

VersaFlow Clamp-on Ultrasonic Flow Meters General Application Guide



Clamp-on Ultrasonic Flow is a non-intrusive technology that is applied to the outside of process piping. Ideal for clean liquid applications, this transit-time measurement technology reduces installation downtime and provides significant cost effectiveness when compared to inline flow measurement equipment, especially in larger pipe sizes. Typical applications include:



Flow Measurement of Hydrocarbons

- For use in oil and gas industry
- Ultrasonic meter can be offered for non-invasive pipes and bigger line sizes
- High pressure is not an issue as the meter is clamped on and not in contact with fluid medium
- Independent of conductivity
- Service: Hydrocarbon condensate, HFO, diesel , kerosene
- Typical pipeline size 2" to 40" (DN 50 to 1000)



Heat Measurement

- Service : Hot water
- University runs field tests in different greenhouses and do not want inline instruments
- Clamp-on Ultrasonic flow meters provide easy installation and handling

Flow Measurement of Drinking Water

- Ultrasonic clamp-on to provide cost-effective solution
- Easy sensor mounting for bigger pipe diameter to 160" (DN 4000)
- Minimized uncertainty
- Typical temperature: 35 - 50°C (95 - 120° F)
- Typical pressure: 7 to 16 bar g (100 to 230 psig)
- Can handle wide flow range
- Retrofit is also possible
- Optimized reliability



Flow Measurement of Pen Stock of Hydro-Electric Power Station

- Flowrates are monitored to safeguard the turbine blades
- HEPS is fed from a retained lake located in the mountains
- Typical pressures up to 30 bar (435 psig)
- Typical pipeline size 20" to 40" (DN 500 to 1000)
- Since pipe punctures are not allowed, Ultrasonic clamp-on are excellent solutions for such applications

Other Fluid Applications

- Demineralized water
- Cooling water
- Boiler feed water
- Potable and produced water
- Raw and seawater
- Irrigation water
- Ammonia
- Glycerol
- Fertilizers
- Elastomer
- Alcohols
- Benzene
- Propylene
- Ethanol
- Ethylene
- Butadiene
- Acetone
- Plastics
- Chemical additions
- General process control

Features

- Velocity range: 0-20 m/sec
- Measures volumetric flow rate, velocity, sound velocity, damping of acoustic signal and signal to noise ratio
- Acc. $\leq 1\%$ of measured value for $>2"$ (DN 50)
- Repeatability $\leq 0.2\%$
- For all applications in single path/single pipe or dual path/dual pipe
- Size: $\frac{1}{2}$ to 160" (DN15 to 4000)
- Max. temp: 50° C (120° F) - Optional: 95° C (200° F)
- ATEX, FM and CSA approval for zones 1, 2
- Long-term reliability using online display signal quality monitor
- 4-20 mA HART, 10 kHz pulse/freq
- Infrared sensor for configuration
- Gold-plated connectors guarantee signal transfer and corrosion resistance
- Easy installation using patented rattle unit
- Full graphical display with four optical keys
- Easy maintenance of sensors

More Information

For more information on VersaFlow, visit www.process.honeywell.com or contact your Honeywell account manager.

Automation & Control Solutions

Process Solutions

Honeywell

2500 W. Union Hills Dr.

Phoenix, AZ 85027

Tel: +1-602-313-6665 or 877-466-3993

www.process.honeywell.com

SO-08-51-ENG
June 2023
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