RANCANG BANGUN PENANGGULANGAN KEBOCORAN GAS LPG BERBASIS IoT

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ABSTRACT

LPG (Liquefied Petroleum Gas) plays a vital role in people's lives both in the household and in the industry. LPG also has an affordable price and the way it is used easier. However, LPG gas also negatively impacts human health and even cause considerable losses if not used carefully, such as leaks that can cause fires. In general, gas leaks occur due to problems with regulators and other supporting tools. In minimizing the fires' occurrence, it is designed to counteract LPG gas leaks based on the Internet of Things (IoT) to facilitate early management in case of LPG leaks. The system uses NodeMCU ESP 8266 to process MQ-6 sensor values. The motor driver serves as the driver to open the regulator on the gas cylinder automatically. This system is designed to warn LPG leaks using warning through Blynk application which is forwarded to the user in the form of notifications. The test results showed that the LPG leak management system can run well according to the scenario determined by sensor testing. The average value is 2.34%, accuracy value is 90%, the precision value is 81%, and recall value is 100%. The testing scenario for the LPG gas leak management system and measurement of MQ-6 sensor detection distance shows that the farther the source of the gas leak with the MQ-6 sensor, the lower the gas leakage level. The highest delay is up to 2 seconds at a distance of 40 cm.

Keywords: *Internet of Things, LPG Leaks, MQ-6, NodeMCU ESP8266, Blynk*