JSL INDUSTRIES LTD

"Jyoti" LOW TENSION SWITCH BOARDS

Introduction

Features & Technical Specification

Dimensional Details

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JSL INDUSTRIES LTD

‘Jyoti’ Low Tension Switch Boards

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JYOTI LOW TENSION SWITCH BOARDS

Jyoti LT Switchboard has been designed to meet rigorous demands of modern industries / Power Plant etc. With maximum operational reliability and safety. These conform to IS : 8623.

MOTOR CONTROL CENTRE (MCC)

The MCC are of bolted or welded construction and compartmentalised in SINGLE FRONT or DOUBLE FRONT execution with following alternative design

NON DRAWOUT DESIGN (FIXED)

The fixed type MCC are made of Sheet Steel welded construction. Each feeder is located in a separate module Power and Control terminals are fixed type.

STANDARD FEATURES OF THE DRAWOUT MCC

Fully compartmentalized design ensures operator safety.	Self-aligning & self-disconnecting power & auxiliary control contacts.
Drawout Modules are withdrawable with 3 distinct position viz. Test, Service & Isolation.	Vertical bus-bars are free of any nuts & bolts hence the entire vertical bus bar is maintenance free.
Drawout Modules of same size are fully interchangeable.	Double stab-in earthing provided for all the drawout components.
Totally enclosed, vermin-proof & dust-proof vertical bus-bar chamber.	Swivelling lever-guide for easy withdrawal of the modules without any additional tools.
Automatic safety shutter for the vertical bus-bar.	Feeder & cable alley doors open in opposite directions providing ample working space.
Main bus-bars are easily approachable from the top.	Highly flexible, change as per site condition.

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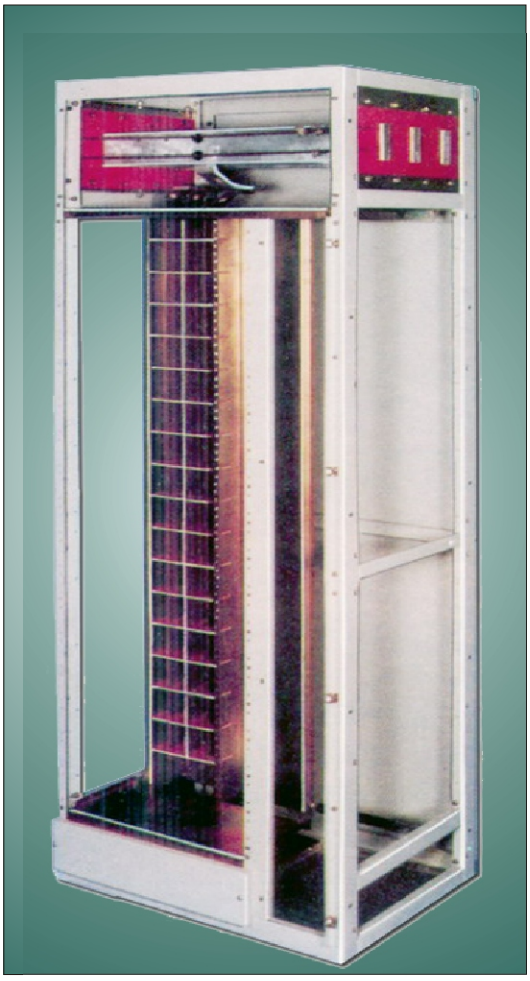
The Withdrawable Modules

The withdrawable modules or trolleys are available in sizes that are standardised in multiples of 100mm with 200mm (M2) as the minimum trolley size. The sizes are based on the motor feeder ratings. The trolleys are arranged vertically in a multi-tier formation. Each vertical can house upto 9 nos, of 7.5kW DOL starter modules, Individual motor controls upto a max. Of 160 kW / 215hp can be housed in individual standard trolleys. The maximum feeder size is restricted to size 900mm (M9) to ensure ease of handling & proper alignment of the trolleys. They can be provided with door interlocking & pad-locking arrangements if required as additional safety features.

The bolted design of the panel chassis allows for ease of alteration & extension if required at site. The design ensures absolute interchangeability between the withdrawable modules of the same size. The trolley equipped with the components for the spare feeder in the MCC is thus fully interchangeable at size.



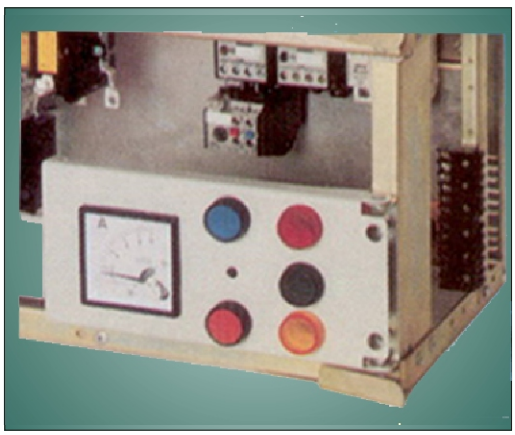
BUS-BAR SYSTEMS

The bus-bars are selected to meet the continuous current rating & short circuit levels desired. The three phase vertical bus-bars provided are of high-conductivity, electrolytic grade copper as standard. These vertical droppers are provided with round edges for ease of contact insertion. They are provided in an enclosed chamber which is located behind the feeder compartment.

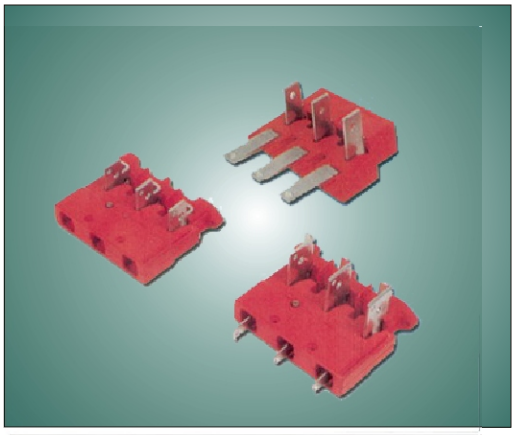
The chamber is totally enclosed to prevent the entry of dust & vermin. The vertical bus-bars are accessible only after the removal of the feeder trolley & the front guard. The vertical bus-bars are free of bolts, holes etc. For connection & hence are maintenance free. FRP vertical bus-bar support are provided within the bus chamber at a distance of 100mm from each other.

INSTRUMENT PLATE

The withdrawable modules are provided with a swing-out instrument plate at the front on the bottom right hand side, it is hinged on its right edge to provide access to the components mounted beind it. The plate can be opened upto an angle of 110°. A cut-out in provided in the compartment door to enable the operator to read the flush-mounted meters, reset the overload relay, etc.

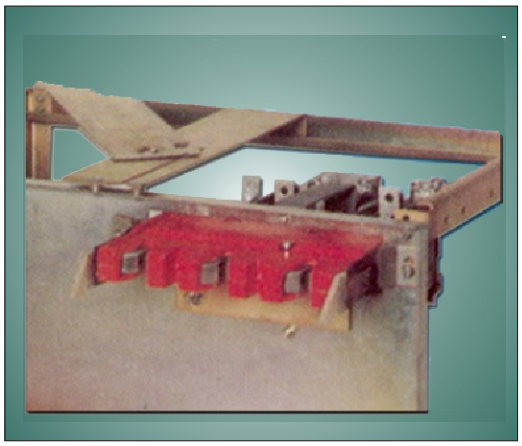


Power Drawout Contact



Spring-loaded, tin/silver plated main power contacts are provided for both the incoming as well as the outgoing side main circuit connections.

These are in direct contact with the vertical bus-bars. The power contacts are available for ratings upto 400 Amps.

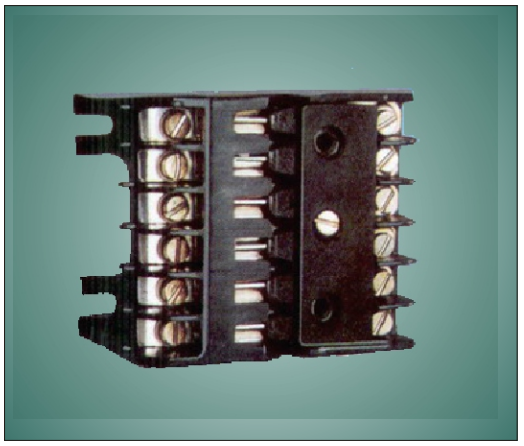


Trolley Earthing

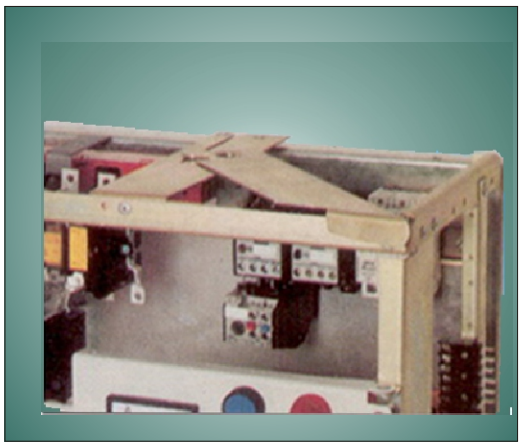
Specially designed phosphor-bronze earthing springs are used to provided positive double earthing. The contacts scrape against the electro-plated vertical bus-bar chamber shrouding to provide earthing.

The system ensures earthing before the main contacts make and breaking after the main contacts break.

Auxiliary Control Terminals



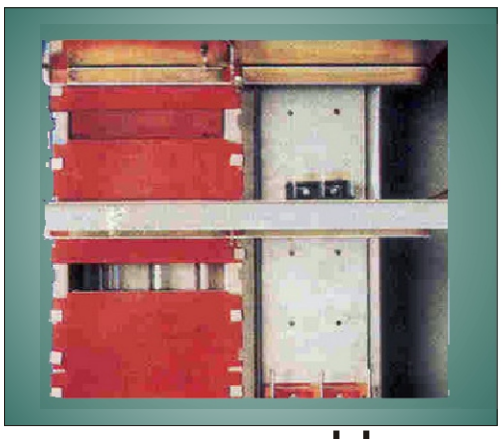
Each withdrawable module is provided with 6-way auxiliary control terminals having test & service position. They are self-aligning, self-disconnecting during the module operation. The male contacts are silver plate copper, having both surfaces in contact with the phosphor-bronze springs integral to each female contact. The contacts and terminals are designed to be finger-touch proof.



Lever & Guide Assembly

Each withdrawable module can be withdrawn from or inserted into the connected position with the help of a simple & robust lever arrangement. The guide levers move easily & quickly within the guide rails on the base of the feeders.
No additional tools are required in the process. This ensures smooth & easy operation of the trolley.

Automatic Safety Shutter



A gravity - operated safety shutter in fron of the vertical bus-bar chamber prevents the bus-bars from being touched by accident when the withdrawable module is being removed. Each module is fitted with double earthing contacts with the lifters attached to them. The lifters push the shutter up as the withdrawable module is levered into the feeder compartment.

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JYOTI LOW TENSION SWITCH BOARDS

TECHNICAL DETAILS:

RATED VOLTAGE	500 Volts, 3 Phase, 50 Hz
RATED CURRENT	Upto 3200 Amps
SHORT CIRCUIT STRENGTH	Standard : 36 kA (rms)/sec. 76 kA (peak).
	Optional : 50 kA (rms)/sec. 105 kA (peak).
DEGREE OF PROTECTION (as per IEC 60529)	Standard : IP - 52. Optional : IP - 54.
TYPE OF BUS - BAR	Horizontal : Aluminium. Vertical : Copper. (Tinned if required)
RATING OF BUS - BAR	Horizontal : 3200 Amps. (Max.) Vertical : 600 Amps. (Max.)
BUS - BAR SUPPORT	F.R.P.
DIMENSIONAL DATA	SINGLE FRONT : 2400(H) x 800 (W) x 600 (D) DOUBLE FRONT : 2400(H) x 800 (W) x 800 (D)
CONFORMANCE	IS 8623 (Pb-1) - 1977 / IEC 60439-1

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POWER CONTROL CENTRE (PCC)

The PCC can be supplied with ACB (Fixed / Drawout)/ switch disconnector Fuse, isolator etc. With busbar rated upto 3200 Amp. - PCC with higher rating can also be supplied on request.

PCC are offered either in single tier or two tier design. Doors, sides covers, top and bottom plate are provided with gaskets to make the PCC dust and vermin Proof.

SAILENT FEATURE

- Busbar are designed for fault level upto 50 kA rms
- Large cabling are to accommodate incoming & outgoing cable.
- Separate compartment for Relay / Metering
- The ACB Panels (PCC) are suitable for coupling to both Single Front & Double Front MCC

TECHNICAL DETAILS:

Rated Voltage	415V 3 ph 50 Hz
Rated Current	Upto 3200 Amp
Short Circuit Strength	50 kA rms for Sec 105 kA (Peak)
Type of Enclosure	Standard : IP 52 Optional : IP 54
Type of Busbar	Aluminium or Copper
Rating of Busbar	3200 A PCC with higher can also be supplied on request
Busbar Support	FRP / SMC
Conformance	IS 8623

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PRODUCT RANGE :

1	Fixed & Drawout type Motor Control Center (MCC)
2	Fixed & Drawout type (ACB) Power Control Center (PCC)
3	Non-Segregated Busduct
4	Generator Control Panel
5	Control & Relay panel for Generator, Transformer & Line feeder.
6	Automatic Power Factor Correction Panel (APFC) AMF Panel
7	Distribution Boxes
8	Control Desk & Mimic Panel
9	Push Button Boxes & Junction Boxes
10	Auto-Transformer Starter (ATS Panel - upto 400 HP)
11	Magnastart Starter - Slip ring Motor Starter (Upto 400 HP)

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