapid control in liquids, slurries, high purity gases and air. It reliably monitors the flow of water-based liquids, syrups, lubricants, coolants, highly viscous or adhesive materials, as well as air and gases used in chemical injection, pill coating, fermenting, bottling, pump protection, seal leak detection and more.

Designed with a breakthrough inline style non-invasive flow sensor, the FS2000L performs equally well in clean or dirty media and is unaffected by entrained particles or bubbles. The FS2000L installs in minutes as an inline-type flow switch, which never clogs or impedes flow because its unique sensor doesn't protrude into the media. That means there is absolutely no pressure-drop as well.

The control of sanitary/high purity liquids and gases is often problematic. Flow switch sensors placed directly into the process media often either reduce flow or clog over time (especially differential pressure tube sensors), which can degrade their responsiveness. Contact with the media also requires frequent cleaning, repair or replacement of mechanical sensors, such as paddles and floats.

The FS2000L solves such problems with its flat-face no-moving parts sensor design. This unique thermal mass flow sensor is installed flush to the inside of the pipe inner diameter (ID). It is fully temperature compensated for high repeatability of measurement with little to no drift over time regardless of changes in media or air temperature and requires almost no maintenance.

Designed for demanding processes, the FS2000L In-line Flow Switch is accurate to $\pm 3\%$ of set-point, with a fast 0.5 second response time and offers $\pm 1\%$ repeatability. It operates in media temperatures from -40 to 250°F (-40 to 121°C) and operating pressures to 100 psi [7 bar (g)].

The FS2000L Inline Flow Switch is suitable for use in line sizes from 0.5 to 2 inches (13 to 51 mm). Its wide measuring range supports water-based applications from 3.4 to 85.5 GPM (0.11 to 324 LPM), and it supports air/gas flow applications from 0.02 to 342 SCFM (0.0006 to 9.70 NCMM), depending on line size.

Input power for the control circuit is available in either 24 Vdc or 115/230 Vac. The alarm signal output is a 6 amp, 28 Vdc/240 Vdc resistive relay. Secondary alarm indicator is an open collector circuit (250 mA maximum).

The FS2000L's robust construction delivers superior life and low maintenance. Its all-welded 316 stainless steel thermal mass flow sensing element, means no clogging, no leakage and superior corrosion resistance. The electronics enclosure is all-metal, NEMA Type 4X (IP66) rated and approved for Groups B, C, D, E, F G and EEx d IIC. Process/pipe connection options include 1-inch NPT or 1-inch compression fitting.

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