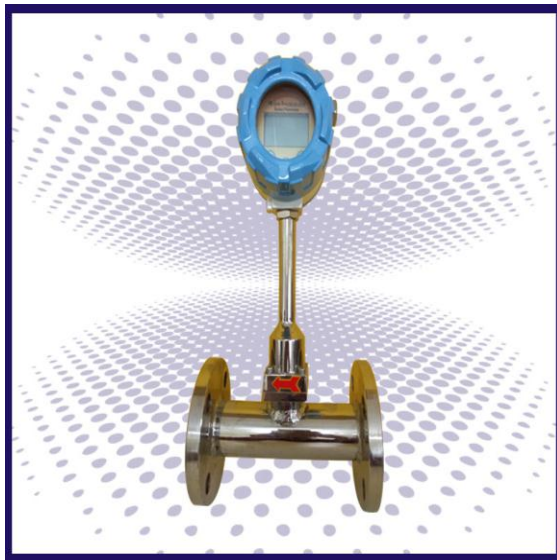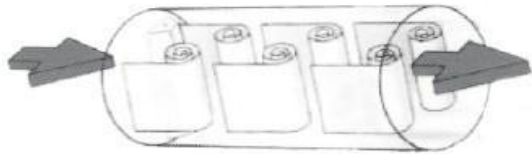## *VORTEX FLOW METER*

Features and main Technical Data

? Compact structure
? No moving parts, Long lifetime
? Long time stability
? Same sensor to measure liquid, gas and steam
? Within the Reynold's No. Range meter coefficient is not influenced change of temperature, pressure, viscosity and others.
? Reynolds No. Range: $2X10^4 \sim 7X10^6$ (DN25~DN100)
$4X10^4 \sim 7X10^6$ (DN150~DN300)
? Display : Rate and Total flow Local LCD Display
? Pressure Operating: 1.6~32MPa
? Fluid Temp.: 40°C ~ +150° C (Integral Type)
40°C ~ +300 °C (Separate Type)
? Power Supply 24 Vdc + 10% or
3.6Vdc inner lithium Battery
? Ambient Temp.: -25° C ~ +60 C
? Relative Humidity : 5% ~ 95%
? Atmospheric Pressure:86 ~ 106KPa
? Measured Fluid: Liquid, Gas and Steam
? Accuracy: 1% (For Liquid), 1.5% (For gas and Steam)
? Output Signal: 4~20mA Current (2 Wire System) or
Standard Pulse Output (3 wire System)
? Explosion proof: Exd II BT4

Principle

Put a drum vertically into a burette and let some fluid flow down along the drum, by two sides of which there formed, intoration, regular vortexes, which is called the Karman Street. Output frequency of the Karman Street is released to fluid velocity and drum diameter, which can be described by following formula:

$$f = S_t * \frac{v}{d}$$

Where:
f = Karman Street Output frequency   v = velocity
S_t = Coefficient (called as Strohar number)   d = Drum Diameter

As the Karman Street output frequency is directly proportional to velocity v, it may work out an instantaneous flow rate by using a tested output frequency of the Karman Street. The Strohar number is a key coefficient for vortex street flow meters. Within the lineal section of the curve, where St=0.17. the output frequency is directly proportional to the flow velocity, so a velocity v is derivable by using a tested frequency f. SDVT serials vortex street flow transducers detect the output frequency by using piezoeletricial elements inside the sensors (probes) to test the stress that is alternatively acted on the elements by vortex.