

GENSET PANEL DESIGN WITH UNDERVOLTAGE AND OVERVOLTAGE PROTECTION SYSTEM AND MONITORING BASED ON NODEMCU ESP 8266 MICROCONTROLLER

Ziyan Izzulhaq

*Electrical Engineering Study Program, Faculty of Science & Technology
University of Technology Yogyakarta
Jl. Ringroad Utara Jombor Sleman Yogyakarta
E-mail : ziyan.izzulhaq@gmail.com*

ABSTRACT

A protective device is a tool that functions to protect electronic equipment from interference so as to avoid fatal damage. The faster the reaction of a protective device installed in a system, the less the effect of interference on the device. On the generator generator panel, in general, there is only a simple panel containing an analog voltmeter as a voltage indicator and an MCB (Miniature Circuit Breaker) installed on the body cover of the generator, where if there is a disturbance in the installation either caused by a short circuit or overload, the MCB will cut off electricity and cannot protect against voltage drop or over voltage. So in this study the researchers developed a panel that can protect against under voltage and over voltage disturbances and can also be monitored remotely via a smartphone. This system uses an ESP8266 microcontroller and also a PZEM-004T sensor, this system can also be monitored via the blynk application on a smartphone. Based on the test results, this panel can work normally with a predetermined voltage range, namely a voltage of 220 to 240 V. While a voltage of 200 V and below the panel is protected because there is under voltage, and at a voltage value of 240 V and above, the panel is protected because there is over voltage. To monitor remotely using the Blynk ESP8266 microcontroller application in the panel, it must be connected to the internet. Based on the tests that have been carried out several times, the generator panel test results obtained a success rate of 100%.

Keywords : under voltage, over voltage, panel, PZEM-004T