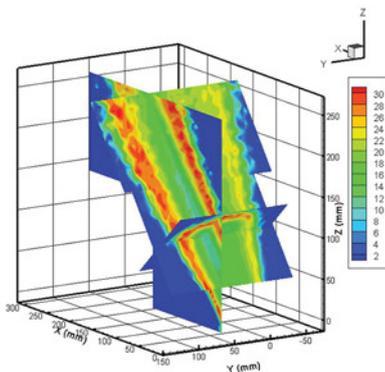


# StreamLine Hot-wire anemometer by Dantec Dynamics

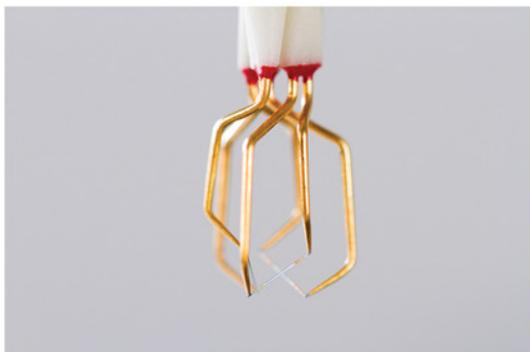
Hot-wire anemometry is a method of single point, time-resolved measurement of fluid flow under laboratory and/or field operating conditions. It's main advantage over the other methods is measurement at high frequency, which makes the method particularly suitable for studies on turbulence. The measuring element is represented by a wire or film heated to a constant temperature or more precisely an electric resistor cooled by a passing fluid. In order to maintain the electric resistance constant, the temperature fluctuations have to be instantaneously compensated for by changes to the electric current which is proportional to the speed of the fluid.

## SPECIFICATION

- constant temperature anemometer - CTA
- portable, three channel measuring system StreamLine by Dantec Dynamics
- determination of single or up to three components of velocity vector at the point of measurement (single, two or three wire probe) or simultaneous measurement with up to three probes
- small probe size, measuring part size starts at 1 mm
- fast frequency response, sampling frequency up to 400 kHz



- Turbulence intensity in a jet issuing from an air terminal device



- Hot-wire elements

## REFERENCES

- Škoda auto a.s. (Analysis of jet directioning and homogeneity as generated by dashboard vents. Flow in the vicinity of dashboard defrost vent) (2007-2011)



## TYPICAL APPLICATIONS

- velocity field and turbulence mapping in fluids, boundary layer flow
- especially suitable for highly turbulent flow of wide range of time scales
- accurate single point velocity measurement of large dynamic range
- studies of aerodynamics and hydrodynamics of a free jet velocity flow, pipe flow or close-to-wall flow
- specification of boundary conditions for computational models (CFD)

## PROVIDED OUTCOMES

- time record of up to three components of velocity vector at a single point may provide:
  - power spectral density of velocity fluctuations
  - autocorrelation function
  - statistical moments of velocity
  - turbulence characteristics
- by sequential scanning, the entire 1D/3D domain can be measured

Ing. Jan Jedelský, Ph.D.

tel: +420 541 143 266 | e-mail: jedelsky@fme.vutbr.cz

Department of Thermodynamics and Environmental Engineering

Faculty of Mechanical Engineering, Brno University of Technology

Technická 2896/2, Brno 616 69, Czech Republic

tel: +420 541 143 280 | e-mail: otpp@fme.vutbr.cz | www.eu.fme.vutbr.cz