

DESCRIPTION

The VN Compact Insertion Vortex Flow Meter measures the volumetric or mass flow rate or BTU/energy of steam, gas or liquids over a large flow range. The meter includes a mounting assembly alignment pin to simplify the installation. The meter is designed for specific pipe sizes and includes parts for installation.

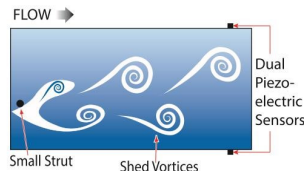
The vortex sensing element is CNC machined out of one piece of solid stainless steel and engineered to stand up to abusive environments inside and outside the pipe. The dual ceramic piezoelectric sensors are bonded inside the vortex element, which is press-fit to the stainless steel insertion bar and completely welded together. There are no internal o-rings or seals of any kind and absolutely no leak paths into the sensors or electronics. Our sensors do not touch the process fluid, which gives them an almost unlimited life span.

BENEFITS

- Measure volumetric, mass flow rate or BTU/energy of steam, gas or liquids
- Lower profile insertion meter for pipes 2...24 in.
- Simplify installation with an insertion meter and pipe mounting assembly designed for the specific pipe size
- Reduced noise interference with dual piezoelectric sensors and filtering
- Standard model handles process temperatures up to 400° F (204° C)
- Reduced maintenance due to:
 - ◊ Heavy duty welded stainless steel construction
 - ◊ O-ring-free element
 - ◊ No moving parts
 - ◊ Piezoelectric and temperature sensors never touch process fluid

OPERATION

An everyday example of a vortex shedding phenomenon is a flag waving in the breeze: the flag waves due to the vortices shed by air moving across the flagpole. Within the flow meter, as flowing fluid moves across the tiny strut or "shedder bar", vortices are shed on a smaller scale. The frequency of the vortices shedding is proportional to the fluid velocity.



Through the use of an internal RTD, the flow meter software compensates for changes in temperature to achieve an accurate mass flow measurement.

With the addition of a second external RTD, the meter can measure the energy transfer across a heat exchanger.



APPLICATIONS

The unique design of the VN meter can be used in steam, gas or liquid lines. The same design can measure water as low as 1.32 feet per second and saturated steam in excess of 250 feet per second.

INSTALLATION

The VN Compact meter includes a mounting assembly with alignment pin and an arrow machined into the mounting assembly that shows the direction of flow.

After depressurizing the pipe and welding the mounting assembly onto a welded outlet, insert the VN Compact meter into the mounting assembly and align the meter so the pin can be inserted into the mounting assembly. When the pin is inserted, you are ensured that the meter is inserted to the proper depth and is aligned with the flow. The pin also acts as a secondary method to prevent the meter from coming out of the pipe once the pipe is pressurized.

SIZING SOFTWARE

The Vortex Sizing Application software determines the precise scaling factor for your application based on:

- Fluid type
- Min. and max. operating flow rate
- Operating temperature
- Operating pressure