Design of Measurement Systems Wind Speed and Wind Direction on Buoy Weather To Build Maritime Weather Predictor

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Abstract
The main factor to determine existing weather conditions in the maritime area of wind speed and wind direction. Because of these factors affect the appropriateness of an activity to be conducted in territorial waters. If the higher speed of the wind the higher the risk of accidents that will be experienced. At this time measurement system design wind speed and wind direction have been integrated with the Buoy, so the instrument can measure if placed waters. This measurement system using a microcontroller ATMega 8535 as a center for processing signals obtained from the measured variables. In the conduct of the wind speed data retrieval is done by comparing the anemometer with a tool that has been designed. As for the direction of the wind using optocoupler 8 pieces, each optocoupler is representing one of the wind direction and placement of each optocoupler is referring to the compass. From the test results that have been conducted an average wind speed that is read by a device that is equal to 3.84 m / s of data collection as much as 18 times. Wind speed sensor also has a measurement uncertainty of the values of 0.0363 m / s. As for the test results have shown the source of the wind direction with the right wind direction which each optocoupler 45° of the circle.

Keyword: Buoy Weather, Measurement System, Wind Speed and Direction, Speed, Optocoupler