

PRINCIPLE OF MEASUREMENT

An elongated flow-body of streamlined shape transforms the incident fluid flow in such a way that the sensor's response is immune to flow regime and variations in flow velocity profile.

Dynamic pressures, P1 and P2, are measured in proximity to the streamlined flow-body. One pressure-sensing port faces upstream, the other downstream. The two signals are combined in a unique way to simultaneously measure fluid volumetric flow rate, mass flow rate and density (for gases).

$$P_1 = \frac{1}{2} \rho V^2 + P_0$$

$$P_2 = -\frac{1}{2} \rho V^2 + P_0$$

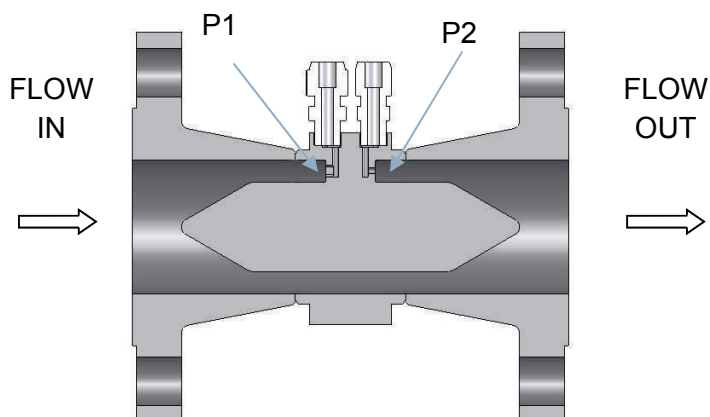
P_0 = static pressure

V = average flow velocity

$$\rho = \text{gas density} = \frac{(P_1 + P_2)}{(2ZRT)}$$

$$\text{Mass flow } Q_m = K \times \sqrt{(\Delta P \times \rho)}$$

Where K = meter constant



General Specification:

Sizes:	½" to 3"
End connection:	Flanged, Screwed and Weld type
End connection rating:	ANSI #150, 300 & 600; other options possible
Medium:	Liquids, gas (pending) and steam (pending)
Primary element accuracy:	+/- 0.5% of the rate
Repeatability:	+/- 0.1% of the rate
Materials:	SS 316L; Other options on request
Versions:	Primary Element Primary Element with DP transmitter (volumetric flow) Primary Element with multi-variable transmitter (mass flow)
Types:	In-line and insertion (pending)
Transmitter mounting:	Remote or integral (compact)

If you need a quote from us please visit our website: http://malema.com/Industrial/pdf/Flow_Meter_Application_Sheet.pdf , fill-in the details requested in the flow application questionnaire and email/fax to us. We will get back to you at the earliest.

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Specifications are subject to change without notice.

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