PITOBAR Averaging Pitot Tube for steam flow, with Manifold Valve for Direct Transmitter Mounting Type DK251/3, DK251/4 and DK251/5

Principle

The PITOBAR Averaging Pitot Tube is used for flow measurement of saturated and superheated steam 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.

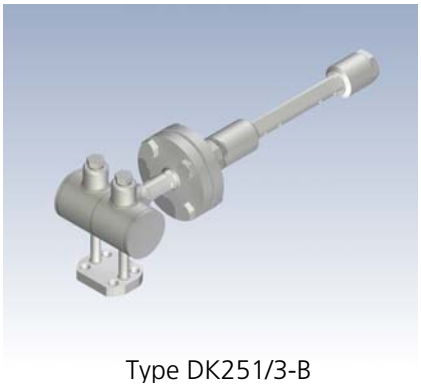
The PITOBAR Averaging Pitot Tube principle of operation is derived from the classic or single point pitot tube, which has been used for flow measurement for many decades.
As opposed to the single point pitot tube, the PITOBAR averaging pitot tube has a number of holes depending of pipe size pointing towards the up-stream side. One port pointing down stream measures the static pressure.

Construction

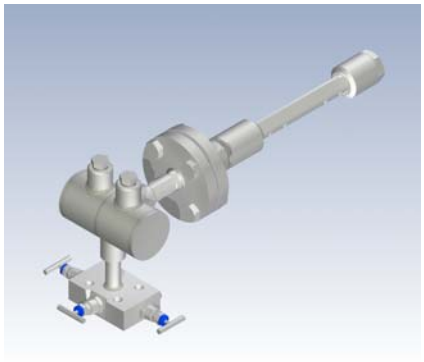
The PITOBAR Averaging Pitot Tube is constructed and designed with a diamond shaped strut with several ports spaced centrally within concentric rings of equal area pointing towards the upstream side. This is done in order to get the best averaging measurement of the dynamic pressure, resulting in a more accurate flow reading.
The pitot tube creates a differential pressure signal which is proportional to the flow rate.
Differential Pressure = (Pstatic + Pdynamic) - Pstatic

The condensing chamber is an integrated part of the probe.

Design and calculation standards	:	VDI 2640, ASME, DIN, EN 13480.
Types	:	DK251/3 with mounting flange DK251/4 with 3 valve manifold valve DK251/5 with 5 valve manifold valve
Sizes	:	DN 50 - DN 2000, 2" - 80"
Pressure rating	:	PN 16 - 40, 150 - 300 lbs, ISO PN 20, 50
Temperature range	:	100 °C - +450 °C
Material, PITOBAR	:	stainless steel AISI 316, CrMo steel
Material, mounting kit	:	stainless steel, carbon steel, 1.4515.
Process connections	:	Flange according to pressure rating
Flange standards	:	DIN, ANSI, ISO, others on request
Mounting	:	Welding to the pipe



Type DK251/3-B



Type DK251/4-B

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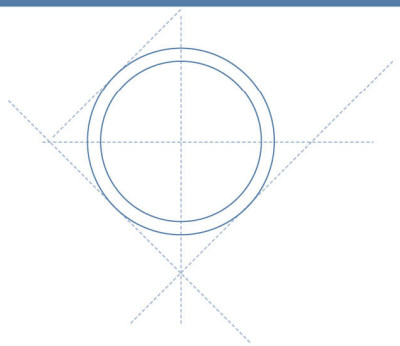

Technical Data

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	:	80 m/s
Probe size	:	25 x 25 mm

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. No risk of blockage of condensate. Can measure mass flow rate in saturated steam when the PITOBAR is mounted with multi-variable differential pressure transmitter.