

INTRODUCTION

The Ultrasonic Rate of flow, together with measuring weir flume, is used to measure water flow in open channel. the non-contact method is used for measurement by letting ultrasonic wave passing through air. Therefore, they are more reliable and durable in dirty and corrosive solutions compared with the contact-type meters.

APPLICATIONS

The Ultrasonic Rate of flow It is mainly used to measure the flow of sewage plant, sewage discharge outlet of enterprises and public institutions, urban sewers, as well as the channels for irrigation and water conservancy. to accurately measure levels of various liquids in industrial tanks, vessels, and containers, providing reliable monitoring and control capabilities.



FEATURES

- 1) High accuracy
- 2) Remote Communication
- 3) Wide polymer
- 4) Real time Monitoring
- 5) Low Maintance
- 6) Non Contact measurement
- 7) Environmental Compatibility

PRINCIPLE OF OPERATION

An ultrasonic rate of flow operates by emitting a sound pulse from a transmitter directed towards the liquid surface under measurement. This pulse propagates through the surrounding medium, typically air or another gas, and upon reaching the liquid surface, it reflects back to a receiver.

The meter measures the round-trip time t it takes for the pulse to travel from the transmitter to the liquid surface and back to the receiver. Using the known speed of sound C in the propagation medium (such as air), the meter calculates the distance D from the transducer to the liquid surface using the formula:

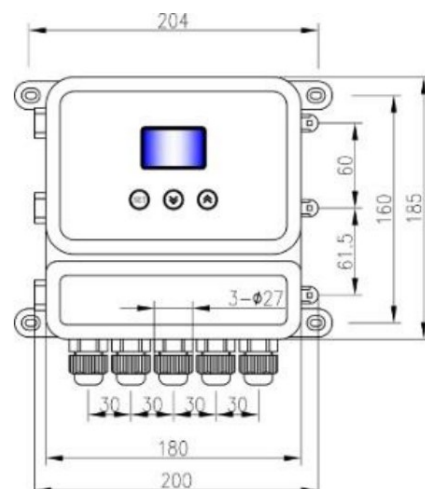
$$D = C \times t / 2$$

Where:

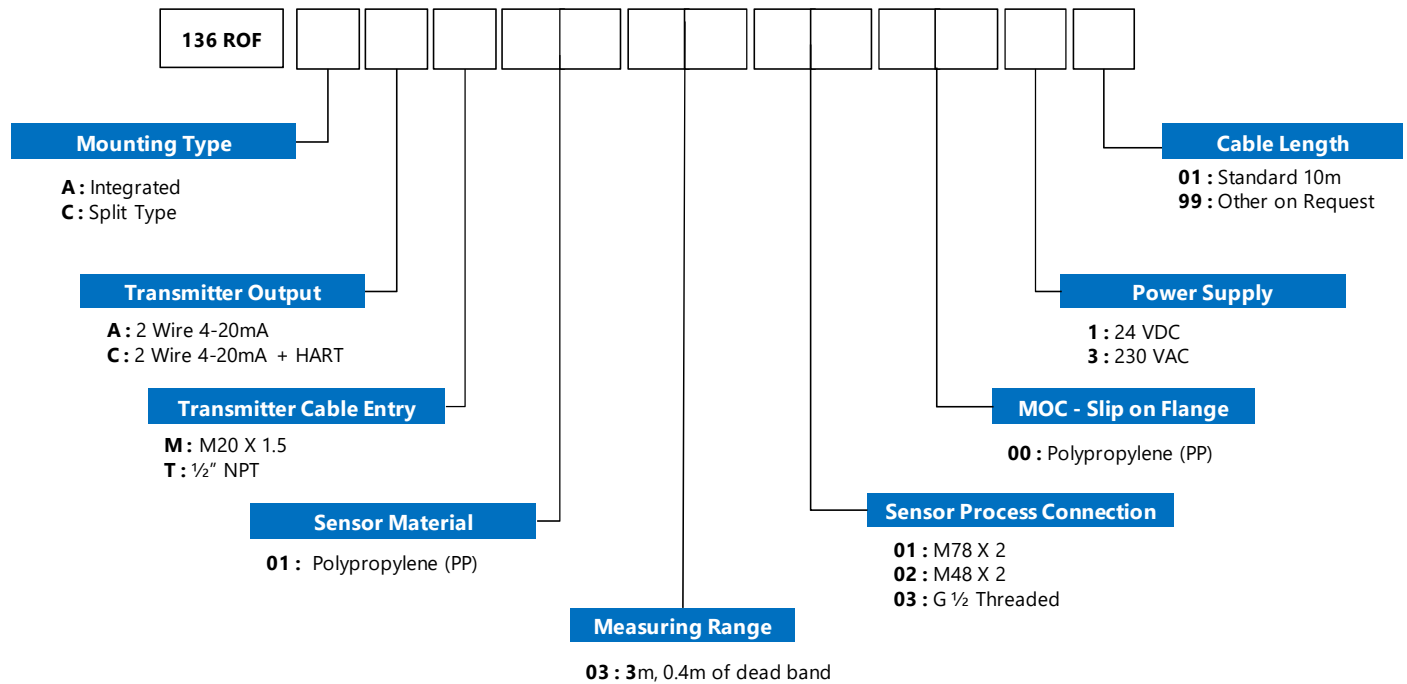
- D is the distance from the transducer to the liquid surface.
- C is the speed of sound in the medium (air).
- t is the time taken for the pulse to complete its round trip.

Once the distance D is determined, the meter subtracts this distance from the total distance between the transducer and the bottom of the channel or vessel to precisely ascertain the liquid level. This method enables accurate measurement of liquid levels in open channels, including natural water bodies, industrial canals, or tanks, leveraging ultrasound technology's capability for distance measurement via sound wave reflections.

MECHANICAL DIMENSIONS



ORDERING CODE



SPECIFICATIONS

Sr.No.	Category	Parameter Name	Parameter Description
1	General	Measuring Frequency	64KHz
2	Specification	Measuring Ranges (m)	3
3		Dead Band (mm)	400
4		Mounting Type	Integrated or Split Type
5		Accuracy	±0.5% of Full scale
6		Power Supply	24VDC @100mA or 230 VAC @50 Hz
7		Analog Output	4 Wire 4-20 mA @ 500 Ω
8		Digital Output	HART Communication (Optional) @250 Ω
9		Load Resistance	600Ω
10		Display	LCD Display
11		Installation Method	Flange
12		Construction	Sensor Material
13	Transmitter Cable entry		M20 X 1.5 or ½" NPT
14	Process Connection		M78 X 2 or M48 X 2 or G ½ Threaded
15	Cable Length (m)		10m (standard) / Higher length on request
16	Protection class		IP 66 (Converter) & IP 68 (Sensor)
17	Process Condition	Process Temperature	0 to 60°C
18		Process Pressure	Standard atmospheric Pressure
19	Environmental	Humidity	≤90% RH
20		Ambient Temperature	0 to 50°C

LF-136-0811-R00 18/07/2024

SBEM Pvt. Ltd.

Head Office & Works - Gat No.326, Shriram Nagar, Gaud Dara
 Road, Khedshivapur, Pune-412205
 Tel 02113299298

Email : sales@sbem.co.in Website : www.sbem-india.com

Pune

pune@sbem.co.in

Mumbai

mumbai@sbem.co.in

New Delhi

newdelhi@sbem.co.in

Chennai

chennai@sbem.co.in

