

MALEMA KINETIC FLOW METER MODEL KFM 2100

KFM 2100 Series is an advanced flow element that is suitable for liquid, gas and steam flow measurement with high accuracy and repeatability. Thanks to its patented design where a stream lined bullet shaped flow element that causes a minimum disruption to the flowing medium providing unmatched flow turndown with very low pressure drop.

KFM 2100 series is available as a flow element separately as well as a complete flow meter. In the first option, you have a choice of using a differential pressure transmitter of your preference. Alternatively, we can integrate the KFM flow element with a differential pressure transmitter and supply as a fully calibrated unit.

FEATURES:

A novel design approach in fluid flow measurement

High turn down: 10:1 typical; up to 50:1 for some applications with multiple transmitters

No need for straight runs

Stream lined measuring section: Low pressure drop

No moving parts

Measurement is independent of flow regime: Suitable for laminar, turbulent and transition flow conditions

High accuracy and repeatability

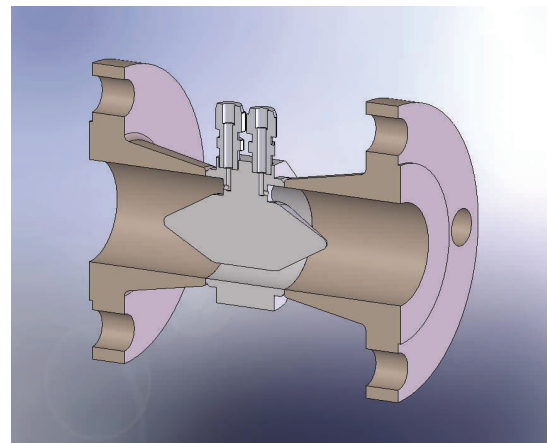
Volumetric and mass flow measurement with built-in temperature sensor option

Suitable for liquids, gases and steam

Patented design (Patent No. US 7,478,565 B2)



KFM Flow Meter



KFM Primary Element
Patent No. US 7,478,565 B2

APPLICATIONS:

- WATER AND WASTE WATER
- CONDENSATE, COOLING WATER & HOT WATER
- PETROLEUM PRODUCTS
- ACIDS AND ALKALIES
- COMPRESSED AIR
- INDUSTRIAL GASES
- STEAM

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).

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

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

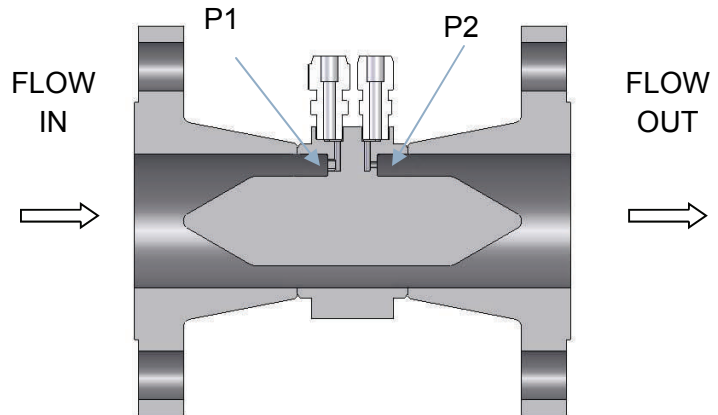
P_0 = static pressure

V = average flow velocity

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

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

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 and steam |
| 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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