

# VELOCITY MEASUREMENT



(S-) PITOT TUBES

**128 series**

The Pitot tube is a primary measuring instrument for the measurement of velocity in pipelines and tubes. The measuring principle of the Pitot tube is applied especially when the temperature of the medium that is being measured is very high and when it concerns very low velocities.

**ACIN** instrumenten bv

made to measure

# 128 & PS series

## PITOT TUBES & S-PITOT TUBES

### HIGH PRECISION ELEMENTS FOR VELOCITY MEASUREMENT

The Pitot tube is a primary measuring instrument for the measurement of velocity in pipelines and tubes. The measuring principle of the Pitot tube is applied especially when the temperature of the medium that is being measured is very high and when it concerns very low velocities.

The principle of the Pitot tube is based on the fact that the dynamic pressure of a flowing medium is higher than the static pressure. With the Pitot tube it is possible to measure both pressures, which can be used to determine the velocity of the medium.

The Pitot tube is placed with the dynamic pressure opening in the direction of the fluid stream. Behind the measuring head there are openings through which the static pressure can be measured. The Pitot tube has 2 nipples: a positive one for the dynamic pressure and negative one for the static pressure.

Since the velocity of a medium in a pipeline depends on where it is located, the results of the measurement will be adjusted for the place of the measurement.

### APPLICATIONS

- velocity measurement in wind tunnels
- measurement of quantity of gas/ liquid through a pipeline
- control of air treatment installations
- control of draft in chimneys
- control of filthiness of filters
- velocity measurement during flue gas sampling in chimneys
- measurement of the speed of boats, planes and trains

### DRAWING



## STANDARD PITOT TUBES

Type no	Description	Length	Diameter	Material
128-4/...	Pitot tube	50,100,150,350 mm	Ø 4 mm	nickel-plated brass, option: stainless steel
128-4 of -6/500	Pitot tube	500 mm	Ø 4 of 6 mm	nickel-plated brass, option: stainless steel
128-6/750	Pitot tube	750 mm	Ø 6 mm	nickel-plated brass, option: stainless steel
128-10/1000	Pitot tube	1000 mm	Ø 10 mm	nickel-plated brass, option: stainless steel
128-10/1500	Pitot tube	1500 mm	Ø 10 mm	nickel-plated brass, option: stainless steel
128-10/2000	Pitot tube	2000 mm	Ø 20 mm	stainless steel
128-20/2500	Pitot tube	2500 mm	Ø 20 mm	stainless steel

128-4,6,8,10 | Mounting flange, for duct mount of all types of pitot tubes



## S-PITOT TUBES

For measurement in polluted air and/or extreme high temperature ACIN can also deliver S-Pitot tubes.

Type no	Description	Length	Diameter	Material
PS/500RB	S-Pitot tube	500 mm	Ø 22 mm	Stainless Steel AISI 316
PS/1000RB	S-Pitot tube	1000 mm	Ø 22 mm	Stainless Steel AISI 316
PS/1500RB	S-Pitot tube	1500 mm	Ø 22 mm	Stainless Steel AISI 316
PS/1500RB-33,7	S-Pitot tube	1500 mm	Ø 35 mm	Stainless Steel AISI 316
PS/2000RB-33,7	S-Pitot tube	2000 mm	Ø 35 mm	Stainless Steel AISI 316
PS/3000RB-33,7	S-Pitot tube	3000 mm	Ø 35 mm	Stainless Steel AISI 316
PS/500IRB	S-Pitot tube	500 mm	Ø 22 mm	Stainless Steel AISI 316
PS/1000IRB	S-Pitot tube	1000 mm	Ø 22 mm	Stainless Steel AISI 316
PS/1500IRB	S-Pitot tube	1500 mm	Ø 22 mm	Stainless Steel AISI 316



## THE MEASUREMENT

The Pitot tube is mounted inside the pipe. For a rough measurement it will be sufficient to place the Pitot tube in the centre of the pipe and use a conversion factor for the average velocity. The Pitot tube can also be placed at a spot theoretically representative for the average value of the stream profile in the pipe.

The measuring head of the Pitot tube has to be placed parallel with and pointing in the direction of the flow stream. A deviation of  $\pm 3^\circ$  can cause an error of 1% in the reading of the pressure difference.

A pressure difference meter is connected to the hose nipples of the Pitot tube. The choice of the meter depends on the accuracy required and the further processing of the measuring signal.

ACIN instrumenten has a wide range of pressure difference meters, for example the Setra 267, and can give advice about which meter is appropriate for your application. For more information, visit our website [www.acin.nl](http://www.acin.nl)



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