DEVELOPMENT OF AN ANEMOMETER FOR MEASURING AIR FLOW VELOCITY IN AGRICULTURE

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Abstract

This paper presents the construction and calibration steps of a hot-wire airflow sensor (anemometer) using an incandescent filament as the sensor. Due to the properties of the filament, its high melting point and the materials from which it is made, the light bulb filament allows the filament to heat up when electric current is passed through it without the filament oxidising rapidly. The paper also describes the aerodynamic calibration of the filament sensor using a calibrated anemometer (testo 405i) as a reference point. The experimental results following the calibration process confirm that the electrical resistance of a conductor can be successfully used to measure airflow.

Key words: anemometer, hot wire, wind sensor, light bulb filament