KIMO®
CONSTRUCTEUR

Air velocity | Pressure | Humidity | Air flow | Temperature

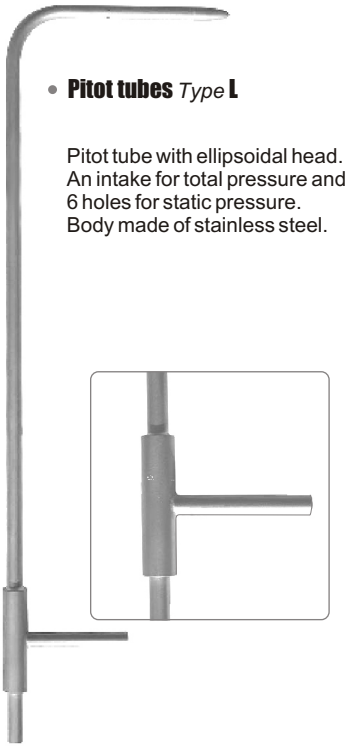
TECHNICAL DATA SHEET

New

PITOT TUBES
type L

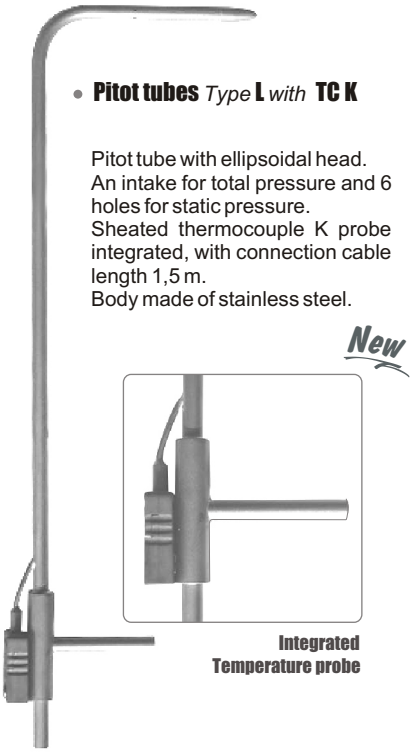
CE

KIMO offers a wide range of high-quality and accurate Pitot tubes, as per the AFNOR NFX 10-112 norm.
These Pitot tubes, when being connected to a differential column / or needle / or electronical 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^3/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.



- **Pitot tubes** *Type* **L**

Pitot tube with ellipsoidal head.
An intake for total pressure and 6 holes for static pressure.
Body made of stainless steel.



- **Pitot tubes** *Type* **L** *with* **TC K**

Pitot tube with ellipsoidal head.
An intake for total pressure and 6 holes for static pressure.
Sheated thermocouple K probe integrated, with connection cable length 1,5 m.
Body made of stainless steel.

New

Integrated Temperature probe

	Type **L**	*Type* **L** *with* **TC K**
Norm	AFNOR NFX10-112. Annex 4 dated 14.9.77. This norm meets the requirements of the International Norm ISO 3966.	
Model	NPL curved with ellipsoidal head	
Coefficient	1,0015	
Accuracy	More than 1 %, for a ± 10 ° alignment to the fluid flow.	
Quality	Hard stainless steel 4/4, as per AFNOR / Z2.CDN.17.12.	
Operating temperature	From 0 to 600 °C in standard and up to 1000 °C in option (except Ø 3 mm).	
⚠	The extent error of an air velocity or airflow measurement with a KIMO Pitot tube remains inferior to 2%, when being carried out as per the NFX10-112 norm.	
	It is recommended to carry out a calibration of the Pitot tube, in order to determine its exact coefficient.	

Introduction of the range

Pitot tubes *Type* **L**

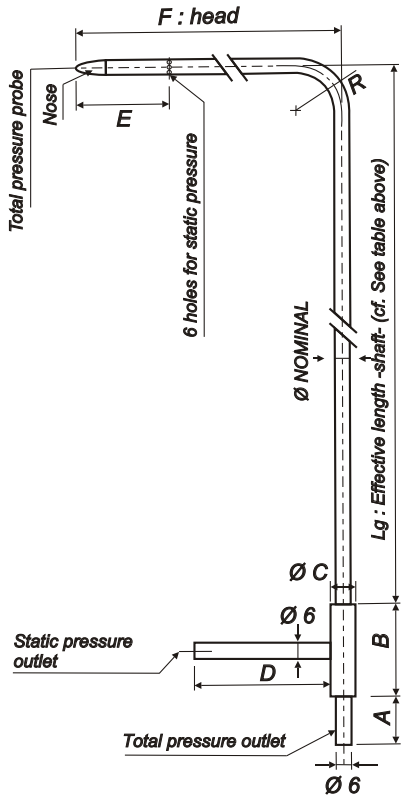
	Ref.	Length
Ø 3 mm	TPL-03-100	100 mm
	TPL-03-200	200 mm
	TPL-03-300	300 mm
Ø 6 mm	TPL-06-300	300 mm
	TPL-06-500	500 mm
	TPL-06-800	800 mm
Ø 8 mm	TPL-08-1000	1000 mm
	TPL-08-1250	1250 mm
Ø 12 mm	TPL-12-1500	1500 mm
	TPL-12-2000	2000 mm
Ø 14 mm	TPL-14-2500	2500 mm
	TPL-14-3000	3000 mm

Pitot tubes *Type* **L** *with* **TC K**

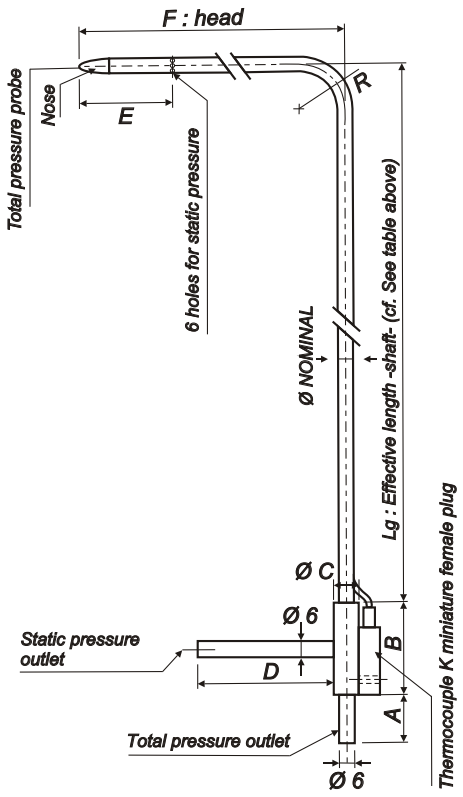
	Ref.	Length
Ø 3 mm	TPL-03-100-T	100 mm
	TPL-03-200-T	200 mm
	TPL-03-300-T	300 mm
Ø 6 mm	TPL-06-300-T	300 mm
	TPL-06-500-T	500 mm
	TPL-06-800-T	800 mm
Ø 8 mm	TPL-08-1000-T	1000 mm
	TPL-08-1250-T	1250 mm
Ø 12 mm	TPL-12-1500-T	1500 mm
	TPL-12-2000-T	2000 mm
Ø 14 mm	TPL-14-2500-T	2500 mm
	TPL-14-3000-T	3000 mm

Description and dimensions

Pitot tubes *Type* **L**



Pitot tubes *Type* **L** *with* **TC K**



	A	B	Ø C	D	E	F	R
Pitot tubes Ø 3 mm	17	32	10	30	25	48	9
Pitot tubes Ø 6 mm	25	40	10	45	48	96	18
Pitot tubes Ø 8 mm	25	40	10	45	64	128	24
Pitot tubes Ø 12 mm	25	50	16	60	96	192	36
Pitot tubes Ø 14 mm	25	50	16	60	112	224	42

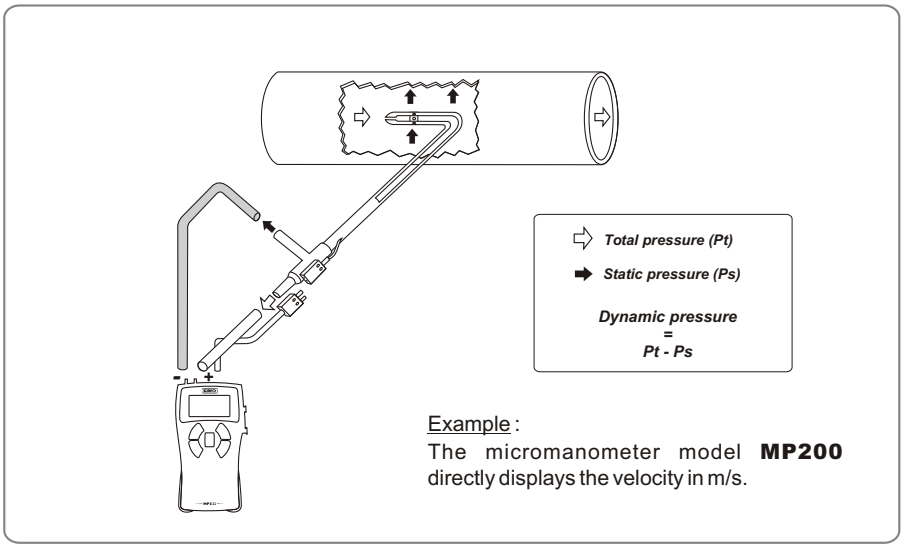
OPERATING

The Pitot tube must be introduced perpendicularly into the duct, in several points pre-determined (see table “location of measuring points”).

The head (ending with an ellipsoidal nose) must be maintained parallel and facing the flow.
The total pressure (+) catched by the nose, is connected to the + of the manometer
The static pressure (-) catched by the holes of the head, is connected to the - of the manometer.
The connection cable of the thermocouple K probe is connected to the thermocouple K inlet of the manometer (only on the Pitot type L with TC K).

Then, the instrument can display the dynamic pressure, also named “velocity pressure”.
The dynamic pressure corresponds to the difference between the total pressure and the static pressure : **Pd = Pt - Ps**

Pitot tubes type L with TC K : direct reading of the velocity with or without temperature balancing on the micromanometers of Class 200 and 300.



Example :
The micromanometer model **MP200** directly displays the velocity in m/s.

With the dynamic pressure in mm H_2O or in Pa, we can calculate the air velocity in m/s, with the simplified BERNOULLI formula :

V in m/s at 20 °C **:** $1{,}291\sqrt{\ \textbf{Pd}\ \text{in Pa}}$

Or

V in m/s **: 4,05** $\sqrt{\Delta\textbf{P}\ \text{in mmH2O}}$

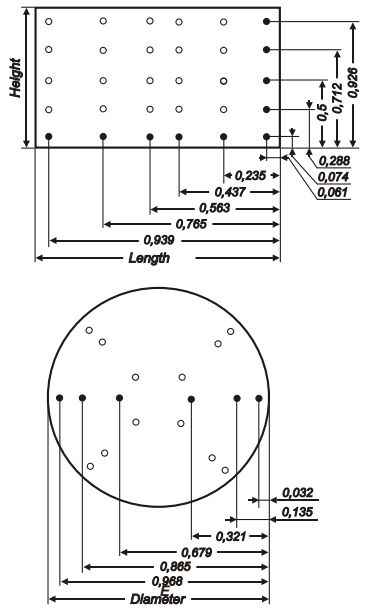
Formula to get the velocity, with temperature balancing of the airflow :

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

With :

Po = barometric pressure in Pa
θ = temperature in °C
K = coefficient of the Pitot tube

Location of measuring points



Simplified drawing of the NF.X10.112 norm, for measuring points, as per the method “Log. Tchebycheff”.

OPTION

- ***TIG welding :***
This option is recommended when using the Pitot tubes type L and S with TC K up to 1000°C, except for Pitot tubes Ø 3mm.

Accessories

• ***Connection glands made of nickel plated brass :***
To install the Pitot tube in a fixed location.

Ref : **PE 458 Ø 3**
PE 458 Ø 6
PE 458 Ø 8

• ***Clamp made of stainless steel and cast iron :***

Ref : **KI-BF-6** Stainless steel clamp for Pitot tube Ø 3 and 6 mm.
KI-BF-8 Stainless steel clamp for Pitot tube Ø 8 mm.
KI-BF-12-F Cast iron clamp for Pitot tube Ø 12 mm.
KI-BF-14-F Cast iron clamp for Pitot tube Ø 14 mm.

• ***Sliding connections with nipple, made of stainless steel of Teflon :***

Ref : **KI-RCC-3/14** Sliding connection cylindrical ¼ gas with stainless steel nipple for temperature probe or Pitot tube Ø 3 mm.
KI-RCCT-3/14 Sliding connection cylindrical ¼ gaz with Teflon nipple for temperature probe or Pitot tube Ø 3 mm.

Ref : **KI-RCC-6/12** Sliding connection cylindrical ½ gas with stainless steel nipple for temperature probe or Pitot tube Ø 6 mm.
KI-RCCT-6/12 Sliding connection cylindrical ½ gas with Teflon nipple for temperature probe or Pitot tube Ø 6 mm.
KI-RCC-8/12 Sliding connection cylindrical ½ gas with stainless steel niple for temperature probe or Pitot tube Ø 8 mm.
KI-RCCT-8/12 Sliding connection cylindrical ½ gaz with Teflon nipple for temperature probe or Pitot tube Ø 8 mm.
KI-RCC-12/12 Sliding connection cylindrical ½ gaz with Teflon nipple for temperature probe or Pitot tube Ø 12 mm.
KI-RCCT-12/12 Sliding connection cylindrical ½ gaz with Teflon nipple for temperature probe or Pitot tube Ø 12 mm.
KI-RCC-14/12 Sliding connection cylindrical ½ gaz with stainless steel nipple for temperature probe or Pitot tube Ø 14 mm.
KI-RCCT-14/12 Sliding connection cylindrical ½ gaz with Teflon nipple for temperature probe or Pitot tube Ø 14 mm.

• ***Extension cable for thermocouple K class 1 :***

Ref : **CEK150M** Length 1,50 m for temperature probe and Pitot tube, with miniature compensated male/male plug.
CEK150 Length 1,50 m for temperature probe with miniature compensated male/female plug.
CEK300 Length 3 m for temperature probe with miniature compensated male/female plug.
CEK500 Length 5 m for temperature probe with miniature compensated male/female plug.

• ***Rubber sealing caps :*** come in a 10-unit bag

Ref : **1590/12** Full rubber sealing caps, Ø 8 to 12 mm, height 20 mm.
1590/17 Full rubber sealing caps, Ø 12 to 17 mm, height 25 mm.
1590/22 Full rubber sealing caps, Ø 17 à 22 mm, height 25 mm.

• ***Caps :*** come in a 10-unit bag

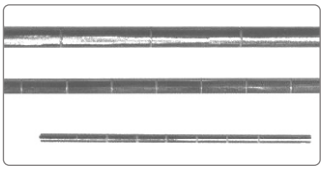
Ref : **GPN.U3B** Sealing caps (to seal holes in the duct) Ø 7,5 to 9,5 mm.
GPN.U5B Sealing caps (to seal holes in the duct) Ø 9 to 11 mm.
GPN.U6B Sealing caps (to seal holes in the duct) Ø 10 to 11,5 mm.
GPN.U8B Sealing caps (to seal holes in the duct) Ø 11,5 to 13 mm.
GPN.U10B Sealing caps (to seal holes in the duct) Ø 12,5 to 14,5 mm.
GPN.U12B Sealing caps (to seal holes in the duct) Ø 14 to 16 mm.
GPN.U17B Sealing caps (to seal holes in the duct) Ø 18,5 to 21 mm.

• ***Straight Pitot tube type L and type L with TC K :***
You can directly make the measurements by plonging this tube into the air duct.
Diameters and dimensions : same as the Pitot tube NPL curved.

Feel free to contact KIMO for any special case, any special manufacturing.

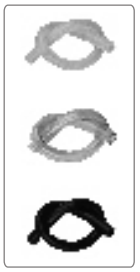
• ***Graduation (mm) red-marked on the shaft :***
For Pitot tubes Ø 3, 6, 8, 12, 14 mm.

Ref : **TP GR 03**
TP GR 06
TP GR 08
TP GR 12
TP GR 14



• ***Tubes :***

Ref : **TC 5 X 8**
Cristal tube Ø 5 X 8 mm
for fixed Pitot tubes.
TS 4 X 7
Flexible silicone tube Ø 4 X 7 mm
Black or white for Pitot tubes.



Ref. FT ang - Tubes de Pitot type L- 08/04 B

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