



## SIL DECLARATION OF CONFORMITY Model FLT93 SERIES

We, *Fluid Components International LLC*, located at 1755 La Costa Meadows Drive, San Marcos, California 92078-5115 USA, declare as manufacturer, that the *FLT93 Series* is suitable for use in a safety instrumented system for SIL 2 as High and Low Flow alarming device and as High and Low level alarming device.

The FLT93 Series has been classified as Type A subsystem according to IEC 61508-1 Chapter 7.4.3.1.2 with a Hardware tolerance (HFT) of 0.

The Failure Modes, Effects and Diagnostic Analysis (FMEDA) report carried out by notified body TUV Nord Cert GmbH, resulted in following failure ratings:

SIL (Safety Integrity Level) : 2  
HFT (Hardware Fault Tolerance) : 0  
Subsystem type : A

Failure rates according to IEC 61508-1

Function	SFF	PFD	$\lambda_{DU}$	$\lambda_{DD}$	$\lambda_{SU}$	$\lambda_{SD}$
Low Level/Flow	84 %	$1,32 \times 10^{-3}$	302 FIT	144 FIT	1147 FIT	320 FIT
High Level/Flow	82 %	$1,52 \times 10^{-3}$	374 FIT	82 FIT	1102 FIT	383 FIT

### Terminology:

SFF = Safe Failure fraction  
PFD = Probability of failure on demand  
 $\lambda_{DU}$  = failure rate dangerous undetected faults  
 $\lambda_{DD}$  = failure rate dangerous detected faults  
 $\lambda_{SU}$  = failure rate safe undetected faults  
 $\lambda_{SD}$  = failure rate safe detected faults  
FIT = Failure Rate in  $10^{-9}$ /hour

Above analysis is based on assuming:

- FLT93 series jumper settings are done correctly for required power supply, function and fail safety per IOM Manual 06EN003246 Chapter 3
- Potentiometer settings are done correctly per IOM Manual 06EN003246 Chapter 3
- Annual functional test cycle
- External power supply failures, and mis-wiring is excluded
- Mechanical damage to sensor or electronics is excluded
- Alarming with a PLC or equivalent as a field interface device

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### Flow/Liquid Level/Temperature Instrumentation

Visit FCI on the Worldwide Web: [www.fluidcomponents.com](http://www.fluidcomponents.com)

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