COMPANY PROFILE

ISO 9001:2015
CPRI Certified Low Voltage Panel Builder
& Harmonic Analysis

PowerCon
Switchgears LLP

Solutions for a Safer World

INDEX

- Introduction
- Company Policies
- Our Products Range
- CPRI Test Reports & ISO Certificate
  - 5000A Short Circuit 70KA for 1 Sec
  - 4000A Short Circuit 50KA for 1 Sec
  - 3000A Temperature Rise (Heat Run)
  - IP – 65 (Ingress Protection for Out Door)
  - IP – 55 (Ingress Protection for Out Door)
  - ISO 9001:2015 Certificate
- List of Projects Executed
- In House Facility
- Product Photographs
- Harmonic Analysis Study

INTRODUCTION

We, the PowerCon Switchgears LLP take this opportunity to introduce ourselves as one of the well growing LV Panel Board Manufacturing Company managed by a team of professionals having a distinction of completing prestigious projects all over Maharashtra & Outside within the specific time frames.

Registered Office	:	Plot No. W-379, MIDC Industrial Area, Rabale, Navi Mumbai.
Year of Est.	:	May' 2011
Factory Area	:	16000Sqft / 1600Sqm
Construction	:	G + 2 RCC Building (Total - 16,000 Sqft) Fabrication Area (GF) - 8000 Sqft Electrical Assembly (1F & 2F) - 4000 + 2500 Sqft Office setup - 1300 Sqft
Industries we Serve	:	Commercial, Residential, Industrial, Pharma, Utilities, Marine, ETP, STP, Oil & Gas etc
Key Strength	:	In House Fabrication with CNC Turret Punch (Amada) Team of qualified

& experienced Engineers, Technicians, Strong Estimation & Design team, On Time Delivery & Customer Service

The friendly & pleasant atmosphere at PCS, makes business with valuable customers.
The company continual investment on technology and training, its dedication to total quality management in all disciplines from research and development to marketing, from manufacturing to sales service have created competitive advantage for the company.

The Main Motive of PowerCon Switchgears is to ensure customer satisfaction by providing premium quality panel boards with a full warranty for maximum performance. The assembled components are acquired from top range manufacturers. More over a qualified team of specialists ascertain a prompt and excellent after sales service whenever required.
This includes any future upgrades, replacements and modifications

Vision

To provide the region with premium quality panel boards which are safer, energy efficient, reliable & cost effective to meet the ever-changing market needs.

Mission

Our primary mission is to provide a dedicated service and a high standard of workmanship that will add to the value of the projects and will meet, satisfy & exceed specified requirements of our clients

INTRODUCTION

Core Values

The company's management philosophy is based on teamwork and partnerships coupled with clear personal responsibilities for the delivery of our business objectives. We constantly strive to be the leader in our chosen markets and believe that success can be achieved by delivering consistently excellent services to every customer. These principles will guide us to succeed in our projects and will serve us well ahead into the future; from site execution to project management and ultimately to fulfill the client's desire

Dedicated People

Our people are the soul of our company and we are confident that these committed workforces, operating in a creative, dynamic and rewarding environment will help us grow to greater heights. We nurture our people by constantly providing the right motivation to encourage them to perform their duties. To help enhance their skill set and knowledge, integrated training and development programs are conducted periodically, for all personnel at all levels

Our Business Approach

We are committed to effectively and efficiently solve the client's queries when it involves value engineering and local Authority requirements. Because, the sooner we help our clients, the faster it is for them to get on with project. We do this to make “ease of executing the project” a reality, not a mere slogan on the wall

OUR PRODUCT RANGE

- PCC – Power Control Centre up to 6300A
- MCC – Motor Control Centre
- IMCC – Intelligent Motor Control Centre
- AC / DC Drive Panels (VFD Control Panel)
- Soft Starter Control Panel
- HVAC Control Panel, Chiller Control Panel
- Automation / PLC / DDC Control Panels
- Auto / Manual Synchronizing & Load sharing Panel
- Fire Pump Control Panel
- APFC Panel (Contactor & Thyristor Switching, detuned Reactor)
- AMF – Auto Mains Failure / ATS – Auto Change Over Panel
- Mimic Panel
- Stainless Steel Control Panel for Marine application
- SMDB – Sub Main Distribution Boards
- FDB – Final Distribution Board
- Meter Cabinet, Feeder Pillars & Street lighting control panel
- Bus Duct / Rising Main – (done up to 6300A)
- Sheet Metal Fabrication Work (MS, CRCA, SS)
- Server Rack, Modular / Bolted design Enclosure
- CNC Punching / Bending Works

CPRI TEST CERTIFICATES

TEST REPORT

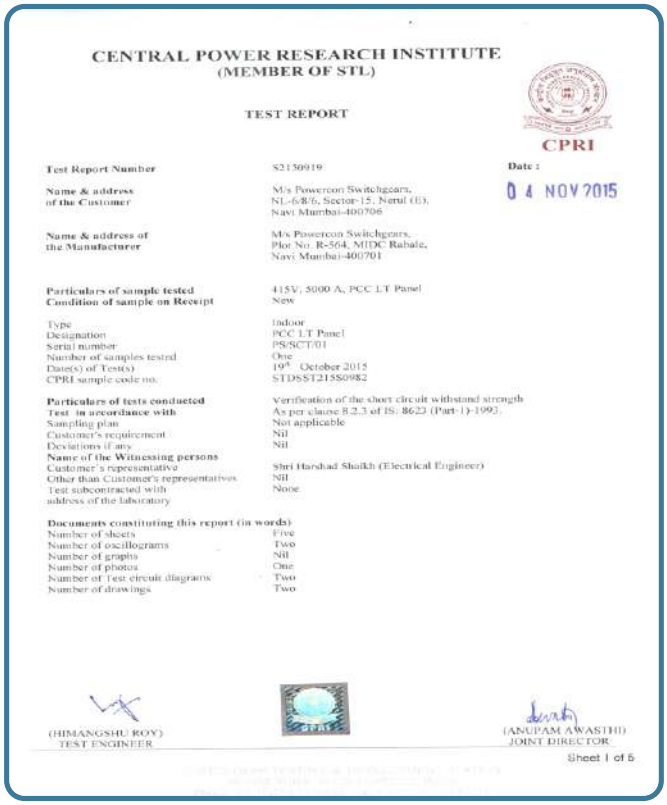
Central Power Research Institute

(A Govt. of India Society)
P.B.No. 8066, Sadhashivanagar Post Office,
Prof. Sir C.V. Raman Road,
Bangalore - 560 080 (INDIA)

TEST NAME	TESTED ITEM	TEST STANDARD	LAB NAME
S/C_70KA_5000A for 1 Sec	PCC LT Panel	IS: 8623 (Part 1) 1993 ICE: 60439	CPRI, Bhopal, MP
S/C_50KA_4000A for 1 Sec	LT Panel	IS: 8623 (Part 1) 1993 IEC: 60439	CPRI, Bangalore
3000A Temperature Rise Test	LT Panel	IS: 8623 (Part 1) 1993 IEC: 60439	CPRI, Bangalore
IP_65 Test	PDB Enclosure	IS/IEC: 60947-1_2004	CPRI, Bangalore
IP_65 Test	PDB Enclosure	IS/IEC: 60947-1_2004	ELCA Lab, Rabale

CPRI TEST CERTIFICATES

5000A S/C_70KA for 1 Sec



CENTRAL POWER RESEARCH INSTITUTE
(MEMBER OF STL)

CPRI

TEST REPORT

Date : 04 NOV 2015

Test Report Number	S2150919
Name & address of the Customer	M/s Powercon Switchgears, NL-6/8/6, Sector-15, Nerul (E), Navi Mumbai-400706
Name & address of the Manufacturer	M/s Powercon Switchgears, Plot No. R-564, MIDC Rabale, Navi Mumbai-400701
Particulars of sample tested	415V, 5000 A, PCC LT Panel
Condition of sample on Receipt	New
Type	Indoor
Designation	PCC LT Panel
Serial number	PS/SCT/01
Number of samples tested	One
Date(s) of Test(s)	19th October 2015
CPRI sample code no.	STDSST21S50982
Particulars of tests conducted	Verification of the short circuit withstand strength
Test in accordance with	As per clause 8.2.3 of IS: 8623 (Part-1)-1993.
Sampling plan	Not applicable
Customer's requirement	Nil
Deviations if any	Nil
Name of the Witnessing persons	
Customer's representative	Shri Hamhad Shaikh (Electrical Engineer)
Other than Customer's representatives	Nil
Test subcontracted with address of the laboratory	None
Documents constituting this report (in words)	
Number of sheets	Five
Number of oscillograms	Two
Number of graphs	Nil
Number of photos	One
Number of Test circuit diagrams	Two
Number of drawings	Two

(HIMANGSHU ROY)
TEST ENGINEER

(ANUPAM AWASTHI)
JOINT DIRECTOR

Sheet 1 of 5

4000A S/C_50KA for 1 Sec

CPRI

CENTRAL POWER RESEARCH INSTITUTE
(Member of STL)

Sheet 1 of 5

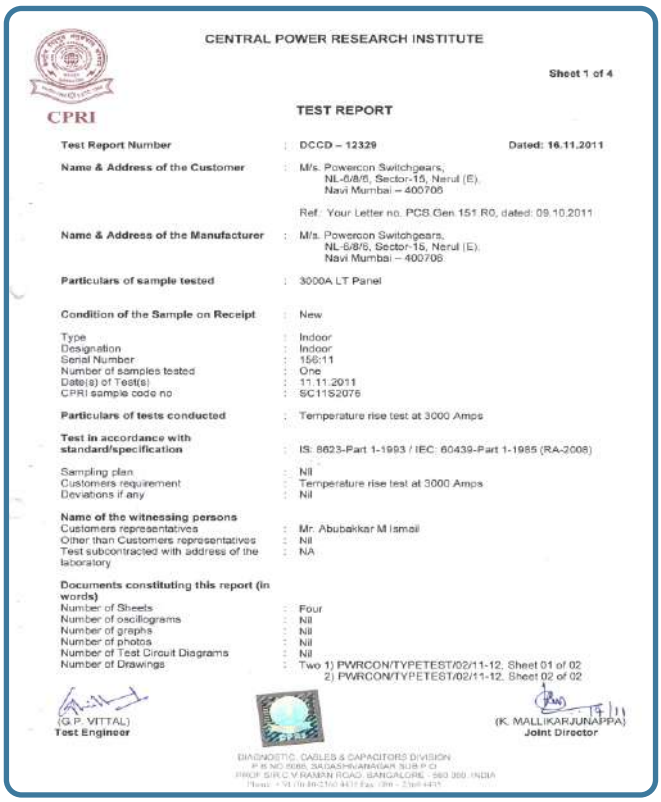
TEST REPORT

Test Report Number	SC11523A Dated: 14th November, 2011
Name & Address of the Customer	M/s. Powercon Switchgears, NL-6/8/6, Sector-15, Nerul (E), Navi Mumbai - 400 706, Maharashtra.
Name & Address of the Manufacturer	M/s. Powercon Switchgears, Plot No. W-283, M.I.D.C., Rabale, Navi Mumbai - 400 701, Maharashtra.
Particulars of sample tested	Low-voltage switchgear and controlgear assembly-415 V 4000A LT Panel
Condition of the sample on Receipt	New
Type	Indoor, cubicle
Designation	---
Serial Number (s)	156:11
Number of samples tested	One
Date (s) of test (s)	9th November, 2011
CPRI sample code no(s)	SC11S2076
Particulars of tests conducted	Verification of the short-circuit withstand strength
Test in accordance with Standard / specification	Sub-clause 8.2.3 of IS 8623 (Part 1): 1993
Sampling plan	Not applicable
Customer's requirement	50 kA rms for 1.0 s & 105 kA peak on phase bus-bars
Deviations if any	None
Name of the witnessing persons	
Customer's representative	Mr. Abubakkar M Ismail - Proprietor
Other than customer's representatives	None
Test subcontracted with address of the laboratory	None
Documents constituting this report (in words)	
Number of sheets	Five
Number of oscillograms	Two
Number of graphs	Nil
Number of photos	Two
Number of test circuit diagrams	Two
Number of drawings	Two

(Sakthivel. P)
Test Engineer

(Swaraj Kumar Das)
Joint Director

3000A Heat Run Test



CENTRAL POWER RESEARCH INSTITUTE

CPRI

Sheet 1 of 4

TEST REPORT

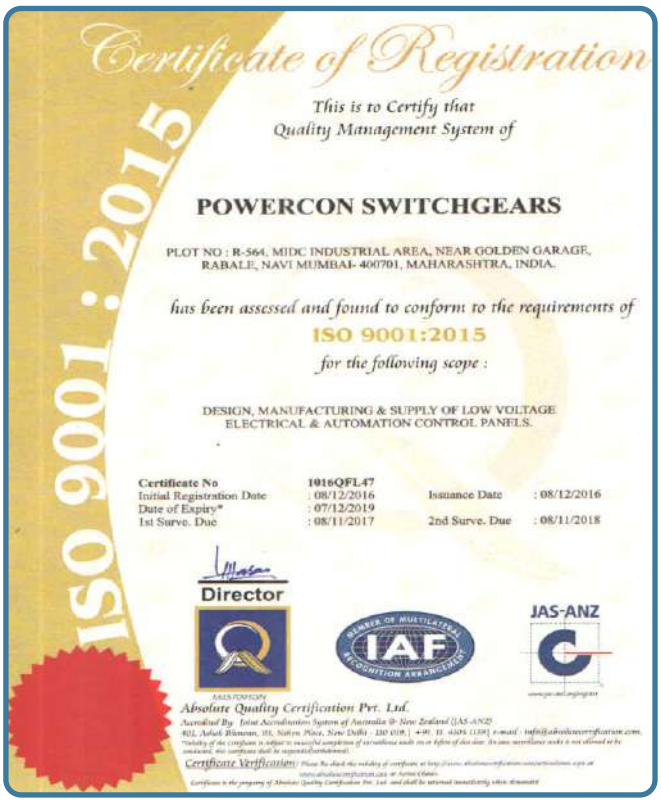
Test Report Number	DCCD – 12329 Dated: 16.11.2011
Name & Address of the Customer	M/s. Powercon Switchgears, NL-6/8/6, Sector-15, Nerul (E), Navi Mumbai – 400706
	Ref: Your Letter no. PCS.Gen 151 R0, dated: 09.10.2011
Name & Address of the Manufacturer	M/s. Powercon Switchgears, NL-6/8/6, Sector-15, Nerul (E), Navi Mumbai – 400706
Particulars of sample tested	3000A LT Panel
Condition of the Sample on Receipt	New
Type	Indoor
Designation	Indoor
Serial Number	156-11
Number of samples tested	One
Date(s) of Test(s)	11.11.2011
CPRI sample code no	SC11S2076
Particulars of tests conducted	Temperature rise test at 3000 Amps
Test in accordance with standard/specification	IS: 8623-Part 1-1993 / IEC: 60439-Part 1-1985 (RA-2008)
Sampling plan	Nil
Customers requirement	Temperature rise test at 3000 Amps
Deviations if any	Nil
Name of the witnessing persons	
Customers representatives	Mr. Abubakkar M Ismail
Other than Customers representatives	Nil
Test subcontracted with address of the laboratory	NA
Documents constituting this report (in words)	
Number of Sheets	Four
Number of oscillograms	Nil
Number of graphs	Nil
Number of photos	Nil
Number of Test Circuit Diagrams	Nil
Number of Drawings	Two 1) PWRCON/TYPETEST/02/11-12. Sheet 01 of 02 2) PWRCON/TYPETEST/02/11-12. Sheet 02 of 02

(G.P. VITTAL)
Test Engineer

(K. MALLIKARJUNAPPA)
Joint Director

DIAGNOSTIC, CABLES & CAPACITORS DIVISION
P.B.NO.7088, JALAHALLI POST
PROF. SIR C.V.RAMAN ROAD, BANGALORE - 560 013, INDIA

ISO 9008 : 2015



Certificate of Registration

ISO 9001 : 2015

This is to Certify that
Quality Management System of

POWERCON SWITCHGEARS

PLOT NO : R-564, MIDC INDUSTRIAL AREA, NEAR GOLDEN GARAGE, RABALE, NAVI MUMBAI- 400701, MAHARASHTRA, INDIA.

has been assessed and found to conform to the requirements of

ISO 9001:2015

for the following scope :

DESIGN, MANUFACTURING & SUPPLY OF LOW VOLTAGE ELECTRICAL & AUTOMATION CONTROL PANELS.

Certificate No	1016QFL47		
Initial Registration Date	: 08/12/2016	Issuance Date	: 08/12/2016
Date of Expiry*	: 07/12/2019		
1st Surve. Due	: 08/11/2017	2nd Surve. Due	: 08/11/2018

Director

JAS-ANZ

Absolute Quality Certification Pvt. Ltd.

CPRI TEST CERTIFICATES

IP - 55 Test

CENTRAL POWER RESEARCH INSTITUTE

CPRI

TEST REPORT

Sheet 1 of 3

Test Report Number:634EATDIP11S0341

Dated: 22.11.2011

Name & Address of the Customer	:	M/s POWERCON SWITCHGEARS NL-6/8/6, Sector -15, Nerul (E), Navi Mumbai – 400 706.
Name & Address of the Manufacturer	:	M/s POWERCON SWITCHGEARS NL-6/8/6, Sector -15, Nerul (E), Navi Mumbai – 400 706.
Particulars of sample tested		
Condition of the sample on Receipt	:	New (Fitted with Terminal Block inside)
Type	:	Outdoor (415V AC)
Designation	:	Power Distribution Board
Serial Number	:	200 11
Number of samples tested	:	One only
Date (s) of Test (s)	:	09.11.2011 & 11.11.2011
CPRI sample code no(s)	:	EATDIP11S0341
Particulars of tests conducted		
Test in accordance with		
Standard / specification	:	IP 55 Tests as per IS/IEC 60947-1:2004 Standard.
Sampling Plan	:	Not applicable
Customer's requirement	:	1. IP 55 (5X Category 2) Tests as per IS/IEC 60947-1: 2004 Standard. 2. Insulation Resistance measurement at 500 V DC and 3. Power frequency High Voltage withstand test at 2.0 kV AC to be applied for one minute between all terminals of terminal block shorted together and body of the Power Distribution Board, to be conducted before and after IP test.
Deviations if any	:	-Nil-
Name of the witnessing persons		
Customer's representative	:	Mr. Abubakkar. M. Ismail
Other than customer's representatives	:	-Nil-
Test subcontracted with address of the laboratory	:	None
Documents constituting this report (in words)		
Number of sheets	:	Three Only
Number of oscillograms	:	-Nil-
Number of graphs	:	-Nil-
Number of photos	:	-Nil-
Number of test circuit diagrams	:	-Nil-
Number of drawings	:	One only. Drg. No. PWRCON/TYPETEST/03/11-12, Sheet 01 of 01

(LOKESH C.)
Test Engineer

(NAGARAJA RAO V. N.)
Joint Director

IP – 65 Test

ELCA LABORATORIES

Trust Built Up Over 40 Years Of Service To Industry

AN ISO/IEC 17025 ACCREDITED MATERIAL TESTING LAB

UNIT - II, W 361, TTC INDUSTRIAL AREA, MIDC, RABALE, NAVI MUMBAI - 400 701. INDIA. PH : 91 (22) 2769 3483 TELEFAX : 91 (22) 2769 3492 E-MAIL : rabale@elcalabs.com WEB : www.elcalaca.com

UNIT - I, PLOT NO. A-444, ROAD NO. 37, RAM NAGAR, WAGLE ESTATE, THANE - 400 604, INDIA PH : 91 (22) 2582 4499, 2047 FAX : 91 (22) 2581 3341 E-MAIL : info@elcalabs.com

LAB ACCREDITED BY NABL TC/8744

Test Report

for Ingress Protection (IP65) Test carried out on

PDB LT PANEL

Customer:

PowerCon Switchgear

Plot No.R 564, MIDC,

Industrial Area, Rabale,

Navi Mumbai- 400 701.

Test Report No: E-1225

Description of the Product: PDB LT PANEL

Serial No.: PS/IP65/01

Dimensions: 100mm x 400mm x 200 mm

Drawing No.: PS/IP65/TEST/17-18 **Sheet** 1 of 1 **REV.** 0 **Dated** 16.09.2017

Date: 10th October 2017

For ELCA LABORATORIES

Authorised Signatory
Shriram Raichur / Harshala Mawale
Dy. Technical Manager / Sr. Engineer

MANUFACTURING FACILITY

Fabrication

NC Hydraulic Bending Machine
Up to 8 mm Thickness – 2Nos

NC Hydraulic Shearing Machine
with 160 Ton Capacity – 1 No

CNC Mechanical Turret Punch Press (Amada_Japan)

IN HOUSE FACILITY

Few of our Product Photographs

IN HOUSE FACILITY

Fabrication

Machine Description	Make	Qty
NC HYDRAULIC SHEARING MACHINE (160 Ton Capacity)	TRIMANS – NUGEN INDIA	1 No
CNC TURRET PUNCH PRESS	AMADA VELA – II	1 No
NC HYDRAULIC BENDING MACHINE (3m Length, 6mm Bending Capacity)	TRIMANS – NUGEN INDIA	2 Nos
Hydraulic Power Press (30 Ton)	FREDRIC	2 Nos
CO2, ARC, ORGAN Welding Machine	REPUTED	6 Nos

Electrical

Machine Description	Make	Qty
Hydraulic Busbar Punching Machine (Capacity – 200 x 12mm AL / CU)	CH-70	1 No
Hydraulic Busbar Cutting Machine (Capacity –200 x 12mm AL / CU)	CWC-200V	1 No
Hydraulic Busbar Bending Machine (Cap - 200 X 12mm)	TRIMANS – NUGEN INDIA	2 Nos
Busbar Cutting Machine	FREDRIC	2 Nos
Bench & Hand Drill Machine	REPUTED	6 Nos

Testing Facility:

Item Description	Make	Model / Sr. No	Qty
0 - 5 KV AC High Voltage Breakdown Tester	Neutronics	2K1107301	1 No
500/1000V Analog Insulation	Shanti	ITI-10050 / 6717K	2Nos
500/1000V Digital Insulation Tester	Rishabh	Rish Insu 20 / 1710066706	2Nos
Digital Clamp Meter	Meco	Meco 27	2 Nos
Screw Gauge (0 – 25mm)	Insize	140750982-R	1 No
Vernier Caliper	Mitutoyo	60456476	1 No
Powder Coating Thickness Tester	Amruta, Portacoat	(0-1500) Micron / 14205	1 No
Powder Coating Thickness Tester	Amruta, Portacoat	(0-1500) Micron / 14205	1 No

LIST OF MAJOR PROJECTS EXECUTED

Client / Projects	Consultant / PMC
IT & ITeS Industries	
TCS Facility, Gandhi Nagar, Gujarat	M/s. Avinashraj & Associates
TCS Facility, Hunjewadi, Pune	M/s. Avinashraj & Associates
TCS Mantri, Hydrabad	M/s. Avinashraj & Associates
TCS Facility, Nagpur	M/s. Avinashraj & Associates
Accenture_Gigaplex_Airoli	M/s. ANS Electricals Pvt Ltd
Accenture_Godrej Boyce_Vikhroli	M/s. Dhruva Engg Consultants
Accenture_Godrej IT Park_Vikhroli	M/s. ANS Electricals Pvt Ltd
Sungard, Bangalore	M/s. CUTECH Consulting Engineers
CITIUS TECH Solutions (Powai, Airoli)	M/s. Electromech Consultans
ITeS, IT Building A & B @ Navi Mumbai	M/s. Reliance Industries Ltd
FSS Technology, Thane	M/s. Swami Consultants
Quality Kiosk, Rupa IT Park, Mahape	M/s. Premier Engineering Services
Eclerx Services Ltd, Hinjewadi, Pune	M/s. Eleganz Interiors Pvt Ltd
Hexaware Technologies, Navi Mumbai	M/s. Ajit Kulkarni Consultants Pvt Ltd
Reliance LDC Building, Ghansoli	M/s. Sunil Electric Co
Prime Focus, Hydrabad	M/s. Voltasun Engineers
Dassault Systemes, Pune	M/s. Beyond Design Arch & Consult
Industrial Projects	
Tata Thermal Power Plant_Jamshedpur. (Fire Pump MCC with 8Nos MICOM Numerical Relays)	M/s. TATA Power Ltd, Mumbai
MCGM / LT PMCC	M/s. TATA Consultant Services
Maroshi, Vakola & Mahim	M/s. Hindustan Const Co
MCC with Control Desk	M/s. Crompton Greaves Ltd
Sea Water Reverse Osmosis Plant, Tuticorin, Tamil Nadu	M/s. Hindustan Dorr Oliver Ltd
Intelligent MCC Panel	M/s. Apar Industries Ltd
M/s. DSM Nutritional, Ambernath	M/s. Spectrum Pharmatech
Fiabila India Ltd, Taloja	M/s. Clarion Cosmetics
Gopinath Dairy Products Pvt Ltd, Turbhe	M/s. Avinashraj & Associates
Parakh Agro Industries Ltd. Plant - Nerul, Taloja, Khopoli	M/s. Parakh Foods Pvt Ltd
BPCL, Coimbatore	M/s. Trans Enterprises
Kairav Chemofarbe Ind Ltd, Taloja	M/s. Avinashraj & Associates
ANJ Furniture Factory, WADA	M/s. ANS Electricals Pvt Ltd

LIST OF MAJOR PROJECTS EXECUTED

Client / Projects	Consultant / PMC
Commercial Projects	
Tata Son's Bombay House	M/s. Allied Techno Services Pvt Ltd
Tata Power Strategic Engineering Division, Powai	M/s. TATA Power Ltd, Mumbai
NESCO Exhibition Centre, Goregaon Hall - 7, 7A	M/s. Aryan Electricals Pvt Ltd
NESCO Exhibition Centre, Goregaon (8200Kvar APFC Panel)	M/s. Aryan Electricals Pvt Ltd
National Sports Club of India, Mumbai	M/s. Alfa deal Pvt Ltd
McDonalds, India (All Stores in West)	M/s. Avinashraj & Associates
McDonalds, India (All Stores in West)	M/s. WD Partners India Pvt Ltd
Mahindra & Mahindra Corporate, Kandivali	M/s. Avinashraj & Associates
Link's Mall, Kerala	M/s. Pratik Project Man.Consultant
DMRC – Delhi - Gaziabad Metro Project	M/s. Tata Power Projects Div
Construction Supply	M/s. Ultra Power Construction
Glomax Shopping Mall, Kharghar. (8 x 630KVA DG Synchronzing Panel)	M/s. Electromech Consultans
Tata Capitals Ltd, Goregaon	M/s. CUTECH Consulting Engineers
Kanpile Shopping Mall, Panvel	M/s. Techno Group
Tata Central Archeries, Pune	M/s. Allied Techno Services Pvt Ltd
Samsung Electronics (Pune, Indore, Raipur)	M/s. Swami Consultants
Bharti Axa Life Insurance, BKC, Mumbai	M/s. Devang Dalal MEP Consultant
Viacom 18 Media, Ahmedabad	M/s. Voltasun Engineers
Indospace B300, Chakan III, Pune	M/s. Stup Design Forum
Indospace B100, Chakan IV, Pune	M/s. MOTT Mcdonald
Indospace (AS Cargo), B1000, Chakan II	M/s. MOTT Mcdonald
Indospace Common Infra 38 acres	M/s. MOTT Mcdonald
Indospace (DHL), B200, Chakan II	M/s. MOTT Mcdonald
Indospace B900C, Chakan II	M/s. MOTT Mcdonald
Indospace (Bhamboli) B600, Chakan III	M/s. Stup Design Forum
Indospace B200, Chakan II	M/s. Stup Design Forum
Destination Indsutrial Park, Chakan	M/s. Stup Design Forum
Indospace Facility, B4C, Chakan I	M/s. SEW Engineering (I) Pvt Ltd
KGA Investments, Powai	M/s. Design Bureau
SBI, Vashi, Dadar, Pune, Chattisgarh	M/s. Delta Electricals
Naaptol Online Shopping, Rabale	M/s. Swami Consultant
Yogi Hotel, Sanpada	M/s. Ruhani Electricals
Asian Paints House, Kalina	M/s. Avinashraj & Associates
Mumbai Metro (L&T)_Const Panels	M/s. Ultra Power Construction
Owens Corning India, Taloja	M/s. Mahesh Electricals

LIST OF MAJOR PROJECTS EXECUTED

Client / Projects	Consultant / PMC
Healthcare / Pharma Projects	
Criticare Multi Specialty Hospital, Andheri	M/s. Electro-Mech Consult
Enaltec Labs Pvt Ltd, Pitampur, Indore	M/s. Spectrum Pharmatech
Pontika Aerotech, Sirmour, HP	M/s. Doshi Consultants Pvt Ltd
Welness Forever, Andheri	M/s. Devang Dalal MEP Consultant
Heba Pharmaceuticals, Sikkim.	M/s. Aryan Electricals Pvt Ltd
Lozen Pharma, Hubli	M/s. Aryan Electricals Pvt Ltd
Unichem Laboratories, Mumbai	M/s. Aryan Electricals Pvt Ltd
Lupin Ltd	M/s. Encon Expertise Pvt Ltd
MPCT Multi Spel. Hospital, Navi Mumbai	M/s. Arsh Consulting Engineers
Surana Sethia Hospital, Chembur	M/s. Arsh Consulting Engineers
Sun Pharma, Dadra plant	M/s. Aryan Electricals Pvt Ltd
Hikal Ltd, Mahad	M/s. Alfa National Fire Safety
Education / Institute Projects	
Sadhu Vaswani Int. School Sanpada	M/s. MCS Electro Power (I) Pvt Ltd
Billabong Internation School, Andheri	M/s. Electromech Consultants
Delhi Public School, Seawoods	M/s. VV Electricals
Baccuni Education Institute, Powai Shapoorji Pallonji Co Ltd	M/s. Eco Vigor Consultant
Residential Projects	
Hyde Park @ Kharghar (G+9 Storeys – 13 Bldgs)	M/s. Electromech Consultans
Jayem Realty Infra Project, Pune	M/s. Unique Consultant Services
Mahindra Splendor @ Bhandup (NEPL)	M/s. Integrated Consultants
Ezperenza Res Tower, Pune. Clover Realty & Infra Pvt Ltd.	M/s. Potential SEMAC
Vertex Newton Projects, Kalyan	M/s. Design Bureau Consultants
The Park, Lodha Group (Construction Panels Value over 1.5 Cr)	M/s. B.E.Billimoria Co Ltd
Casablanca Residence, Pune	Clover Realty & Infrastructure
Nisarg Green, Ambernath	M/s. Bahulekar & Associates
Sun Dunes, Malad	M/s. Sun Developers
The NEST, Juhu Mumbai	M/s. Wadhwa Residency Pvt Ltd

HARMONIC ANALYSIS & ENERGY AUDIT

We conduct Harmonic Analysis and Energy Audit to Electrical network systems and provide Complete Solution for industrial, Commercial & Utility in order to improve power quality through reactive power compensation and harmonic control.

- *Electricity Act 2003: Energy Audit must for HT customers*
- *How can we move towards systematic Energy Conservation*
- *Does Energy Conservation in your electrical installation generate Harmonics?*
- *Are your Equipments & Electrical systems getting affected due to Harmonics?*
- *Are you ready to pay penalties for generating Harmonics?*
- *Are your neighbors generating Harmonics which are affecting your systems?*

Complete Solution Package

- Measurements of Harmonics and Energy Audits in electrical systems
- Design & Recommendation of Tailor-made Power Solution to the Power Quality problems
- Designing, Manufacturing, Testing & Commissioning of product to achieve power quality improvement through system measurements

What is Harmonic?

The harmonic is defined as one of the components obtained from the breakdown of a periodic wave in the Fourier series. The order of a harmonic is further defined as the ratio between the frequency of the harmonic and the fundamental frequency of the periodic wave considered. Harmonic is current or voltage that appear on the electrical power system as a result of non-linear loads. A frequency that is integer multiples of the fundamental frequency of 50 Hz, the 3rd harmonic is 150 Hz, the 5th is 250 Hz etc. Harmonic Frequencies in the power grid are a frequent cause of Power Quality problems. Harmonic frequencies from 3rd to 25th are the most common range measured in Industries.

50 Hz | 5th (250 Hz) | 7th (350 Hz) | Distorted curve

HARMONIC ANALYSIS & ENERGY AUDIT

Where do Harmonics Come from?

Most types of equipment common in electrical systems today generate harmonics:

- Equipment containing electronics that control other apparatus, e.g. variable speed drives, soft starters, static compensators, rectifiers, etc.
- Arc furnaces
- In certain cases, transformers, reactors and rotating machines.
- Office / Home electronic appliances

Harmonics are not only found in industrial networks. They can also spread into the distribution network and cause problems for other power users.

What problems can Harmonic cause?

- Increased losses, e.g. machines will operate at increased temperature and can be overheated
- Increased consumption in electric bills due to high copper and iron losses – KW & KWH
- Resonance problems between the inductive and capacitive parts of the power network
- Malfunctioning of control systems since electronic meters, relays, etc. are matched to the fundamental frequency
- Overloading of capacitors, leading to malfunctioning and premature aging
- Interference with telecommunications and computers
- Disturbances in ripple control systems
- High currents in neutral conductors

Designing a harmonic Filter

A harmonic filter usually consists of a capacitor which is connected in series with a reactor. The components are dimensioned to create a series resonance circuit for a required frequency. A harmonic filter works like a short circuit at one or more specified frequencies. We can help you to calculate and design filters which will reduce interference and interruption on your network. The various functions that a harmonic filter performs are enumerated as follows

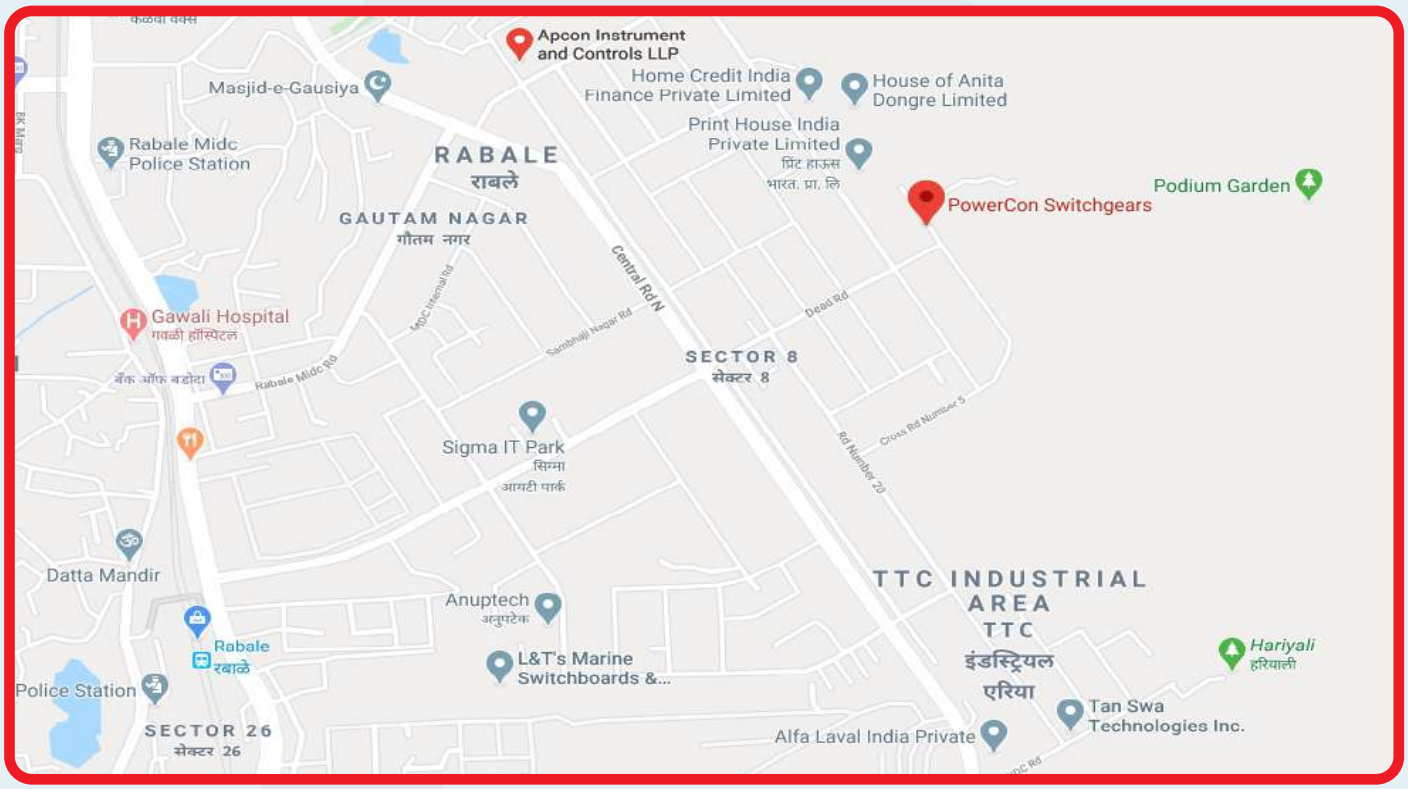
- Reduces neutral currents
- Reduces transformer loading
- Enhances system protection
- Minimizes impact on distribution transformers
- Reduces local neutral to ground voltage
- Lowers peak phase current/average phase current
- Increases system capacity
- Improves power factor on non-linear loads
- Reduces total harmonic distortion
- Improves phase current & Voltage balance

Tailor made solutions – Each plant needs its own

Thorough know-how and experience is required to design harmonic filters properly. Each plant is unique and needs its own special technical solution. Both system and component know-how are essential to find the optimum solution in each individual case. An important component in the filter is the capacitor. Since it copes with the whole harmonic content, it must be designed with the greatest care.

What do PF Capacitors have to do with Harmonics?

In an industrial plant containing power factor correction capacitors, harmonics distortions can be magnified due to the interaction between the capacitors and the service transformer. This is referred to as harmonic resonance or parallel resonance. It is important to note that capacitors themselves are not main cause of harmonics, but only aggravate potential harmonic problems.Often, harmonic-related problems do not show up until capacitors are applied for power factor correction.



Plot No. W – 379,MIDC Industrial Area,Rabale, Navi Mumbai. Maharashtra – 400 701

Office: +91 8291 917 191 / +91 8291 917 991

Mob: +91 8291 917 491

info@powerconswg.com

www.powerconswitchgears.com