

# UNIVERSAL RECTIFIER CONTROL PANEL FOR DC BRAKES



## INTRODUCTION

**DC Rectifier** is a micro-controller based system for operating DC Brakes of 100 - 700 Ø drum of any make. The unique rectifier system, converts the input AC voltage of 400-415 VAC to an output DC voltage using a micro-controller based circuit and controlling switch gear items like contactors, rectifier bridges etc. A highly efficient IGBT controls the DC output Voltage level as per the PWM signals sent by the controllers. The micro-controller controls the DC output levels based on the input given to it through a keypad on the circuit. The input by the user can be visually seen on the display incorporated in the circuit. This intelligent controlling system is universally compatible for all brakes on the input settings provided by the user and quickly transitions from inrush to holding state for optimally operating the brake.



## SPECIFICATIONS

**ENCLOSURE** : Sheet Steel, IP-54/IP-55

**FINISHING** : Powered Coated

**INPUT VOLTAGE** : 380-420 VAC

**OUTPUT VOLTAGE**

**INRUSH VOLTAGE** : 300-350 VDC

**HOLDING VOLTAGE** : 100/110/120 VDC

## BILL OF MATERIAL

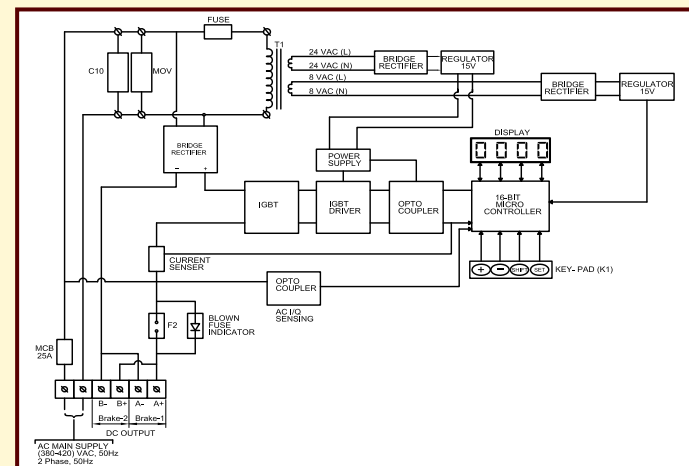
| SYMBOL | DESCRIPTION                        | RATING            | MAKE            | QTY |
|--------|------------------------------------|-------------------|-----------------|-----|
| PC     | Power Supply + Control Section     | -                 | SOC             | 1   |
| T1     | Transformer, Primary: Secondary:   | 415 VAC: 8,24 VAC | SOC             | 1   |
| IGBT   | Insulated-gate bipolar transistor. | 40A               | ST              | 1   |
| M1     | Single Pole MCB                    | 25A               | SIEMENS/HAVELLS | 2   |
| F3     | Fuse                               | 25A               | L&T             | 1   |
| D1     | 7 Segment Display, 4 digit         | -                 | -               | 1   |
| K1     | Keypad(4 KEYS) for Setting         | -                 | -               | 1   |

## SETTING THE BRAKE DIAMETER VALUE:

To use the pre-selected primary and secondary holding values as per the brake diameter selection, follow the procedure given below:

1. Power off the Controller.
2. In the power off mode, press key S1 & S4 SIMULTANEOUSLY. While keeping the key 1 pressed, POWER ON the controller. Keep the pressed till the display shows [100]. Release key 1.
3. Use S1 key, by pressing S1 we can select voltage 100,110,120V to confirm the select key.
4. Restart the controller and operate the brake as per the selected value.

## CIRCUIT DIAGRAM FOR RECTIFIER DCEM BRAKE



## LAYOUT FOR RECTIFIER CIRCUIT

