



MCCs - PCCs





MOTOR CONTROL CENTRES

The Motor Control Centres (MCC) Type MBS / MBD are of bolted construction and designed to meet the requirements of modern power plants, steel plants, refineries and other engineering and process industries. These conform to IS: 8623 and IEC:439.

The MCCs are made of sheet steel formed profiles and compartmentalised either in single front MBS or double front MBD execution with following two alternative designs:

Drawout Design

In this design each feeder can be drawn out with power and control contacts being spring loaded/sliding type. A test position is also provided whenever required to facilitate testing of control circuits with functional interlocks without energising the power circuit.

Non-drawout Design

In this design no drawout tray is provided and both power and control terminals are fixed type.

Panels

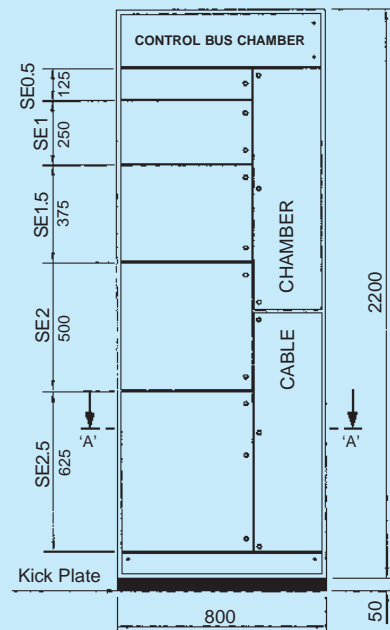
Each panel is designed for extension on either side. It can be coupled to a breaker panel having higher depth at either end.

Doors, side covers, top and bottom sheets are provided with gaskets to make the panel dust and vermin proof.

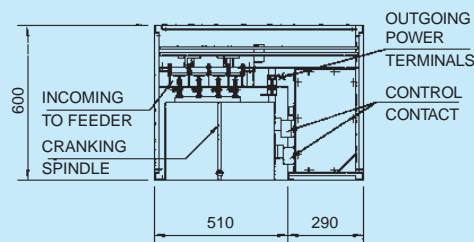
Busbars and Cable Chambers

The busbars are designed for fault level up to 50 kA r.m.s. for one second. The main busbars run horizontally at the rear in single front panels and at top in double front panels in separately enclosed compartments. The busbars can be designed to cater to load up to 3200A at 415V. For single front MCCs, one set of vertical busbars run down the entire height in the rear; for double front MCCs, 2 sets run down the entire height.

MCC-DRAWOUT-SINGLE FRONT TYPE MBS-01



Panel Elevation



Section - 'AA'

All Dimensions are in mm





Each set of vertical busbars can be designed to cater to a load up to 600A at 415V. The busbars are generally of aluminium and are mounted on DMC/SMC insulators.

A separate horizontal control chamber is provided at the top of each panel to facilitate running of inter-panel control wiring and control busbars.

Liberal dimensioned cable chamber is provided on right side of each panel of 300mm width between outgoing terminal and edge of the panel. The inside clear space in the cable chamber will be 290mm.

Compartments and Trays

The compartments are of standard sizes NSE 0.5, NSE1.0, NSE1.5, NSE 2.0 NSE 2.5 and NSE 3.0 being multiples of NSE 0.5 which is 125mm high. One panel front can accommodate maximum of 15 such basic units of NSE 0.5 size. NSE 1.0 or above modules can also be divided vertically to accommodate maximum 3 drawout modules.

Every compartment is provided with a hinged door and a sheet metal partition/FRP barrier in between the vertical busbars and tray. Outgoing power contacts are mounted within the compartment to avoid accidental contact from the cable chamber.

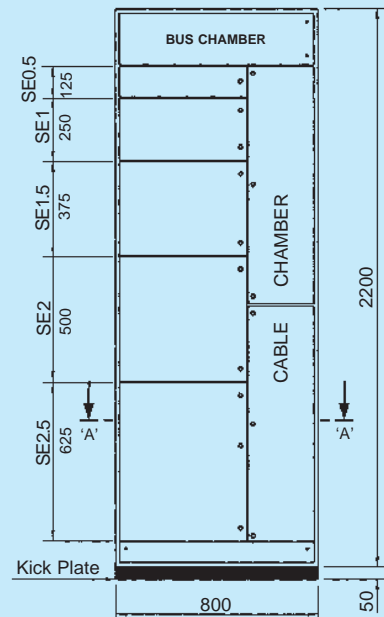
In case of drawout MCCs, components of a feeder are mounted on a withdrawable tray. The trays are provided with guides and low friction sliding devices. Trays are provided with simple insertion and withdrawal device, which also locks the tray in fully inserted position. For safety, a spring loaded scraping earth is provided on each tray having direct connection to the main earth bus.

Salient Features

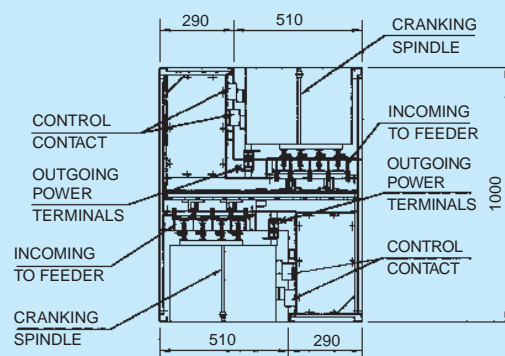
Frames of panels are made from formed profiles and bolted together using connecting pieces of tool based design, resulting in very high accuracy

Liberal sized busbars for ratings up to 3200A continuous and 50kA r.m.s. fault current for one second.

MCC-DRAWOUT-DOUBLE FRONT TYPE MBD-02

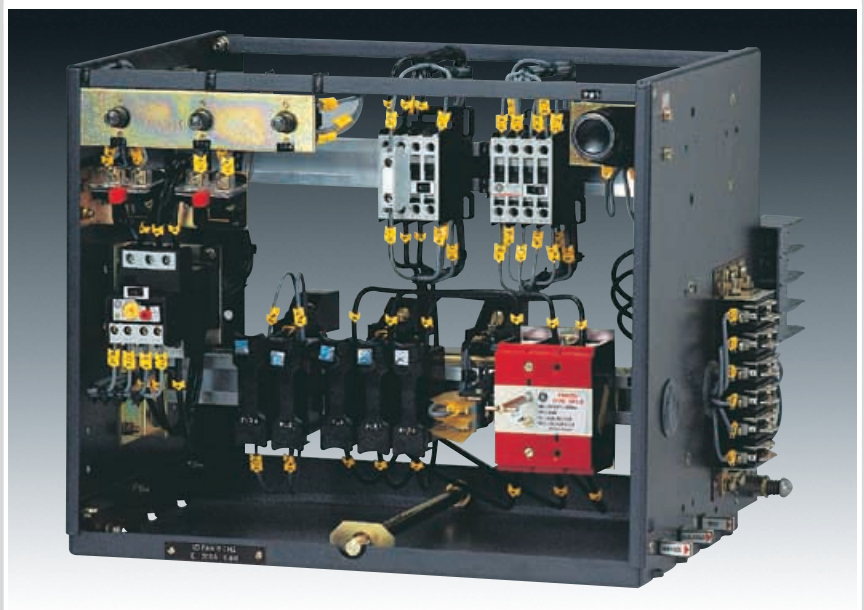


Panel Elevation



Section - 'AA'

All Dimensions are in mm





Non-hygroscopic fire retardant FRP barriers and moulded DMC/SMC insulators for the busbars for increased safety.

High contact pressure for drawout power contacts of silver-coated copper.

Sliding type, sturdy, silver-coated control contacts for safe operation and easy maintenance of drawout MCCs

First-to-make, last-to-break scraping earth provided on each drawout tray for safety to operating personnel.

Spacious cable chambers (300mm) to facilitate easier cable terminations. In case of special requirement, panels with cable chamber of size 500mm can be offered.

Vertical busbars designed for 4 pole plug in system to provide drawout isolation of neutral and thus avoiding neutral links.

Standardised compartment and tray sizes for interchangeability.

Self locking of trays after insertion
Outgoing power terminals mounted inside compartments to prevent accidental contact from cable chamber

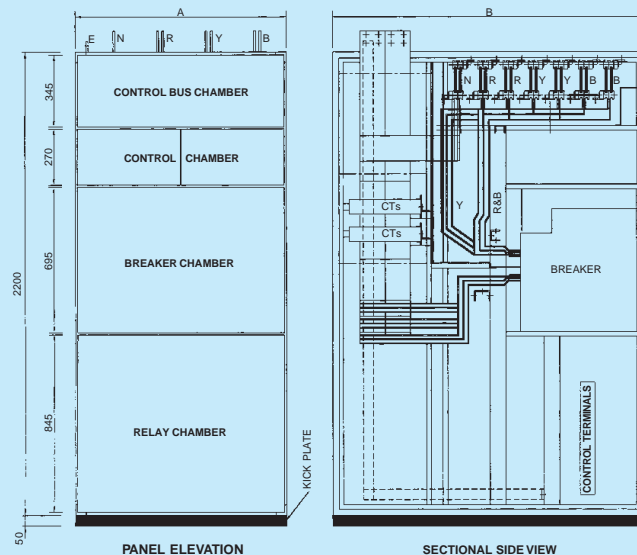
POWER CONTROL CENTRES

The Power Control Centers (PCCs) normally comprise either only circuit breaker panels or circuit breaker panels and MCC panels coupled together. The circuit breaker panels are suitable for coupling to both single front and double front MCC panels and are designed taking into account the functional requirements and ease of access for maintenance.

Panels

The circuit breaker panels are offered either in single tier or two tier configuration. Doors, side covers, top and bottom sheets are provided with gaskets to make the panels dust and verminproof. Each circuit breaker panel is provided with segregated compartments for safety viz., control bus chamber, control/metering chamber and breaker chamber.

SINGLE TIER BREAKER PANEL Type PBS - 32



PANEL TYPE	BREAKER RATING	DIMN - A	DIMN - B
PBS - 32	3200A & 4000A	1000	1500
PBS - 25	2000A & 2500A	800	1500
PBS - 16	800A TO 1600A	600	1000 / 1300*

* DIMN - B IS 1000 / 1300 FOR CABLE ENTRY AND 1500 FOR BUS DUCT ENTRY PANEL

All Dimensions are in mm



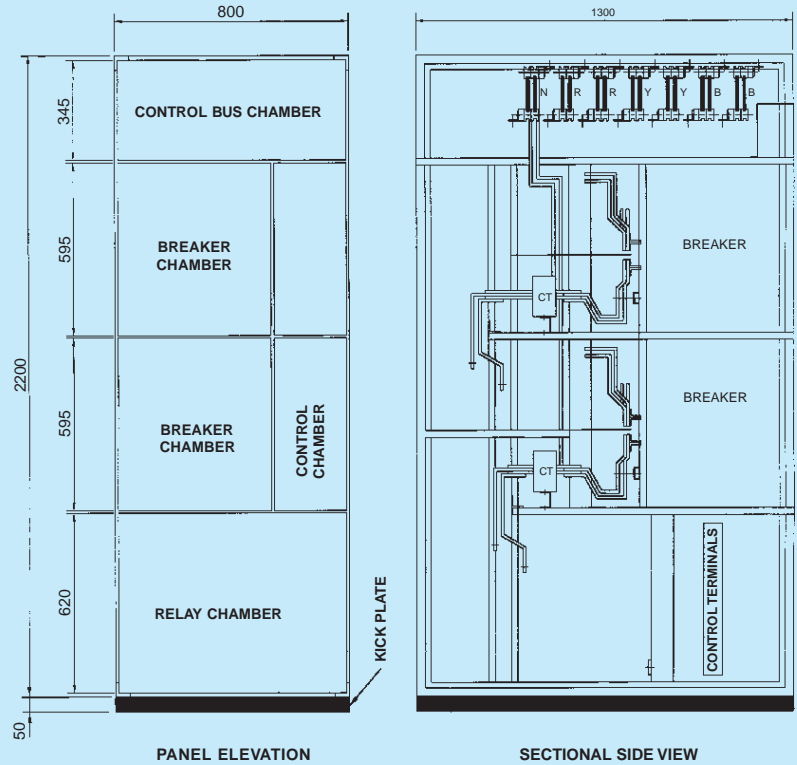


BUSBARS AND CABLE CHAMBERS

The busbars are designed for fault level up to 50 kA r.m.s for one second and to cater to loads up to 3200A at 415V, 3Phase,3/4 Wire Systems and supported on DMC/SMC insulators. The panels are type tested for 50 kA fault level at CPRI. Higher ratings and KA available on request. Removable neutral links are provided wherever required.

Cable Chambers are provided with liberal cable entry space and are also suitable for either cable entry or busduct entry from top or bottom. The depth of the panels can be chosen to suit the cabling requirement. For single core cables, non-magnetic gland plates are provided to eliminate heating. Barriers are provided between the incoming and outgoing terminals of the Air Circuit Breaker for added safety.

TWO TIER BREAKER PANEL Type - PBT - 10



All Dimensions are in mm



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