



BRITE ENGINEERING



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About Us:

Brite Engineering Control Switchgears (P) Ltd., is an ISO 9001-2015 Accredited for Design Manufacturing services & supply of Control Panels. Located in Jalahalli Industrial Area, Bangalore, we are one of the leading Manufacturers & suppliers of HT & LT Panel Boards. Founded in the year 1995 by Mr. V. C. Swamy who earlier served in the public sector & with vast experiences, we have consistently serviced the electrical needs for our customers & our loyal clientele in the industrial, commercial & Residential segments. Our Projects stand testimonials to the fact that Brite engineering deliver's Quality Products & Quality Solutions. The company currently employs close to 150 people with three production plants all located in a convenient vicinity of Bangalore thereby enabling us in speedy expedition of all works.

Infrastructure:

Our current facility is spread across 46000Sq.ft in size in unit 1 and unit 2

- Machine Shop
- Fabrication Shop
- Assembly Shop
- Testing area
- Powder coating shop
- Designing
- Administration
- Stores
- Dispatch section

Our Mission:

To be able to provide our customer with the utmost satisfaction & achieve consistent technical excellence in our day to day endeavours.

Our Vision:

To add economic value to our clients businesses and to incorporate high quality standards in our products & services.

Objective:

To meet our day to day challenges in an absolutely professional manner and also be fully committed towards satisfying of all our customers by working closely with them.

Values:

People are the very essence of our business, The respect, responsibility care & concern consistently invested in all our people is the means by which we believe that true success, happiness & peace of mind comes by living in harmony with our environment & nurturing a relation-ship of interdependence & living in this awareness.

Skills:

One of the major assets at BECSPL is the availability of highly dedicated work force teams with good technical expertise and specialized skills sets in the fields of design, Manufacture, testing etc. with larger emphasis on quality.

Solution: Customized solution for Wind power and Solar

Products: Packaged substation/ unitized substation (PSS/USS)

Segments: Wind, Solar, Water, Sugar, Defences etc.

Infra, Building, Hospitals, Industries, Pharma.

Market: National & International Market

Approvals: ISRO, CPRI, KPTCL, All ESCOMs,

List of Machinery & Equipment:**Cutting Equipments:**

- Hydraulic Shearing Machine(2500mm,100 tones Capacity)
- Cut half Machines
- Jigsaw Machines
- Power Press break

Bending Equipments:

- Hydraulic Bending Machine(2500mm ,100 tones Capacity)
- Hydraulic Press(40 tones Capacity)
- Manual Fly Press
- Bus Bar Bending Machine

Welding Equipments:

- Arc Welding Machines
- CO2 welding Machines
- Spot welding Machine

Drilling Equipments:

- Radial Drilling Machines
- Hand Drilling Machines

Grinding Equipments:

- Bench grinder
- Grinding Machine portable
- Sand ring Machine portable

Testing Equipment:

- HV Tester 100KV for HT Panel
- AC/DC Testing Panels 0-230V
- HV Test Kit - Upto 75kV
- Megger
- Digital Multi Meter
- Phase sequence Indicator
- Digital Tong Tester
- Thickness measuring Gauge
- Primary Current Injection Kit -1
- Secondary Current Injection Kit -1
- Breaker CRM Kit

Others:-

- Electrical Crane with 5 Ton Capacity
- Hydraulic Trolley with 2 Ton Capacity
- Compressor
- Blower
- Weighing Scale

Product portfolio

Our Offerings:

Low Voltage Products	Medium Voltage Products
Rating: Up to 415V, 50Hz 6300A Design: Single Front / Double Front Type: Fixed / Draw-out Type Form: Up to Form-4B IP: IP-54 SC Rating: Up to 100kA	Voltage: 3.3kV to 33kV Current: 2000A STC: 31.5kA IP: IP-65 Power: 500 MVA
• PCC Panels • Power Distribution Boards • MCC Panels • A P F C Panels • Lighting Distribution Panels • Variable Frequency Drive Panels • Soft Starter Panels • LT Metering Panels • DG Synch & AMF Panels -LT, HT • Control & Relay Panels • Distribution Boards • Feeder Pillars	• VCB Panel from 3.3kv to 33kv • HV Capacitor Panels • LBS Panels • Lighting Arrester Panels • Change Over Panels • Neutral Grounding Resistor Panels • HT Synchronizing Panels • Relay and Metering Panels • Mimic Panels • PLC / SCADA Automation Panels • Compact Secondary Substations • 11 & 33kV Ring Main Units

Medium Voltage Products

SAFE gear* is wide range of medium voltage switchgear designs, which give versatile and cost effective solutions for generation, distribution and any other application at the consumer level.





Salient Features For MV Switchgear Type

Indoor Type	Outdoor KIOSK Type
1. Metal clad construction-all segregated compartments. 2. Independent exhaust vents for all HT compartments. 3. IP4X degree of protection externally and IP2X between compartments. 4. Modular Construction for expend ability. 5. Type tested for BIL and Short circuit as per 62271/1200/2003. 6. Rodent Proof. 7. Maintenance friendly.	1. Kiosk Type construction with double door in the front. 2. Rear door has both hinged and bolted options for safety. 3. Adequate slope given on top roof to drain water dust and particles. 4. Robust weather and dust proof-IP5X degree of protection externally and 2X between compartments. 5. Fully welded construction. 6. Type tested for BIL and Short circuit as per 62271/1200/2003. 7. Rodent Proof. 8. Maintenance friendly.

3.3KV to 33KV HT VCB Panel

The VCB Panel/Switchboard are optimized design for Indian local electricity supply condition & ambient. The switchboard is of compact design, sturdy construction & simple in operation with a proven motorized spring operated mechanism. The switchboard is constructed by placing standardized fabricated cubicle. The Switchboard is fully compartmentalized & extensible on both side, each cubicle is subdivided internally into the following compartments which are segregated from each other with provision for internal wiring.

- Metering Box
- Breaker Compartment
- Cable Compartment
- Busbar Compartment
- PT Compartment

The Switch board is completely cabled in the factory, installation on site only requires the external power & auxiliary connections .All normal operations are carried out from the switch board front with closed doors, only maintenance & replacement operations require the opening of doors on the front & Back.

Technical specifications –3.3kV to 11 KV Cubicle (We are authorised MV Integrate of ABB) **ABB**

Description	Indoor(VMAX/VD4)	Outdoor (VMAX.VD4)
Rated Voltage (kV)	3.3-12 kV	3.3-12 kV
Basic Insulation level (kVrms/kVp)	28/75	28/75
Rated Frequency (Hz)	50	50
Rated Busbar current (A)	Upto 2000A	Up to 2000A
Short time current rating (1 or 3 Sec) (kA)	31.3	31.3
Width x Depth x Height (mm)	700 x 1550 x 2100	800 x 1550 x 2200
Degree of protection	IP4X	IP5X
Weight with Circuit Breaker (Approx) (Kg)	900	1000

Technical Specifications - 22kV to 33kV Cubicle

Description	Indoor	Outdoor
Rated Voltage (kV)	33 kV	13kV
Basic Insulation level (kVrms/kVp)	70/170	70/170
Rated Frequency (Hz)	50	50
Rated Busbar current (A)	As requested	As requested
Short time current rating (1 or 3 Sec) (kA)	31.5	31.5
Width x Depth x Height (mm)	1200 x 2500 x 2400	1200 x 2550 x 2500
Degree of protection	IP4X	IP5X
Weight with Circuit Breaker (Approx) (Kg)	>1700	>1900

415 V Low Voltage Panels

Power Control Centers (PCC)

Power Control Centres housing either only circuit breaker panels or coupled together with Motor Control panels are designed taking into account the functional requirement and ease of access for maintenance. Each panel is provided with segregated compartments for control bus chamber, control/metering chamber and breaker chamber.

Salient Features for LV Panels

- Compartmentalized structure.
- Sleeved bus bar
- Cable entry from top and bottom
- Modular Construction for expendability.
- Type tested for BIL and Short circuit as per 62271/1200/2003.
- Rodent Proof.
- Maintenance friendly.



Motor Control Centres (MCC)

For housing switch gears for motors of different capacity, squirrel cage or slip ring type with direct on line or reduced voltage starting through auto-transformers. The panels are provided with standard protection devices as per IS requirement. In addition, winding/ bearing temperature control relays, phase sequence protection, under/over voltage relays or any other protection suitable for use with thermistor /RTDs are offered as optional extra.





Relay & Logic Control Panels

Diesel generator control panels for single or parallel operation, Automatic main failure (AMF) Panels, Remote Tap Changing Control (RTCC) panels etc. and power factor correction control panels up to 800 KVAR in steps suitable KVAR banks. In indoor type panels, Control elements like switch fuse units / MCCB's, contractor etc. are housed in totally enclosed segregated compartments with hinged doors located at the back, isolated from feeder compartment. Liberal ventilation to the capacitors is ensured by fixing mesh on all three sides. Accommodating capacitors within the panels not only saves external cabling but also makes the installation neat and compact.

Salient Features for Relay Control Panel

- For voltage level 11kv to 66KV.
- Numerical / Static relay as per customer specification.

Construction of Panels

LT panels are manufactured for 415V, 4wire, 3ph, 50Hz. AC supply and current carrying capacity up to 2500A. These are compact, totally enclosed, CRCA sheet steel clad, floor mounting, free standing, hinged doors for feeder compartments for ease of operation and bolted covers for bus chambers. To provide operator safety the compartments of the panels are segregated. Folded sheet steel construction is employed which lends adequate mechanical strength & dimensional stability. The panels are provided with gaskets for doors and covers to make the panels dust and vermin proof. The panels are extensible on either side. Separate earth bus is provided.

Air insulated EC grade copper / Aluminum bus bars are designed for temperature up to 85 deg. C. Heat shrinkable PVC sleeve is provided DMC/SMC insulators are used to maintain excellent non-hygroscopic Characteristics.

Cable chambers are suitable for either from top or bottom. The depth of the panel is chosen to suit the cabling requirement. For single core cables non-magnetic gland plates are provided. Control terminal blocks, suitably located away from power circuit terminators, facilitate easy connection and access of control cables.

The panel boards are available in draw out design. Sheet metal partition /FRP barrier is provided between the bus bar and tray. Outgoing power contacts are mounted within the compartment to avoid accidental contact from the cable chamber. In case of draw out MCC's , the components of a feeder are mounted on a with draw able tray. The tray is provided with guides, low friction sliding devices, simple insertion and with drawl device which locks the tray in fully inserted position. For safety, a spring –loaded scraping earth is provided on each tray having connection to the main earth bus.

All the switch boards and control panels undergo an elaborate pre-treatment which includes degreasing de-rusting and phosphating. Exterior and interior of the panels are finished with final coat with light / dark Grey or any other shade to customer's choice. Special epoxy paints for installations laden with corrosive chemicals, powder coated finish is offered as optional extra. All panels and bus ducts are manufactured as per IS 8623.



DG Synchronizing Panel

We offer DG Synchronizing Panels which are based on Auto / manual sharing, Auto Synchronising, Auto KW & KVAR sharing and Load dependent start / stop features. Changing of schemes are made through PLC & software which work in tandem with the Generator Control Package Relay that also takes care of power monitoring, communication, display as well as protection. For any type of load addition or reduction, manual intervention with respect to DG Set operation is not required. However, in case of emergency, manual override is possible. Special programs using Real Time Clock (RTC) are possible. With this facility, along with KW dependent programs; day, date and time dependent programmers are possible. Because of KW dependent load sharing, optimum utilization of DG sets are possible. This increases DG sets efficiency and saves lot of fuel. DG Sets are always tried to run with about 80% load factor, where we get maximum efficiency of DG Sets. Load dependent stop and stop facility can also be incorporated in the logic in order to further save fuel costs and wear & tear of the DG sets. Unequal sizes of DG sets can also be synchronised with special relays and PLC logic. Multiple DG sets can be synchronised and at Brite engineering, we have done up to 11 DG Sets.



PLC Panels

We offer to our clients a range of intelligent, flexible, powerful, expandable and effectively programmable logic relays with expandable inputs and outputs. These programmable logic relays have the capability of analogue inputs, high speed counters and communication options.

SCADA Systems

Our range of SCADA systems are user friendly, robust and comprehensive in the display of Power parameters, graphs, single line diagrams, history, trends, data, help menu for the Control Panel operation, and remote start stop facility as called for by the application. We can provide

- 75 tags to unlimited tags, development & runtime package
- Web version package for 2 users to unlimited users
- Supports system redundancy & client server architecture
- Connectivity to RDBMS
- Open system architecture
- Tag database compatibility with various application software like MS excel & word



Compact Secondary Substation (CSS):

CSS typically replace conventional pole mounted transformers. Used in Residential Complexes / Apartments. Commercial Buildings. Industries. Power Distribution. Hospitals. Software Parks. Development Projects. Construction Sites. Solar Power Generation.

Compact Substation essentially consists of an assembly of the following on common base.

- **H.V Compartment** - M.V Switchgear: RMU / LBS / VCB with metering & protection.
- **Transformer compartment** – Transformer: Oil / Dry type Up to 2500KVA, up to 33kV, with OCTC / OLTC.
- **L.V compartment** - L.T Switchgear / Panels with ACB / MCCB / SFU with metering & protections or Complete LT panel with multiple feeders & Capacitor Banks.

Features

- High level of safety for equipment and personnel
- All equipment inside the CSS is type tested
- Footprint engineered to meet required clearance standards
- Steel housing
- Can be lifted with transformer installed
- Engineered for smooth air flow and natural cooling
- Locking system for all doors to prevent un-authorized entry of personnel
- Stainless steel hinges for corrosion resistance
- No access to live parts



List of Customers





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