



tekFab DP04 + tekProbe

First Nanotechnology Capacitive DP Cell with True Static Averaging Pitot Flow Sensor

The **Tekflo tekFab DP04** Series brings uncompromised low cost, but with the most advanced nanotechnology capacitive reactance differential pressure (dp) sensing to **Tekflo's** insertion **tekProbe** PR3 averaging Pitot flow sensors. This low cost version complements the **tekFab** Multivariable system. However, this system is used for simplified volumetric flow measurement of liquids, gases, saturated or supersaturated steam, with a fixed mean density, in pipes and ducts 100 to 3000mm (4" - 120").

The flow computation, displayed digitally on the **tekFab DP04**, is based on classical Bernoulli Theory, which defines a **true static pressure** input. Only the **tekflo PR3** averaging Pitot produces such a noise free **true static pressure**. Other industrial Pitot types measure either a suction pressure, or an attempt at static pressure measured on the side of a costly profiled tube in the pipe line. Both types result in a noisy, erroneous static pressure, emanating in erroneous flow sensing.

The **Tekflo tekFab DP04** DP Cell series uniquely accomplishes the most long-term accurate sensing by embodiment of two nano-molecular crystalline silicon filled chambers, which construct virtually a solid state capacitive reactance sensor. The sensor contains two high natural frequency diaphragms, which sense the +ve and -ve differential pressure produced by the **tekProbe**. The high natural frequency and virtual solid state **tekFab** construction ensures virtual insensitivity to normal plant shock and vibration even at low range dp.

The **tekProbe** produces a noise free true static pressure and impact pressure to provide unmatched total system mass flow accuracy, repeatability and resolution, with virtually zero hysteresis.

Features:

- Unique dp sensing chamber provides 500% of upper range limit static pressure overload protection
- Sensing chamber incorporates Czochralski nanotechnology monocrystalline silicone. Nano molecules (down to 0.000000001m) provide the ultimate fluidic long term stability and strength, which is transferred to the **tekFab** measurement system
- Virtual solid state sensing chamber provides high insensitivity to shock and vibration, even with low dp ranges
- dp accuracy : $\pm 0.25\%$ of span traceable to USA NIST
- static press : accuracy $\pm 0.1\%$ of span
- stability : $\pm 0.1\%$ of URL over 6 months
- amb.temp : effects $\pm 0.2\%$ of dp span per 56°C (135°F)
- external temp norm temp -30°C to +93°C (-22°F to +220°F)
- max static : pressure 10barg (145psig), 40barg(590psig)
- dp range 1 : 0 to 10mm to 150mm wg (0 - 0.4" to 6"wg)
- dp range 2 : 0 to 40mm to 400mm wg (0 - 1.5" to 15" wg)
- dp range 3 : 0 to 60mm to 610mm wg (0 - 2.5" to 25" wg)
- vibration eff : 0.05%of max range/g for frequencies <200Hz
- 2-wire o/p : 4 -20mA, 12 - 45 Vdc, default with square root extraction for flow measurement
- Protocol : HART superimposed on 4 -20mA signal
- 4-wire o/p : 110/220 Vac, 50/60Hz with 0 - 10mA
- Display : 5-digit LED or LCD numerical display
A bargraph is configurable to display up to 4 variables
- Certification : Ex ia IIC T3 - T6 / Ex d II C T4 - T6
- Protection IP65 and NEMA 4X



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