

ABSTRACT

Technological development makes human to think faster and produce progress in all areas. One of them is making progress as a substitute for the human machine to manufacture a robot that can be used to help humans. Robot is a mechanical device that can perform physical tasks, using either human supervision and control, or using a program that has already been set in such a way. Robots that have various shapes and technologies contonya robot hand controlled by a control system in the form of software.

Robot used this time is robot hand with the AX-type servo motor 12. The form and manner of motion of the robot is to imitate the human hand. This robot offers convenience for people to lift objects that are nearby. In the robot hand uses servo motor type AX-12 as a driving force. This robot was designed with seven motor with five degrees of freedom of driving. Servo motor is controlled with a PC that is assisted by a controller block that uses AVR microcontroller ATmega 8535 and half duplex circuit. So that this robot can move with greater ease and flexibility.

Testing the robot hand movement using the software on a PC built with VB.Net. then the data is processed in such a manner and sent to the controller block. From block data controller will be sent to the AX-12 servo motor so the motor will move. Instructions that are used to move the robot hand with the AX-12 servo motor is write, write reset and sync.

Keywords: robot, ATmega 8535 AVR microcontroller, servo motors AX-12, PC, half duplex, controllers, VB.Net