SIL DECLARATION OF CONFORMITY Model ST100 SERIES

We, *Fluid Components International LLC,* located at 1755 La Costa Meadows Drive, San Marcos, California 92078-5115 USA, declare as manufacturer, that the *ST100 Series* of products is suitable for use in a safety instrumented system for SIL 1, flow, temperature and pressure measurement.

The ST100 Series has been classified as Type B subsystem according to IEC 61508-1 Chapter 7.4.4.1.3 with a Hardware tolerance (HFT) of 0.

The Failure Modes, Effects and Diagnostic Analysis (FMEDA) report carried out by *exida*, resulted in following failure ratings:

SIL (Safety Integrity Level)	:	1 - As a single device
HFT (Hardware Fault Tolerance)	:	0
Subsystem type	:	B

Failure rates according to IEC 61508-1

Function	**SFF**	**PFD (AVG)**	λ_{DU}	λ_{DD}	λ_{SU}	λ_{SD}
Single Probe AC supply	79.8 %	1.21×10^{-2}	567 FIT	1927 FIT	314 FIT	0
Single Probe DC supply	79.9 %	1.22×10^{-2}	570 FIT	1946 FIT	317 FIT	0
Dual Probe AC supply	88.9%	1.00×10^{-2}	415 FIT	2918 FIT	404 FIT	0
Dual Probe DC supply	88.9%	1.01×10^{-2}	418 FIT	2937 FIT	407 FIT	0

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

Above analysis is based on assuming:

- The HART protocol is used for setup, calibration and diagnostics purposes, not for safety critical function.
- Materials are compatible with process conditions.
- The device is installed per manufacturer's instructions.
- External power supply failure rates are not included.
- Worst-case internal fault detection time is 1 hour.
- The device is configured for fault detection per NAMUR NE43 or the logic solver is configured to interpret output fault conditions.
- Proof test interval of 1 year.

Issued at San Marcos, California USA
20, May 2012

Eric Wible
2012.06.28 15:47:50 -07'00'

Eric Wible, Engineering Manager