

ABSTRACT

In today's era, technology is increasingly developing rapidly. Lots of the findings of the researchers and scientists worldwide even easier and beneficial to humans. The rapid development of technology is military technology, one of which is the operation of the UGV (Unmanned Ground Vehicle). UGV is a mechanical device that can be operated manually or automatically above ground level to carry something without direct human contact. Some jobs that involve observation or supervision in difficult or dangerous areas, this UGV system can make it easier because the UGV can be controlled remotely.

In this study, the author uses an electric car as a prototype. The authors have designed a braking control system based electric car remote control. The braking the electric car will be done remotely. At the time wanted to do the braking, the user will press the remote control and the remote-control data will be processed using PID control to regulate the movement of the linear actuator. Linear movement of the actuator will slow the pace of electric cars, there will be braking.

The remote control-based electric car braking system with the PID method has values $K_p = 0.97$, $K_i = 1$, $K_d = 0.5$. The percentage difference in stopping distance between electric car braking based on remote control with PID control method and electric car braking with human foot response (manual) is 65%.

Keywords: *remote control, braking system, PID control, electrical vehicle.*