

P2 Power Solutions

An ISO 9001:2008 company



Quality power within your reach



Power your power



Company Profile

P2 Power Solutions Pvt. Ltd. works to deliver Innovative Engineering Solutions with specific focus on energy efficiency and power quality enhancement. Today in this highly competitive world operating costs have become a major concern for all industries. Power is the bottom-line of any industry. Poor quality and inefficient usage of power can increase the operating costs by almost 100%. We thereby help the industries to strengthen their bottom-line using our technical expertise and avant-garde technology. Through our products and services we reduce their operating costs, cut down on unknown failures or trips and make the system more efficient, in short escalating their competitiveness.

Promoted by a group of IITians; we are associated with IIT Kharagpur, one the top technical institutes in the world, through TIETS (Technology Incubation and Entrepreneurship Training Society) for all the technical support and R&D. Our advisory board consists of eminent people from the industry in various fields. We hold an experience of more than 40 years in this industry.

Prevalent Industrial Problems

In developing countries the quality of existing infrastructure and grid conditions is not strong enough to provide a stable power supply and withstand distortions originating from the use of heavy equipment and machinery. Therefore, it has to be supported by ancillary systems to provide an efficient and trouble-free power supply.

Poor power quality results in:

- Uneven behavior/ failure of circuit cards
- Trips in sensitive drives
- Flickering of PLCs
- Humming sounds in drives
- Under utilization of transformers and generators
- Unequal distribution of single phase loads causing unbalance
- Distorted voltage due to fluctuating loads like arc furnaces
- Voltage sags and surges
- Poor dynamics and maintenance of power factor correction capacitors



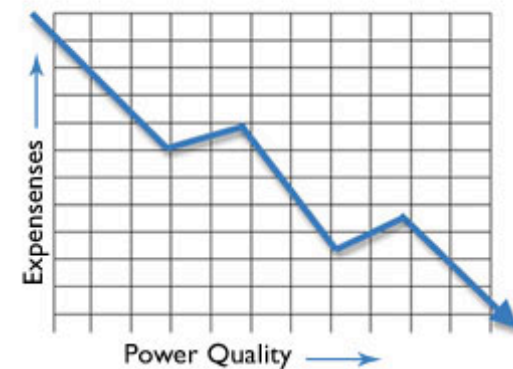
P2 Power Solution Products

► ACTIVE FILTER SOLUTIONS

P2 Power Active Filters cater to loads from 100 kVA to 6 MVA.

Key features include:

- IGBT based Intelligent Power Conditioner
- Excellent dynamics (200 micro-sec response)
- Small footprint
- Ultra compact design
- Reduction in noise pollution
- Easily adaptable to future expansion
- Completely programmable as per user requirements
- Virtually maintenance free
- Stepless power factor correction
- No transients
- Auto foldback



Expenses reduces as PQ improves!

Active Power Factor Correction:

Maintains Power Factor to unity and corrects both leading and lagging power factor. It eliminates the recurring cost of replacement of capacitors and can work in harmonic rich environments as well. It reduces the effects of surges and sags ultimately increasing the life expectancy of sensitive equipment.

Active Harmonic Filtering:

Reduces current and voltage THD levels within international IEEE 519 standards. It reduces trips in sensitive drives and also reduces eddy current and skin effect losses. Thus leading to an improved efficiency of the entire system.

Active Load Balancing:

It ensures balanced load condition on the source side in case of poor distribution of single phase loads thus increasing utilisation of transformers and also increasing the capacity utilisation of generators.

Active Neutral Correction:

Reduces voltage difference in neutral and earth due to excessive current in the neutral. This eliminates shunting of computer screens and increases the overall reliability of the system.

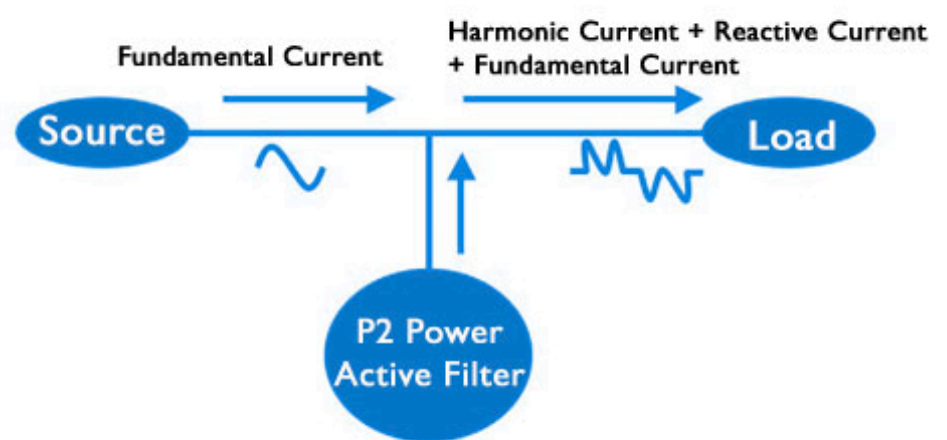
► **P2 Power Hybrid Filters:** A combination of Active and Passive Filters, the P2 Power Hybrid filter is the ideal value for money solution for power conditioning.

► **Passive solutions**

- Fixed Capacitor banks
- Detuned Capacitor Banks
- Thyristor switched APFCs
- APFC Panels
- Tuned Filters

► **FACTS Laboratory:** Exclusive for Educational Institutions, we provide all equipment required to setup a Flexible AC Transmission System laboratory. Under this we offer:

- Statcom
- UPFC
- Model Transmission Lines
- DVR



P2 Power Active Filter is our ground breaking product that is customizable as per user requirements and combines all the above features.



Our Services

OUR WIDE RANGE OF SERVICES INCLUDE:

- **ENERGY CONSUMPTION ANALYSIS**

The EC Analysis measures the consumption pattern and details at every installation at your facility including equipment, HVAC and utilities and suggests ways to reduce maximum demand and improve on the load factor. Losses at various points are identified and improvements suggested.

- **POWER QUALITY STUDY**

The PQ Study is a detailed analysis of the power quality issues in your system including Voltage and Current Harmonics, Power Factor variations, load unbalance, Power frequency disturbances and Electrical transients.

- **RELIABILITY STUDY**

The Reliability Study takes stock of the condition of your installation with respect to its overall reliability and helps you do preventive maintenance.

- **ELECTRICAL SAFETY ANALYSIS**

The ES Analysis pin points potential electrical hazards in a facility's electrical distribution system to prevent or minimize loss of life and property.



- **ENERGY MANAGEMENT ANALYSIS**

The EM Analysis is an advisory cum program management service to help you manage, initiate and implement energy management programs within your organizations.

- **ROOT CAUSE ANALYSIS**

We do an in-depth analysis of any electrical issue being faced at your facility.

- **HVAC ANALYSIS**

The HVAC Analysis measures the efficiency of your Heating Ventilating and Air Conditioning systems and identifies points of losses and wastage.

- **MANAGED ELECTRICAL SERVICES**

Our ME service is a one year plan which includes most of the above services under one umbrella. It helps you structure, analyse, implement and manage your energy in a much better and efficient manner. With our ME Service you can rest assured that your technical team is following the roadmap that has been laid down. We provide support and training as well.



Further Offerings

WE OFFER A WIDE RANGE OF LT AND HT PANELS AS BELOW:

- Power control centers, fixed and draw-out up to 6400A
- Motor control centers, fixed and draw-out up to 3200A
- Double bus bar power panels up to 6400A
- Automatic Power Factor Correction Panels
- PLC based DG automation panels for load synchronizing, sharing and managing up to 6DG sets
- PLC based process control panels
- Bus trunking and rising mains-segregated and compact up to 5000A
- AMF panels

QUALITY AND MORE:

- Quality Assurance System incorporated an all stages of manufacturing.
- Supervision is also provided for erection and commissioning of the panels and switchgear



THE RANGE CONFORMS TO THE HIGHEST STANDARDS SUCH AS

- IS 8623 Part 1&2-1993 for 50kA short circuit withstand capacity up to 4000A
 - IP:54 Degree of protection as per IS:2147
 - Test as per IS:8623



PRECISION MANUFACTURING

- All fabrication is done in house to ensure high quality
- Fabricated with 2mm thick CRCA steel sheet for robust construction
- The modular and bolted construction eases pre-treatment in the 8-tank process as per IS:3616,1966
- Switch board and bus ducts conform to highest industry standards for failsafe operation in tough conditions
- Minimum paint thickness of 60 micron is provided with sophisticated powder coating equipment
- Fail-safe earthing is provided on all doors
- Transparent shrouding of all live parts to avoid accidental contact
- Unique colour coding for DG and transformer ensuring ease of identification and operation
- Adequate space for cabling in each vertical section
- In-house lab testing carried out of salt spray, paint adhesion, scratch test, secondary and primary injection release testing etc ensuring long life cycle of the structure
- Mini volt drop test ensures total check on loose connections
- Filters at air entry point to prevent dust accumulation inside

COMPARISON SHEET

	Active Power Conditioner P2 Power Active Filter	Hybrid PF Compensator P2 Power Hybrid Compensator	Substitute Technology APFC, RTPFC
PERFORMANCE			
Technology	Microprocessor controlled IGBT based	Microprocessor controlled IGBT & AC Capacitor+Reactor based	AC Capacitor and/or Reactor based
Speed	< 0.2 milli seconds	< 0.2 milli seconds	Response time > 50ms
Efficiency	> 98%	> 96%	< 90%
Current Injection	Stepless current compensation	Stepless current compensation	Stepped kVAR compensation
Effectiveness	Effective with highly fluctuating loads	Effective with highly fluctuating loads	Ineffective with fluctuating loads
Power Factor (PF) Correction	True PF compensation	Displacement PF compensation	Displacement PF compensation
Leading/Lagging PF	Both Leading/Lagging PF compensation	Both Leading/Lagging PF compensation	Lagging PF compensation only
Load Balancing	Negative sequence current injection to balance grid current	Negative sequence current injection to balance grid current	No load balancing
Harmonic Compensation	Harmonic compensation	No Harmonic Compensation	No Harmonic Compensation
Neutral Correction	Possible with 4 wire system	Not possible	Not Possible
FOOTPRINT			
Size & Weight Advantages	Smallest Footprint	Small	Largest Footprint
COST			
Resource Intensive	Smallest space requirement	Low on space requirements	Increases cost of space
Capital Cost	Reduced failures	Reduced failures	Can increase failures due to resonance
Operating Cost	Low operating cost	Low operating cost	Recurring cost of capacitor replacement
Returns on Investment	High	High	High with non fluctuating loads
	Improved PF	Improved PF	Ineffective with fluctuating loads
	Better voltage profile	Better voltage profile	Introduces voltage transients
	Reduced failures	Reduced failures	Can increase failure due to resonance
MAINTENANCE			
Maintenance Requirements	Modular design	Modular design	Easy Maintenance
Spare-parts Requirements	Virtually maintenance free	Virtually maintenance free	Recurring cost of capacitors/contactors

We Deliver:

- A complete and thorough analysis of the current situation
- Innovative, revolutionary and cost effective engineering solutions which add value
- An action oriented management report detailing short and long term measures along with an ROI analysis
- Complete support for implementation

Our Social Commitment

Environmentally friendly P2 Power Solutions products are designed to

- Reduce energy consumption
- Reduce energy generation needs
- Reduce the use of natural resources like coal and petroleum
- Lower noise pollution
- Reduce carbon emissions

Partners to our Customers

A team of dedicated, trained engineers at P2 Power Solutions assure you:

- Appreciable value-add to your current process
- A turnkey solution
- 99.99% uptime guarantee
- 24/7 technical support
- An inventory of spare parts at all the strategic locations

Our Clients

- Amar Ujala
- Anabond
- Concast Bengal Industries Ltd.
- Dainik Jagran
- Hero Moto Corp
- Hindustan Times Media
- Indian Express
- Institute of Technical Education and Research
- Punjab Bevel Gears Ltd.
- Tata Steel - Bearings Division
- Vision Rx Lab
- Amtek Railcar
- B.R.Ambedkar Multi Speciality Hospital
- CV Raman College of Engineering
- GKB Opticals
- Hindustan Times Burda
- IIT, Kharagpur
- Indo Auto Tech
- PTC Industries Pvt. Ltd.
- Radisson Hotel (Bestech Group)
- Vidya Prakashan

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