Solar & Wind Hybrid Power Generation Training System
Nvis 436SW

Hybrid Renewable Energy Systems are becoming popular as stand-alone power systems for providing electricity in remote & urban areas due to advances in renewable energy technologies and subsequent rise in prices of petroleum products. A hybrid energy system usually consists of two or more renewable energy sources used together to provide increased system efficiency as well as greater balance in energy supply.

Solar and Wind hybrid power plant is an integrated hybrid energy solution capable of harnessing both the sunlight on-site and wind energy available at low altitudes in urban and rural environment.

Nvis has designed 436SW Solar & Wind Hybrid Power Generation Training System to explain fundamentals of power generation and storage of Solar and Wind energy. This system includes controller-based digital measuring instruments for accurate results and protection devices for safety. It also includes an inbuilt Inverter which can be operated with both mains and through batteries. Users can easily understand how to configure Hybrid Solar & Wind system to get the maximum electrical energy for domestic and industrial use.

Features

- A Hybrid system for power generation and learning concepts.
- Equipped with Hybrid Solar & Wind charge controller with overload and low battery protection.
- Designed considering all safety measures.
- Specially designed patch cords for extra safety .
- Highly accurate microcontroller-based measuring instruments.
- Equipped with multifunction meter to analyze output parameters.
- System is flexible to operate on mains as well as inverter mode.
- Solar technology learning software (optional)

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Technical Specifications

Solar Panel

Power Rating	: 1KW
Cell type	: Polycrystalline

Solar panel structure

Material	: GI
Assembly	: Detachable and easy to install

Solar battery : 4nos.

Capacity	: 100Ah
Type	: C10

Wind Turbine

Wind Turbine	: 300 watt(Design specification)
Charging Current	: 0.3 - 0.4A
Generator voltage	: 24V approx.
Actual Output Power	: 10W - 15W.
Blades	: 3nos.
Rotor	: Three FRP blades along with standard steel nut-bolts
Structure	: 5ft, with floor stand

Hybrid charge controller

Quantity	: 1no.
Voltage	: 24V
Protection	: Overload and low-battery protection
Terminals	: BS10 type for safety purpose

Hybrid Inverter

Capacity	: 1000VA
Input Voltage	: 190~260V
Output voltage	: 210~245V (inverter mode)
Output frequency	: 50Hz ±0.1Hz (inverter mode)
Output waveform	: Modified sine wave (inverter mode)
Efficiency at full load	: >80%
Protection	: Overload & short circuit
Technology	: Microcontroller based design

Digital meters

DC Voltmeter	: 300V
DC Ammeter	: 40A
DC Ammeter	: 10A

AC multifunction meter

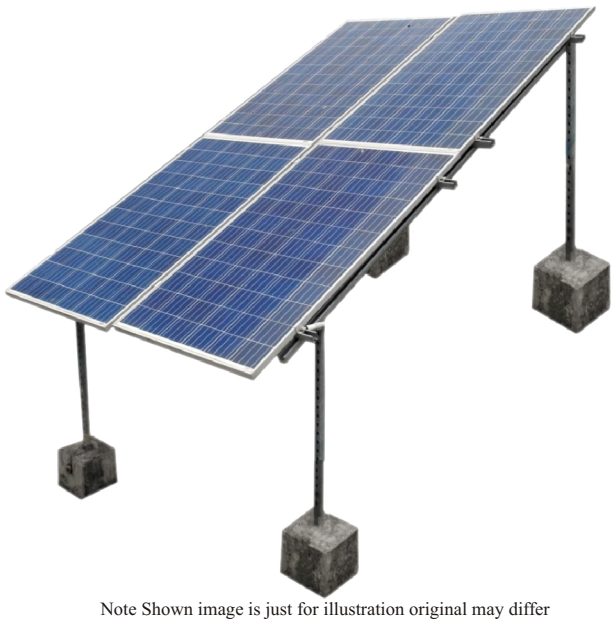
Measurements	: AC voltage, AC current, Frequency, Power, kWH

Optional accessories: AC/DC Load (Nvis 726)

Blower for wind turbine (Nvis Bl01)

Scope of Learning

- Study of hybrid charge controller.
- Analysis of the effect of dust on solar PV module.
- Study of safety and precaution for Solar system and Wind turbine installation.
- Study of solar & wind (hybrid) power generation.



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Subject to change - Version 2.0

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