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ULTRASONIC FLOW METER

Insertion Type
Ultrasonic Flow Meter

Clamp-on Type
Ultrasonic Flow Meter

UFMc and UFM*i*

We are certified with

ISO/IEC 17025:2017 | ISO 9001:2015
ISO 14001:2015 | OHSAS 45001:2018

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Technology. Excellence. Trust.

ULTRASONIC FLOW METER

UFMc and UFM*i*

INTRODUCTION

Manas Microsystems is one of India's top Ultrasonic Flow Meter manufactures and suppliers. A comprehensive range of Ultrasonic Flow Meters is available from Manas, including Clamp-on Type Ultrasonic Flow Meters, and Insertion Ultrasonic Flow Meters, Portable Ultrasonic Water Flow Meter and Handheld Ultrasonic Water Flow Meter. These meters work on transit time principle.

When the Ultrasound wave passes through the liquid the component of liquid velocity is added to ultrasound velocity.

By careful measurement of the Time required by the sound wave to reach the other end of the diameter, one can calculate accurately the water velocity. By knowing the velocity, the volumetric flow rate can be calculated.

For the volumetric metering of water, ultrasonic flow meters have been used in businesses and markets for a long time. The transit time meter is used for clear liquids of liquids having very low levels of undissolved solids.

PRINCIPLE OF OPERATION

For measuring the flow of the medium, two ultrasonic pulses are sent through the medium, one in the flow direction and another in the opposite direction.

The transit time of the two pluses are then measured. The transit time difference at between these two pluses gives the average flow velocity on the propagation path of the Ultrasonic Signals. This can be used to obtain the average of flow velocity on the cross section of the pipe, which is proportional to the volumetric flow.

FEATURES

- Sizes available for 2" to 80" (DN50 -DN2000)
- The meter contains no moving parts and fast response to flow transits
- Highly accurate and reliable
- Isolated 4-20 mA output proportional to flow rate
- No need to cut the pipe or stop water, easy installation

TRANSDUCER TYPES

Clamp on Type

The transducers are clamped on the outside surface of the closes pipe.

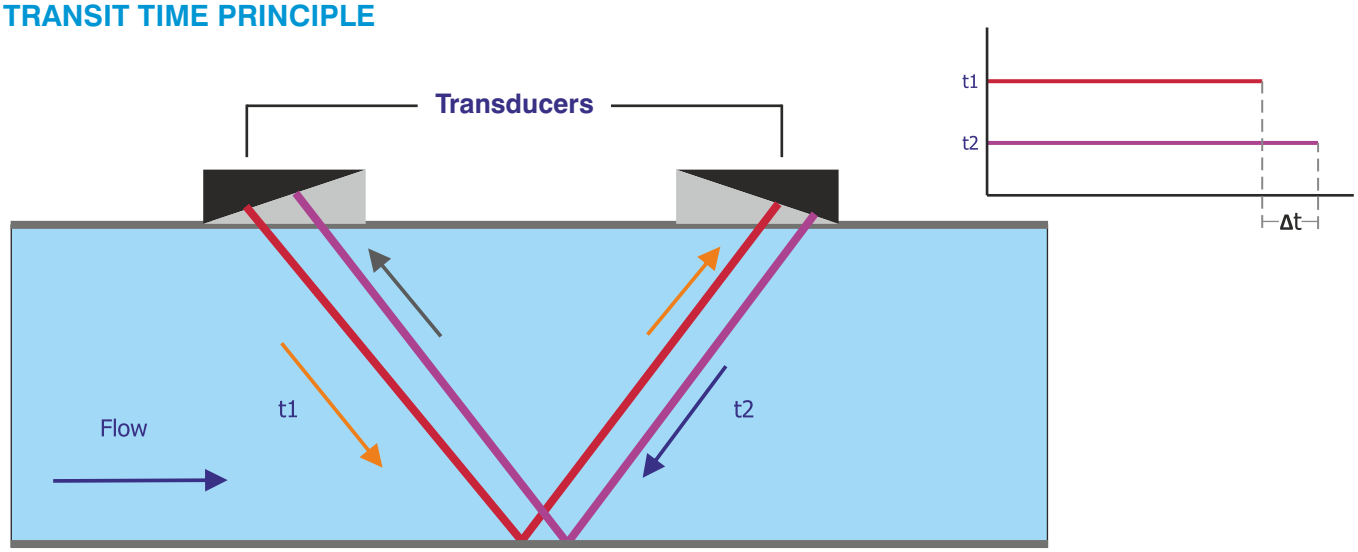
Insertion Type

The transducers are inserted in the surface of the closes pipe.

Full Bore Type

The transducers are aligned diagonally on the surface of the closes pipe.

TRANSIT TIME PRINCIPLE



TECHNICAL SPECIFICATION OF TRANSDUCER

Specification	Clamp on	Insertion	
	Ctm	Ctl	UFMi
Applicable Line Size	DN50 to DN250	DN300 to DN2000	DN50 to DN2000
Accuracy	±2%	±2%	±2%
Protection	IP68	IP68	IP68
Pressure	PN16	PN16	PN16
Medium Temperature	-30° to 90°C	-30° to 90°C	-30° to 160°C
Installation	No need to cut the pipe or stop water, easy installation		No need to cut the pipe or stop water
Feasibility	Not applicable to pipes of cement of glass steel material which are not ultrasound-conductive		Suitable for pipes where welding is available
Thickness	No Limitation		For pipe having thickness less than 20mm

TECHNICAL SPECIFICATION OF TRANSDUCER

Specification	PS3010 H	PS3030 W	PS3040 F
Fluid Type	Clear Water	Clear Water	Clear Water
Mounting	Handheld / Portable	Wall Mounting	Fixed Mounting
Protection	NA	IP65	IP68
Housing	ABS	Aluminum	Aluminum
Velocity Range	0～±7 m/s	0～±7 m/s	0～±7 m/s
Pipe Material	Carbon Steel, Stainless Steel, Cast Iron, Copper and PVC	Carbon Steel, Stainless Steel, Cast Iron, Copper and PVC	Carbon Steel, Stainless Steel, Cast Iron, Copper and PVC
Power Supply	Built in Rechargeable Ni-MH Batteries, 12 Hours Operation (with Charger)	85-264 V AC; 12-24 V DC	85-264 V AC; 12-24 V DC
Display	4 X 16 Character with back light	2 X 20 English letters with back light	2 X 20 English letters with back light
Communication	RS232 Interface support MODBUS	RS485 Interface support MODBUS	RS485 Interface support MODBUS
Output	NA	4-20mA	4-20mA
Accuracy	±2%	±2%	±2%

ORDERING INFORMATION

Sample code explained: UFMc - CT*m* - PS3010 H - RS2 - B

UFM — Transducer Model

UFMc	: Clamp on Type
UFM*i*	: Insertion Type

PS3010 H — Transmitter Model

PS3010 H	: Handheld
PS3030 W	: Wall Mounting
PS3040 F	: Fixed Mounting

CT*m* — Line Size

Sensor for Clamp on Type

CT*m*	: DN50 to DN250
CT*l*	: DN300 to DN2000

Sensor for Insertion without Spool

CT/ Probe	: DN50 - DN2000

Sensor for Insertion with Spool

DN50	: 2”	DN600	: 24"
DN65	: 2 ½”	DN700	: 28”
DN80	: 3”	DN750	: 30”
DN100	: 4”	DN800	: 32”
DN150	: 6”	DN900	: 36"
DN200	: 8”	DN1000	: 40"
DN250	: 10”	DN1200	: 48"
DN300	: 12”	DN1400	: 56"
DN350	: 14”	DN1600	: 64"
DN400	: 16”	DN1800	: 72"
DN500	: 20"	DN2000	: 80"

RS2 — Communication Facility

RS4	: Rs485
RS2	: RS232

B — Power Supply

3	: 12 – 24 V DC
U	: 85 – 264 V AC
B	: Battery Operated

ULTRASONIC FLOW METER TYPE

Installation of Clamp-On Type Ultrasonic Flow Meter

Installation of Insertion Type Ultrasonic Flow Meter

Due to continuous development specifications are subject to change without prior notice.

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