

# Turbulence measurements with the hot-wire anemometer

North Atlantic Treaty Organization, Advisory Group for Aeronautical Research and Development - fluid mechanics

Description: -

- French language -- Chrestomathies and readers.  
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Notes: Bibliography: p. 28-32.  
This edition was published in 1955

**Hot Wire Anemometer Turbulence Measurements in the wind Tunnel of LM Wind Power — DTU Research Database**

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**Air Flow Measurement: how hot wire anemometer works**



Filesize: 11.67 MB

This resistance measurement is accomplished by measuring the voltage across the wire, then working through a known but non-linear relationship between voltage and resistance for a given material.

## fluid mechanics

Therefore, counting the turns of the cups over a set time period produced the average wind speed for a wide range of speeds. The current through the hot wire remains unchanged. The advantages of this instrument are mainly due to the very small dimensions that can be taken by the probe.

## How to use wind speed measuring instruments

Both the temperature and the resistance values of the device are maintained as constant to calculate the fluid flow rate through the calculation of I. Microprocessor based anemometers are available to automate this procedure.

## Hot Wire Anemometer : Definition, Equation, Working, Uses and Benefits

If there is no room for the straight pipe section, a honeycomb flow straightener can be incorporated into the sensor assembly.

### Air Flow Measurement: how hot wire anemometer works

This article will look at a fluid-velocity measurement transducer called the hot wire anemometer. Mass flow is measured using different instrumentation, such as the Coriolis flowmeter. The three cup anemometer was further modified by the Australian Derek Weston in 1991 to measure both wind direction and wind speed.

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The turbulence intensity as well as the mean flow velocity downstream of the grids were not homogeneous in space.

#### **The hot**

When the wire is placed in the liquid flow, then heat transfer takes place to liquid from the wire. You are undoubtedly familiar with the classic wind-speed anemometer with three cups rotating as the wind blows, while a tachometer reports the revolutions rate Figure 1.

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