

DESIGN AND IMPLEMENTATION OF FUEL FLOW CONTROL UNIT FOR AERO ENGINE

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ABSTRACT

High speed aircrafts are manufactured for aviation sector, which requires well-equipped and high performance engine, hence various parameters of the engine has to be checked before installing it into an aircraft's. In my project titled "Design and implementation of fuel flow control unit for aero engine" mainly concentrating on the engine parameters such as temperature, pressure, speed and fuel level. If temperature exceeds the threshold limit, it will result in melting up of the engine blades, it may lead engine failure. Hence constant monitoring of this parameter should be done and also deviation from the permissible limit has to be indicated. Aero engine is a typical nonlinear system, and the main fuel control system is the core of the engine control system. Hence we propose this project wherein the fuel control is obtained by controlling the revolution per minute (RPM) of the engine taking into consideration the parameters temperature, pressure and speed. Basically higher rpm means more fuel and hence the control of the rpm should be compatible with the fuel intake. The decision is taken based on the feedback obtained by the gas turbine engine.

KEYWORDS: Fuel Flow Control, FPGA, Stepper Motor, PID, PWM



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