

UFM-100

Clamp-on Ultrasonic Flowmeter

Easy to install by simply clamping onto piping.
Compatible with all various liquid and pipe materials.
Ideal for usage management.
Accumulation history by day, month, and year.

■ For flow control and equipment diagnosis

- Factory production facilities
- Water supply system for boiler
- Coolant in the air conditioning field
- Applications in the Chemical Industry
- Brewing process, water for pharmaceutical cleaning
- Steel plants, equipment lines on board ships
- Regular maintenance of equipment

■ Flow measuring principle

Delta time of Flight measuring



The flow rate can be measured from the difference in transmission time of ultrasonic waves transmitted in the forward and reverse directions. Forward ultrasonic transmit in the fluid flow, so the faster the flow is, the shorter the transmission time. Conversely, reverse ultrasonic transmit against the flow, so the faster the flow is, the longer the transmission time is. The difference in transmission time between the forward and reverse directions correlates to the flow rate, and thus the flow rate can be measured.

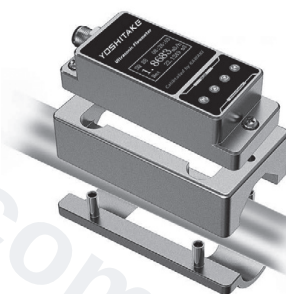
■ Specifications

Supported pipe materials	Metal pipe, Plastic pipe, Tube hose	Display resolution of integrated flow	0.0001/0.001/0.01/0.1/1(Auto)
Supported fluids*2	All fluids (Water, chemicals, etc.) Oil (15~25A only)	Analogue output	4-20mA, load resistance 600 Ω or less
Supported nominal size of pipe	10A ~ 80A(φ 16.5~ φ 92)	Applicable ambient temperature	0~50°C (No condensation)
Supported fluid temperature	0~50°C (No freezing on pipe surface)	Protective structure	IP54
Measurable flow rate range	0.5~5.0m/s (For oil 1.0~4.0m/s)	Material	Aluminum alloy (Sensor body, mounting bracket)
Repeatability	F.S. ± 3.0%	Power supply	DC12~30V
Display	Instantaneous flow, Integrated flow, Flow rate	Power I/O connector	M12 5-pin connector with 2m cable standard
Units	m³/h, LPM*3 (Instantaneous flow) m³, L (Integrated flow) m/s (Flow rate)	Required straight pipe length	For general piping: Upstream side 10D, Downstream side 5D (D indicates the nominal size of pipe)
Display resolution of instantaneous flow	0.001/0.01/0.1/1	Language	ENGLISH

*2 No air bubbles or foreign objects *3 Means L/min

To ensure safe use of the product, please be sure to read the enclosed instruction manual before use.

Kawaki

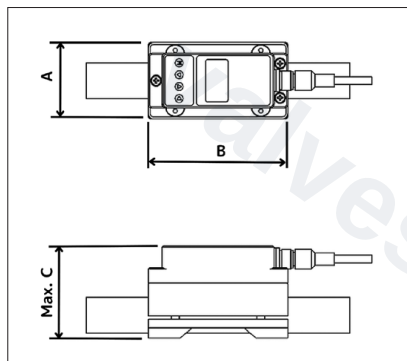


■ Flow rate table

Nominal size	Max flow rate*1	
10A (φ 16.5~φ 23mm)	38 L/min	
15A (φ 16.5~φ 23mm)	60 L/min	
20A (φ 25~φ 28mm)	108 L/min	
25A (φ 32~φ 35mm)	180 L/min	
32A (φ 38~φ 45mm)	300 L/min	
40A (φ 48~φ 54mm)	400 L/min	
50A (φ 58~φ 64mm)	650 L/min	
65A (φ 72~φ 78mm)	1000 L/min	
80A (φ 80~φ 92mm)	1500L/min	

*1 Maximum flow rate indicates the value with steel pipe

■ Dimensions



Nominal size	(mm)		
	A	B	C
10A·15A (φ 16.5~φ 23mm)	40	106	75
20A (φ 25~φ 28mm)	40	106	74
25A (φ 32~φ 35mm)	40	106	81
32A (φ 38~φ 45mm)	40	106	90
40A (φ 48~φ 54mm)	40	106	100
50A (φ 58~φ 64mm)	45	130	115
65A (φ 72~φ 78mm)	45	136	129
80A (φ 80~φ 92mm)	45	150	143

■ Required straight pipe length

To ensure accurate measurement, please provide appropriate straight pipe sections in the upstream and downstream of the product according to the table below. D indicates the nominal size of pipe.

(mm)

Type of the previous joint	Upstream	Downstream
90°bend (Elbow) 1pcs T-joint (Cheese) 1pcs	10D	5D
More than two 90°bends (Elbow) on the same plane	13D	5D
More than two 90°bends (Elbow) not on the same plane	24D	5D
Contraction pipe (Reducer: Large diameter → Small diameter)	5D	5D
Expansion pipe (Reducer: Small diameter → Large diameter)	11D	5D
Globe valve fully open	13D	5D
Gate valve fully open	7D	5D

