

# Users Manual

# ELECTROMAGENT, Model EMU-50V & CONSTANT CURRENT POWER SUPPLY, Model DPS-50

Manufactured by

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## **ELECTROMAGNET & POWER SUPPLY**

# EMU-50, DPS-50



These electromagnets have the most widely used 'U' shaped soft iron yoke. The soft iron is of a special quality, structurally uniform, well machined and finished to meet the rigid standards.

The pole pieces are made form dead annealed soft iron blocks of the best quality available. They are well shaped, machined and finished. The air-gap is continuously variable with two way knobbed wheel screw adjusting system. EMU-50V is supplied with flat pole pieces and EMU-50T is supplied with tapered pole pieces.

The coils are wound on non-magnetic formers with uniform layers of S.E. Copper wire. The new and modern design of the coils provides goods thermal conductivity characteristics and eliminated troublesome hot spots even at high magnetic fields. DPS-50 is an inexpensive and high performance constant current source suitable for small and medium sized electromagnets. Although the equipment is designed for the Electromagnet, Model: EMU-50, it can be used satisfactorily with any other electromagnet provided the coil resistance does not exceed 6W.

The current regulation circuit is IC controlled and hence results in the highest quality of performance. Matched power transistors are used to share the load current. The supply is protected against overload, short circuit and transient caused by the inductive load of the magnet.

#### **Specifications**

Current Range Smoothly adjustable from 0-4A

**Load Regulation** 0.1% for load variation from 0 to max

Line Regulation 0.1% for ± 10% mains variation

**Display** 3<sup>1</sup>/<sub>2</sub> digit, 7 segment LED DPM

**Power:** 220V ± 10%, 50Hz

Weight: 33Kg

Dimensions: 335mm X 305mm X 155mm

### **Specifications**

Field Intensity 7.5KG at 10mm air-gap with flat pole pieces Pole Pieces 50mm diameter

Energising Coils

Two, each with a resistance of about  $3.0\Omega$ 

**Power Requirement** 0-30Vdc, 4A, if coils are connected in series

Weight: 33Kg

#### UNPACKING

- 1. Keep the case in upright position and remove all the nails from the top lid.
- 2. Remove the side panels also and unscrew the clamp holding the base of the magnet with the bottom of packing case.
- 3. Put the magnet on a table. The magnet is in a assembled state, including the coils connections. Fix the handles provided in a small box with the magnet.

### **OPERATING INSTRUCTIONS**

- 1. Connect the two coils in series i.e. the direction of current in both the coils should be same. Otherwise little or no magnetic field would result even at full current.
- 2. Connect the leads to the power supply and switch on the power supply. The electromagnet is now ready to use.

### PRECAUTIONS

- 1. Power supply should be connected to a 3-pin main's socket having good earth connection.
- 2. Always increase or decrease the current gradually, switch 'ON' or 'OFF' the power supply at the zero current position.
- 3. Keep the pole pieces covered with small amount of grease to avoid rusting and the magnet as a whole may be covered with dust cover provided, when not in use.

