

PITOBAR Averaging Pitot Tube for Direct Transmitter Mounting Type DK203, DK204, DK205, DK253, DK254, DK255

Principle

The PITOBAR Averaging Pitot Tube is used for flow measurement of liquid and gasses in horizontal or vertical pipe lines.

PITOBARs are installed in power stations, pulp and paper, petrochemical and chemical industry, refineries, just to name a few.

The PITOBAR Averaging Pitot Tube principle of operation is derived from the classic or single point pitot tube, which has been used for flow measurement for many decades.

As opposed to the single point pitot tube, the PITOBAR averaging pitot tube has a number of holes depending of pipe size pointing towards the up-stream side. One port pointing down stream measures the static pressure.

The PITOBAR has very low installation costs and the pressure loss is low compared to other flow elements, especially in larger pipe sizes.

Design and

calculation standards : VDE/VDI 2640, ASME, DIN, EN 13480.

Types : DK203 and DK253 with mounting flange
DK204 and DK254 with 3 valve manifold valve
DK205 and DK255 with 5 valve manifold valve

Pipe sizes : DK20X DN 50 - DN 1000, 2" - 40"
DK25X DN 50 - DN 2000, 2" - 80"

Probe size : DK20X 20 x 20 mm
DK25X 25 x 25 mm

Pressure rating : PN 16 - 400, 150 - 2500 lbs, ISO PN 20, 50

Temperature range : -100 °C - +300 °C

Material, PITOBAR : stainless steel AISI 316,
Material, mounting kit : carbon steel, stainless steel AISI 316

Process connections : Flange according to pressure rating

Flange standards : DIN, ANSI, ISO, others on request

Bottom support : for larger pipe sizes and high velocities
especially in gas applications

Mounting : Welding to the pipe

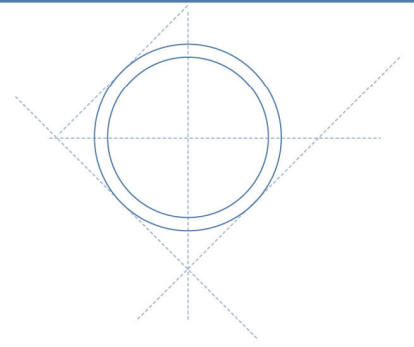
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Type DK203-A



Type DK204-B



Construction

The PITOBAR Averaging Pitot Tube is constructed and designed with a diamond shaped strut with several ports spaced centrally within concentric rings of equal area pointing towards the upstream side. This is done in order to get the best averaging measurement of the dynamic pressure, resulting in a more accurate flow reading.

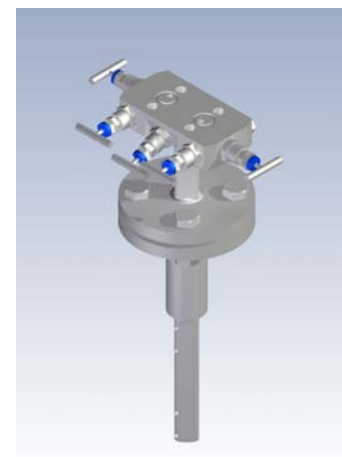
The pitot tube creates a differential pressure signal which is proportional to the flow rate.

Differential Pressure = (Pstatic + Pdynamic) - Pstatic

The differential pressure transmitter is easily mounted with the bolts and gaskets, which is a part of the supply.

Technical Data

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|--------------------------------------|---|
| Accuracy | : ± 1% accuracy of actual flow |
| Repeatability | : ± 0,1% |
| Reynolds no. | : Minimum 100.000 at full flow |
| Rangeability | : 10:1 |
| Max. allowable differential pressure | : Depending on size, density and velocity |
| Max. fluid velocity | : liquids 5 m/s, gasses 80 m/s |



Type DK255-A

Advantages

Very easy to install particularly in existing pipe runs. Very low pressure loss due to low energy consumption caused by low drag coefficient. Risk of leakage is minimized.