



HYBRID POWER BACKUP

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1.0 Executive Summary

This report is written to give an overview of the design process of the Solar and ESCOM power hybrid system.

The hybrid power system is designed in a such a way that it will be selecting the source of the power, either ESCOM or solar depending on the status of the power.

Hybrid power system will help in increasing the up time of the Electronic Data System. There will be much data collection using the system that will help the workers to have accurate reports

2.0 Introduction

There is an ESCOM power problems face at health centers in southern region, it is reported that these sites face much blackouts from ESCOM power line. In which the system is not being effectively utilized. A solution was needed to address the problem.

It has been agreed to produce a hybrid system which will help to reduce down time of the system.

3.0 Hybrid System

Hybrid power system utilizes two or more power sources powering one gadget or system. In this case we are dealing with ESCOM power source and Solar power System which is supposed to power Electronic Data system (EDS) of a Health center.

It will have two battery banks which are electrically isolated. One bank will be charged by solar power and the other will be charged by ESCOM power. All battery banks are designed to run on 24v system. The EDS will always run from a single battery bank at a time this will reduce down time of the system hence increase productivity of the health Centers.

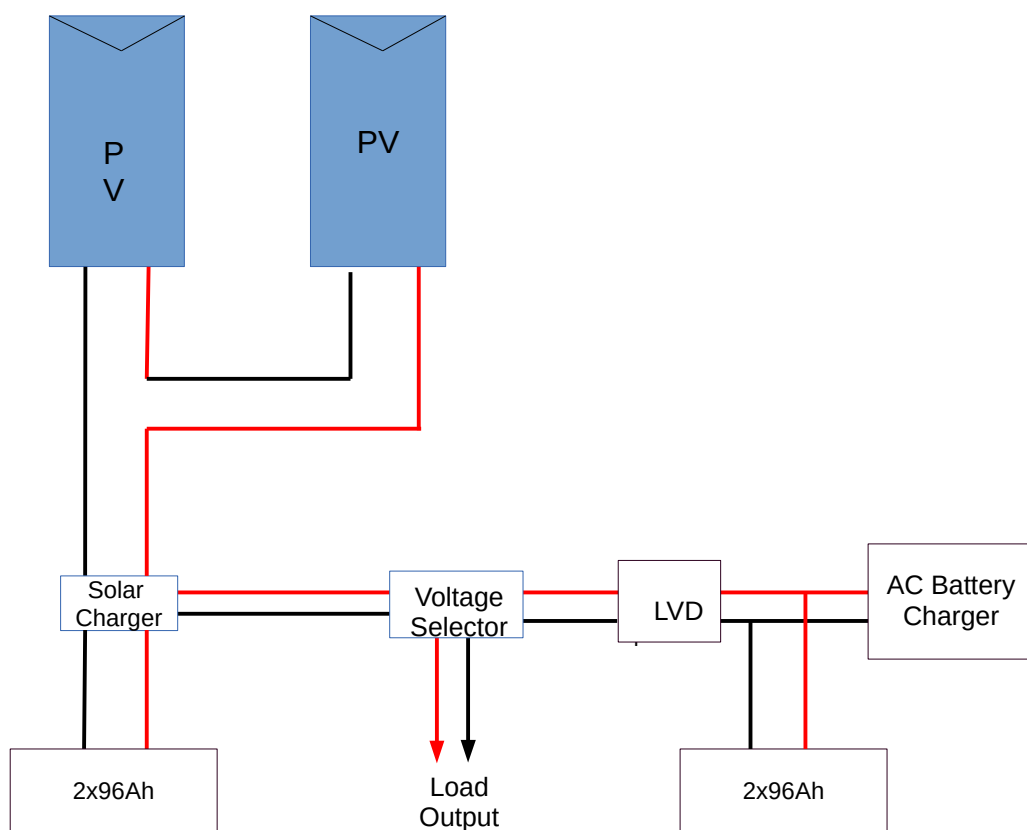


Fig 1

4.0 Voltage selector

The voltage selector is used to switch between the Solar power and ESCOM power supply. It really uses an analogy system. The main active component in the selector is the relay, which has Normally open (NO) and Normally Closed terminal (NC). When there is power from ESCOM the relay is energized and the system receives power. When power is lost on the ESCOM side the system will

continue running the batteries charged by ESCOM power, and if they are drained then the voltage selector switches to the solar power.

When ESCOM power is back and batteries are charged the selector switches back to ESCOM power.

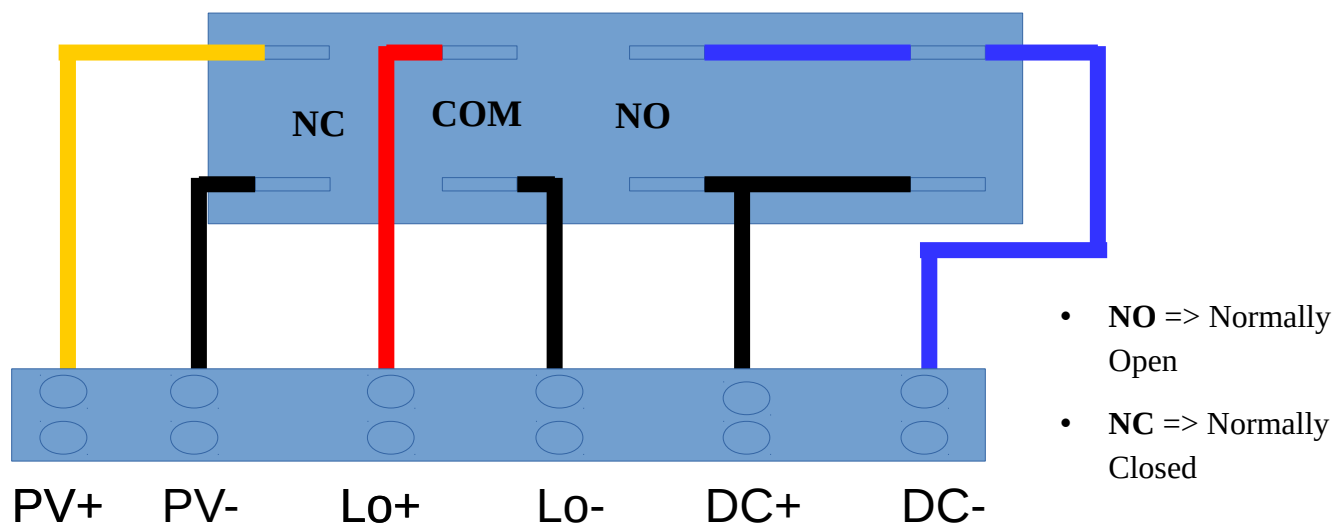


Fig 2

5.0 Conclusion

Hybrid power system will help in increasing the up time of the Electronic Data System. There will be much data collection using the system that will help the workers to have accurate reports. The hybrid system will improve life span of the batteries.