STEAM

LIQUID

GAS

HTIV

Hot Tap
Insertion Vortex Flow Meter

Accuracy • Reliability • Standardization • Installation

NICE Instrumentation, Inc.

Built for Long-term Reliability

1. ***Weather Proof Multi Pole Power Connector –***
This allows for field mountable connect and disconnect without opening the enclosure or wiring terminals.

2. ***Stainless Steel Conduit Connection –*** Designed for plant electrical regulations

3. ***Explosion, Water and Dust Proof Enclosure Comes Standard***

4. ***Microtel Smart TX –***
The Microtel Smart TX is a low power two wire 4-20 ma transmitter with multifunctional capabilities. The device is auto ranging with six digits of rate and eight digits of totalizing and is available in all engineering units. All parameters can be easily reconfigured through the keypad while in the field.

5. ***Alignment arrow –***
The alignment arrow enables a perfect element alignment to the process fluid.

6. ***Solid Stainless Steel Construction –***
All parts of our meters are machined from solid stainless steel stock.

7. ***Stainless Steel Seal Assembly –***
Our steal assembly rides along the shaft of our insertion bar and will always have a sealed connection to the bar. The tightening nut is not a seal and is used to keep the bar in position once installed. The seal assembly has a 1 _" NPT connection for any typical valve or weld-o-let. The seal assembly can also take class 150# flange up to class 1500# flange connections.

8. ***Valve Assembly –***
The valve assembly must be 1 1/2" fully ported. Ball or Gate valves must be used (butterfly valves cannot be used).

9. ***Insertion Tool (Our Gold Standard) –***
Our insertion tool is specially designed to eliminate the weight, bulkiness and equipment malfunction that occurs when insertion tools are permanently connected to the instrument and exposed to the harsh elements of the plant or mother nature. Our insertion tool can be used for installation under extreme pressures and makes it easy for the installer to adjust and fine tune their flow instrumentation. Once the installation is complete the installer can quickly remove the tool and store it to a location away from the harsh environment of the plant or the outdoors.

Remote transmitter available up to 300 feet from flow meter

Where Flow Measurement Meets Innovation

The perfect solution for Steam, Gas & Liquids.

The Hot Tap Insertion Vortex Flow Meter is a heavy duty design engineered to standup to the most abusive environments inside and outside the pipe.

The vortex sensing element is CNC machined out of one piece of solid stainless steel. The ceramic piezo electric 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 NEVER touch the process fluid giving them an almost unlimited life span.

With over 100 years of combined CNC machining experience our solid stainless steel vortex element has no pins, screws or gaskets of any kind. The bluff body and tail piece are CNC machined from the body of the element. Since there are no holes to clog and no moving parts, there are no mechanical limitations due to frequency or velocities. Our machined elements will never wear or move out of place, giving the same steady frequency from the first day to year thirty.

The Hot Tap Insertion Vortex has been designed for easy installation.

Each HTIV comes with its own seal assembly that rides along the shaft of the insertion bar. This stainless steel seal assembly has a 1 1/2" NPT connection for easy connect and disconnect with any valve, thread-o-let or any ANSI class flange. The HTIV can be installed or removed during flow with our insertion tool assisting the installer during high pressure applications.

Once the meter is installed into the flow, simply point the machined arrow at the top of the insertion bar downstream to ensure an accurate and repeatable flow reading.

The Hot Tap Insertion Vortex and our Insertion Tool are designed for safety and simplicity.

All parts of our HTIV are CNC machined from solid bar stock, press fit and welded together. This design eliminates all possibilities of process fluid ever leaking up through the bar and into the electronics housing.

Every HTIV has a Safety Stop CNC machined into the insertion bar. The Safety Stop will never allow the insertion bar to come completely out of the pipe assembly. The safety stop makes it impossible for the bar to come out of the seal assembly and leak process. The Safety Stop eliminates the need for long chains or cables to dangle from the insertion bar that can corrode or come loose over time.

The large nut on the insertion bar is not a seal. This nut has a tapered ring inside that when tightened, presses securely around the insertion bar, keeping it in position for the life of the application or when loosened.

The HTIV utilizes one of the smallest holes for insertion type flow meters. Since this unit is hot-tappable, there is no need for a costly shut down. In order to keep our costs competitive and our meters light weight and streamlined, the insertion tool is a separately purchased item and can be used on many different installations. In the end the overall price of our HTIV meter is not affected by hot-taping requirements.

The maintenance free design makes the HTIV a flow meter on which to standardize.

All mechanical assemblies on the insertion bar are press fit and welded construction. There are absolutely no o-rings or compression seals in our element design which allows the HTIV to stand up to and measure almost all fluid types.

If for any reason the insertion bar is damaged, it can be easily removed and replaced. The HTIV can measure in line sizes 2 inches to 48 inches in diameter making it a good meter to standardize since one spare HTIV fits many line sizes and almost all fluid types.

The unique design of the HTIV can be used in STEAM, GAS or LIQUID lines. The same HTIV design can measure water as low as 1.2 feet per second and natural gas and super heated steam in excess of 250 feet per second.

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