UD Energy Systems Pvt. Ltd.

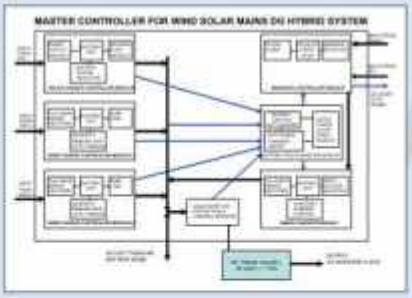
AN ISO 9001-2000 COMPANY.

MASTER CONTROLLER

The master controller is a composite wind, solar, battery, diesel & AC mains control system all in one. It controls all the power inputs by a logic based microprocessor with the sole purpose of keeping the battery in charged and healthy condition prioratising wind & solar power over diesel & mains power & delivering power of regulated voltage to the telecom equipment or load. It can intelligently make up for the energy shortage from wind & solar utilising mains or diesel pre programmed short durations.

Ultimately it's speciality lies in making the system run only on renewable energy for most of the year and calling for conventional energy for a small part of the year and also ensure uninterrupted power supply and the same time reducing diesel / power consumption by around 80%.

Scrolling digital display showing voltage current, Whr for Solar, wind, mains & Load



MASTER CONTROLLER

All system control functions are performed by UDE System Master Controller. The MC is logic based, with numerous features designed specially for reliable operation in remote locations with hostile climates.

The system control algorithm which includes all the considerations necessary to optimize and balance system operation, and includes factors relating battery voltage and load level to state of charge, diesel start and stop command sequences, and numerous others. The controller manages not only the day-to-day operation of the system, but enforces a long-term protocol that minimizes fuel consumption and maintenance requirements, and maximizes system efficiency and component lifetimes.

The MC plays a vital role in optimizing systems operation. Battery state of charge (SOC) decreases during power loading and is restored each day to an extent dependent on the power generations by Wind & Solar. When SOC drops to pre determined level the diesel-driven alternator/mains charger starts, charging the battery through a communications-grade battery charger. It recharges the battery to predetermined SOC in a very minimum possible time period depending on external load, a process normally requiring about 4 hours of mains/DG charger operation. The diesel/Mains charger then shuts down automatically and the renewable energy resumes the charge function.

Micro Controller

SPECIFICATION

Solar Charge Controller

Charger Capacity	1 to 6kwp
Input voltage	48 to 120 volts DC
Output voltage	63 volts DC (max)
Control	Solid State
Switch	MOSFET
Control of Charging Current	2 steps
Protections	Over Charge, Short Circuit & Over Current

Wind Controller

Charger Capacity	
Input voltage AC	48 to 60 volts 3 phase
Output voltage	64 volts DC (max)
Over Speed Control	Auto Magnetic Brake
Protections	Over Charge, Short Circuit & Over Current..

Rapid Mains Charger

Charger Capacity	50 to 300 amps DC
Mode	Constant Current
Input voltage	190 to 260 volts AC
Output voltage	62 volts DC (max)/ presettable
Protections	Short Circuit & Over Current.

Dump Load

The Master controller shall try to use the available power resources in the following sequence of priority.

A) SOLAR .....Maximum
B) WIND.....Maximum
C) BATTERY .....Mid Level Band
D) GRID .....Less
E) .DIESEL.....Least

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