

DESIGN AND BUILD ATS (AUTOMATIC TRANSFER SWITCH) BETWEEN PLN NETWORKS AND PLTS

Sebastianus Rifaldo Oro

*Program Studi Teknik Elektro, Fakultas Sains & Teknologi
Universitas Teknologi Yogyakarta
Jl. Ringroad Utara Jombor Sleman Yogyakarta
E-mail : rhyfaldooro25@gmail.com*

ABSTRACT

Many sectors require continuous electrical energy, but the electricity source from PLN is not always able to be used because there will be total blackouts due to disturbances. The manual power transfer process can be time consuming. Therefore, ATS (Automatic Transfer Switch) is needed for automatic transfer of PLN when the power goes out with PLTS as back up. ATS functions to give orders to PLTS to start automatically. However, factory-made PLC-based ATS and PLTS have a high price. So that the design of the ATS (Automatic Transfer Switch) and PLTS monitoring system module was made as an IoT (Internet of Things)-based automatic power supply switch at an affordable price and the same function as the factory-made ATS. ATS design components include magnetic contactor, relay, TDR, MCB 16A, switch, 20WP solar panel, 1000Watt inverter, solar charger, 8Ah 12V battery and LVD. Based on the test results, if the PLN supply goes out, the voltage supply from the PLTS automatically takes over turning on the load and if the PLN voltage supply returns, the voltage will automatically be transferred back to the PLN network. The battery is limited to a maximum capacity of 11V and the rest is used as a backup so that the battery can be used for a long time. The battery should not be used until the charge runs out, so a battery charger is needed to recharge the battery. Battery charging is done automatically from PLTS or from PLN when there is no supply from PLTS.

Keywords : *ATS (Automatic Transfer Switch), PLTS, Automatic Switching, Electricity*