



**Sharda Electronics & Co.**

An ISO 9001:2015 Certified Company





# Business Profile

We have been witnessing to change all our life and change continues to happen all around us every moment.

Change is happening at a rapid pace because of our technological understandings so we all need to be vigilant & adapt to new environments. This is necessary not only for success but also for survival. As Per our company mission to deliver the highest quality products with innovative technology to best service customer needs, we always try to provide better quality electrical power products to our valuable customers.

Taking all this in consideration, SHARDA Electronics & Co. Manufactures Hi-Tech designed Electrical products with advanced manufacturing capabilities. Our production includes advanced machinery, technology, with our group of well qualified and experienced engineers, skilled persons, this leads to achieving our motto **“BEST QUALITY, ECONOMICAL,**

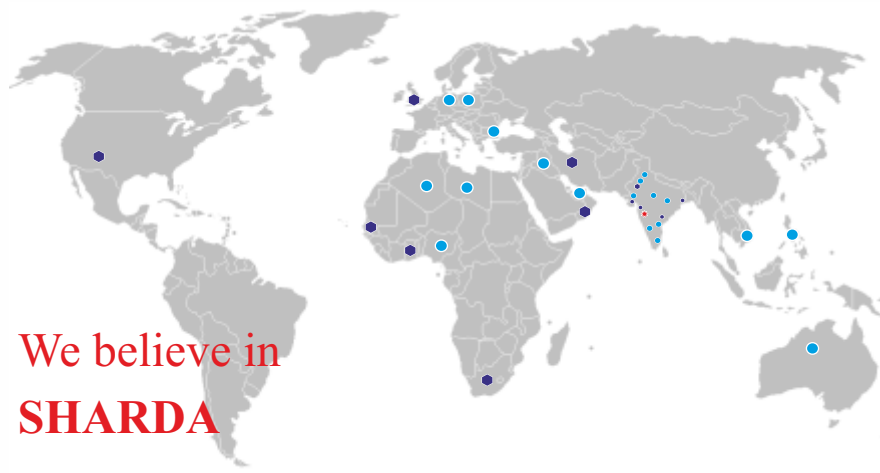
## TAILOR-MADE ELECTRICAL PRODUCTS"

SHARDA Electronics have a Global Presence with a satisfied customer base in

## 2 continents and 10 Countries.

Also we have 3 international representative offices.

We thankful to our entire valuable customers, without them it is not possible to achieve our vision as well as mission. We hope this co-operation will continue in the future as well.



We believe in  
**SHARDA**

**S**uccess is achievement through safety precaution & preventive maintenance.



**A**chieving an exceptional product quality.

**R**igorously work to enhance the business.

**D**evelop & continually improve performance of various functions related to waste control, and cost saving.

 mbition of making of our capacitors globally known.



# MV / HV Capacitor Bank

We offers full System Analysis, Design, Supply, Testing & Installation of MV / HV Capacitor Bank With Associated Equipment's / Switch Gears.



## MV / HV Capacitor Bank on Turnkey Basis

- MV/HV Capacitors Unit
- Series Reactor (tuned/detuned)
- Neutral Current Transformer / Residual Voltage Transformer
- Current Transformer
- Potential Transformer
- Circuit Breaker
- HRC / Expulsion fuse
- Isolator
- Lightning Arrester
- Control & Relay panel with SCADA Compatibility
- Galvanized Structure

We offer range / ratings of Capacitor Bank is as per System / Customer requirement.

### Product Range :

Rated output : 100 KVAR to 50000 KVAR  
Rated Voltage: 1 KV to 760 KV

## MV / HV Automatic Power Factor Correction Metal Enclosed Capacitor Panel.

MV / HV APFC metal enclosed capacitor panel is normally used where system having less space with very high fluctuating loads at MV / HV side.

**Metal Enclosed Capacitor Panel includes,**

- MV / HV Capacitors
- Current limiting reactor / Harmonics Filter reactor
- Protection fuses
- Automatic control unit
- Capacitor Switch / Contactor for switching
- CT, PT for metering and protection



We manufacture MV / HV APFC Metal Enclosed Capacitor Panel up to **33 KV** with IPXX protection and **SCADA** compatibility.

We offers range / rating of, Metal Enclosed Capacitor Panel is, as per Customer / System requirements.



### Product Range :

Rated output : 500 to 5000 KVAR  
Rated Voltage: 1 KV to 33 KV

**Save Energy Earn Energy**



# LV Automatic Real Time Power Factor Controller Capacitor Panel

"SHARDA" Low Voltage Automatic Real Time Power Factor Controller Capacitor Panel achieves and maintain very closure to unity Power factor and Harmonics level within limit. With advance technology of **Thyristor or contactor** used switching devices, **Inrush current limiting reactor or harmonics filter reactor**.

This LV RTPFC capacitor panel are used to maintain closure to Unity Power Factor in fluctuating or variable inductive load and also to limit the Harmonics within level in Heavy Electronics load Industries like steel, cement, automobile, paper, furnace industry etc.



## Features

- Electricity saving.
- Increase loading capacity of generator.
- Reduction in KVA demand.
- As KVA is directly proportional to current so substantially saving in  $I^2R$  losses, eddy current losses, hysteresis losses.
- Losses of cables and transformer is reduced.
- Improves performance of electrical apparatus.
- Time delay avoids impulse operation.
- Automatic dynamic switching.
- No inrush current, Voltage surges, Voltage spike, Harmonics generated at time of switching of capacitor.
- Switch-gears are used in panel which compliance all international standards.
- Panels are protected by IP4XX.
- Panels are powder coated with anti corrosive coating.
- Compact design.
- Cooling is maintained by exhaust fan & thermostat.
- Efficient after sale service.

## Application

- 40% Saving in electricity bill.
- Supply quality improves.
- Saving in losses of transformer rating.
- Avoid nuisance tripping for sensitive load in event of harmonics effect.



We offers range / ratings of LV Automatic Real time P. F. Controller Capacitor Panel, as per Customer / System requirements.

## Product Range :

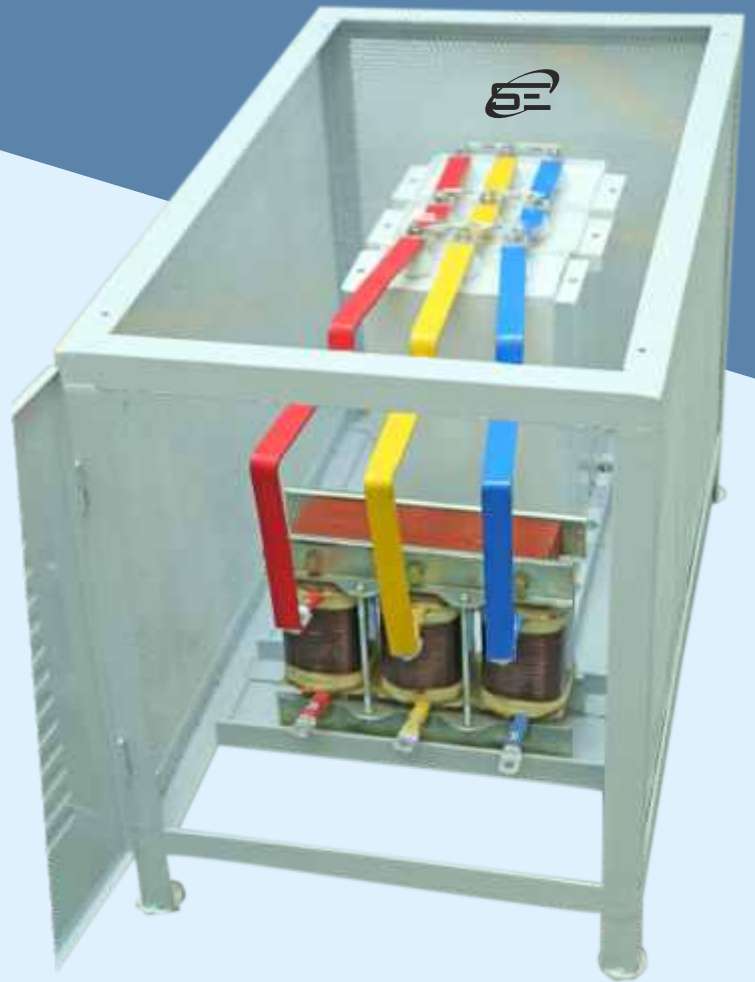
Rated output : 50 to 5000 KVAR  
Rated Voltage : 380 Volt to 1000 Volt

## Harmonics Filter

SHARDA offers perfect solution to minimize **Harmonics level** of industries where non-linear load like **VFD, Electronics load, Convertors, Booster equipment's** are present.

First, our technical executive analyse full system and as per system requirements to reduce voltage and current harmonics level compliance to IEEE Standard 519.

SHARDA manufactures Capacitor and Reactor which is used in Harmonics filter has sturdy design with considering all electrical and mechanical parameters to achieve harmonics level to IEEE standard level in system.



### Product Range :

Rated output	: 50 KVAR to 4000 KVAR
Rated Voltage	: 380 Volt, 400 Volt, 440 Volt, 480 Volt, 525 Volt, 690 Volt, 1000 Volt.
De-tuning factor	: 0.2% to 14 %
Type of reactor	: Dry type Aluminum / Copper wound
Type of Capacitor	: Double dialectic ultra heavy duty All PP Capacitors

# SHARDA's Services & Solutions

## We Provides Following Electrical Services & Solutions :

- Consultancy.
- Power Quality Analysis, Energy Audit & System Analysis.
- Services are offered to all Heavy Industries like Steel Plant, Rolling Mills, Cement Plant, and Chemical Plant.
- Automation and quality control.

### ◆ Consultancy

- Undertaking Electrical and Mechanical turnkey heavy industries such as, steel, cement, plastic.
- We are giving full Electro-Mechanical consultancy for new or expansion of existing Industry.

### ◆ Power Quality Analysis, Energy Audit & System Analysis

- We conduct compressive system analysis.
- We conduct full energy audit to improve system power quality, voltage quality.
- We also provide solution to save energy losses and minimize electricity bill.

### ◆ Services are offered to all Heavy Industries like Steel Plant, Rolling Mills, Cement Plant and Chemical Plant

We provide entire power quality solution for heavy industry such as Improvement of Power Factor, Harmonics reduction, Energy saving, Energy audit, Power quality analysis. The details are described below..

The load available in heavy load industries are mostly Pure Inductive and Power Electronics type load i.e. the nature of load is variable and fluctuating. Because of this nature following causes / problems occurs,

- 1.Low power factor as most of load is inductive.
- 2.High Harmonics level as load is power electronics.
- 3.Fluctuation in voltage & current as load is variable.



## To prevent the above Causes / Problems We, SHARDA takes the following steps:

### 1 Power Quality Analysis

We visit to respected industry and collect the load details and its nature of working as well as duration of work.

Then we Analyze the entire system with our Hi-tech calibrated equipment.

This procedure may take few days as per the load and nature of Industry.



### 2 Documentation & Design

After detail case study of system we prepare power quality report. Which including the analyzed data with comments.

Then we design the Power quality devices according to nature of results to solve the power quality problem.



### 3 Supply & Installation

According to designed power quality devices we manufacture the same with recent trends and technology.

Then we install power quality devices to respected area in the system to achieve desired results.



LV / MV / HV Capacitor Bank



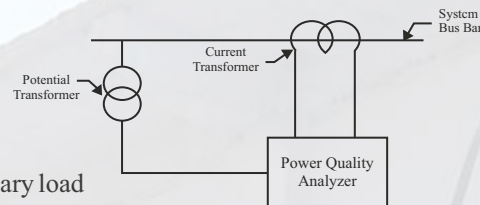
Harmonics Filter



# SHARDA's Services & Solutions

## Case Study in Heavy load Industry

The Project has a Main Substation in where the 33 kV Incomer is received from the local electrical Utility and then being distributed inside the plant. The total load is about 14 MW In this they have 2 Induction furnace, AC and DC drives Rolling Mill, Dust collector and auxiliary load



We have done the analysis at AC and DC drives Rolling mill as the customer faces problem of less power quality that is low power factor and heavy harmonics in system. Because of these issue customer is penalized from local electricity utility as well as electronics components in their plant gets damaged.

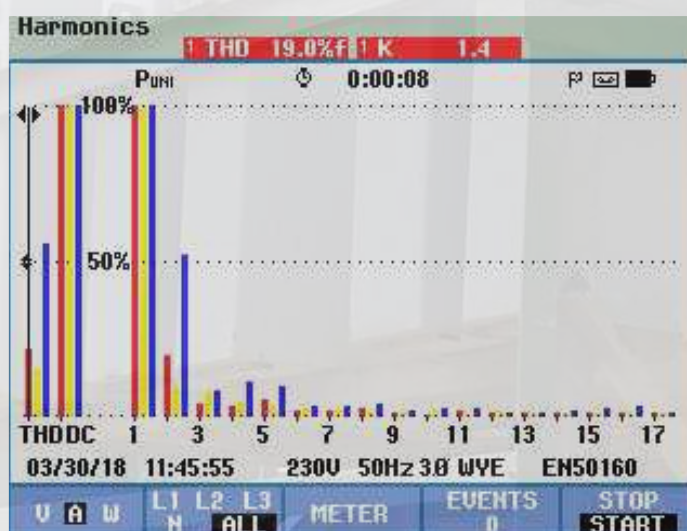
So to minimize the above problem, we have analyzed their system as shown in figure. The results are as below.

After examining the results, we have Designed, Supplied and Install Power Quality device including LV Automatic Power Factor Controller Capacitor Panel and Harmonics Filter in system.

After installation of all the electrical equipments, Power Factor is improved up to @0.98 and the Both the current and voltage Harmonics level is reduced which is within IEEE 519 limit.

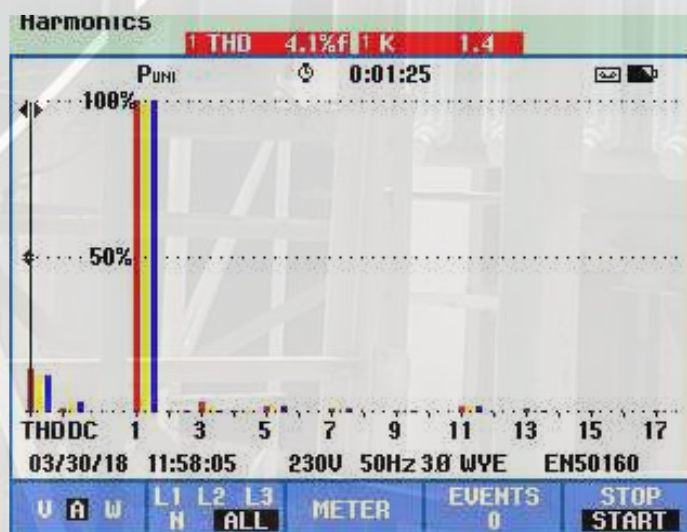
## Results Before Installation of Power Quality Devices

Power & Energy				
FUND 0:00:11				
	L1	L2	L3	Total
kW	76.0	78.4	71.5	225.9
kVA	92.0	90.1	83.9	266.0
kVAR	51.9	44.3	43.9	140.1
PF	0.79	0.83	0.81	0.81
Arms	388	381	357	
L1 L2 L3				
Vrms	244.8	245.1	244.5	
03/30/18 11:45:06 230V 50Hz 3Ø WYE EN50160				
VOLTAGE	ENERGY		TREND	HOLD RUN



## Results After Installation of Power Quality Devices

Power & Energy				
FUND 0:00:18				
	L1	L2	L3	Total
kW	76.7	77.4	75.2	229.3
kVA	79.0	78.9	77.6	235.5
kVAR	19.2	15.5	18.9	53.6
PF	0.97	0.98	0.97	0.97
Arms	323	322	320	
L1 L2 L3				
Vrms	244.5	245.9	244.7	
03/30/18 11:55:56 230V 50Hz 3Ø WYE EN50160				
VOLTAGE	ENERGY		TREND	HOLD RUN



## Features



**Save upto  
40%  
Electricity**

**Improve  
Power Factor  
@ Unity**

**Reduction  
of  
Harmonics**

**Increase  
Transformer  
Capacity**

**Increase  
Generator  
Capacity**

**Cable,  
Generator,  
Transformer  
losses reduces**



MV / HV Capacitor Bank



Automatic Real time Power Factor  
Controller Capacitor Panel



LV/HV Bus duct



Harmonics Filter



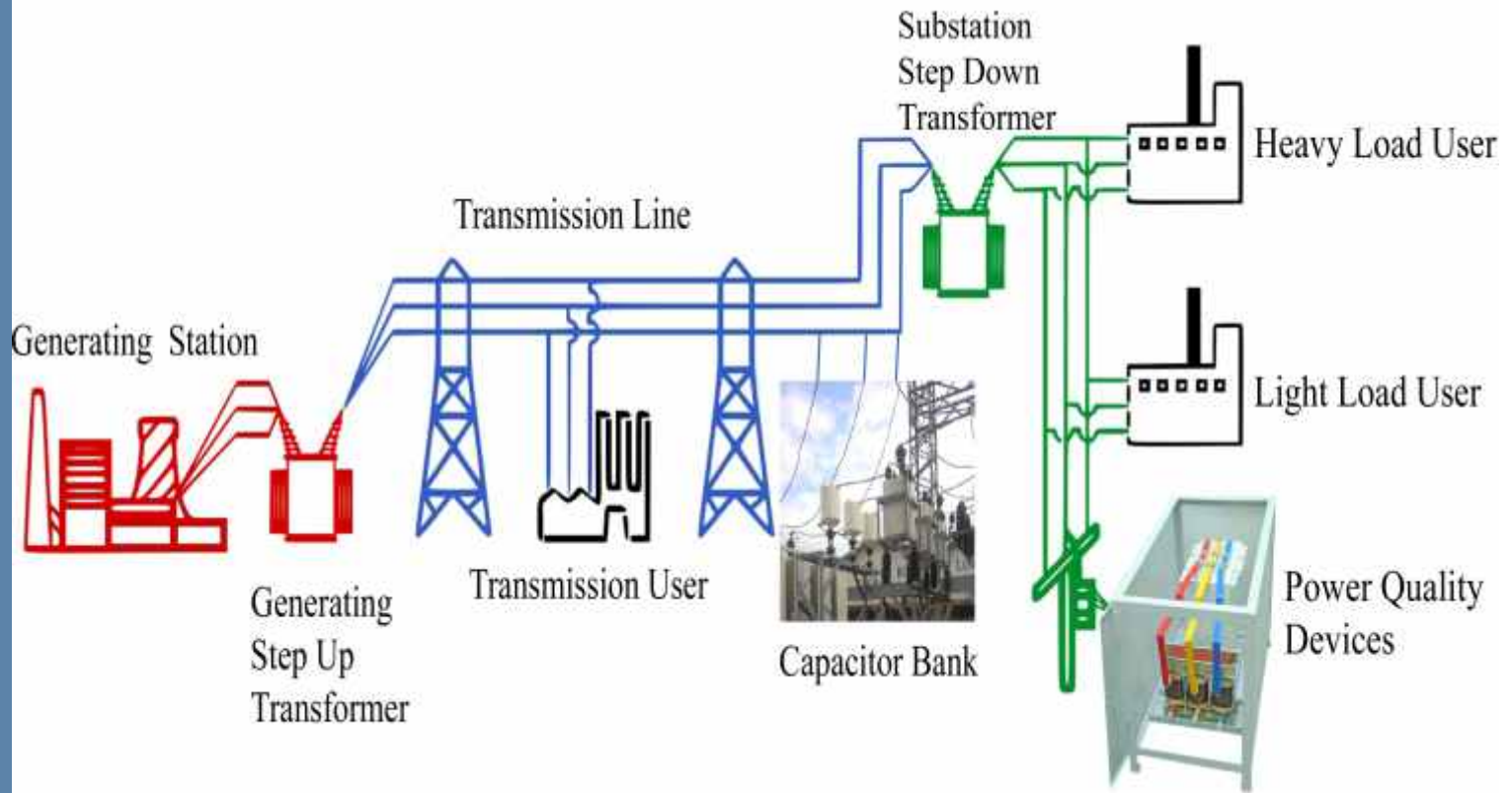
Distribution Panel



Breaker Panel

**We  
Provide**





**Distribution Panel**



**HV / LV Bus Duct**



**Breaker Panel**



**Control Relay Panel**



# MV/HV Capacitor

- MV / HV capacitor design with recent trends and technology with imported raw material.
- Construction of MV / HV capacitor generally 1 ph or 3 ph with single/double/triple bushing termination in all film design.
- The capacitor manufactured by using electrical grade double side hazy biaxially oriented all PP film interleaved with soft annealed high purity aluminum foil as its electrode.
- The capacitor is impregnated under high vacuum with electrical grade non-PCB insulating fluid.
- All capacitors either internal fuse or external fuse assembly with permanent internal connected discharge device.

## Product Range

Specification	: IS 13925 IEC, 60871, ANSI IEEE STD 18
Rated Output	: Up to 1000 KVAR (single unit)
Rated Voltage	: 1 KV to 400 KV class
Frequency	: 50 Hz / 60 Hz
Connection	: Single phase & Three phase ( $\Delta$ )
Installation	: Indoor /outdoor, vertical / horizontal
Protection	: Internal /External fuse



## Surge Capacitor

SHARDA's surge protection capacitors are special types of capacitors. Its application is of a specialized nature i.e. in case of abnormal condition. These capacitors are designed for protection of large rotating machines such as motors and generators. At the time of over voltage during electric storms produces surges to electrical equipment's connected to system. The voltage stress between turns of multi turn coil sets a limitation and surge voltage causes breakdown between turn to turn insulation resulting in short circuited turns. To protect from this situation surge capacitors are used.

These capacitor compliance with ISS Standard 11548:1986.

## APPLICATION

- Protection of Motors and Generators against Inter-Turn fault.
- High voltage Surge and Cable fault finding.
- LAVT Panel.
- Protection against surges.



## Product Range :

Rated Voltage	: 4 KV AC to 60 KV AC
Rated Capacitance	: 0.1 micro Fared to 0.5 micro Fared
No. of phase	: 1 Ph or 3 Ph



## LV APP Capacitor

SHARDA's design of LV APP capacitor is of double dielectric sturdy type. These capacitors are used in heavy industrial area where heavy high harmonics, fluctuations, voltage instability is present. The design of capacitor is very sturdy to withstand highly polluted electrical system. For that purpose SHARDA is stick to approximate same design, construction & features as per our MV/HV capacitor.

These capacitor compliance with ISS 13585 and IEC 60931

### Product Range :

Rated output : 5 KVAR to 50 KVAR (Single unit)  
60 KVAR and above (Banking system)

Rated Voltage : 380 Volt to 1000 Volt



## LV MPP Capacitor :

SHARDA's LV MPP capacitor design with metalized film having feature of self healing. These capacitors are used in light load industry where inductive load is present.

As metalized film acts as a dielectric as well as part of capacitor. The separate element place either in cylindrical aluminum container or square type CRCA/SS container with soft jelly ic semi solid vegetable oil which is non biodegradable & environment friendly.

These capacitors are incorporate with self healing technology. These capacitors have **over pressure dis-connector** facility to operate at heavy failure to bypass from system.

These capacitor compliance with ISS 13340/13341, IEC 60831



### Product Range :

Rated output : 5 KVAR to 50 KVAR (Single unit)  
60 KVAR and above (Banking system)

Rated Voltage : 380 Volt to 1000 Volt



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