

## tekVorx Multivariable Flow Sensors

Vortex flow sensors derive their name from a natural phenomenon of fluid dynamics. When a gas or relatively low viscosity liquid impinges on a non-streamlined body, the fluidic boundary layer can only cling to the contour of the body at a very low rates. At a Reynolds Number (Re) of around 2000, that is, a critical combination of low viscosity, high viscosity and high density, the boundary layer separates from the body. Flow friction causes the boundary layer to form a rotational vortex, which is a detectable pressure pulse. With the **tekVorx** symmetrical and well-designed bluff body, vortices are formed in a well-defined and stable pattern, alternately on one side of the body, then on the other side. The frequency of the vortices are proportional to the mean velocity of the flow above  $Re > 15,000$ .

The **tekVorx** embodies a robust, highly reative piezoelectric sensor, which is virtually immune to vibration. This detects the frequency of the vortices, which are processed in a **tekVorx** microprocessor.



**tekVorx TV01 Flanged**



**tekVorx TV01 Wafer**

### Features:

- Entirely digital, no moving parts, flow sensor for mass and volumetric flow of liquids, gases and steam
- Accuracy  $< +/- 1%$  of reading liquids and  $< +/- 1.5%$  gases and steam
- Repeatability  $+/- 0.1%$  of reading
- All **tekVorx** flow sensor calibrations are traceable to USA NIST and other international standards
- Multivariable mass flow, volumetric flow, temperature, pressure sensing and other display options
- Solid state piezoelectric sensor provides high insensitivity to vibration

**tekVorx** output frequency is unaffected by changes in pressure, temperature and viscosity

- Available in-line or wafer type 25 - 300mm (1" - 12"), insertion type 250 - 2000mm (10" - 80")
- Huge optional pressure ratings 10 - 40barg (145 - 580psig) or 63 - 420barg (913 - 6089psig)
- Meet European Pressure Equipment Directive PED 97/23/EC Article 3, Sound Engineering Practice
- Optional temperature ratings  $-20^{\circ}\text{C}$  to  $+350^{\circ}\text{C}$  ( $-4^{\circ}\text{F}$  to  $662^{\circ}\text{F}$ )
- Flow downturns typically  $> 10 : 1$  to  $40 : 1$ , sizes and media dependent
- Efficient bluff body design produces lowest pressure loss and noise free, well defined vortices
- High long term stability, no zero drift
- Power supply 12 - 24V dc or battery/solar powered
- Outputs : scaled pulse, 4 - 20mA, RS485, HART protocol
- Flanged or low cost wafer style connections or hot tap insertion types
- Manufactured strictly to ISO 9001 Quality Assurance