



UFI



UFI-1



UFP

# 초음파 유량계 (Ultrasonic Flow Meters)

Q

FTC<sup>®</sup>



◆ Features

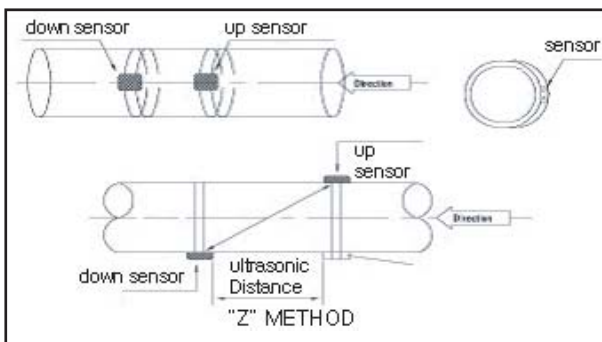
- Can select measurement accuracy:  $\pm 1.0\%$ ,  $\pm 2.0\%$ ,  $\pm 3.0\%$ .
- Can select the 4-20 mA \* 2 wire type and the battery type.
- Measurement of low flow rates and minimum flow velocity of 0.01 m/s.
- No pressure loss and a zero fault rate with no running parts.
- High-efficient battery used up to 6 to 10 years.
- IP-68-rated protection and used 2 meter deep water.
- High-temperature erosion-resistant ceramic sensors and operation temperature ranging from -40 to 160°C .
- Can select the vertical or horizontal view and the remote type.
- Displays circulation such as forward(and reverse)-direction totalize flow rate, instant flow rate and flow velocity.



UFI

◆ Description

UFI Series is an ultrasonic flow meter designed to address shortcomings of the existing fluid flow meters. It adopts the same standard as the existing pipes, so it can be applied and installed for a wide range of DN 15 ~ DN 1000 mm pipes. The battery type is designed to measure flow rates for 6 to 10 years without power connection and users can also select the 4-20mA\*2 wire type, which requires electric current output. Combines merits of the existing volumetric type, variable area, turbine, parasitic and electronic flow meters and provides the output of RS-232, RS-485 and 4-20mA electric currents as basics, with M-BUS, GPRS and CDMA communications available as options.



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## ◆ Performance Specifications

### Accuracy

±1.0%, ±2.0%, ±3.0% of Full scale

### Repeatability

<±0.5%

### Measurement Cycle

Factory shipping hour 3 Seconds (1~31 Seconds Selection)

### Sensor

High-temperature erosion-resistant ceramic sensor  
Application Temperature : -40 °F to 320 °F (-40~160°C)

### Pipe

All-in-one die casting pipes (with water pipe standard) and selection from DN15 to 1000 standard range.

### Other

- Displays results of measurement in circulation. Programmable
- Self-diagnose and display of fault
- Can select the unit of totalize flow rate. (1, 0.1, 0.01, 0.001, 0.0001m<sup>3</sup>)
- Communication baud rate : 300, 1200, 2400, 4800
- Can select the Vertical view, Horizontal view, Remote
- Displays monthly totalize flow velocity for 24months.
- 8bit forward and reverse-direction totalize flow meter and 64-bit inner calculation

## ◆ Operation Specifications

### Measurement Principle

Ultrasonic time differential method measures flow velocity depending on properties of changes occurring in ultrasonic radio wave speed.

### Operation

Operations with the internal key and magnetic bar

### Fluid Measured

Water and other water.

### Application Temperature

Ambient .. - 40°F to 176°F (-40°C to +80°C)  
(LCD display : -13°F to 140°F (-25°C to +60°C)  
Fluid ..... - 40°F to 320°F (-40°C to +160°C)

### Display

Displays a wide range of status on a super low power-consuming LCD as below.  
Forward (or reverse)-direction totalize flow rate, instant flow rate, flow velocity, totalize flow rate time, date, operating status error codes, remaining battery power, strength of ultrasonic, signals quality and fluid sound velocity.

### Output signal

RS-232, RS-485, 4~20mA (Basic fact)  
M-BUS, GPRS, CDMA (Option)

### Communication protocol

Standard M-BUS Communication protocol GPRS, CDMA Communication protocol  
It follows in the order Specifications and Communication protocol production it is possible.

### Power Requirements

A single 3.6V lithium battery can be used for up to 6 to 10 years. 2Wire 4~20mA allows normal operations without a battery. Normal operation without a battery is required for normal operations of RS-485 output.

### Power Consumption

- When the measurement cycle is 3 seconds and the pipe is 100mm, average power consumption is 0.55m W.
- When the measurement cycle is 1 seconds and the pipe is 100mm, average power consumption is 1.65m W.
- When the pipe is empty, the mode is automatically switched to power-saving, reducing power consumption to less than 30% compared to normal operations for longer battery lifespan.

## ◆ Physical Specifications

### Wetted Materials

Cast aluminum

### Enclosure

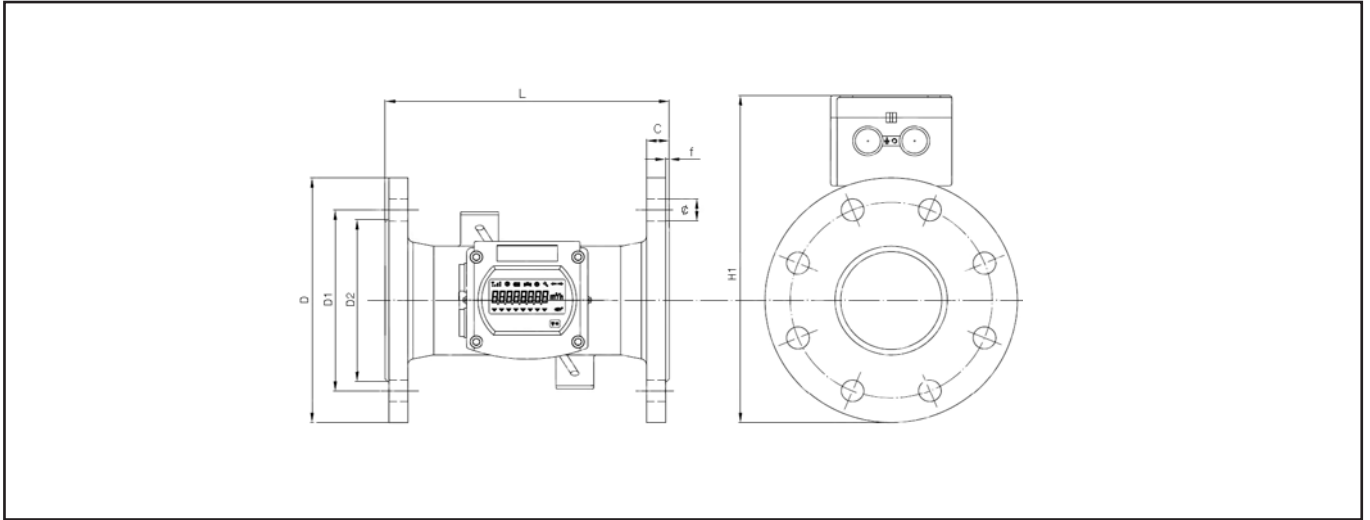
IP68

### Explosion-proof for Class

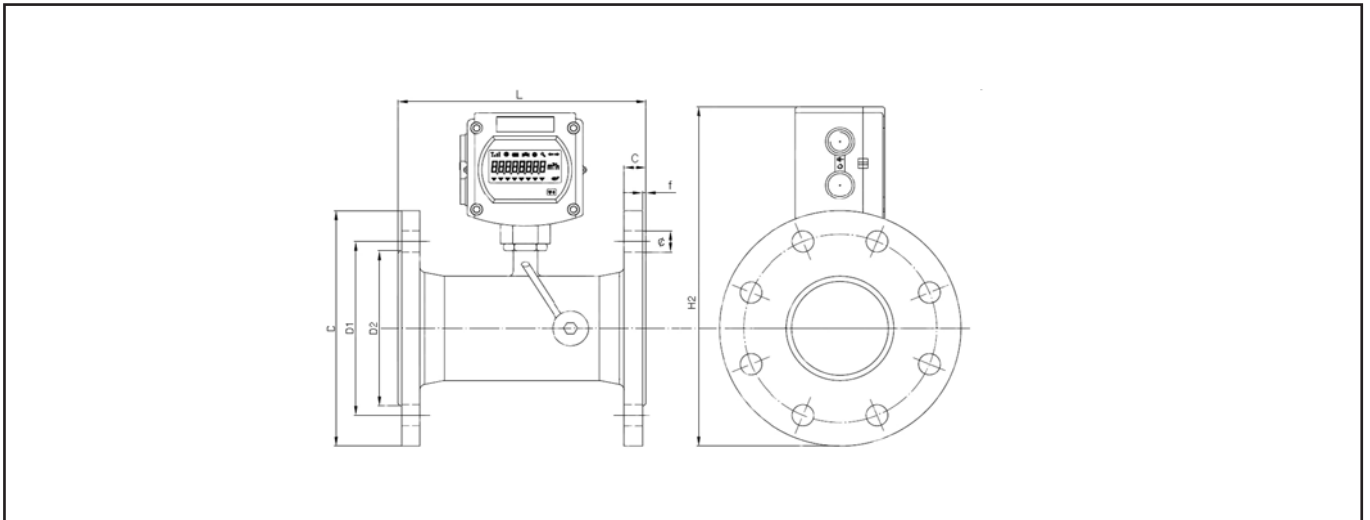
Nature safety Explosion

◆ Dimensional Specification

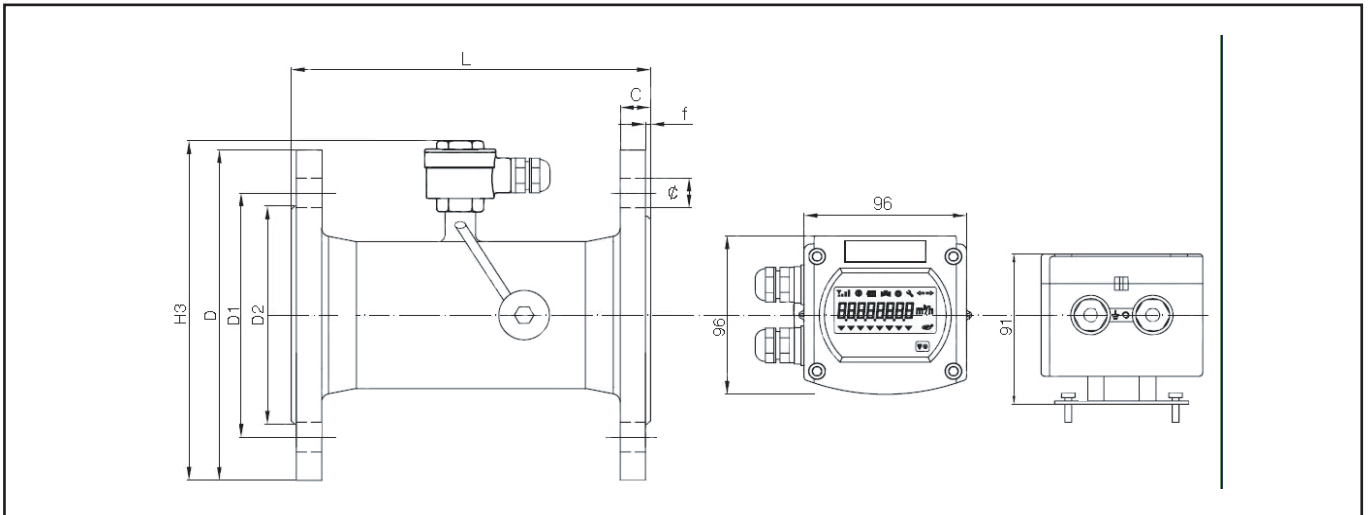
1. Horizontal view



2. Vertical view



3. Remote Type



◆ Pipe Standard

Unit : mm

PIPE DIA(DN)	Length(L)	Width(W)	Height(H)	Connector	Weight(kg)	Pressure(MPa)
15	165	96	132	G3/4B	1.25	4
20	195	96	138	G1B	1.7	
25	225	96	147	1/4B	2.4	
32	230	96	153	1/2B	2.7	
40	245	96	165	G2B	4.8	

Unit : mm

PIPE DIA (DN)	Length (L)	Flange Outer(D)	D1	Φ x n	Inner diameter		C	Height			Weight (kg)	Pre ssure (Mpa)
					D2	f		H1	H2	H3		
50	200	165	125	18x4	99	3	20	234	255	172	7.5	1.6
65	200	185	145	18x4	118	3	20	254	275	192	10.2	
80	225	200	160	18x4	132	3	20	268	289	206	11	
100	250	220	180	18x8	156	3	22	287	308	225	13.5	
125	250	250	210	18x8	184	3	22	315	336	253	17.5	
150	300	285	240	18x8	211	3	24	345	366	285	22.8	
200	350	340	295	22x8	266	3	24	403	424	341	34.2	
250	450	405	355	22x12	319	3	26	462	483	405	65.8	
300	500	460	410	26x12	370	4	28	516	537	460	76.6	
350	550	520	470	26x12	429	4	30	572	593	520	86.4	
400	600	580	525	26x16	480	4	32	656	647	580	121	
450	700	640	585	30x20	548	4	34	682	703	640	168	
500	800	715	650	33x20	609	4	36	745	766	715	256	
600	1000	840	770	36x20	720	5	38	858	879	840	295	
700	1100	910	840	36x24	794	5	40	938	959	910	323	
800	1200	1025	950	39x24	901	5	42	1046	1067	1025	386	
900	1300	1125	1050	39x28	1001	5	44	1146	1167	1125	465	
1000	1400	1255	1170	42x28	1112	5	46	1261	1282	1255	510	