

# ***NANTECH POWER SYSTEMS PVT LTD***

**An ISO 9001 : 2008 Certified Company**



*Changing the shape of power*



## Ultimate Power Solutions

## TOTAL OPTIMAL POWER QUALITY

Energy Management & Solutions



## COMPANY PROFILE

NANTECH POWER SYSTEMS is an UPS & stabilizer manufacturing company with a mission to offer the customer quality, cost effective product and time bound solutions meeting their short term and long term power requirements.

Nantech Power Systems is promoted by well- experienced professionals are qualified engineers from reputed institutions. The company boasts of a well-equipped UPS Manufacturing facility & development center. The company conforms with ISO 9001:2008 standards.

## OUR VISION

**To provide  
Total Optimal Power  
Quality & Energy  
Management & Solutions**

## PRODUCT RANGES

Online UPS	500VA - 500KVA
Line Interactive UPS	500VA - 2KVA
Servo voltage Stabilizer (Air Cooled/Oil Cooled)	1 KVA - 1000KVA
Active Harmonic filters	300A - 1200A
Ultra Isolation Transformer (Air Cooled/Oil Cooled)	1 KVA - 1000KVA
Inverters/Solar Inverters	1 KVA - 100KVA
CVT	250VA - 5KVA

## OTHER BRAND PRODUCTS

1. Emerson UPS & Active Harmonic Filters
2. APC UPS Systems
3. Numeric UPS Systems
4. Socomec UPS Systems
5. Microtek Products
6. Luminous Products

## QUALITY POLICY

To achieve customer satisfaction by direct interaction with end user and meeting the product specific needs and expectations of customer, which shall also include on Time delivery and continuous improvement

## CUSTOMER CARE

For our production up to the above said ranges NANTECH POWER SYSTEMS has a large infrastructure setup to provide services of a higher order. The company has 4000 sq.ft state of the art manufacturing unit with a full set of testing and development equipments.

## INFRASTRUCTURE

We at NANTECH take great care on "After Sales Service". We have a team of service professional across various destinations that take care of our customers. These service professionals are in regular touch with our customers by way of routine maintenance minimizing incidence of breakdowns. We have service centers at Madurai, Trichy, Tirunelveli, Pondy, Coimbatore & Bangalore.



## ONLINE UPS SYSTEM

### THE SMARTEST WAY TO TACKLE POWER FAILURE

True on-line double conversion micro-controller based UPS system for high end servers, workstations, CAD/CAM... sensitive to AC power irregularities and blackout. The high switching frequency of the UPS enables fast response to dynamic loads like CNCs textile and printing equipment, glass processing, medical equipments..., resulting in good transient response for non-linear loads. The UPS is designed to support advanced electronic equipments with high crest factor demand and provides unmatched performance.



### FEATURES

- True on-line double conversion
- RS-232 Interface available for m/c interlock
- Built-in manual/static by-pass switch
- Compact and silent in operation

- Programmable Controls
- User friendly applications
- Advanced PWM, IGBT technology
- Suitable For CNC machines & 3 phase industrial Applications

### TECHNICAL SPECIFICATIONS

INPUT	Voltage	230 VAC, (+15%-20%) Single Phase 415 Volts (+15%-20%)
	Frequency	47 to 53 Hz
OUTPUT	Rating	1/2/3/7.5/15/20 KVA, Single Phase 10/20/30/40/ 50/ 60/75/ 100/120/ 150 / 200/250/ 300/400/ 500 KVA, 3 Phase
	Voltage	220/230/240 Single Phase 380/400/415 V, 3 Ø
	Regulation	±1% for unbalanced load
	Phase Displacement	120±1 deg for 100% unbalanced load
	Power Factor	0.8
	Crest Factor	3:1
	Frequency	50Hz ±0.1%
	Wave Form	Sine Wave
	Harmonic Distortion	<3% THD for linear load <5% THD for non-linear load
	Over Load	110% for 30 minutes 125% for 10 minutes 150% for 60 seconds
TRANSIENT RESPONSE	Transient Response	±5% for 100% step load change
	Response Time	Recover to ±1% within 5 msec

EFFICIENCY	Inverter Efficiency	Better than 95%
	Overall Efficiency	Better than 92%
PROTECTIONS	Rectifier	I/P AC over/under voltage DC over voltage Battery charging over current Single phase failure- Reverse phase sequence
	Inverter	O/P over voltage / under voltage O/P overload O/P short circuit DC under voltage Over temperature
METERING	LCD / LED display to read following parameters with user friendly mimic diagram •I/P Voltage •O/P Voltage •Battery Voltage •I/P Current •O/P Current •Battery Charge •I/P Frequency •O/P Frequency	
CONTROLS	Input on/off MCB/MCCB, By-pass on/off switch, Output on/off switch, Manual by-pass switch, Inverters on/off	
PHYSICAL	Enclosure	IP 31 (IP 42-optional)
	Cable Entry	Bottom (top-optional)
	Colour	Broken White/Siemens Grey (optional as per req.)
ENVIRONMENT	0 to 45°C max, upto 95% RH(non-condensing)	
	Cooling	Forced air-cooling
	Audible Noise	<60dB upto 100KVA <75dB upto 500KVA
REFERENCE STANDARDS OPTIONAL FEATURES	Altitude	<300 mtr. above MSL
	IEC 146-(IV), EN 50091-1, EN 50091-2	
	Remote Start/Stop, RS 232/485 interface CNC machine interlock	



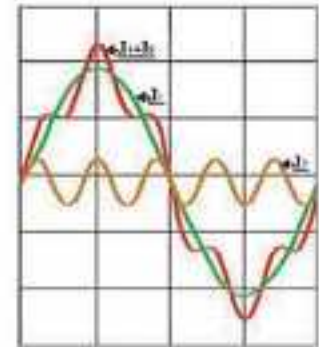


## ACTIVE HARMONIC FILTER

### HARMONIC POLLUTION

Harmonic pollution is an increasing problem which affects all power distribution networks in industrial, commercial, telecom and medical applications. Most of the power converting equipment or facilities can generate harmonic current.

- Uninterrupted Power Supply
- DC power systems/chargers Frequency converters
- AC/DC variable speed drivers
- Fluorescent lamps
- Welding machines
- Computers & peripherals



### EFFECTS OF HARMONIC POLLUTION

- Over voltage/current in the distribution network
- Overheated power cables due to skin effect and copper and iron loss in transformers, motors and generators
- Overheating in all types of electronic systems
- Damage to capacitors due to resonance
- Inaccuracy of instrument measurement
- Interference in telecommunication systems
- Voltage distortion and lagging in power factor

### ADVANTAGES

Nantech AHF the true harmonics solution, is a solid-state power converter that brings about the following advantages to improve power quality

Eliminates all harmonic currents from non-linear loads

Compensates reactive power factor of lagging loads

Acts as a virtual damping resistor to prevent possible harmonic resonance

AHF behaves like a harmonics current generator. It will measure the harmonics generated from the non-linear loads and cancels these harmonics with a newly generated, opposite phase shifted harmonics current of the same amplitude

### USER FRIENDLY CONTROL PANEL

Nantech AHF is equipped with a user friendly control panel. It is simple to turn the unit on or off and features buzzer silence and system status from 4 LEDS including power On, Filtering, Full Correction and Error. The optional LCD panel with special blue back lights offers access to all parameters, waveforms and spectrums for management of both AHF and system power quality.

### TRUE HARMONIC SOLUTION

- Active Harmonic Compensation
- Improve Power Quality
- Instantaneous Dynamic Response
- Flexible Up-Grading/Redundancy
- Various Capacity Ranges 25A to 1200A



## SERVO VOLTAGE STABILIZERS

The purpose of voltage stabilizer is to receive a fluctuating AC voltage of low or high amplitude & deliver an almost constant voltage, at the output. The voltage variations, which have become a common phenomenon in power supply systems, cause havoc in modern advanced electronic equipments. The voltage stabilizers are meant to take care of this problem. They avoid breakdown, ensure longer life of the equipments & save in energy during high incoming voltages.



### TECHNICAL SPECIFICATIONS

OUTPUT VOLTAGE*	230V AC for 1 phase 415 VAC for 3 phase 4 wire system.
REGULATION	± 1% or 0.5%
SUPPLY FREQUENCY	47-53 Hz
EFFICIENCY	Better than 98%
WAVEFORM DISTORTION	Nil
EFFECT OF LOAD POWER FACTOR	Nil
AMBIENT	0-45°C max. relative humidity upto 90%
ENVIRONMENT	Designed for indoor tropical use
ENCLOSURE	IP 21

### SUPPLY SYSTEM INPUT VOLTAGE RATING

	RANGE*	
SINGLE-PHASE	170-270V	1,2,3,5,8,10,12.5,16, 20 & 25 KVA air-cooled execution
THREE-PHASE	340-480V	5,7,10,15,20,25,30,40, 50,60,75,100,125 & 150 KVA air cooled execution
		60,75,100,125,150, 200,250,300,400,500, 750,000,1250,1500, 2000 & 2500 KVA oil cooled execution
	300-480V	3.5,7.5,10,15,25,30, 40,50,60,75 & 100 KVA air cooled execution
		75,100,125,150,175, 200,225,250,300,350, 400,500,750,1000, 1250 & 1500 KVA oil -cooled execution

### WHY NANTECH?

The use of variable speed servo motor along with proportional type of control circuit ensures that the voltage fluctuations are corrected quickly without any oscillations at the output so as to protect the end equipment. Hunting, oscillation, and noise generation is eliminated.

#### D.G. SET COMPATIBILITY:

Special RMS sensing circuit ensures no drift in output voltage even with distorted waveform, generally observed in D.G. Set. This avoids nuisance trippings of advanced electronic equipments, otherwise observed.

The rate of voltage correction is 2-3 times faster than our competitors.

Designed to work on Unbalanced Line & Load conditions wherein each phase is individually controlled with separate variable speed Motor & Electronic Controls.

The response time of stabilizer quick at 10 msec.

The improved efficiency of 98% compared to typical 95% available in the market will reduce running costs. Substantial saving in the electric bill (lower power losses) will pay back the cost of equipment in 2/3 years.





## ULTRA ISOLATION TRANSFORMER

ULTRA ISOLATION TRANSFORMER With very special construction all types of electrical noise predominantly common mode noise is eliminated by this UIT. Since it isolates primary and secondary and separated neutral to ground bond on the secondary side it can be used to create separately derived source to combat current loops. High isolating materials with special shielding techniques attenuate common mode noise as well minimize transverse mode noise.

### APPLICATIONS

They are specially designed for sensitive critical equipment's like computers & peripherals, medical instrumentation, digital communication telemetry systems, CNC machines etc. and stopping such disturbances generated by the noisy equipment load from being injected into the power line.

### FEATURES

High efficiency, high reliability and accuracy. Compact rugged in construction, free standing, floor mounting model and housed in sturdy metal casing with sufficient ventilations. High insulation values, Suitable for use with modern sophisticated micro processor based equipment, CNC machines, computers and other Industrial processing.

### USES

- Protect Computers, CNC Machines and Telecommunication equipments from damage due to electrical noises, spikes etc.
- If ground potential of system units are different from each other and are exposed to the effects of instability at high frequencies.
- If ground of the equipment cannot be earthed.
- To Protect against strong lightening, impulse noise, bus short-circuit, accidental discharge of capacitors
- When multiple Noise Cut-off transformers are used, the suppression effects increase in proportion. Therefore, the effects of cascading Noise Cut-off Transformers is remarkable.



- To shield large number of electronic equipments which individually are producing different types of electrical noise at a common busbar typically CNC machines, Drives, Hardening equipment etc. The use of NCT, being bidirectional, prevents damage due to circulating noise interference within them.

### EFFECTS

- Electrical noise are observed to occur over a wide band of frequency ranging from 1-KHz to 100 MHz and above. In magnitude observed to be as high as 4000 to 6000 Volts on 3 phase supply system.
- The high frequency noise can interfere with digital electronic equipments causing untransmittable data errors, change of programs, loss of memory, erratic behaviour, etc.
- The high voltage spikes can cause the failure of Thyristors or Transistors, Micro Processors and other sensitive devices.
- The radiated noise can interfere in operation of remote control equipment like Cranes, Digital Controls or Television Equipments.

### ELECTRICAL NOISES ARE GENERATED DUE TO

- Switching of electrical utilities like Capacitors, MCCBs, ACB's etc. Larger the inductance of the system and larger the current change during switching, larger the magnitude of electrical noises.
- The inductive loads like big Motors, Compressors, Overhead Cranes, Elevators, Presses etc. also generate substantial switching noises.
- Switching equipments like Inverters, Converters, SMPS etc. generate electrical noises due to switching of Thyristors, Transistors, Relays etc.
- Lightning, precipitation of static charges and electrical discharges in the atmosphere are the natural cause of generation of various electrical noises.
- Welding systems pollute earthing systems, adds surges and high frequency noises in the wave form, generating power quality anomalies.

### RATING AVAILABLE : 1KVA TO 1000KVA

An isolation transformer is often built with special insulation between primary and secondary, and is tested, specified and marked to withstand a high voltage between windings, typically in the 1000 to 4000 volt range



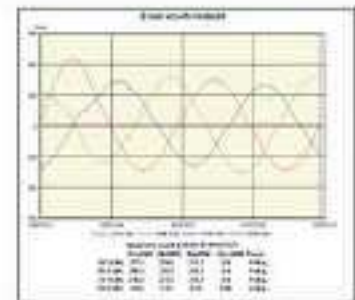
## POWER QUALITY AUDIT & HARMONIC ANALYSIS



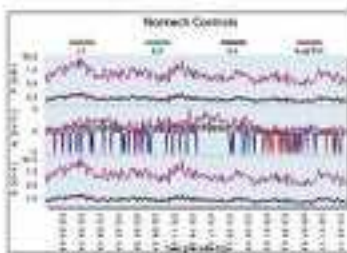
Most electrical problems like tripping of switchgears, blowing of fuses, failure of electronic equipments, flicker, high energy costs etc. are because of disturbances in the electrical network. Nantech, specializes in the field of Power Quality Solutions since last 19 years. Using modern state of the art equipments, we are actively conducting Power Quality Audits and Power monitoring at various Automobile, Engineering, Aerospace, Pharmaceutical, IT Data centers, Printing, Textiles, Defence & Railway establishments at an all India level. Our design exposure to drives, automations, PLCs, Motors etc. and close associations with designers and foreign principals has provided us valuable insights and knowledge in this field to provide detailed analysis and solutions.

We can provide a comprehensive range of on-site services which includes:

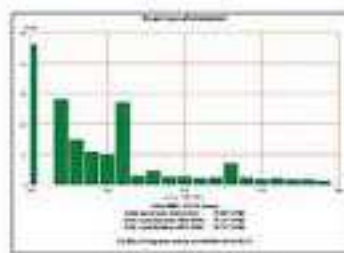
- Power Quality Audit
- Power monitoring and Load analysis
- Harmonic and Reactive power analysis
- Transient and Flicker analysis
- Compliance monitoring



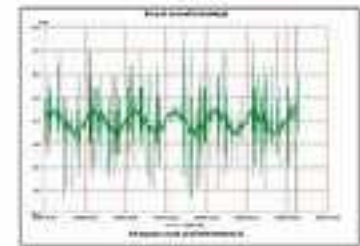
Power Quality Audits



Power Monitoring



Harmonic Analysis



Transient Analysis

Our state of the art monitoring equipments are from internationally renowned vendors like Dranetz BMI, Fluke, Tektronix. The measurements carried out are compliant to various industry standards like IEC 61000-4-30 Class A, EN50160, IEEE 1519, and IEC 61000-4-15. Using advanced software tools, we can generate detailed graphical waveforms, event reports, trend sheets and summary reports for various nodes in the electrical network.

We also provide recommendations and solutions to rectify the problem with their cost benefit analysis. The typical power quality disturbances observed at various sites are: Voltage fluctuation, Harmonics, Frequency variation, Earth leakage, Transients, Surge, Sag, High frequency noise, Glitch, Notches etc. Some sample reports and graphs from monitoring at various client sites are shown.



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OUR BRANCHES AT:

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MADURAI, SALEM & TIRUNELVELI



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