



A grid-connected system allows people to power their home or business with renewable energy. Any excess electricity produced is fed back into the grid.

Power providers (i.e. electricity boards) in most states allow net metering, an arrangement where the excess electricity generated by grid-connected renewable energy systems "turns back" your electricity meter as it is fed back into the grid. If you use more electricity than your system feeds into the grid during a given month, you pay your power provider only for the difference between what you used and what you produced.

55916 Grid-Tied Solar Power Generation Training System is designed for training and understanding of complete technology of solar grid tied system. This system not only helps in developing the basic understanding of solar power generation but also helps user to understand the system designing and system installation. It demonstrates the reverse metering concepts along with fundamentals of Solar PV based power generation.

Features

- Built in DC/AC voltmeters and ammeters to read the voltage and current of Solar panel and system.
- Bidirectional energy meter demonstration.
- Multifunction meter to observe voltage, current, power, frequency, power factor and energy.

Object

1. To study grid tied solar power generation and its application.
2. To study site assessment and planning before solar PV installation.
3. Understand IV characteristics of solar panel.
4. Understand the reverse metering technique.
5. Understand the effect of tracking on solar power generation system.
6. Understand effect of shadow on solar PV system.

Technical Specifications

Solar panel

Power Rating : 1KW
Cell type : Polycrystalline
Solar panel structure
Material : GI
Assembly : Detachable and easy to install
Single phase grid tied inverter
Rated output power : 1KW
Max DC input voltage : 450V

Note: Specifications are subject to change.

Max DC input current	:	10A
MPPT operation range	:	50V-400V
Rating grid voltage	:	230Vac
Grid voltage range	:	180Vac-230Vac
Grid rating output current	:	4.3A
Rating grid frequency	:	50/60Hz
Topology	:	Transformer less
Efficiency	:	96%
Protection	:	DC reverse polarity, AC short circuit, Islanding, temperature, etc.

Digital meters

DC voltmeter	:	300V
DC ammeter	:	20A
AC voltmeter	:	450V
AC ammeter	:	10A
Bidirectional energy meter	:	1no.
Multifunction meter	:	1no.

Protection devices

DCDB (DC distribution)	:	1no.
ACDB (AC distribution)	:	1no.
Terminals	:	BS10 type for safety purpose
Load	:	1.2KW, resistive load (optional)
Rheostat	:	50W, 15A x 1 no. (optional)

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