CAPACITIVE SMART WIND SENSOR

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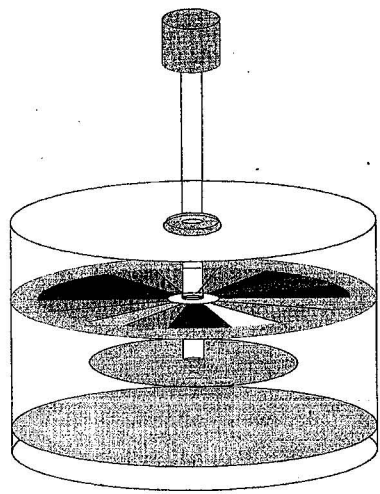
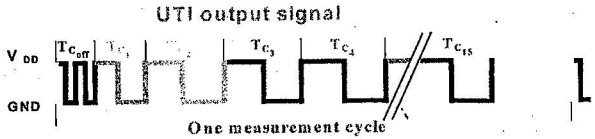
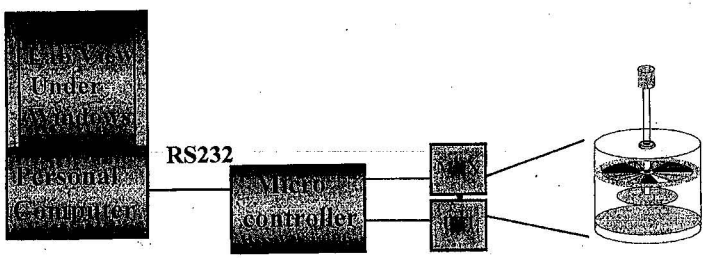
Measurement principle

The Capacitive Smart Wind Sensor uses a mechanical spring system to convert wind speed and wind direction to a two-dimensional displacement This displacement is measured with a grounded electrode which moves between two fixed segmented electrodes of a capacitive sensor.

Capacitive sensors are sensitive to the conductive effects of contamination and condensed water. Therefore in the capacitive wind sensor the sensitive part is assembled in a hermetical sealed casing. The casing makes part of a mechanical spring structure, which converters the wind speed and direction to an electrode displacement inside the casing. One of the fixed electrodes of the sensor is divided into 16 segments. Depending on the wind force and direction the corresponding 16 capacitors have certain values, which are measured with a universal sensor interface (UTI) system.
The period-modulated output signal of the UTI is read-out by the microcontroller. The micro-controller is sampling the time periods and performs all calculations, including those for auto-calibration.







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