# WV INLINE WAFER VORTEX FLOWMETER

**UNIVERSAL DESIGN** : The unique design of this meter can be used in gas, liquids, or steam lines. No matter what the application, from super heated steam to super cold liquids, the same meter and electronics can be applied.

**DUAL SIGNAL PROCESSING:**Through the concept of creating two independent signals for each vortex signal, which is produced, the meter's performance is dramatically improved. Noise cancellation is improved over one hundred times. Accuracy and range ability have increased two-fold.

When two signals are produced, the microprocessors electronics can determine if the signals are truly a vortex signal or just noise and turbulence. The vortex signals are 180 degrees out of phase whereas the noise and turbulent signals are in phase. The electronics will only amplify signals, which are 180 degrees out of phase, and attenuate the signal, which is in phase. This technique gives the flow meter the ability to separate a very weak vortex signal from a very strong noise and turbulent signal without skipping a beat; therefore, the display and outputs of the meter will have a much steadier reading.

**MAINTAINABILITY:**These meters are designed to be maintenance free due to their almost indestructible design with no moving parts. The sensor is typically the heart of any vortex meter. Our vortex meters, utilizing stainless steel encapsulated ceramic crystals, are of the most rugged construction. These crystals are one of the strongest components of the meter; thereby giving the meter an almost indefinite life.The electronics have no pots to adjust or components to drift, which means infrequent calibrations. Once the meter is operational, there will be no need to touch the meter for many years.

**SPECIAL FEATURES:**There are no moving parts to wear or fail. The vortex shedder element is pinned in and welded in place, assuring permanent placement, so that there is no effect on meter accuracy. The meter can measure velocities from 1.0 to 250 feet per/sec. Two independent sensors produce two independent signals, 180 degrees out of phase for optimum noise cancellation. The meter can operate in process temperatures up to 600 degrees F. The electronics is common to all flow meters in the product line. All parameters can be entered and reviewed through the keypad and display on the face of the meter. The electronics can be remoted 300 feet from the meter. The display on the transmitter shows rate and total simultaneously, 6 digits of rate and 8 digits of total, in engineering units.

Nice Instrumentation Inc./ Precision Flow Products
1 Applegate Terrace, Manalapan, N.J. 07726
PH. 732 294 5525, FX. 732 294 4799,- EMail nice5345@optonline.net

# WV INLINE WAFER VORTEX FLOWMETER

## Specifications

Process Fluids……Liquids, gas, steam

Accuracy……....Plus or minus .5% of reading*

Repeatability……..…Plus or minus .25% of reading

Maximum Operating Pressure……..…1,000 P SIG(67 Barg)

Maximum Operating Temperature…600 deg F (315C)

## Electronics " Microtel "

Transmitter……..…..Microprocessor Based Smart Transmitter

Power Supply……...……..14 to 36 Volts DC, 110/220 Volts AC

Outputs……..……4 to 20 ma Two Wire, Pulse, Serial Communication

Display…….……2 Lines, 16 Alphanumeric Characters Each

Keypad…….……Setting of Recalibration, Engineering Units, Data Logging, Sample Time, Alarms, Response Time

Data Logging……Stores Up to 16,000 Readings, with Sampling Times From 1 Minute to 256 Minutes

Serial Port…….Remote Calibration, Remote reading and Setting of all the Parameters

*Note: ACCURACY OF .5% OF READING CAN BE ACHEVED WITH PROPER UPSTEAM AND DOWNSTREAM PIPING.

Electronic Housing----- FM & CSA Approved for Hazardous Locations by Enclosure Manufacturer, Class I, Group B, C, D Class II Group E, F, G Class III NEMA 4
¾" NPT Conduit Connections

ELECTRONICS CAN BE REMOTE MOUNTED FROM THE METER 300 FEET

Nice Instrumentation Inc. / Precision Flow Products
1 Applegate Terrace, Manalapan, N.J. 07726
PH. 732 294 5525, FX. 732 294 4799, -E Mail nice5345@optonline.net

# LPIV Low Profile Insertion Vortex Meter

The low profile insertion vortex flowmeter is a cross pollination of an inline meter and an insertion meter. Its purpose is to simplify the installation and eliminate human error when installing a flow meter. The insertion depth is always held to an exact position, and the meter will always point up stream, eliminating calibration variables. The meter has a low profile and can be installed in any orientation, vertically or horizontally around the pipe. Since most problems with the operation of an insertion meters are installation related, the start up reliability of the meter reading is very high.

There are no other parts required, other than the meter during installation. The mounting assembly welds directly on the outside of the pipe. The radius of the mounting assembly is machined to fit the diameter of the pipe, from two inch to twenty four inches in diameter. There is an arrow machined into the mounting assembly showing the direction of flow. Once the mounting assembly is welded to the pipe, the insertion bar can then be inserted into the mounting assembly.

The insertion bar is designed to have no leak paths to the sensors or the electronics. All mechanical assemblies on the insertion bar are electron beam welded, no O rings or compression seals. If, for any reason the insertion bar is damaged, it can be replaced without removing anything off the pipe. There are only two sizes of insertion bars, one for two to four inches, and one for six to twenty four inches; therefore, one spare part fits many line sizes.

The meter has been designed for safety. There is a pin, which is inserted into the mounting assembly once the insertion bar is inserted into the pipe. This pin serves two purposes. The first is to align the meter with the flow; and the otheris to prevent the meter from coming out under pressure. The pin can only be installed with zero line pressure. When pressure is applied, the pin is locked in place and cannot be removed. There is also a large nut which screws down over the insertion bar onto the mounting assembly. This nut also holds the insertion bar from coming out. When pressure is applied to the line, the insertion bar cannot be removed; even if someone removes the holding nut, the pin is still in place.

The insertion bar has two sen sors, one sensing the vortex signal and the pipe noise, and the other sensing just the pipe noise. This eliminates inaccuracies due to fluid disturbances by subtracting out the pipe noise.

The electronics is a smart transmitter. There are six digits of rate and eight digits of totalization. All parameters can be modified via a keypad. The electronics is a two wire device, 4 to 20 ma. and can be remote mounted three hundred feet from the meter. There is also a serial port to read and down load data into memory.

Nice Instrumentation Inc./ Precision Flow Products
1 Applegate Terrace, Manalapan, N.J. 07726
PH. 732 294 5525, FX. 732 294 4799, E Mail nice5345@optonline.net

# LPIV Low Profile Insertion Vortex Meter

## Specifications

Process Fluids……Liquids, gas, steam

Accuracy……....Plus or minus 1% of reading*

Repeatability……..…Plus or minus .25% of reading

Maximum Operating Pressure……..…..1000 PSIG(67 Barg)

Maximum Operating Temperature……600 deg(F315 C)15 C

## Electronics " Microtel "

Transmitter……..…..Microprocessor Based Smart Transmitter

Power Supply……...……..14 to 36 Volts DC, 110/220 Volts AC

Outputs……..……4 to 20 ma Two Wire, Pulse, Serial Communication

Display…….……2 Lines, 16 Alphanumeric Characters Each

Keypad…….…….Setting of Recalibration, Engineering Units, Data Logging, Sample Time, Alarms, Response Time

Data Logging……Stores Up to 16,000 Readings, with Sampling Times From 1 Minute to 256 Minutes

Serial Port……..Remote Calibration, Remote reading and Setting of all the Parameters

*Note: **ACCURACY IS REFERENCED TO VELOCITY AND THE CROSS SECTION AREA OF THE PIPE. IF WE KNEW THE EXACT DIAMETER OF THE PIPE THE ACCURACY COULD BE .5% OF READING, WITH PROPER UPSTEAM AND DOWNSTREAM PIPING.**

Electronic Housing----- FM & CSA Approved for Hazardous Locations by Enclosure Manufacturer, Class I, Group B, C, D Class II Group E, F, G Class III NEMA 4 ¾" NPT Conduit Connections

ELECTRONICS CAN BE REMOTE MOUNTED FROM THE **TRANSMITTER** 300 F **t (90 meters)**

Nice Instrumentation Inc./ Precision Flow Products
1 Applegate Terrace, Manalapan, N.J. 07726
PH. 732 294 5525, FX. 732 294 4799, - E Mail nice5345@optonline.net