



# E-CUBE ENERGY INFRA SERVICES PVT. LTD.

DRIVING EFFICIENT UTILIZATION OF ENERGY



Power Quality | Power Distribution & Control | Metering | Energy Management

**E-CUBE**  
Driving Efficiency

# About us



## **E-Cube Energy Services Pvt. Limited.**

E-Cube Energy Infra is a professionally managed company involved in the manufacturing, distribution and providing of turnkey solutions in the field of Power Quality, Metering and Power Distribution & Control.

With a state of the art manufacturing setup at Jalan Industrial Complex and over 3 decades of experience, E-Cube Energy Infra aims to deliver high quality technologically advanced products and solutions to customers across the region especially to industries, government departments, utilities and large EPC contractors.

E-Cube Energy Infra also intends to work closely with national and international manufacturers of niche products in the above mentioned segment to be able to offer technologically advanced yet cost effective solutions to our customers

## **Other Group Companies**

### **Rajasthan Industrial Enterprises**

Established in the year 1982, "RIE", an ISO 9001:2015 certified company, today is the largest distributor of AC Capacitors in Eastern India and one of the leading providers of Power Quality, Metering and Distribution products and solutions. With the aim to bringing quality products to market, it is constantly augmenting its product line with top notch brands and products helping its customers unlock hidden energies within their setups

### **Rajasthan Industrial Enterprises**

### **E-Cube Energy Trading Private Limited**

Headed by Umesh Bhutoria, EETPL has emerged as a "Thought Leader" in the use of Energy Analytics in Industries/SME's to accelerate Energy Efficiency. Our company through its products and solutions helps industries/utilities get started with their Energy Data Strategy and transition to Faster, Better and Cheaper way of assessing, reporting and managing Energy Performance.

[www.eetpl.in](http://www.eetpl.in)

# Key Management

**Bimal Kumar Bhutoria**  
Chairman

With over 30 years of experience in the electrical sector Shri B.K. is the chief mentor of the group of companies.

**Amit Bhutoria**  
Director

Amit, an engineer from IIT Kharagpur, leads the product development, marketing and sales functions. He has considerable experience in offering Power Quality solutions for industries.

**Umesh Bhutoria**  
Director

Umesh, considered to be a thought leader in the use of Energy Analytics in driving Energy Efficiency, is involved in the overall product strategy of the company

**Deepak Lunia**  
HOD Commercial

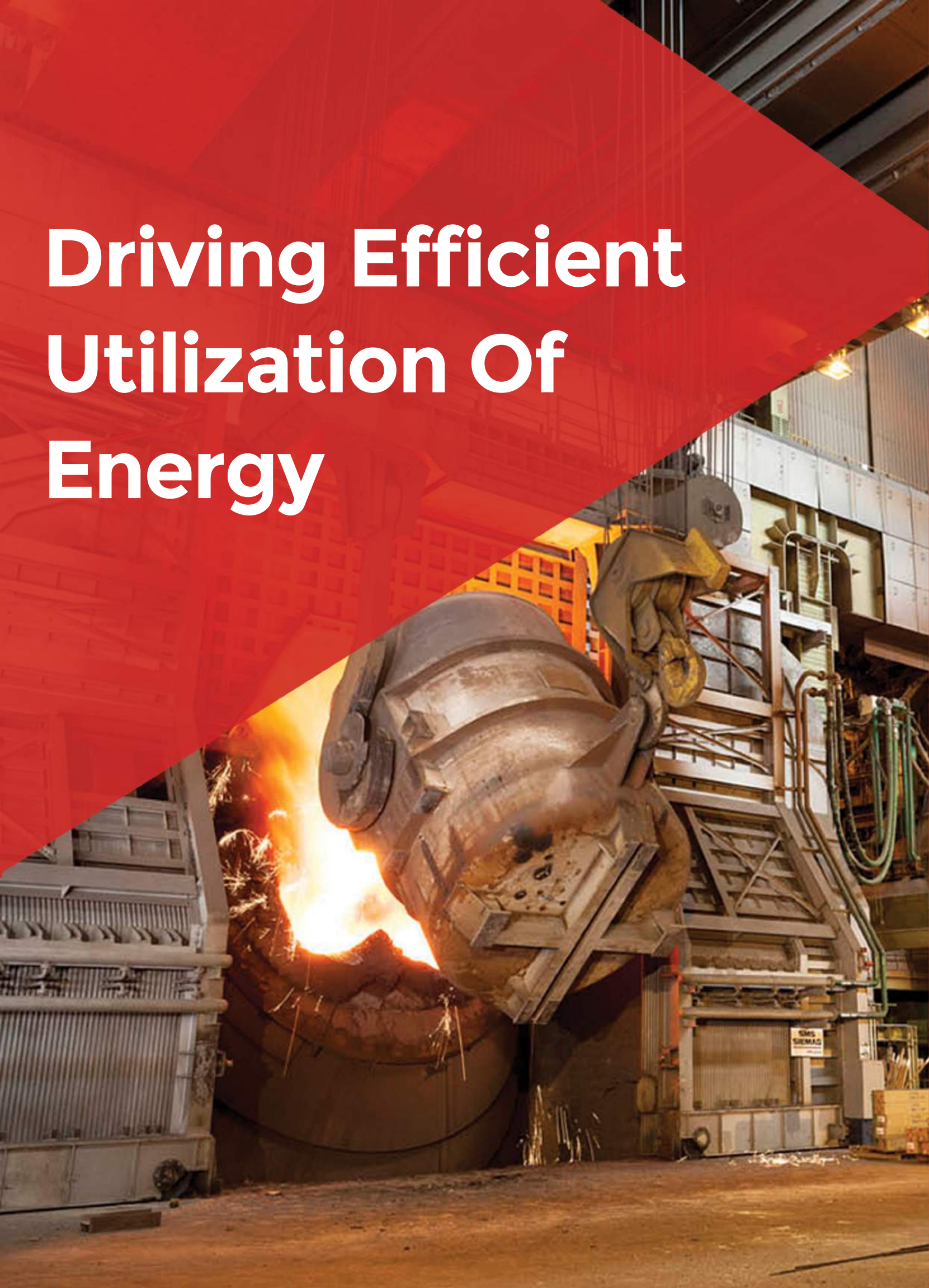
Deepak, a commerce graduate with overall experience of more than 25 years, leads all commercial functions within the organization

# Existing Customers



**Note:** The company logos used above are property of their respective owners

# Driving Efficient Utilization Of Energy





# Power Quality Products & Solutions

E-Cube Energy offers the most extensive and technologically advanced product and services portfolio covering industrial power quality – from capacitor banks and active harmonic filters to power quality data loggers and static voltage conditioning equipment. E-Cube Energy has the internal capability to conduct power quality audits and design, develop, manufacture, test, install and commission solutions on turnkey basis helping customers with guaranteed performance SLA.



## Our Products

**BITMatic APFC Panels**

**BITStatic RTPFC Panels**

**BITActive AHF (Active Harmonic Filter)**

**HT Capacitor Banks**

**HT Rack Mounted Capacitor Banks**

**HT APFC Panels**

**HT Metal Enclosed Capacitor Banks**

**BITHarmony Passive Harmonic Filters**

**BITHybrid Hybrid Compensation Panels**

**Static Var Compensators (SVC)**

**Static Var Generator (SVG)**

**LT Capacitor Banks (MPP/APP/MDXL)**

**PFC Spares (APFC Relay, TSM, CDC etc)**

**Power Quality Audits & Custom Solutions**





### **Contactor Switched APFC Panels (BITMatic Series)**

The BITmatic series of Automatic Power Factor Correction (APFC) Panels manufactured by E-Cube Energy come in three variants - normal, de-tuned and tuned. These panels use Heavy Duty and Super Heavy Duty power capacitors with oil impregnation providing the best performance for Indian conditions.

The SPFCR-3 series of microprocessor based 3CT sensing PF controllers are used which sense load from all the three phases thereby allowing for more accurate PF control while also providing for superior performance, monitoring and data logging capabilities. All ratings of panels have suitable forced cooling arrangement through the use of requisite number of thermostats and cooling fans.

### **Thyristor Switched RTPFC Panels (BITStatic Series)**

The BITCON BITstatic range of Real Time PF Correction (RTPFC) range comes with tuned or de-tuned heavy duty filter capacitor banks and microprocessor based 3CT sensing PF controllers with transistor relays for fast switching (overall response time of less than 20 ms ). Specialized configuration of BITstatic system for compensation of unbalanced loads is also available on request. BITstatic RTPFC Systems are rugged in construction and use best in class components to provide long service life and even when providing ultra-fast transient-free switching.



### **BITActive Active Harmonic Filters**

BITCON BIT Active range of filters work on the principle of negation - injecting the reverse of the harmonic currents that need to be compensated within the electrical networks. The system adopts an advanced 3-level structure and consists of digital signal processors (DSP), large programmable controllers and high power electronic devices, which has excellent performance and superior reliability.

The AHF system can also improve power factor (PF) and correct load imbalances in the power system. The modular design of our offered AHF makes them to be the perfect choice for customers.



### Passive Harmonic Filters (BITHarmony Series)

We have developed an efficient Passive Filter, which are specifically designed to provide superior harmonic filtration (to tolerable levels as defined by IEEE-519) as compared to other competing technologies for use in 6-pulse front-end diode rectifier applications.

Since all filter components are passive (input reactor, output reactor, shunt reactor, capacitor) they are rugged, maintenance free, reliable and low cost.

### Static VAR Generators (SVG)

The Static VAR Generator (SVG) is able to improve power factor for a lagging or leading displacement Power factor in a steplessly with an overall response time of less than 20 ms. SVG have the same working principle as AHF and are used reactive compensation for applications where normal capacitor banks are not able to give the desired results due to too frequent fluctuations in loads. SVG offered by us is also modular in design, and the SVG system consists of one or several SVG modules and an optional Liquid Crystal Monitor & Control Panel (LCM).



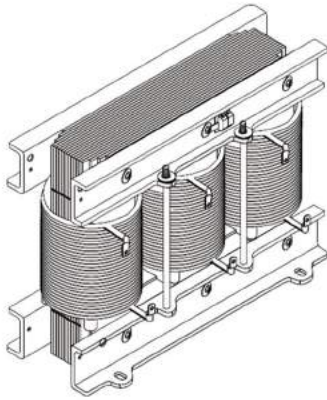
### LT Power Capacitors

We offer the best quality MPP (as per IEC:60831-1 & 2, IS:13340 Part 1 & 2) / APP (as per IS:13585-1994) LT Power Capacitors with oil impregnation which is most suitable for Indian conditions. These capacitors are offered in box type construction for fixed compensation and in can type construction for use in PFC system and in harmonic filters. Our capacitors are designed to withstand high inrush currents of up to 450 times the rated current, 10% over voltage on a continuous basis and higher over current capacity of up to 3 times the rated current. We offer unconditional guarantees on our offered capacitors.

### Hybrid Panels

BITCON Hybrid system integrates conventional power factor correction systems and the latest IGBT-based AHF solutions to provide ultra-rapid response and infinitely variable kVAR and harmonics control which can be applied either in low voltage or medium voltage electrical distribution networks. These systems are capable of providing near real time response by injecting instantaneous and continuously variable reactive power and harmonic currents. For utilities billing on KVAH, it is usually not possible for consumers to reduced KVAH only by using capacitors banks as harmonics present in the system also contributes to increased KVA consumption and needs to be addressed appropriately.





### LT Harmonic Block(De-tuned) Reactors

These reactors are used in PF correction equipments so as to protect the capacitor banks by preventing the occurrence of harmonic resonance when capacitors are injected into the electrical system with non-linear loads for improvement of system PF.

We offer heavy duty low loss reactors with Al or Cu windings with linearity of 200%. These reactors are equipped with a thermal NC contact used to disconnect the capacitor bank in case of overheating of reactors.

### LT Capacitor Duty Contactors

E-Cube offers specially designed contactors meant to limit the in rush current due to switching of capacitors. Designed with an insulation voltage of 690 VAC, they are suitable for use with a wide range of operating voltages from 400-690 VAC. They come in different ratings from 5 KVAR to 100 KVAR and offer high operating life of up to 2,00,000 operations at rated load.



### APFC Controllers

E-Cube offers a wide range of microprocessor based APFC controller in 1 CT and 3 CT sensing options for a wide range of user applications. The 3 CT APFC controllers offered by us come with a host of top of the line functionality such as RS-485 communication port, in-built power analyzer with THD and data logging facility.

We also offer optional remote monitoring module through which the relays can be monitored / programmed over GPRS/ Ethernet connections.

### Thyristor Switching Modules (TSM)

A Thyristor Switching Module(TSM) is a solid state switching device that provides reliable, high speed and transient free operation of capacitor banks. They are specially designed for use in RTPFC Panels for compensation fast varying loads like welding machines, rolling mill etc. or electrical networks where equipment are sensitive to voltage disturbances created due to contactor switching.

These modules can be used for both balanced and unbalanced compensation for 440-690 V applications.







### HT Outdoor Capacitor Banks

The HT Outdoor Capacitor Banks mainly consists of single phase (arranged in single or double start configurations) or three phase capacitor units of Al(Aluminum) Polypropylene (AIPP) film design, inrush suppression or tuned/de-tuned reactors, Residual Voltage Transformers(RVT) or Neutral Current Transformers (NCT) for capacitor protection, isolators with earth switch, LA's and other protection gears all mounted on galvanized steel structures. These are rugged in construction and can be designed for continuous use in the harshest of operating conditions.

Available in voltages ranging from 3.3 KV to 132 KV and in ratings from 50 KVAR to 20 MVAR.

### HT Indoor Metal Enclosed Capacitor Banks

E-Cube Energy offers factory built HT Metal Enclosed Capacitor Banks that not only offer space saving and the ultimate ease of installation. These panels can be equipped with various protection relays, meters, and sensors to protect the capacitor bank as well as the system from over-voltage, out-of-balance operation from capacitor failure, internal faults, and over-temperature due to fan failure.

They can be designed for both indoor and outdoor applications and are available in voltages ranging from 3.3 KV to 33 KV.



### HT APFC

E-Cube offers these specialized metal enclosed capacitor banks with multiple steps, with each step operated automatically using electro-mechanical contractors.

These HT APFC's can be designed with inrush reactors or de-tuned reactors and a host of metering and protection options. These are mostly available for voltages ranging from 3.3 KV to 11 KV, but can also be offered for 33 KV using imported switches.

### HT Capacitors

APP oil impregnated bare capacitor units are offered to customers in 1 Phase and 3 Phase design in voltages ranging from 3 KV to 22 KV.

These capacitors with their special design offer lower losses (less than 0.2 Watts per KVAR) and high operating life even for the most demanding applications.





# Distribution & Control Products & Solutions

E-Cube Energy offers the complete range of distribution solutions from LT Panels to plugs and sockets. LT Panels offered by us are type tested at CPRI, Bhopal for Short Circuit, Temperature Rise and Ingress protection against relevant standards. Every single panel that we manufacture goes through a stringent QC process thereby ensuring their trouble free performance at site.



## Our Products

Power Control Centers ( PCC)	Motor control center (MCC)
Main LT Panel	VFD Panels / PLC Panels
AMF Panels	DG Sync / Load Sharing Panel
Feeder Pillars	Distribution Boards
Bus Ducts	Junction Boxes
Insulated Plugs & Sockets	Lighting Panel





## Motor Control Centre (MCC)

BITCON make low voltage motor control centers (MCCs) are designed and manufactured for use in demanding applications in markets such as pulp and paper, mining and metals, utility, chemical, oil and gas, mass-production manufacturing, and water & wastewater.

These MCCs offer application flexibility while adhering to the most stringent industry standards.

Our MCC's provide a safe, smart and durable means to protect and control motors.

### Salient Points of our MCC

- Rated updated to 3200A
- Compartmental design with different forms of separate as per customer requirements
- Segregated compartments for power and control bus
- Use of dedicated electronic motor protection relays for larger feeders
- Provision for local, remote and DCS operations
- Intelligent MCC option available on request
- Available in both Fixed and Draw out options in single or double front designs



## Power Control Center (PCC)

BITCON make PCC panels can be designed for a current rating of up to 6300A and for fault levels of 50/70/100 KA for 1-sec as per customer requirements. Our PCC panels are fabricated using 2/3 mm thick CRCA sheet of high quality and undergo 9 tank pre-treatment processes before being powder coated with high quality epoxy paint as per approved colour shade. Non-hygroscopic SMC/DMC bus supports of reputed makes are used along with Al/Cu bus bars in our panels.

### Salient Points of our PCC

- Relevant Standard IEC 61439 - 2, BS EN 61439 - 2
- Rated up to 6300A with short circuit withstand capacity of up to 100KA for 1 sec
- Bolted construction with welded top and bottom frame
- Each vertical divided into unique zones consistent across the entire length of the panel
- Single tier/ double tier arrangement of breakers
- Degree of protection IP-42 / IP-54
- Various forms of separation possible from Form 1 to Form 4
- Use of protection relays for feeder protection
- Intelligent PCC option available on request



## LT Distribution Boards

These are switchboard assemblies used for low voltage power distribution that divides an electrical power feed into subsidiary circuits, while providing a protective fuse or circuit breaker for each circuit in a common enclosure.

### Salient Features:

- Modular Design
- Ease in handling, transportation and maintenance
- Easily extensible on either side, makes the enclosure future proof.
- Single front & double front construction.
- Multi-Tier compartmentalized Circuit Breaker Panel
- Load Distribution through MCCBs and MCBs
- Arrangement for receiving supply through Power Cable.
- Doors can be hinged on either side offering greater flexibility to configure the panel as per the site conditions.
- Standard sizes available off the shelf, thus cutting down lead time and inventory carrying cost
- BMS Compatibility as per requirement.

## VFD Panels

With the advent of automation and implementation of motor control for energy savings gaining popularity, VFD panels have become very popular across multiple industry segments such as HVAC, Power Plants, Pumping Stations, Food Processing, Textile, Metals & Mining and more.

VFD's control the motors speed as per requirements thereby allow for the control of a certain process or reduce the motor load thereby generating energy savings.

BITCON make VFD panels are offered using drives of reputed makes along with a host of options such as by pass arrangement, speed control potentiometer, semiconductor fuses for protection and interfacing with BMS/DCS/SCADA/PLC as per customer requirements.





### AMF Panel / DG Sync / Load Sharing Panels

AMF Panel monitor the incoming AC mains supply, activate the standby generator when mains power fails, and make an automatic electrical transfer of the building's load from the mains to the generating set. When the mains supply returns, the ATS panel controls a return to the mains supply and shuts down the generator after a suitable cooling run.

DG Synchronization Panel comprises of special relays that automatically performs synchronization of two or more sources of power (usually DG's). Besides, these panels can also be provided with load sharing relays so that each power source shares equal load and control starting & shutting off generators depending upon load requirement.

Application are intended to shoulder peak saving or base load operation in heavy energy consuming industries such as oil refineries, petrochemical refineries, steel mills, mines, cement factories, food processing, Multi storied residential colonies , Hospitals , Malls, Hotels , Telecommunication sectors etc.

### Automation (PLC) Panels

PLC Automation Panels control the varying electrical load as per variable load demand periodic as well as intermittent and switching on sequential flow of programmable automated operation in assembly line of manufacturing as well as completion of operations. These panels used in conjunction with MCC panels or VFD panels.





## Control & Relay Panels

A control & relay panel is designed to provide to control the associated line or transformer through outdoor switchgear at various 11KV and 33KV zonal substations. The control & Relay panels are complete in themselves with all main and auxiliary relays, annunciation relay, fuses, links, switches, wiring, labels, terminal blocks, earthing terminals, base frame, foundation bolts, illumination, cable glands etc.

These panels are used for the control & monitoring of electrical equipment such as transformers, generators and circuit breakers. Indoor Control panel for Outdoor VCB includes Numerical relay, Master Trip Relay, Trip circuit Supervision Relay, Indications & meters etc. These control & Relays panels are available in various combinations as single circuit or multi-circuit depending upon the customer requirements.

## Stand Alone Motor Starter Panels

We offer a wide range of starter panels such as DOL starters, Star-Delta Starters, Soft Starters etc for a wide range of industrial applications.

A soft starter control panel houses and utilizes soft starters as a method of motor control. A soft starter itself is designed to control the acceleration and deceleration motors. It also starts up motors with a reduced power load. They are used across industrial and commercial applications to control three-phase and single-phase motors. Soft starters are common components of a control panel as they can increase a motor's lifespan by relieving it from harsh electrical stresses.

We are also able to offer retrofit solutions to control motors feeders automatically using specialized controllers thereby allowing optimum utilization of energy.



## Feeder Pillars

Switchboard assemblies that provides local isolation to electrical distribution equipment, protecting both the cabling and the transformer from faults. Feeder pillars allow simple and local maintenance to your equipment, reducing site downtime and reducing overall maintenance costs. E-Cube offers a wide range of feeder pillars as per customer requirements.



## Manual / Automatic Changeover Panels

These panels use circuit breakers or motorized changeover switches to power your infrastructure during a mains failure. We supply changeover systems from 20A for the smallest backup systems to 3200A ACB-based synchronizing panels for much larger installations.

The benefit of an automatic transfer panel system over a manual system is the ATS panel moves the electrical load without any manual process, reducing downtime. In the event of a power outage the transfer switch automatically switches its incoming power supply from the mains to the generator, triggering the generator to start up. The generator is ready to take load within approx. 15 seconds.

Without ATS switches, organisations would have to manually change over from mains to the generator and therefore suffer a longer break in electricity and depend on personnel being available to carry out this task. An automatic transfer switch panel will eliminate this need for a manual change.

## Customized Solutions

We also specialize in providing customized power distribution solution by including different protection elements or conditions elements as is required for proper working of equipment's within an industrial or commercial setups.

These panels are fitted with IOT enabled continuous monitoring relays that are able to allow both monitoring and control of these panels remotely.



# Insulated Plugs & Sockets



E-Cube Energy offers the complete range of insulated plugs and sockets that are used to distribute power to loads. These insulated plugs and sockets come in a wide range of configurations and ratings that suit a wide range of applications. These come in IP ratings of IP-44 and IP-67 and current ratings from 16A to 125A. Metal Clad plugs and sockets are also available on request for current ratings up to 400A.

Some of the products include

- Psucho Plugs & Sockets
- Panel Mounting Sockets
- Wall Mounting Sockets
- Surface Mounting Sockets (Interlocked with and without MCB provision)
- Mobile Plugs & Sockets
- Appliance Inlets
- AC Distribution Boxes
- Modular Distribution Boards







# Metering and Energy Management

- Multifunction Meters
- Power Analyzers and Data loggers
- Energy Management System
- Demand Monitoring & Control

## Multifunction Meters

We offer single function and multi function digital panel meters. These digital panel meters measure all electrical qualities like Voltage, current, Power, energy, Frequency & Power Factor accurately. Being compact in size and user friendly, widely used for industrial & commercial application.

LED Type, 7 Segment, 3/4 digit display CT/PT Ratio Selectable True RMS & Password Protection Auto Ranging Auto/Manual Scrolling



## Power Analyzers and Data loggers

We offer power analyzers and data logger, devices that measure electrical power characteristics of devices that generate, transform, or consume electricity. Data loggers have inbuilt logging system which provide vantage to access the data anytime. Also enable engineers to minimize energy loss LED/LCD Type, 7 Segment, 3/4 digit display CT/PT Ratio Selectable True RMS & Password Protection Auto Ranging, Accuracy Class 1/0.5 with RS 485 Auto/Manual Scrolling

## Energy Management System


We offer power analyzers and data logger, devices that measure electrical power characteristics of devices that generate, transform, or consume electricity. Data loggers have inbuilt logging system which provide advantage to access the data anytime. Also enable engineers to minimize energy loss

LED/LCD Type, 7 Segment, 3/4 digit display CT/PT Ratio Selectable True RMS & Password Protection Auto Ranging, Accuracy Class 1/0.5 with RS 485 Auto/Manual Scrolling

## Multifunction Meters

We have on offer a range of Maximum Demand Controllers that can help industrial customers in better utilization of available power while avoiding overdraw penalty and disconnection. The MDC's offer a unique predictive control method and up to 3 numbers of control outputs for better control. We also offer customized offerings for demand monitoring and control of specific types of loads such as furnaces etc.

# Voltage Conditioning

E-Cube Energy in partnership with  TSI Power Pvt. Ltd brings to its customers the most advanced voltage conditioning equipment for applications where stable input power is a mandatory requirement. These Static Voltage Regulators with Precision (VRP) are plug & play type, easy to install and are light in weight. They are available for both indoor installation as well as outdoor installation.

## Static PWM Voltage Conditioner (TSI-VRP)

TSI Power offers a full range of PWM Static Voltage Regulators with Precision (VRP), based on IGBT with PWM continuous seamless correction of voltage, surges, spikes, sags & brown-outs.

TSi Power's VRP's are compact, light-weight, tightly regulating AVR's that respond instantly with a wide input voltage range but without switching the active power path. With inbuilt excellent surge voltage protection & electrical noise control circuits, using only passive components, our VRP series is your ideal choice for homes, offices as well as remote locations, such as in cell sites, signaling yards & the like.



Regulator Engine	High frequency 20 Khz IGBT driven voltage regulation convertor
Nominal Voltage	415 volts ac, three phase
Normal Operating Voltage	+/- 13% to 26% of nominal voltage based on model selected
Power Efficiency	Over 97% (20-100% loading)
Voltage Regulation	+/- 1%
Safety & Standards	Designed to meet UL 60950-1 standards. Protection class IP 20
Protection Features	<ul style="list-style-type: none"><li>• OV/UV cutoff</li><li>• Automatic Bypass</li><li>• SPP for surge protection</li><li>• Soft swtich-on</li></ul>

## Isolation Line Conditioners

A correctly sized Isolation Line Conditioner solves grounding problems, recreates a neutral-to-ground bond and minimizes ground leakage current. In addition, it enhances safety, limits short-circuit current, reduces common and normal-mode noise and provides excellent surge protection for sensitive electronic equipment.



TSi Power offers a full line of isolation line conditioners for industrial and medical applications. With numerous configurations and options available, you'll find the ideal product for your specific application. TSi Power isolation line conditioner is available in standard models as a self standing, indoor unit. It can be supplied either as a stand-alone ILc or integrated with our legendary VRP (VRP-ILc).

## Common Application Areas

Communications, CNC, Automation, Robotics, Textile Looms, Hospitals, Diagnostic Centers , Laboratories, OEM's, Building Systems, Surveillance, IT, Wood Processing etc.



# NOTES

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