

Product Name :

Variable DC Power Source (Power Distribution Panel) for Electrical Lab

Product Code :

ADM-025-NE

**Description :**

Variable DC Power Source (Power Distribution Panel) for Electrical Lab for Electric Motors Teaching Labs - Our specification covers design, manufacturing, inspection, testing, supply of the DRIVE.

2) INPUT SYSTEM :-

Normal Voltage : 415V +/- 10%

No of phases : Three phase, four wire

Frequency : 50Hz +/- 2%

Fault level : 20KA RMS at 415 V.

Neutral earth : Solidly earthed.

3) TECHNICAL PARTICULARS :-**3.1) Output Voltage.**

Armature : 440V DC Max.

Field : 220V DC

DC Motor Blower : 415V +/-10%, 50Hz +/-2%, 3Ph.

3.2) Output Current.

Armature :

Field :

3.3) Speed Control.

3.4) Accuracy of speed control. +/-2% under Arm.Voltage feedback.

3.5) Soft start. Acceleration and deceleration control from 5sec to 30sec adjustable.

3.6) Type of control : Tacho/Arm. Voltage feedback.

3.7) Direction of rotation.:

3.8) Braking.

3.9) Type of cooling : Forced air cooling

4) CONVERTER MODULES.

It consists of the following modules.

Input module

Thyristor module

Regulation module

Output module

Excitation module

Indicating and operating module

Protection module

4.a Input module

The incoming 415V 3PH four wire supply will be brought into this module. It consists of -

Tripple pole and neutral incoming AC heavy duty isolator switch.

Three nos. HRC fuse link for mains.

Main contactor

Line surge suppressor consisting of capacitors, resistors & MOVs.

4.b Thyristor module

It will consist of three phase, full wave, fully controlled thyristor bridge assembly comprising of -

Six nos. derated thyristors each mounted on Aluminium heat sinks

RC Snubber circuit for power semi-conductors.

MOVs to protect thyristors against spikes.

Pulse transformers to isolate the control circuit from power circuit.

Forced cooling arrangement.

4.c Regulation module

It consists of modular glass-epoxy based printed circuit boards of height 4U with plug-in type gold plated connectors for easy replacement and servicing.

These are green masked, legend printed PCBs housed in a card frame and interconnected by a mother PC Board.

The different blocks are as under.

Power supply and regulator.

Ramp generator with adjustable accn. Decn. Circuit.

Voltage and current control amplifier which controls the output voltage with adjustable voltage and current limiting.

Pulse amplifier feeding the pulse transformer primary and the gate trigger cirrcuits.

Tripping circuit for single phasing, phase sequence, under voltage, field failure and Electronic overload.

The settings petentiometers (presets), coloured test points and LED indicators are located at the front of the cards

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