ZENVO

Utility

SOLAR POWER

Line Interactive UPS

APPLICATIONS

- Workstations / Servers
- Networking Equipment
- Telecom
- Color Labs
- ATM Machines / POS Systems
- Gold Analyzer Machines
- Security Systems
- Textile Industry

SAVES APPROXIMATELY 35% - 40%

of electricity bills using Intelligent Electronic Grid Compensation technique

Works like an Online UPS, without Double Conversion Losses

Utility Series

7.5KVA - 100KVA

3 Phase / 3 Phase

Rugged transformer

Solar Compatible

Wide Input Voltage Window

Reduction in Electricity Bill

Zero Switch Over Time

What is Line-Interactive Topology ?

The line-interactive topology, the inverter is always connected to the output of the UPS. Operating the inverter in reverse during times when the AC power is normal provides battery charging. When the input power fails, the transfer switch opens and power flows from the battery to the UPS output. With the inverter always on and connected to the output, this design provides additional filtering for incoming power compared to the standby topology.

In addition, the line-interactive topology also incorporates a multi-tap transformer to buck (reduce) or boost (increase) the voltage, thereby providing some degree of voltage regulation (also known as “Automatic Voltage Regulation”) as the input voltage varies. Voltage regulation is an important feature when low voltage conditions exist, otherwise the UPS would transfer to battery power and frequent battery usage can cause premature battery failure. The buck or boost range is typically limited to 10% and while some models will provide both buck and boost, other less expensive models will just provide boost capability.

The inverter in this topology can also be designed such that its failure will still permit power flow from the AC input to the output, thereby eliminating the potential of single point failure by providing two independent power paths.

High efficiency (typically 90%- 96%), small size, economic price point coupled with the ability to correct low or high line voltage conditions make this the dominant type of UPS.

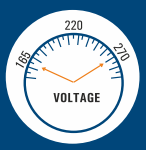
UTILITY SERIES

The Utility Series is Line - interactive UPS, which is affordable & protects critical application from downtime, data loss and corruption caused by power fluctuations and long term outages.
It has a built-in transformer and mains voltage conditioning, ensuring safety of load and reducing the electricity bill.
Equipped for running all types of load at the same time, thus, reducing the maintenance cost.

Salient Features

Galvanic Isolation Transformer

Advantage of isolation transformers is that they reduce power surges. Electrical equipment can run smoothly without the risk of power surges because the DC signals from a power source are isolated. This means that equipment can function at a high level even if there is a power malfunction.



Wide Input Voltage Window

By adapting to wide range of input voltages, the Utility series avoid battery usage during minor power fluctuation, saving its capacity for times when utility power is completely lost.

Solar Compatible

Being solar compatible, reduces electricity usages as well as increases battery life by running on solar in day time.

Reduction in Electricity Bill

Due to working on mains conditioning mode and absence of double conversion.

Zero Switch Over Time

Offers zero switch-over time to switch from mains supply to battery derived supply and vice-versa, by monitoring mains power supply failure.

Advantages of Line-Interactive UPS

The main advantage of a Line-Interactive UPS is its ability to provide an "electrical firewall" between the incoming utility power and sensitive electronic equipment.
Among other advantages, the cost is relatively low, and it offers an energy efficiency of 96-98%. Line-interactive UPS also offers high reliability because they have fewer components.

S.No.	Features	ZENVO Utility UPS	Normal Inverter
1	In-built AVR 5KVA to 7KVA & 10KVA and above optional	✓	✗
2	Zero Transfer time	✓	✗
3	Solar Compatibility	✓	✗
4	Reduction in Electricity bill	✓	✗
5	Galvanic Isolation Transformer	✓	✓
6	Wide Input Voltage Window	✓	✓
7	Reduction in Maintenance cost	✓	✗
8	Transformer Over Temperature Control	✓	✗
9	Compact Footprint	✓	✗

Technical Specification

RATING		7.5KVA - 100KVA
DC BUS		120VDC - 360 VDC
INPUT		
Input Voltage		400V AC 3 Ø & N
Input Voltage Window		350V - 450V
Input Frequency		50Hz ± 6%
OUTPUT		
On Mains Mode		350V - 450V
Transfer time (Battery to Mains and Mains to Battery)		Near Zero (0 - 2msec)
Battery to Mains and Mains to Battery		
On Inverter Mode		400V AC Ø-Ø / 230V Ø- N
Regulation	Balanced Load	(±) 1%
	Unbalanced Load	(±) 1%
Frequency		50 Hz ± 0.1Hz
Waveform		True Sinewave
Total Harmonic Distortion	Linear Load	< 2%
	Non Linear Load	< 6%
Over Load Capacity	100%	Continuous
	125%	1 Minute
	150%	5 Seconds
Inverter Type		IGBT based PWM with instantaneous Sinewave Control
Transient Response		Remains within ± 5% & recover to 100% within one cycle
Crest Factor		3:1
Mode of Operation		Designed for Short backup
Unbalanced Load Phase Shift		120º ± 0.5º
Manual Bypass		Provided
EFFICIENCY		
On Mains Mode		>98 %
Inverter Efficiency		>92%
PROTECTION		
Converter Protection		Advanced Electronic Protection for device safety backed up with MCB's/ MCCBs & fast acting fuses.Soft start for 0-20 seconds Power walk-in
Inverter Protection		Advanced Electronic Protection for device safety backed up with MCB's/ MCCBs & fast acting fuses, high speed pulse by pulse electronic device protection over voltage / under voltage protection, Electronic over current trip
ALARMS		Input / Low / Fail / Output Overload / Over Temperature / Battery Low
LED Indications (4 LED with multi function)		Individual Phase Indication R-Y-B (Mains on / UPS on) / Battery Low / Overload / UPS Trip
User Friendly LCD Display showing the following parameters		Input Voltage Individual I/P Phase Voltage ; Output Voltage Individual Phase O/P Voltage Load Current Individual current ; Battery Voltage
PROTECTIONS		Input MCB / Static MCB; Battery MCB; Input Under / Over Voltage; Battery Low; Battery Charging Current Limit / Output Over Voltage / Output Overload / Output Short Circuit / Inverter Over Tempreature
BATTERY		
Battery Type		SMF / TUBULAR
RATING		7.5KVA - 100KVA
Voltage		120VDC - 360 VDC
Battery Low advance warning at		11V / Battery
Battery Low cut off at		10.5V / Battery
Charging Current Standard		0 - 10A
ENVIRONMENTAL		
Acoustic Noise level		<60db @ 1.5 meter
Ambient Temperature		0 to 40 Deg C
Storage Temperature		-10 to 70 Deg C
Humidity		Up to 95% RH Non condensing
Altitude		< 3000 Feet above sea level (without derating)
Extreme Climatic conditions		AC Environment is required if the temperature goes beyond the normal operating
PHYSICAL		
Enclosure Protection Grade		IP - 20
Cooling		Forced Air
Cable Entry		Front side bottom
Testing Standard		As per IEC 62040 - 3

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