

UNIMEEC ENGINEERS

PROJECT CONSULTANT AND MANUFACTURER FOR ELECTRICAL INSTALLATION FOR INDUSTRIAL AND COMMERCIAL APPLICATIONS

About Us

Electricity is the primary resource for operating any manufacturing business. We have started our journey to make our presence in the field of electrical installation and allied services and thus serve the needs in the relevant industries. Incepted in the year 2009, **Unimeec Engineers** is one of the prominent **manufacturers, exporters, suppliers and traders** of a wide range of **Control Panels, Induction Furnaces, and Electric Panels**. We also offer consultancy services for installation right from designing to commissioning in electrical applications for industrial & commercial installations.

We have successfully commissioned many industrial installations with electrical intensive applications like steel plants, rolling mills, cement plants etc. In addition we have also specialized in power factor improvements in steel plants and in other engineering unit and automatic power factor controller.

Backed with modern infrastructural facilities comprising of the latest machines and equipments, we have been able to manufacture a range of innovative gamut of heavy duty electrical items and allied devices. State-of-the-art facilities coupled with a dedicated team of engineers assist us in handling the involved production processes and meet the consignment deadlines on time in the most efficient manner. Our logistic support staff work round the clock in order to take care of the product distribution across the nation and other markets located in Africa.

We are a group of engineers in the field of mechanical, electrical, electronics, civil and drives where ever applicable.

- **Mr. Ashok Gupta:** B.E Electrical (1979 batch)
(Having experience of more than 30 years in steel sector and their related heavy duty electrical panels)
- **Mr. Prashant Gupta:** M.Tech Electrical (IIT) (Specialization: Power Electronic and Electric Drives)
(Having wide experience in electrical drives and automation required in steel plants and their related distribution panels)
- **Mr. Nishant Gupta:** B.Tech Mechanical
(Having expertise in project engineering and production enhancement in both hot and cold rolling mills)

Our fields of expertise in electrical installations include

- Commissioning of electrical switch ward from 11 KV to 132 KV up to 20 MVA capacities.
- Power control centre with synchronizing panel up to 55 MVA.
- Manufacturing and Commissioning of Electrical Bus-bar systems of up-to 35000 Amps
- Motor control centre.
- Power factor correction panels to maintain unity power factor.
- Commissioning of D.C and A.C drives with SCADA operation.
- Manufacturer of Feeder pillar boxes and lightning distribution board.
- Manufacturer & supplier of compact substation of up to 1500 KVA.

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FOR ALL INDUSTRIAL AND COMMERCIAL ELECTRICAL REQUIREMENTS

1. Industrial Electrical Components:

Backed with modern infrastructural facilities comprising of the latest machines and equipments, we have been able to manufacture a range of innovative gamut of heavy duty electrical items and allied devices. State-of-the-art facilities coupled with a dedicated team of engineers assist us in handling the involved production processes and meet the consignment deadlines on time in the most efficient manner. Our logistic support staff work round the clock in order to take care of the product distribution across the nation and other markets located in Africa.

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- Manufacturing and Commissioning of Electrical Bus-bar systems of up-to 35000 Amps
- Motor control centre.
- Logic panels.
- Power factor correction panels to maintain unity power factor.
- Commissioning of D.C and A.C drives with SCADA operation.
- Manufacturing of electrical panels for steel plant, cement plans, agglomerate marble, etc.

I. Panel

As in the present scenario the steel plant are getting more and more production and quality oriented and this requires lot of heavy and sophisticated type of electrical installation. Hence forth as we have expertise in electrical field we also commission electrical panel and manufacture it. We manufacture all kinds of electrical and control panels required for automation of steel production installations. We have been in panel manufacturing business for near about 15 years and we have manufactured 61 MVA of distribution and control panels and 7000 KVAR APFC panels. Following listed are panels we deal in:

a. Power Control Centre (PCC)

Electrical power for industrial requirements is continuously on the rise and there is increasing need for power control panels with all round protection (like circuit breaker with microprocessor or thermal trip), high reliability and longer life. **Unimeec** has always endeavored to provide power control centre with incorporation of all relevant Indian and International standards to provide best products. Following are salient points of our PCC Panels.

- Modular Construction (separate compartment for every power incoming and outgoing).
- Short Circuit rating of up to 65kA.
- Busbar Rating of up to 6000A.
- All panels with ingress protection of IP-42.
- Operating temperature 0-55C.
- Cable entry: Bottom Entry or Top Entry.
- Easy operation and Maintenance.



b. Electrical Bus-duct System

Electrical Bus-duct system has become very important part of today's electrical installation where the requirements cannot be met by hard wired system. In systems where installation has to be done fast, have limited space or has to be aesthetically pleasing, bus-duct systems have been used. Bus-duct system has also been used in systems where there is a very large current requirement. **Unimeec** has installed bus-duct systems in all kinds of applications, like for e.g. Induction Furnaces, PCC Panels, Large rating L.T. motors etc. We have installed



systems both in Aluminum and Copper material. Following are few salient features of our Bus-duct systems.

- Bus-duct system design is customized.
- Short Circuit rating of up to 50kA@3 sec.
- Voltage Insulation rating of up-to 11 kV.
- Bus-duct System Rating of up to 35000A for a 12 pulse system.
- All bus-duct with ingress protection of IP-42 for indoor installations and IP 56 for Outdoor installation.
- Forced air cooling for all Bus-duct system up-to 30000 Ampere.
- Operating temperature 0-55C.
- **Future Development:** Water Cooled Bus-duct system for rating above 30000 Ampere up-to 60000 Ampere systems.

c. Motor Control Centre (MCC)

For all industrial applications for driving loads with electrical power, electrical motor (especially induction motor control) are used extensively. In order to start, stop and control electric motors, there is requirement of starter and relevant control circuits to control these motor starters. **Unimeec** specializes in design of these starters and we always use genuine electrical components like circuit breakers, contactors, Over-load relays, etc. Following are few focal points for our designed MCCs.



- Modular design (for long life and easy access).
- Short circuit rating of up to 50kA.
- Bus bar current rating of 5000A.
- All panels with ingress protection of IP-42.
- Operating temperature 0-60C.
- Construction: Indoor/Outdoor, single-front/double-front type.
- Cable entry: Bottom Entry or Top Entry.

d. Automatic Power Factor Control (APFC) Panel

With increase in demand for electrical motors in industry, there is growing demand for efficient power factor correction solutions to get the power factor to unity. As the electrical load continuously vary in industrial environment, adding a single capacitor bank to compensate this varying load may lead to following:

- Over compensation (more KVAR than required) which will result in leading power factor, and this reduces p.f. and thus avoidable. Also leading power factor is un-healthy for capacitors and system itself.
- Power loss in capacitors in case of over compensation.



Automatic power factor controls avoids all above problems by step by step switching on and off the capacitors as the requirement arise. The capacitor bank is divided into such combination that a continuous step in KVAR can be used. For example capacitor bank of 5, 10, 20, 40 KVAR can be used in combination to get step of 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75 KVAR to get a very efficient control of power factor. **Unimeec** provides best possible combination of power factor control to get maximum out of capacitor banks. Following are few advantage of use of APFC panel:

- Efficient use of capacitors leading to elongated life of capacitors.
- Avoid over compensation and under compensation.
- Maintain unity power factor thus effective use of available power and avoid penalty for poor power factor.

e. D.C. and A.C Drives with SCADA system.

As the A.C. and D.C. motors are more and more used for variable speed applications to precisely control the speed of motor, A.C and D.C. drives are progressively used for these applications. SCADA (Supervisory Control and Data Acquisition) application is used to provide human machine interface (HMI) to operator to observe various system parameters and also feed various control parameters to control the drive. SCADA system also consists of PLC (Programmable Logic Controller) which calculates the actual control parameters from data fed by operator through HMI.



f. Special Application Logic Panels



We bring forth Special Purpose Logic Control Panels, which find wide application in automating numerous electromechanical processes such as lighting fixtures or controlling the functioning of a machine. We have designed the products in such a way that these can perform even in tough & extended temperature conditions. These vibrant and impact resistant products are made using excellent quality raw material, sourced from trustworthy vendors of the market.

We also expertise in customized electric or drive panels for special or specific applications like in steel production, cement industries, agglomerate marble industries or any other industries

after understanding the detail requirements of the customer.

II. Electrical Installations and Equipments

We have been in the field of commissioning of electrical installations like switchyards up to 132 KV for the last 15 years. While commissioning of high voltage installations we always endeavor to conform to all the required Indian and International Standards in order to provide best possible solutions. We also manufacture various equipments like water resistance starter for slip ring motors. Following are few of our portfolios:

a. Substation Installation

With increase in electrical power requirement in every industrial sector, there has been corresponding rise in demand for substation of 11kV for power requirement up to 4MVA and for 66kV for power requirement above 4MVA. Substation installation being a complex task requires attention to details in fields of civil, electrical and mechanical. **Unimeec** executes the substation installation on turnkey basis with the help of engineering experts of all relevant fields. We consider many aspects while designing the substations. Following are but a few:



- Electrical and mechanical design requirements of various electrical components like power transformers, isolators, current transformers, circuit breakers, earthing, battery banks, etc. conforming to various IEC/Indian standards.
- Civil design requirements for foundations of different substation components and their proper placements.

b. Starters For Large Induction Motors



Induction motor by its inherent characteristics draw large value of current at its starting, which becomes a problem in case of large motors as this value of starting current is 4 -5 times of rated current that is drawn by motor in normal conditions. In order to control this starting current for motor starters are used. These starters can be of many types like water resistance starter for slip ring induction motors which controls the current flowing in the rotor by introducing resistance in rotor electrical circuit, and slowly cutting the resistance out as the motor speeds up. Similarly soft starters are used for smooth start-up of induction motor and also avoid oversized mechanical and electrical components to cater for the power surge on start up. Products offered are:

1. Water resistance starter for up to 2000 HP Slip ring induction motor
2. Soft Starters for Induction motor.

III. Services Offered

Our organization has set a benchmark in the field of electrical installation and panel board manufacturing. Today, electrical installation is adequately required in the steel plants and rolling mills in order to meet the changing demands. The infrastructural facilities require sufficient power supply to efficiently carry out the manufacturing processes. We also offer project consultancy services for electrical installation right from designing to commissioning in the steel plants by our experts in the leading industrial price. We take the project on turnkey basis and cover every technical and design parameters required.

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2. Residential and Commercial Electrical Installations:

With needs of real estate properties increasing, the demand for electrical equipment and protection is dynamically changing day by day. As more and more residential and commercial properties go horizontally and vertically mobile, there is increasing call for fault proof electrical systems with optimal protections coupled. We at **Unimeec**, design customized and innovative electrical products specially catering to light to medium electrical installations, which are reliable in performance and very compact in make.

Our fields of expertise in electrical installations include

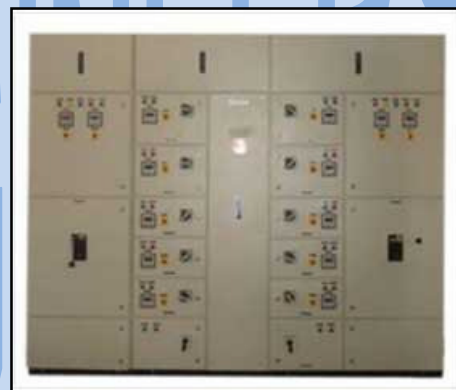
- Modular Distribution Electrical Panels.
- Motor control centre for small commercial establishments.
- Manufacturer of Lighting distribution board
- Manufacturer of Feeder pillar boxes.
- Automatic Power factor correction panels to maintain unity power factor.
- Automation systems to provide energy saving solutions.
- **Future Development:** Manufacturer & supplier of compact substation of up to 1500 KVA

I. Modular Power Distribution Panel

Electrical power for residential and commercial requirements is continuously on the rise and there is increasing need for distribution panels with all round protection, high reliability and longer life. **Unimeec** has always endeavored to provide power distribution panel with incorporation of all relevant Indian and International standards to provide best products.

Salient Features:

- Modular Construction (separate compartment for every power incoming and outgoing).
- Short Circuit rating of up to 35kA.
- Busbar Rating of up to 2000A.
- All panels with ingress protection of IP-42.
- Operating temperature 0-60C.
- Cable entry: Bottom Entry or Top Entry.
- Easy operation and Maintenance.



II. Motor Control Centre (MCC)

For all electrical applications for driving loads with electrical power, electrical motor (especially induction motor control) are used extensively. In order to start, stop and control electric motors, there is requirement of starter and relevant control circuits to control these starters. **Unimeec** specializes in design of these starters and we always use genuine electrical components like circuit breakers, contactors, Over-load relays, etc.

Salient Features

- Modular design (for long life and easy access).
- Short circuit rating of up to 50kA.
- Bus bar current rating of 2000A.
- All panels with ingress protection of IP-42.
- Operating temperature 0-60C.
- Construction: Indoor/Outdoor, single-front/double-front type.
- Cable entry: Bottom Entry or Top Entry.



III. Lighting Distribution Panel

With increase in floor area of commercial complexes for various purposes like corporate offices, showrooms, etc. there has been an increase demand for separate handling of all lighting loads as there is huge number of lighting required for such installations. **Unimeec** endeavors to manufacture **lighting distribution panels** with following features:

Salient Features

- Modular (zone wise) and compact in design (for long life and space constraints)
- Short circuit rating of up to 25kA.
- All panels with ingress protection of IP-42.
- Operating temperature 0-60°C.
- Construction: Indoor/Outdoor, single-front/double-front type.



IV. Feeder Pillar Boxes

For all lighting and low to medium range motor loads, **Unimeec** manufacture **feeder pillar boxes** which are both modular in design and also can be installed in both indoor and outdoor conditions.

V. Power Correction Solutions

Clients can avail from us superior quality Power Factor Correction Panels. Apart from eliminating the need for regular manual intervention, the products save energy and minimize penalties by electricity boards. The panels are equipped with APFC relay, capacitor banks and switchgear. For customers' convenience, we offer the panels in both automatic as well as manual control



VI. Energy Saving Automation Solutions

In today's world there is an acute requirement for energy saving and energy efficiency. This has lead to much automation incorporated in electrical systems of residential and commercial complexes. These automation can be of following nature:

- Installing room occupancy sensors and temperature sensors to turn on or off the air-conditioning system to control heating and cooling.
- Installing movement sensors to dim the lighting of the room.
- Installing photo sensors to control window shutters or blinds to use sunlight as efficiently as possible and thus save energy.



Unimeec endeavors to first understand the client's requirement and then provide best possible energy saving solutions. With this one time smart investment the benefit of such systems can be up to 20%.

Future Development: Compact Secondary Substation

As the requirement of power requirements in commercial and residential installations increase, so has increased the demand for space constraints for all electrical systems especially on the high voltage side. This has lead to increase in demand for compact substation (also known as Compact Secondary Substation (CSS) or Packaged Sub-Station (PSS)). We manufacture and supply compact substations up to 1500 KVA.

Salient Features:

- Compact in design, minimum floor area and height to accommodate in standard commercial complex.
- Modular in design with separate H.V., transformer and L.V. components.
- Easy operation and very reliable.
- Live parts inaccessible for human safety.
- Totally customized and very suitable for mobility.
- Use of HT and LT switchgear for high operation safety.



Quality Assurance

Quality, being a prime concern in Unimeec Engineers, we ensure and follow strict quality standard throughout different phases. We have set up a quality management system wherein our quality inspectors check procurement of the raw materials, storage and trading processes in an efficient manner. Our quality inspectors manage the whole activity with proper assistance from other team members.

Infrastructure

We have deployed a team of skilled professionals having vast experience in their concerned areas. Our professionals including electrical engineers, quality auditors, sales and marketing professionals work in close proximity of each other in order to ensure a smooth and swift manufacturing and supplying of heavy duty electrical items. We also ensure that our team remains aware of the industrial trends and hence, we conduct regular training sessions from time to time.

Our USP

- Prompt delivery.
- High quality products with excellent reliability and availability.
- Transparent dealing with proper quality assurance.

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