



SWITCHGEAR

Panels - Components - Accessories - Relay & Meters



Switchgear - Panels

Product Range:

- **Medium Voltage Air Insulated Switchgear**
- **415V Switchgear / Power Control Center**
- **Motor Control Center**
- **Auto Transfer Switch**
 - **Contactor Based**
 - **Breaker Based**
 - **Solid State or Controller Based**
- **Main Switch Board (MSB)**
- **Sub Main Switch Boards (SMSB)**
- **Distribution Boards (DB)**
- **Feeder Pillars (FP)**
- **Automatic Power Factor Correction Panels (APFC)**
- **Control & Relay Panels (CRP)**
- **Alarm Annunciation & Monitoring Panels (AAMP)**
- **Weather Proof Enclosure for Switch Fuses, Isolators, MCCB**
- **Telephone Terminal Boxes**
- **Local Control Station**
- **Marshalling Box**
- **Junction Box**
 - **Power Junction Box**
 - **Street Lighting Junction Box**
 - **HT Power cable Junction Box (Details on request)**
- **Switch Socket Outlet**
- **Multiple Outlet Combination Unit**
- **DG Synchronization Panel**
- **BusDucts**
- **Mimic Panels**
- **Soft Starter Panels**
- **AMF Panels**
- **VFD Panels**



Our Offerings

ABB

AREVA
forward-looking energy

ALSTOM

C&S
electric

DELABScientific

EATON

ERL
EASUN REYROLLE

FANOX

FUJI ELECTRIC
Japan
SWITCHGEAR PRODUCTS



Jyoti Ltd.
Water • Power • Progress

JEAN MÜLLER
THE NAME FOR SAFETY
Germany
SEMICONDUCTORS FUSES

Littelfuse
U.S.A
MIDGET & TIME DELAY FUSES



LARSEN & TOUBRO

LS Industrial Systems

MITSUBISHI
Japan
SWITCHGEAR PRODUCTS



Pronitron

U.K.
PHOTO ELECTRIC SENSORS
& PROXIMITY SWITCHES



RISHABH

SunRex.
SAFETY WORLD WIDE
POWER, SEMI CONDUCTORS &
SEMICONDUCTORS FUSES

Merlin Gerin
Telemecanique
SQUARE D

SIEMENS

Schneider
Electric

WOODWARD

Medium Voltage Air Insulated Switchgear



HCCO switchgear is fully in accordance with relevant IEC standard (IEC 60298, IEC 60694, IEC 60529, IEC 62271 etc.) and other relevant standards.

The offered Air Insulated Switchgear are type tested, indoor type metal clad switchgear, assembled under OEM Quality Control. They are offered with proven high performance VCB (Vacuum Circuit Breaker). Our Switchgear are in-line with the Far East, South East Asia and Africa Specification.

HCCO is ready to cater you with variety of brands of 11kV Switchgear comes from different manufacturer. We are offering ABB, Jyoti, C&S – Efacec, L&T, LSIS, Schneider, Siemens & other brands as what you need.

Rated Voltage (kV)	7.2kV	12kV	24kV	36kV
Rated Power Frequency	20kV	28kV	50kV	70kV
Rated Impulse Withstand Voltage	60kV	75kV	125kV	170kV
Rated Current (A)	630-2500/3150A	630-2500/3150A	630-2500A	630-2500A
Type of Application	Indoor	Indoor/Outdoor	Indoor	Indoor/Outdoor
Short Circuit Rating (kA)	25kA, 26.3kA, 315kA,	25kA, 26.3kA, 315kA, 40kA	25kA,31.5kA	25kA
Short Time Duration (S)	3Sec	3Sec	3Sec	3Sec
Construction	Withdrawable/Cassette	Withdrawable/Cassette	Withdrawable	Withdrawable
Internal Arc Tested	0.5 Sec (1 Sec* for selected brand)	0.5 Sec (1 Sec* for selected brand)	1 Sec	0.5 Sec
Short Circuit Rating (kA)	25kA	25kA	25kA	25kA

(*17.5kV can be offered)

Salient Features:

- Basic Interlocks:
 - 1) Circuit Breaker cannot racked in or racked out unless VCB is in Open Condition.
 - 2) Circuit Breaker cannot be inserted into service position unless Auxiliary Circuit Plugs are connected.
 - 3) Circuit Breaker can only be closed at Service, Test or removed position. Intermediate position VCBs will not be able to close.
 - 4) Earthing switch cannot be closed unless Circuit Breaker is at removed position.
 - 5) Circuit Breaker cannot be inserted into service position unless earth switch are fully open.
- Safety Shutters
- Padlocking (Optional)
- Compartmental Design

Why HCCO?? Hamzavi will bring you the optimum solution for your need from the variety of brands in view of your technical requirement with the consideration of spacing and budget.

415V Switchgear (LV Switchgear) / Power Control Center

HCCO offered LV Switchgear are Floor Mounted type and with cellular construction. LV Switchgear also termed as LT Panel or Main Low Tension Board are generally fed from Transformer or Generator for the source of Incoming Power through ACB. Which further connects to Main Horizontal Busbar in order to feed to Outgoing circuits through Outgoing ACBs or MCCBs.



HCCO can offer you wide range of products

with different brands as per your need. We mainly deal with ABB, L&T, LSIS, C&S, Schneider and Siemens. We also have the solutions from high quality market from Chinese companies such as CHINT & People Electric Group.

HCCO can provide varieties of switchboards such as, Modular of Fixed Construction, Non Drawout or Drawout type, with safety interlocks and optional cable termination front/rear access. Also, it can come in variety of form of construction like Form 3 or Form 4. Generally PCC acts as an Incomer to MCC, PDB (Power Distribution Boards) or MLDB (Main Lighting Distribution Boards).

Technical Specifications:

Application	Power Distribution
Construction	Modular / Fixed
Type	Drawout / Non-Drawout
Form of Construction	Up to Form 4
Degree of Protection	Up to IP 54/IP55
Rated Operating Voltage	440Volts
Rated Current	6300A
Rated Insulation Voltage	690Volts
Installation	Indoor / Outdoor – Optional
Short Circuit Withstand Current	Up to 100kA for 1 Sec
Cable Entry	Bottom (Default) / Top (Upon Request)
Ambient Temperature	50 Centigrade / 55 Centigrade (On Request)
Applicable Standards	IEC 439

Motor Control Center (MCC)



MCC designed to provide sufficient protection for Motor or Pumps from Overload, Short circuits.

MCCs are directly connected to the equipment running in plant.

MCCs are fed from PCCs via MCCBs and connected to various Motor or Pumps with control circuit which generally consist OLR (Over Load Relay), Main Contactor (for Power Input to Motor) and Auxiliary Contactor (For Control, Interlock, status and Indication use) and relays or other protective means.

HCCO offered MCC are in line with the client requirement with wide range of varieties. MCC panels comes with Bolted Modular construction with spacious arrangement for cable termination which ensures comfortable operation and easy maintenance.

Technical Specifications:

Application	Motor/Pump control
Construction	Front Access Only, Single Front with rear access, double front
Form of Construction	Up to Form 4
Degree of Protection	Up to IP 54/IP55
Rated Operating Voltage	440Volts/415Volts
Rated Current	3000A
Rated Insulation Voltage	690Volts
Installation	Indoor
Short Circuit Withstand Current	Up to 50kA for 1 Sec
Cable Entry	Bottom (Default) / Top (Upon Request)
Ambient Temperature	50 Centigrade / 55 Centigrade (On Request)
Applicable Standards	IEC 439

Auto Transfer Switch (ATS)

Auto Transfer designed to transfer the power from normal power source to emergency power source and vice versa.

ATS comprises of Power Switching Assembly (PSA), Control Unit Assembly (CUA) and the enclosure.

HCCO is offering variety of ATS Panel depending on the switching device.

- **Contactor Based ATS**
- **Circuit Breaker Based ATS**
- **Solid State ATS (or Controller based ATS)**

Contactor Based ATS:

Contactor based ATS are used frequent. As it is cost effective solution. The contactors used for ATS are designed for frequent switching of the load current and normally used as part of Motor starters. Limitation with Contactor based ATS is it works for only switching of power from one source to another and in no way it can protect the circuit from the fault.



Contactor Based ATS



Breaker Based ATS



ATS Controller

Circuit Breaker Based ATS:

Breaker based ATS are used as and when there is need of protection during power transfer from one source to another. MCCBs are used to protect the circuit during the transfer.

Advantage over Contactor Type ATS:

- As the circuit breakers are interrupting fault current, even without trip unit, the self-protecting feature is a main advantage of CB type ATS over Contactor type ATS.
- CB based ATS generally integrate all the functions of Contactor based ATS; as well as it can also include Over Load and Short Circuit protection of Normal and Alternate sources, if it is supplied with Trip Unit.

- In some cases ATS will try to transfer during fault, during this faulty transition, circuit breaker type ATS will successfully disconnect the faulted load and complete the transfer. Unlike Contactor based ATS as the contactors are not rated for interrupting the fault current.

Solid State ATS (or ATS Controller):

Solid state ATS are designed for most quick transfer for the power. It transfers the power with less than $\frac{1}{4}$ of a cycle. Its fast enough not to affect any operation of the computer equipment and most useful in emergency services like in Hospitals.

Switching device or Power switching assemble for (PSA) for ATS Controllers are Silicon Controlled Rectifiers and control unit (CSU) for this ATS is Microprocessor based control unit.

As Emergency Generator Set cannot be switched on in such short response it is not possible to use solid state ATS but it can be used only with the system having two constantly available power source and where the nature of the load is such that there is no feasibility of power outage. However, although it is one of the most reliable method but due to its high cost it is not used generally unless otherwise specified.

Main Switch Boards (MSB) / Sub Main Distribution Boards (DB)

Main Switch Boards/Sub Main Switch Boards (MSB/SMSB) are totally enclosed, usually floor mounted and non-cellular construction. Incoming supply is fed from LV Switchgear/PCC through MCCB and fed to various outgoing circuits and other downstream equipment through MCCB as feeders.

Generally for Oil & Gas industries, feeder MCCBs are generally provided with Earth Fault relays (ELR), if required and same can be wired to Trip the CB or for Audio/Visual Alarm.



Sub Main Distribution Board (DB)

Technical Specifications:

Application	Power Distribution at consumer end.
Construction	Fixed
Type	Floor Mounted/Wall Mounted.
Form of Construction	Up to Form 2
Degree of Protection	Up to IP 54
Rated Operating Voltage	440Volts/415Volts
Rated Current	1250A
Rated Insulation Voltage	690Volts
Installation	Indoor / Outdoor – Optional
Short Circuit Withstand Current	Up to 50kA for 1 Sec
Cable Entry	Bottom (Default) / Top (Upon Request)
Termination Access	Front
Ambient Temperature	50 Centigrade / 55 Centigrade (On Request)
Applicable Standards	IEC 439

Final Distribution Boards (DB):

Final Distribution boards are totally enclosed, usually wall mounted and non-cellular construction. Incoming supply is fed from SMDB/PCC/LT Switchgear through MCCB/Isolator and fed to various outgoing circuits and equipment through CBs/RCBO/ELCB.



Final Distribution Board (DB)

Technical Specifications:

Application	Power Distribution at consumer end.
Construction	Fixed
Type	Floor Mounted
Form of Construction	Up to Form 2
Degree of Protection	Up to IP 54
Rated Operating Voltage	440Volts/415Volts
Rated Current	150A
Rated Insulation Voltage	690Volts
Installation	Indoor / Outdoor – Optional
Short Circuit Withstand Current	Up to 50kA for 1 Sec
Cable Entry	Bottom (Default) / Top (Upon Request)
Termination Access	Front
Ambient Temperature	50 Centigrade / 55 Centigrade (On Request)
Applicable Standards	IEC 439

Automatic Power Factor Correction Panel (APFC)

Every Electricity Company is concerned for the maximum efficiency and minimum Reactive Power in the network. In everyday life each household, commercial premise or industry utilizes large load which are inductive by nature, such as MOTORS, ACs, Large Machines etc. This will effect in rise in reactive power and reduction of active power or useful power use. To avoid this situation various utilities have their pre-defined limit for such use of reactive power, which is expressed in terms of POWER FACTOR.

Power Factor defined as ratio of Active Power to Apparent Power. Higher the reactive power consumption lesser will be the Active Power and in turn less will be the Power Factor. General Guidelines are to maintain Power Factor as close as to unity this can either be done by switching or removing off the load which is practically not possible or by using the Capacitor Banks. However, to use Capacitor bank with the situation of frequent change of loads, it's difficult to make manual operation for Capacitor bank continuously. To overcome such difficulties APFC relays in a panel with capacitor banks are used. This panel is termed as APFC Panel.

The main advantages for APFC panels are

- Economical
- Easy Installation
- Maintain Power Factor to desired limit and so reduced demand charges.
- Prevents leading power factor during low load period.
- Reduced load current, distribution losses and heating of transformers and cables
- Increase service life of all electrical equipment.
- Shortest payback period.

HCCO brings you international reputed brands with optimum choice of price and cost. We can provide you with brands like Schneider, Circutor, EPCOS/Siemens components.

Technical Specifications:

Application	Power Factor Correction
Construction	With or Without Harmonic Filters
Type	Floor Standing
Form of Construction	Up to Form 2
Degree of Protection	Up to IP 41
Rated Operating Voltage	440Volts/415Volts
Rated Current	As per request.
Rated Insulation Voltage	690Volts
Installation	Indoor
Short Circuit Withstand Current	Up to 50kA for 1 Sec
Cable Entry	Bottom
Range	10 to 2400kVAR
Ambient Temperature	45 Centigrade
Applicable Standards	IEC 439



APFC Panels

Control & Relay Panels (CRP)



Alarm Annunciation and Monitoring Panel



Weatherproof Enclosure for Switch Fuse, Isolator and MCCB



Telephone Terminal Boxes (Telephone DBs)



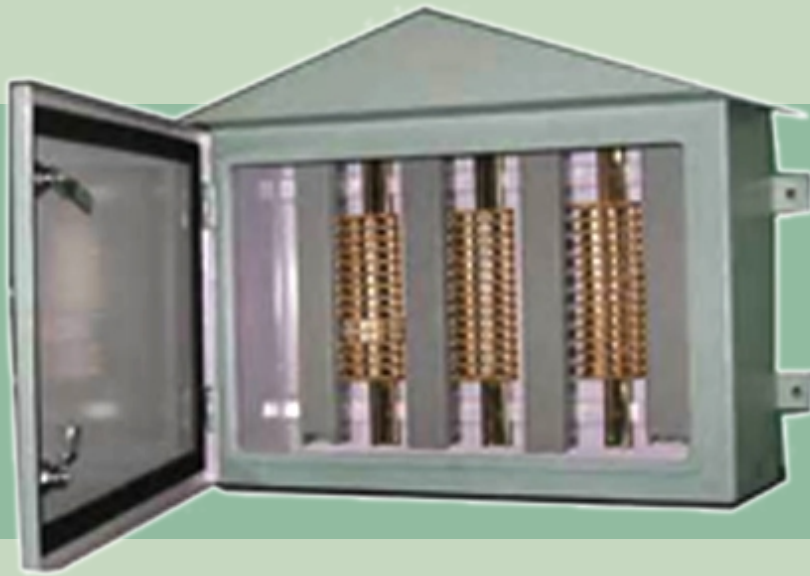
Local Control Station



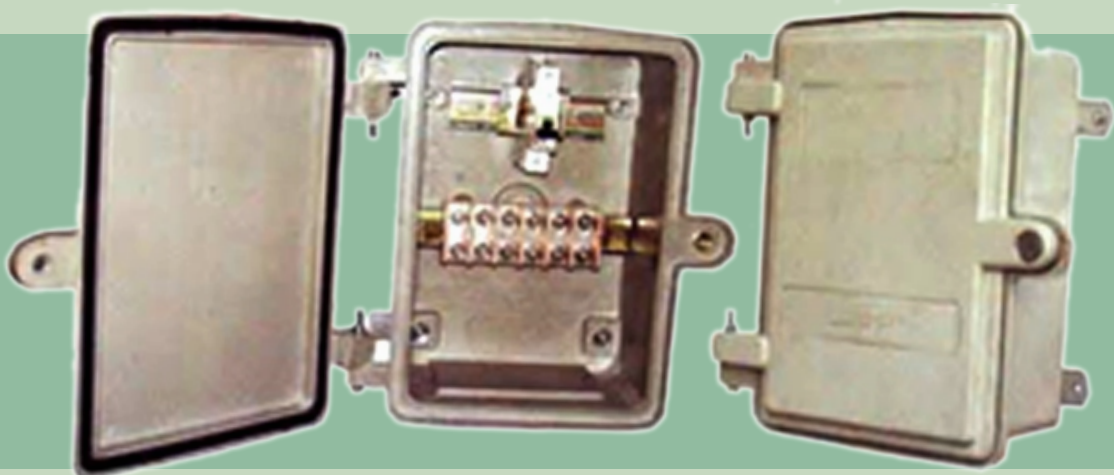
Marshalling Box



Junction Box



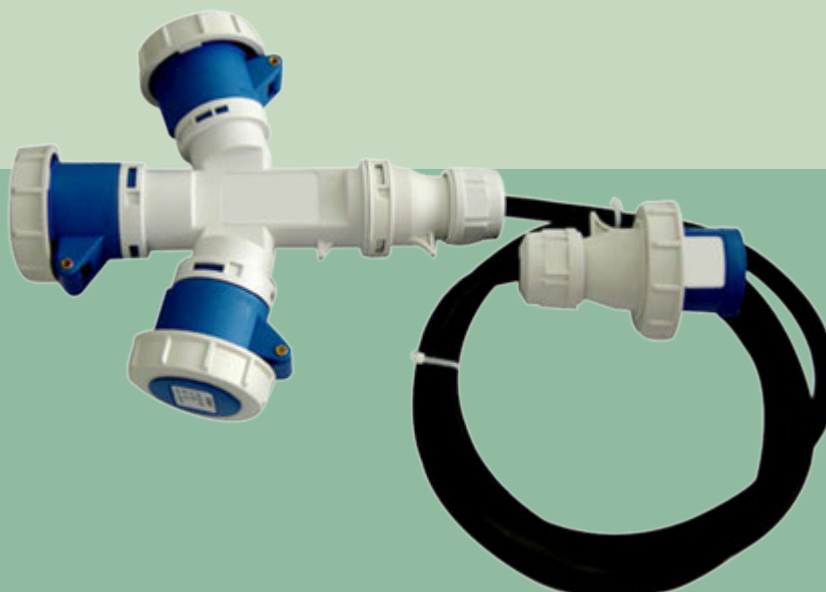
Street Light Junction Box



Switch Socket Outlet



Multiple Outlet Combination Unit



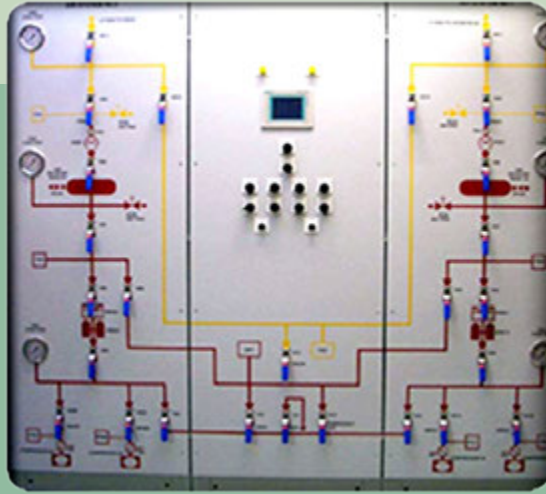
DG Synchronization Panel



Bus Duct



Mimic Panels



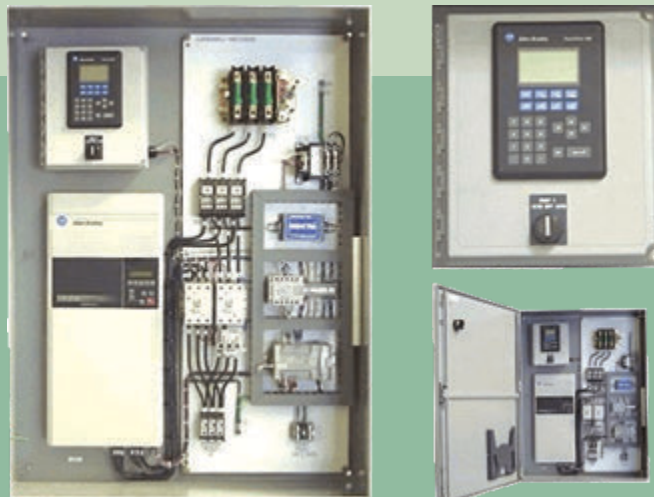
Soft Starter Panels



AMF Panels



VFD Panels





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Coming Soon.....

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