

# Pitot tube Type S



## ■ Presentation

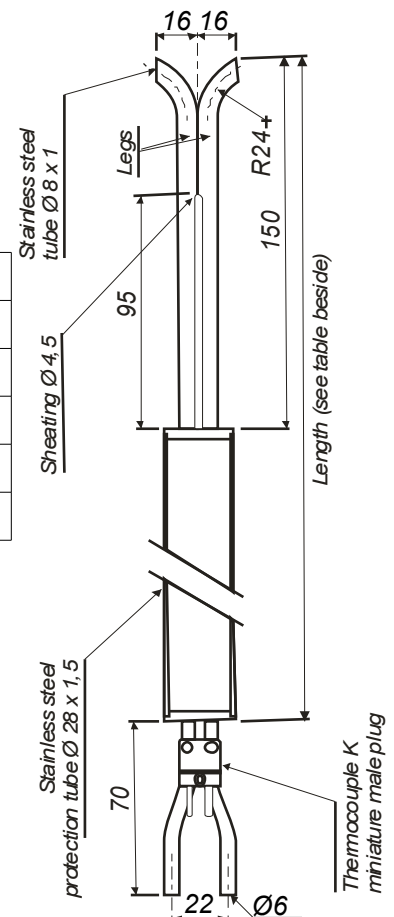
KIMO offers a wide range of high-quality and accurate **Pitot tubes**, as per the ISO 10780 norm.

These **Pitot tubes** when being connected to a differential column / or needle / or electrical manometer, can measure the dynamic pressure of a moving fluid in a duct, and then, can deduct its air velocity in m/s and its airflow in m<sup>3</sup>/h.

These **Pitot tubes** are used in HVAC field, vacuum cleaning and pneumatical transport. They are mainly dedicated to measure hot and particle-charged air, and also high air velocity.

## ■ Dimensions

Ø 8 mm	TPS-08-500-T	500 mm
	TPS-08-1000-T	1000 mm
	TPS-08-1500-T	1500 mm
	TPS-08-2000-T	2000 mm
	TPS-08-2500-T	2500 mm
	TPS-08-3000-T	3000 mm



## ■ Features

- Norm.....ISO 10 780
- Coefficient.....0,84±0,01
- Accuracy.....Better than 4 %, for a ± 15° alignment to the fluid flow
- Quality.....stainless steel 316 L
- Working temperature.....from 0 to 1000 °C



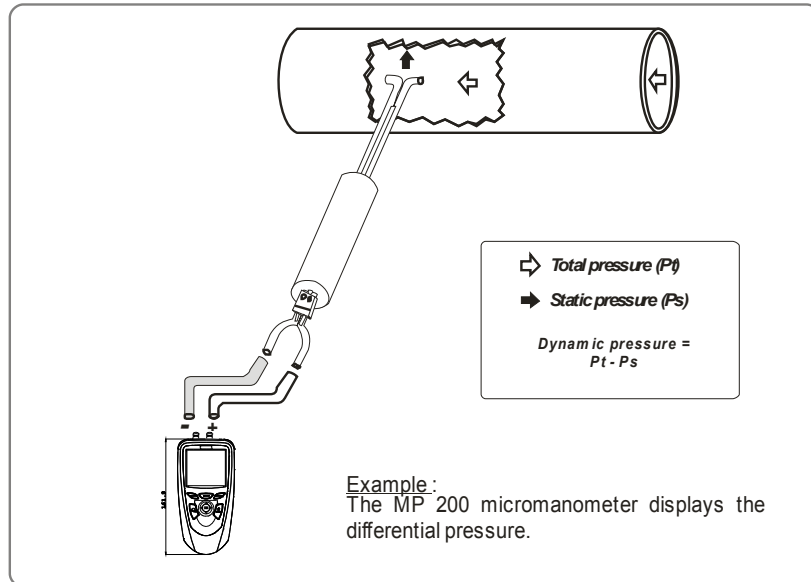
- The extent error of an air velocity or airflow measurement with a KIMO Pitot tube remains inferior to 3%, when being carried out as per the ISO 10 780 norm.
- To meet ISO 10 780 norm's requirements, it is recommended to carry out a calibration of the Pitot tube, in order to determine its exact coefficient.

## ■ Operating

The **Pitot tube** must be introduced perpendicularly into the duct, in several points pre-determined. The holes must be made in proper alignment to the line of the air or gas flow. Compared to the **Pitot tube L**, the **Pitot tube S** is much more sensitive to wrong alignments.

Taking into account that the **Pitot tube** is symmetrical, it is no use to identify the 2 legs. However, it is important to connect the instrument as follows :

- the leg facing the air flow must be connected to the + sign of the manometer
- the leg opposite to the air flow must be connected to the - sign of the manometer.



With the dynamic pressure in mm CE or in Pa, we can calculate the air velocity in m/s, with the simplified BERNOULLI formula :

$$V \text{ in m/s at } 20 \text{ } ^\circ\text{C} : K \times \sqrt{\frac{2}{\delta} \times \Delta P \text{ in Pa}}$$


**Formula to get the velocity,  
with temperature balancing of the airflow :**

$$V \text{ in m/s} = K \times \sqrt{\frac{574,2 \theta + 156842,77}{P_0} \times \Delta P \text{ in Pa}}$$

**With**

$P_0$  = barometric pressure in PA  
 $\theta$  = temperature in  $^\circ\text{C}$   
 $K$  = coefficient of Pitot tube  
 $\delta$  = volumic mass

## ■ Accessories

- Extension cable for thermocouple K class 1 :
- Clamping blocks made of cast iron 
- Tubes



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