

Difference Between Inverter and UPS

Murickens group presents the difference between UPS and inverters. Inverter and Ups are electrical device. These devices provide backup supply to the electrical system. Inverters simply convert battery DC current to AC current and supply. UPS is a device that provide Uninterruptable Power Supply. ie, in the case of UPS Power Back up for Short Duration while in inverter the power back up duration is long.

Descriptions	UPS	Inverter
Definition	UPS means Uninterruptable Power Supply .	Inverter is a device which converts DC electricity to AC
Function	It is an electric circuit (device) which instantly backs up power supply for a gadget. The gadgets works continues to work on smoothly and there is no damage to it.	Inverter consist circuitry which converts AC to DC and stores in the battery. When power supply goes off, that DC power is converted back to AC and is transmitted to the respective electronic gadget.
Principles	It first converts AC to DC Power to charge the battery than Convert DC Power to AC Power (Inverter) and this AC power is supplied to Load. However, UPS monitors the input voltage level and processes it in terms of voltage regulations. UPS= Battery charger + Inverter	Inverter converts DC power (stored in its battery) to AC Power supplied to the devices. Normally AC Power charges the battery .It uses relays and sensors to detect when to use DC power or AC Power, for DC power.
Back up Time	Power Back up for Short Duration	Power Back up for Long Duration
Types	(a) Offline UPS, (b) Online UPS and (c) Line-interactive UPS.	(a) Square Wave, (b) Quasi Wave, (c) Sine Wave
Main Part	Rectifier/charger, Inverter ,controller	Inverter and controller.
Switch over Time	3 to 8 milliseconds.	500 milliseconds.
Voltage Fluctuations	While voltage fluctuations in input supply can be adjusted by the UPS, the output voltages are desired to be as smooth as possible. In smoothing the voltage outputs,	Inverter does not give protection against voltage fluctuations

	UPS are considered better as compared to inverter.	
Circuitry Sophistication	UPS circuitry is far more sophisticated than that of inverter's	Inverter has Simple circuit then UPS
Pricing	UPS more expensive than an inverter.	Inverter is less expensive than UPS
Application	UPS are used for electronics Application such as computer, servers, Network Switches, workstations, Medical Equipment, Processing Equipment which perform critical task and cannot tolerate delays in power supply.	Inverters are preferred more for general electric Application which working does not affected by extended delays in power supply.
Protection	UPS provide protection against voltage spikes, voltage drops, instability of the main frequency and harmonic distortions	Inverter does not provide protection against Line abnormalities.
Battery	Used sealed maintenance free (SMF) battery	Used flat plate or tubular battery
Battery Maintenance	Do not require any maintenance.	Requires continuous maintenance, needs to fill the distilled water toppings at regular intervals of time
Energy Consumption	More due to constant battery Charging	Less

During the power cut time, the inverter gets the power supply from the battery and convert it DC to AC Power and gives the power supply to the electrical devices.

In UPS, switching time from power cut to battery power is vey less. ie, 3 to 8 milliseconds.

hence important and critical equipment like computer, desktop, Medical Instruments is not switch off and can't lose data.