

FLOXACT™ PROBE

Multifunctional air flow probe



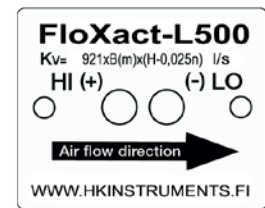
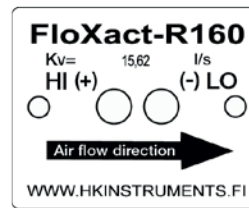
FloXact probe measures air velocity / air volume in HVAC systems. Its intelligent design makes for easy installation in existing ducts or terminals.

Operating on the pitot tube principle, FloXact probe measures the total (PTOTAL) and static (PSTATIC) pressure components of air flow. The probe determines average air velocity, measured over 6, 8, or 10 precisely positioned sensing ports, depending on the length of ducts. The unique shape (patent pending) of the probe profile creates a linear amplification of at least 2.5 times the velocity pressure (PVEL), providing accurate measurement of lower air velocities down to 1.0 m/s (200 FPM). Chamfered entrances to the sensing ports eliminate air-direction affects, making the FloXact probe insensitive to approaching multi-directional, rotating airflow with yaw and pitch up to 30° from straight flow.

FloXact probe is easy to install and completes an accurate and cost-effective air flow station, when combined with a differential pressure transmitter. The probe integrates with most differential pressure transmitters, yet improved accuracy is obtained when output is linear to airflow rather than pressure. HK Instruments DPT-Flow line of air flow transmitters pairs well with FloXact probe.

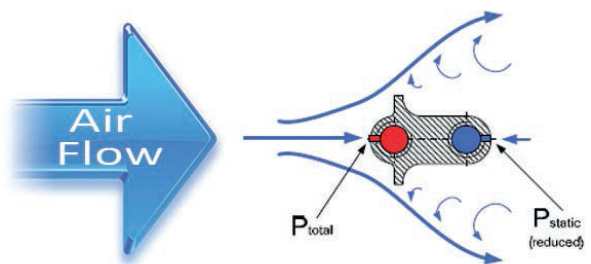
KEY FEATURES

- Multi-point averaging based on the “Log-Tchebycheff” method, providing greater accuracy
- Chamfered sensing points ensure consistent readings
- Easy installation in existing air ducts or terminals
- 2% accuracy
- 2.5 times linear amplification of Velocity Pressure
- Accepts 1/4" OD tubing



Easy installation with sizing that matches existing ducts.

OPERATION



HOW IT WORKS

FloXact probe operates on the pitot tube principle measuring the total (PTOTAL) and static (PSTATIC) pressure components of air flow. Pressure ports located on the leading surface of the probe sense the total pressure (PTOTAL) and pressure ports on the trailing surface sense the static pressure (PSTATIC). The difference between the total pressure and the static pressure is velocity pressure (PVEL), which relates to the squared air velocity as:

$$PVEL = \frac{1}{2} \times \rho \times v^2$$

PVEL = velocity pressure (Pressure units i.e. Pa, inWC, etc.)

ρ = density of the gas (air) in kg/m³

v = velocity in m/s

To simplify calculations and provide for amplification and air duct area (allowing calculation of air volume), FloXact probes have a K VOL value, which are outlined in FloXact installation instructions.

Air volume can be determined with this formula:

$$Q = K VOL \times \sqrt{PFP}$$

Q = air volume in l/s

K VOL = K vol value in l/s/Pa (see Installation Instructions chart)

PFP = pressure difference measured by probe

Velocity pressure (PVEL) times the amplification factor) in Pa

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SPECIFICATIONS

Performance

Accuracy:
±2.0 %

Technical Specifications

Media compatibility:
Dry air or non-aggressive gases
Measurement units:
Pa, m/s, l/s
Environment:
Operating temperature: 5...95 °C
Storage temperature: -20...95 °C
Humidity: 0 to 95 % rH, non condensing

Physical

Dimensions:
Probe:
< 200 mm: 15 x 20 x Length (mm)
≥ 200 mm: 25 x 20 x Length (mm)
Mounting plate:
60 W x 50 H x 1.5 D (mm)
Lengths:
Round: 100, 125, 160, 200, 250, 315, 400 and 450 mm
Rectangular: 250, 300... 1200 (50 mm steps)
Additional lengths available on request.
Mounting:
2 each 5.0 mm screw holes. Lengths XX and greater include 6 mm stud, washer, and nut to secure opposite end of the probe.

Materials:

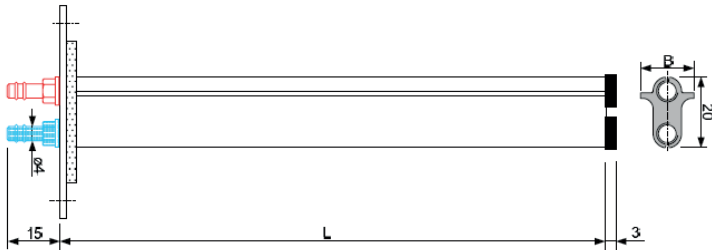
Probe: T3015 aluminium
Mounting plate: Mild steel
Sealing gasket: expanded foam
Pressure fittings
4.5 mm barbed brass
+ High pressure
– Low pressure

Conformance

Meets requirements for CE marking:
RoHS Directive 2002/95/EY



DIMENSIONS



How to generate a model?

Example: FloXact-R200	Product series	
	FloXact	FloXact air flow probe
	Duct type	
	-R	Round duct
	-L	Rectangular duct
Probe length (R = duct diameter, L= duct width in mm)		
100, 125, 160, 200, 250, 315, 400, 450 and other standard round duct sizes up to 1200 mm		
250, 300... 1200 (50 mm steps) for rectangular ducts		
Model	FloXact	-R 200

Additional lengths available on request.