DISTANCE MEASURING TOOL DESIGN USING ULTRASONIC SENSOR BASED SUPPORT SYSTEM FOR AUTOPILOT ARDUINO PROTOTYPE CLASS SHIP SIGMA

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Abstract

SIGMA class prototype battleship extended size 300 x 37 cm designed to be able to maneuver properly. Capabilities supported by the system instruments, sensor, and control system. In this study designed three ultrasonic distance sensor mounted on a boat on the left, right, and foward functios to support the anti collision control system. Signal conditioning system of the proximity sensor using aeduino. In this thesis, the ultrasonic sensor was tested by two methods. First off water testing, where each sensor has a good reading accuracy with an average error of -0,4% smallest. The second test performed on water at an angle sensor readings of 180 °, 150 °, 120 °,and 90 °. The best angle for the sensor readings of 150 °, with an average error of -0,08%. Characteristicsof the beam width and shaped like a cone of the sensor affects the sensor readings.

Keywords : *SIGMA Class Warship, Ultrasonic Sensors, Beam Characteristics*