

Inverter

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Definition

- A Solar Inverter is a device that converts the direct current (DC) from the solar panels into alternating current (AC) which is used for both domestic and commercial purposes.
- A power inverter, or inverter, is a Electrical/Electronic device or circuitry that changes direct current (DC) to alternating current (AC).
- Unit : W or kW

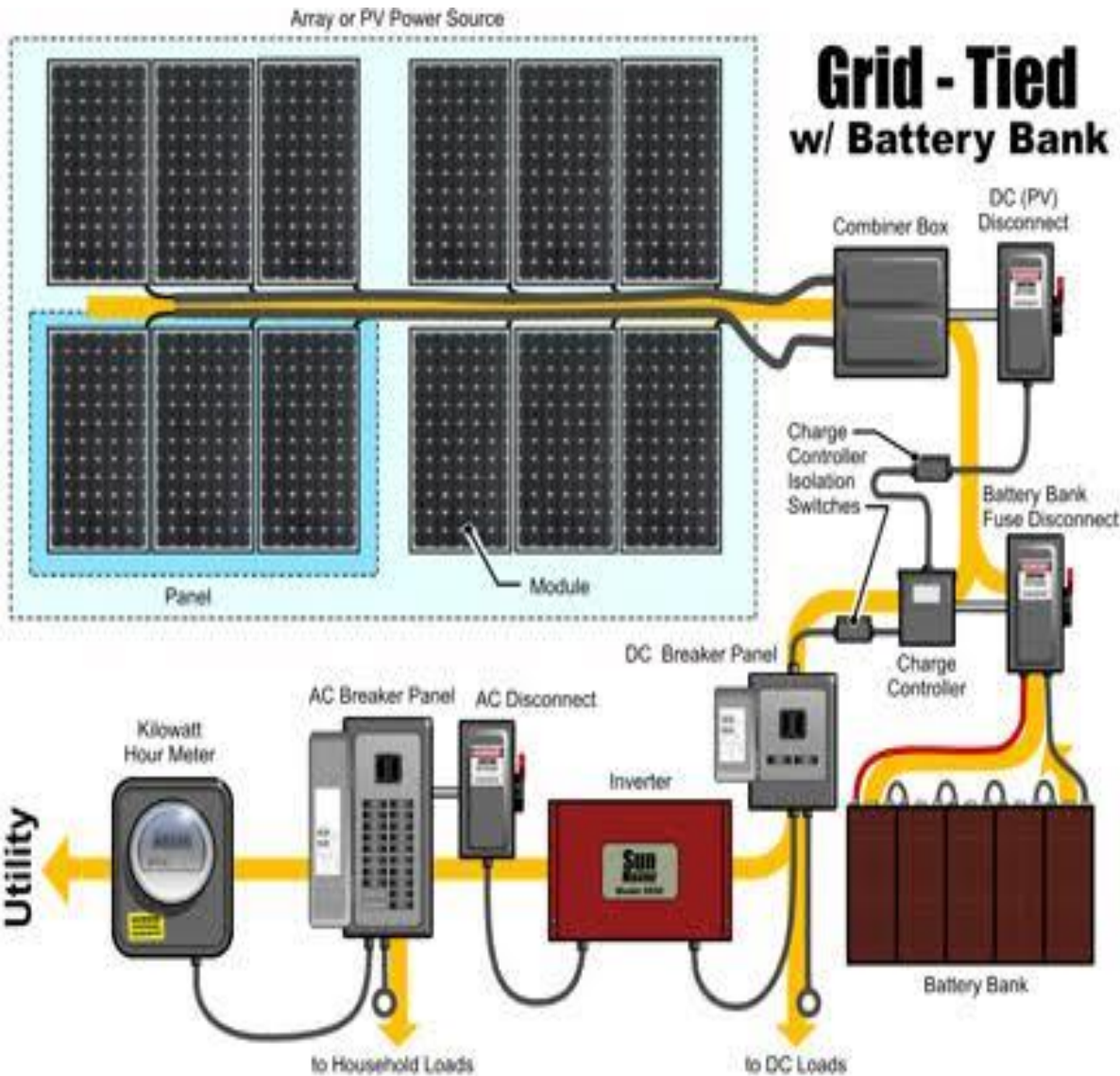
Function

- The basic function of an inverter is to convert the direct current (DC) power that solar panels create to alternating current (AC) power that is usable in homes and businesses or fed directly into the grid in front-of-the-meter projects (utility-scale solar arrays).
- There are three types of inverters that are currently available to you for your solar energy system: string (also known as centralized) inverters, power optimizer systems (also known as string inverters + power optimizers), and microinverters.

Photographs



Photographs



Advantages

Advantages:

- Can be an energy efficient way of changing voltage.
- Can step voltage up or down.
- Can provide electrical isolation between input and output.
- Can provide an AC voltage from a DC source.
- Can smooth out random variations in input voltage.
- Can be used to produce 50 Hz from a 60 Hz supply or vice versa.
- Disadvantages:
 - Require rectification and smoothing on the output if the output is to be DC.
 - May produce radio interference or audible tones.
 - May produce AC at a non-specific frequency.
 - May produce excess output voltage under no load or very light load conditions.

Applications

- Run the Electrical AC appliances
- Charge the Battery
- Home applications
- Industry applications
- Power transmission to the Grid