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Analysis Of Response Speed Settings Flame Sensor Fire Fighting Robots Using Pid

Analisa Pengaturan Kecepatan Respon Flame Sensor Robot Pemadam Api Menggunakan Pid

Ridho Hafied Yunanto Ponorogo Muhammadiyah University
Desriyanti Desriyanti Ponorogo Muhammadiyah University
Rhesma Intan Vidyastari Ponorogo Muhammadiyah University

The fire fighting robot is designed to automatically maneuver through a room where there are hotspots and is able to extinguish the fire. In order to complete the task of extinguishing fire the robot is also designed to use a fire sensor. The robot uses a flame sensor to detect the light generated by the fire source. The Ercomp fire fighting robot, University of Muhammadiyah Ponorogo uses a 28-bit flame sensor with a detection range of 360o. The robot is set using the KP and KD control system with the parameter values used are KP = 9 and KD = 10. In detecting hotspots, the robot must be fast when tracing hotspots. In this study, the application of PID control is expected to produce the best comparison value of PD, PI and PID values to be implemented on legged fire fighting robots. This study is to determine the value of the control tested using the trial and error method and PID tuner. The best results from the test are PID control with Kp = 90, Ki = 20 and Kd = 10, it can be seen from the response parameters that the system has no overshoot, a rise time of 0.59 seconds, and a settling time of 1.15 seconds.

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