

Datasheet

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DeltaK, orifice-based compact flowmeter

- ✓ Pre-assembled complete set : combination of differential pressure element with preset DP transmitter
- ✓ Ready-to-install flowmeter
- ✓ Compact tapping connections
- ✓ Direct assembly on pipe works
- ✓ Efficient seal design to prevent leakage
- ✓ Significant installation savings
- ✓ Easy commissioning
- ✓ Maintenance-free system
- ✓ Flow rate section designed and manufactured according ISO5167, BS1042, ASME.MFC.3M or ISO TR15377 :2007 industry standards
- ✓ Delivered with all the relevant certificates



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The one-piece DP flowmeter

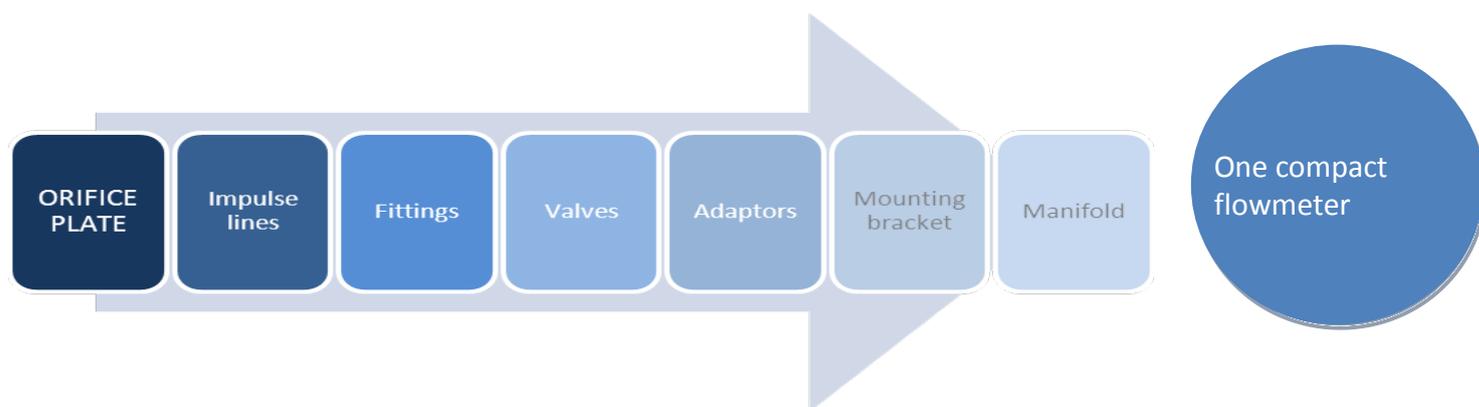
Deltafluid DeltaK compact DP flowmeter is a single piece assembly of a differential pressure element, a manifold and a preset transmitter.

Direct connections between the tapplings and the manifold eliminate maintenance-intensive impulse lines.

Integrated components give a ready-to-install and fully leak-tested flowmeter saving installation costs and ensuring reliable measurements.

These devices are custom-engineered to meet relevant operating conditions and requirements.

Benefits



Traditional installation

- Well-known technology
- Flexible mounting configurations
- Field installation
- Field-tested

Compact orifice flowmeter

- Ready-to-install flowmeter
- Integrated components and compact tapping
- Leak-tested
- Maintenance-free impulse lines
- Reduced installation and commissioning costs
- Factory preset transmitter

Reliable and proven technology
Designed and manufactured according relevant standards
Warranty of accuracy, repeatability and reliability
Transmitter : Long-term, accurate and stable measurement

Applications – standards

Standards	Orifice plate : ISO5167, BS1042, ASME.MFC.3M, ISO TR15377 :2007 Transmitter : ISO61508
Fluid temperature	-110°C to +800°C (if remote transmitter) to +125°C (DP transmitter limit)
Type of fluid	Gas, steam, liquid
Nominal diameters	ND15 to ND1000 (from ½ up to 40 inches) - and beyond according specifications
Maximum operating pressure	Limited by the flange rating



The orifice plate is dimensionally checked in compliance with the manufacturing quality controls. Manufacturing is possible according the european directive PED 97/23 CE requirements.

Features

Accuracy	<1% to 2,5% depending on the installation
Material	Orifice plate : Stainless steel, Carbon steel, Monel alloy, Hastelloys, Inconels, Titanium, PVC, etc

Mounting

Assembly	Between flanges
Process connection	Process connection to existing pipe work, between flanges (RF or RTJ) or butt welding
Centering of orifice bore relative to piping	Distance e between the centerline of the orifice and the centerline of the pipe in the direction parallel to the pressure tapping : $e \leq 0,002 5D / (0,1 + 2,3 \beta_4)$
Type of gaskets	Flat seal (spiral wound gasket, graphite, PTFE) or RTJ (mild steel, stainless steel, monel alloy...)

Technical description

Type of orifice plates	Typically square edge orifice, but any other concentric or non-concentric bores are available depending on the application. If minimal straight lengths are required, multi-orifice bores are available.
Components	An orifice carrier assembly with the relevant orifice plate, 3-way valve manifold, compact connections between tappings and manifold, differential pressure preset transmitter factory-mounted
Preset transmitter	10-year long-term stability Excellent response time $\leq 90\text{ms}$ 4-20 mA output signal Various digital communication protocols : Profibus, HART, Foundation fieldbus or wireless communication Multi-variable transmitter : pressure and temperature compensation for accurate mass flow measurement

The full potential of DP flow measurement

The multi-variable transmitter allows pressure and temperature compensation for an accurate mass flow measurement. Temperature and pressure sensors are linked to the DP transmitter to eliminate inherent errors in the DP flow calculation at actual operating conditions for gas and steam flows.



Impulse lines - Fittings - Valves -
Adaptors - Mounting bracket –
Manifold – Thermowell – Temperature
sensor – Temperature transmitter –
DP transmitter

Traditional installation

Individual components

Flexible mounting configurations

Compact measurement assembly

Integrated flowmeter with temperature and pressure automatic compensation for mass flow measurement

Accurate measurement whatever the fluid pressure and temperature

Multi-variable DP transmitter