

## SIL Compliant Thermal Flow Meters & Switches For Safety Instrumented Systems (SIS)

*Chemical, Electric Power, Oil/Gas and Other High-Reliability Process Industries*



San Marcos, CA — Engineers responsible for functional safety and safety instrumented systems (SIS) per standards IEC 61511 and 61508 will find that [Fluid Components International \(FCI\)](#) now offers the industry's broadest offering of Safety Integrity Level (SIL) compliant [thermal flow meters](#) and [liquid/gas flow switches and level switches](#).

The process industries over the past two decades have seen many changes when it comes to the design and implementation of emergency shutdown/safety systems. Today compliance with the various international and regional safety standards requires a more rigorous approach to the overall safety lifecycle of a system compared to the reliance on the best engineering design practices of the past.

As a result, a broader and significant increase in the implementation of these standards has been noted within the instrumentation and control industry. The standards most commonly referenced in the process industries are: IEC 61511: Functional Safety - Safety Instrumented Systems for the Process Industry Sector; ANSI/ISA-84.00.01 (IEC 61511 Mod) - Functional Safety: Safety Instrumented Systems for the Process Industry Sector; and IEC 61508: Functional Safety of Electrical, Electronic, & Programmable Electronic Safety Related Systems.

The continuous global focus on improved safety within the chemical, electric power, oil/gas, petroleum refining and other hazardous industries is driving these standards. FCI has responded to the requirements for SIL rated flow and level instruments with the design, testing and manufacture of its thermal sensor technology mass flow meters, flow switches and level switches. The result is the industry's largest offering of SIL compliant thermal dispersion technology instrumentation products.

Safety Integrity Level (SIL) compliance is only one piece of the data required to meet the requirements of these standards, but it continues to be the initial focus of inquiries. Reliable failure rate data is equally critical when it comes to evaluating the impact an individual sensor will have on the

overall Safety Instrumented System (SIS) design and validating that particular Safety Instrumented Function (SIF) being used to calculate Safe Failure Fraction (SFF) of a product, evaluate required Hardware Fault Tolerance (HFT) and allowing a design engineer to perform PFDavg calculations.

To ensure that FCI provides unbiased failure rate data, the company utilizes independent, authorized third parties such as exida and TÜV Nord to perform the FMEDA (Failure Modes, Effects and Diagnostics Analysis) per IEC 61508 for our thermal flow meters and thermal switches.

FCI's thermal mass flow meters and flow/level switches have been used within the process industries for more than 50 years as safety instruments, helping customers limit the risks associated with potentially hazardous processes. As the implementation of newer standards related to safety instrumented systems continues to increase, the process industries can continue to rely upon FCI to meet their SIL instrumentation requirements.

Click [here](#) to view the complete SIL compliance documentation for all of the FCI products, including FMEDA reports and declarations.

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.

Contact: FCI: 1755 La Costa Meadows Dr, San Marcos, CA 92078  
Web: [www.fluidcomponents.com](http://www.fluidcomponents.com) Tel: 800-854-1993 Tel: 760-744-6950 Fax: 760-736-6250  
Email: [FCImarcom@fluidcomponents.com](mailto:FCImarcom@fluidcomponents.com)