

# Clamp On Ultrasonic Flow Meter

*Main AC/DC Fixed Type, Wall Mounted Installing*

## 01 Features

- Pipe sizes from 1-240 inches(30-6000mm).
- Wide velocity from 0.01-32m/s.
- Accuracy to 1.0% after on-site calibration.
- Versatile outputs: 4-20mA,0-20mA, frequency, relay, OCT pulse, RS485, batch controller, etc.
- Data logger inside enclosure: From 1G to 8G. Steal power from flow meter without power supply request.
- Communication Protocol: RS485 with Modbus or M-bus.
- Simulation running function for convenient test without actual installing.
- No maintenance required.
- No moving parts to tear and wear
- Accurate bi-directional flow measurement
- Clamp-on transducers: non-invasive, easy and economical installation, no pipe cutting.
- Suitable for all commonly used pipes.
- Suitable for pure liquids and liquids with small particles. No influence by conductivity.
- Insertion transducers and inline transducers are available. Insertion transducers support hot-tapping installing without flow stop.
- Can be functioned as Heat meter (BTU)
- Low power consumption can be used for solar power or GPRS/GSM communication.



## 02 Description

The wall mounted ultrasonic flow meter is one member of our latest generation ultrasonic flow meters which has been one of the main selling items of our flow products.

The flow meter is designed to be installed at a fixed location for long term flow measurement on a closed pipe. The flow meter can support clamp-on, insertion and wetted inline transducers for different application.

The ultrasonic flow meter has no moving parts to tear and wear. So it won't need maintenance, meanwhile, it has no pressure drop. With clamp-on transducers, the installation is very simple and easy. No pipe cutting is required and there is no risk of leaking and contamination.

As quality is very important, all of our transducers are carefully paired and flow meters are calibrated on test rig to ensure a good performance.

03 Technical Specifications

Accuracy	±1.0% of velocity reading or ±0.02ft/s, whichever is bigger.* Could be as high as ±0.5% when in-situ calibration is used.
Repeatability	Better than 0.5%
Velocity	±0.01 to 32m/s, bi-directional
Measurement period	0.5S. Can be set to 0-99S.
Display /Keyboard	LCD backlight display with 2×20 letters. 4×4 tactile-feedback keyboard.
Units	English(U.S.) or Metric
Signal output	4-20mA current output (optional): impedance 600Ω, accuracy 0.1% Relay output(optional): For ON/OFF control, alarm driver, totalizer output, etc.
	Pulse signal output: For output of accumulated flow/heater rate, (positive, negative and net), two channels OCT output (the pulse width of one channel is 6-1000ms, the default value is 200ms.)
	Frequency output: 1-9999Hz by OCT output hardware
	Sound alarm: two channels output, 20 kinds of origin signals optional
Signal input	Three channels 4-20mA input optional, accuracy 0.1%, can input the signal of pressure, level, temperature, etc.
	2-way 3-wire PT100 resistance input for heater measurement. (enthalpy potential method)
Communication Interface, Serial Port	Isolated RS485, support MODBUS, Optional GPRS/GSM module for networking, remote monitoring and remote control MODBUS-RTU or MODBUS-ASCII recommended.
Data logger	Built-in 1-8G data logger optional. Default is 4G. USB readout
Automatically Record Functions	<ul style="list-style-type: none"> <li>※NEG/POS/NET totalizer of the last of 512 days/128months/10years</li> <li>※Time and corresponding flow rate of the last 30 times of power ON/OFF events. Allow manual and automatic flow loss compensation</li> <li>※Programmable quota controller (Driven by external input command or MODBUS command)</li> <li>※ Working setting parameters solidified in FLASH and automatically read from the FLASH while power ON.</li> <li>※ Malfunction timer and auto diagnosis</li> </ul>
Enclosure	Aluminium, IP65

Power supply	8-36V DC/ 90-260VAC 50/60Hz <2W@12VDC
<b>Transducers Specifications</b>	
Clamp-on	Small(S): DN15-80mm
	Medium(M): DN60-700mm
	L: DN350-4900mm
	SH (high temp. type): DN15-80mm
	MH(high temp. type): DN60-700mm
	LH(high temp. type): DN350-4900mm
Insertion wetted	For pipe size over DN80mm-DN5000mm
Spool piece/Inline	Flow cell type: DN15-DN40mm Standard type: DN50-DN1000mm
<b>Transducer Cable</b>	
Shielded transducer cable. Standard length: 2×15'(2×5m). Can be extended to 200m. Cable should not be laid in parallel with high voltage lines, neither should it be close to strong interference source such as power transformer.	
<b>Pipe and liquids applications</b>	
Pipe size	1"-240" (DN25mm-DN6000mm) For smaller pipe size, flow cell type is recommended.
Pipe material	All metal, most plastic, fiber glass, cement etc. Allow pipe liner
Straight pipe run	Upstream 10D, downstream 5D, where D is diameter. If a pump is near, the straight pipe section following the pump should be over 30D.
Liquids type	Virtually all most commonly used liquids (full pipe), pure, suspension, electrically conductive or non-conductive
Liquids temp.	-40°F -312°F (-40 °C -155 °C )
Suspension concentration	<2%,particle size smaller 100um. (<=20000ppm)
Temperature	Main unit: -10 °C-70 °C (14°F -158°F)
	-40°F -158°F (-40 °C -70 °C ) for standard version
	-40°F -312°F (-40 °C -155 °C ) for high temperature version
Humidity	Main unit: 85%RH
	Transducer: IP68. Water-immersible, water depth less than 10'(3m)

*\*Note: flow rate is calculated as the product of velocity and pipe cross-section area.*

*Velocity accuracy may vary for small pipe (≤ 1.5" for stainless steel pipe and ≤1" for other pipes) at low flow rate.*

**04 Application**



- Portable Water/Delonized Water/Cooling Water
- Wastewater, Influent and effluent
- River Laker Water/Sea Water/Irrigation/Pool/Golf
- Chemical Liquids and Solvents
- Oils: fuel oil, diesel oil, lubricant oil, hydraulic oil
- Mixture of Water and Glycol
- Water management in buildings, metropolitans,
- Beverage, food and pharmaceutical processors where non-contact is essential
- Juices/Milk/Wine/Syrups
- Flow monitoring and control in plants
- Retrofit capability, to upgrade or augment existing systems.
- Remote flow monitoring and leakage detection
- Heating/cooling system,e.g. HVAC
- Automated batching and scheduling

## Clamp-on Transducer Option

Small Size:( S)	Medium Size:( M)	Large Size:( L)
Temperature range: 0°C - 80/150°C Pipe size: 1"-4" 25-85mm With magnet	Pipe size:2"-28" 65-700mm With magnet	Pipe size:12"-240" 350-5000mm With magnet

Note1: High temp. version transducer (Max:150°C) is available upon request.

Note 2: Clamp on flow meters can't work well for cement (concrete) pipe or pipe with such material lining. Recommend to use insertion transducers if pipe size is over 50mm.

## Insertion Transducers Option



Insertion transducer has its own features: excellent long-term stability, robust design. With hot-tapping installing below 0.8MPa, not need to shut down flow.

Specification of Standard insertion transducers:

Pipe size range: 80mm-6000mm

Temperature range: 0-150 °C

Vertical Insertion

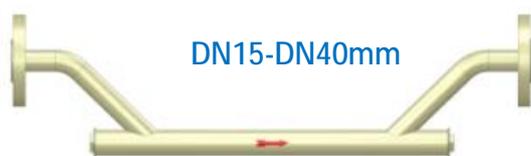
If installing space is not enough, users can consider using inclined insertion.

## Wetted Inline Transducers

Wetted inline transducers are for pipe size from DN15 to DN1000mm. Inline transducers are most accurate and robust. Plug &play, with excellent long-term performance.

For DN15-DN40mm, they use PI type flow cell transducers. And default body material is stainless steel.

For DN50-DN1000mm, they use standard inline style transducers. And default body is carbon steel.



DN15-DN40mm



DN50-DN1000mm

For detailed specification about inline transducers, please feel free to contact us.