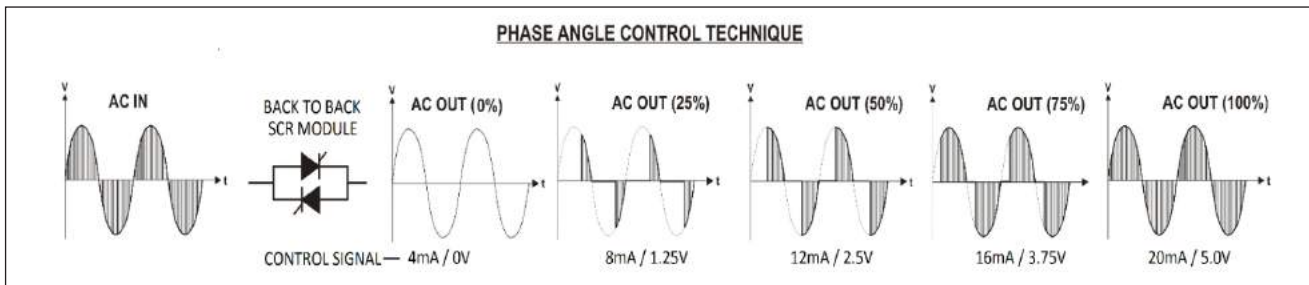


Three Phase Thyristor based Heater Power Regulator



POW-12-PA-XX



MODEL WISE DESCRIPTION

Model	Product Description	Max.KW /Amps @ 380 - 440VAC	Dimensions (H X W X D) mm.
POW-12-PA-3-10A	Three Phase SCR Power Regulator – suitable for 3 phase heaters connected in Star or Delta configuration.	Max.6 KW / 10A @ 415VAC	255 x 170 x 85
POW-12-PA-3-20A	Three Phase SCR Power Regulator – suitable for 3 phase heaters connected in Star or Delta configuration.	Max. 12 KW/ 20A @ 415VAC	255 x 170 x 85
POW-12-PA-3-30A	Three Phase SCR Power Regulator – suitable for 3 phase heaters connected in Star or Delta configuration.	Max.15KW/ 30A @ 415 VAC	255 x 170 x 85

FEATURES

- Suitable for 3 phase resistive heater load in all above load configurations.
- Auto / Manual operation.
- Accepts (4-20)mA / (0-5)VDC / (0-10)VDC control input from external controller
- Soft increase/decrease for smooth control
- Gradual and linear variation of 3 phase voltage proportional to control input.
- Adjustable power limit.
- Current limit and overload trip protection.
- Simple and Modular design for easy installation and operation.

APPLICATION

Thyristor based Power Regulator has a varied application and can be used with heating elements like Nichrome, Tungstan, Kanthal, Infra-Red, Ceramic etc. where precise and accurate temperature / power control is required. There is a significant power savings when compared to conventional contactor type power / temperature control system, which also depends on various other factors. It can be used for small laboratory ovens, furnaces, Air heaters etc. Thyristor based controls are recommended for smooth and steady state control, which enhances the heater life and thereby reduces the maintenance cost.

DESCRIPTION

Libratherm offers ready to use compact 3 phase SCR power regulator for electrical heating loads ranging from 6 KW to 15KW @ 380/415/440VAC 3-phase supply. This power pack module comprises of SCR triggering card model LTC-18, rightly rated back to back connected SCRs (with electrically isolated base)- mounted on the Aluminum heat sink. SCR devices are protected by suitable RC-snubbers. Heavy duty Terminal connectors are provided for 3 phase AC supply, control signal and heater cables. The entire assembly is mounted on an aluminum Heat sink and enclosed with MS powder coated enclosure, which in turn can be easily fixed inside the closed control panel as desired. Potentiometric settings are accessible to the user for on-site calibrations, max/min voltage output and ramp up / ramp down time adjustments and for current limit and over load settings. This model accepts the control signal from external DDC, PID or PLC controller in the form of (0-5)V, (0-10)V or (4-20)mA, user selectable through DIP switch settings.

TECHNICAL SPECIFICATIONS

Available Load Configurations	Three phase (3 or 4 wire star and 3 or 6 wire delta – as shown above)
Control Action	Linear and Proportional using Phase angle control technique (self-synchronized).
Control Signal	(4-20) mA / (0-5) VDC / (0-10) VDC / Potentiometer (user selectable)
Remote On/Off control	Using external potential free relay contacts to enable or disable the Thyristor or voltage output to the load.
Voltage Output	0 to 230VAC (for star connected loads) or 0 to 415VAC (for delta connected loads) variable voltage across the heater load, proportional to the control signal.
Smooth Control	Adjustable Ramp Up and Ramp Down Time for soft increase and decrease of output voltage. (Settable in the range of 2 to 60 seconds)
Settings	Max / Min output voltage settings for each phase.
Load Type / Current	Suitable only for Resistive load (10A to 30A @ 110/230/415 VAC).

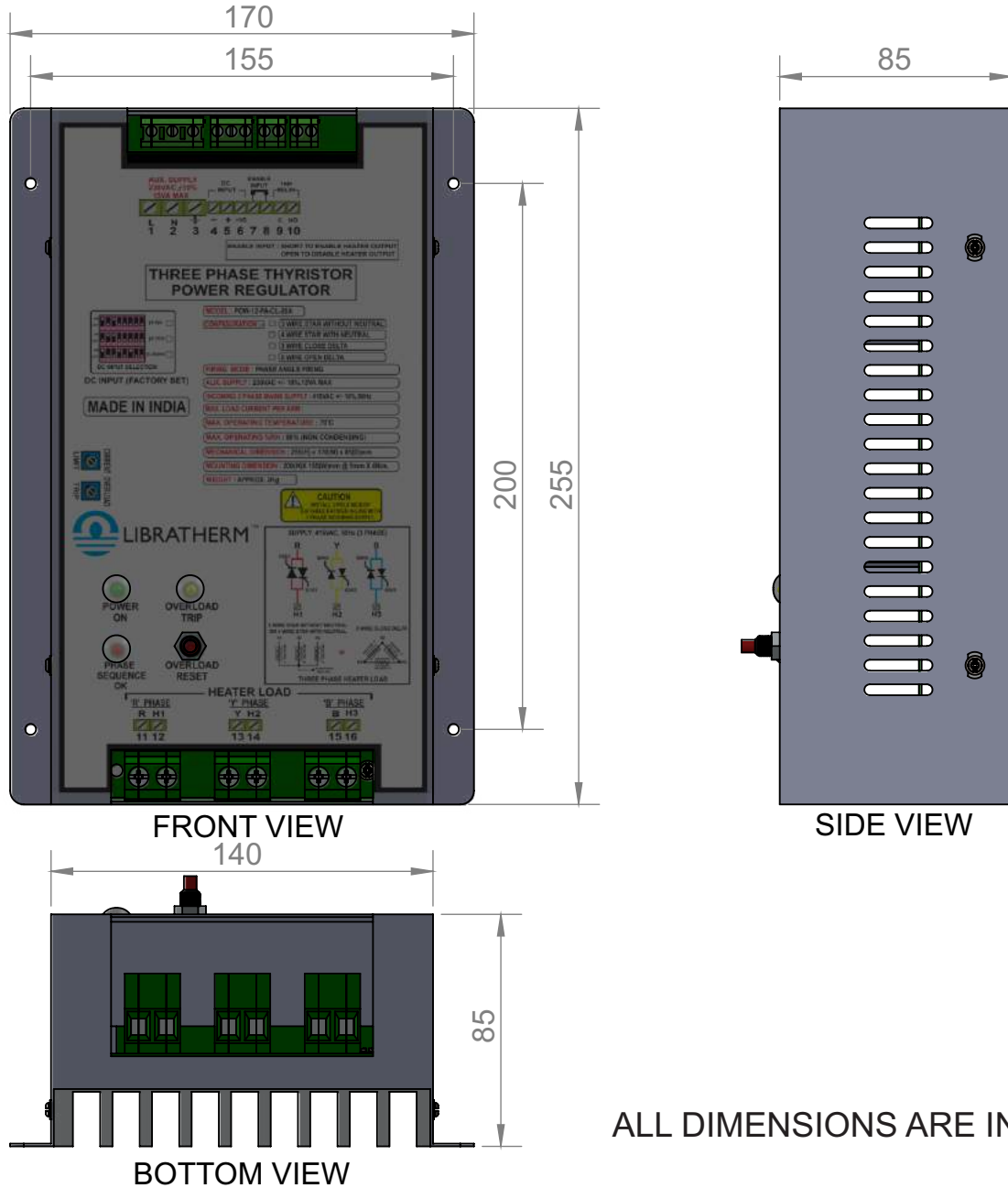
Current Control	Built in current limit and over load trip features.
Aux. Supply Voltage	230VAC +/- 10%, 50/60 Hz.
Load Supply Voltage	40 to 440VAC -3 phase through mains or through step down transformer.
Termination	Heavy duty terminals for 2.5 to 6.0 sq.mm cable.
Dimensions / Weight	As given in the table above / Approx. 3 Kg.
Mounting	Regulator can be mounted on the base plate of the control panel using 4 x M6 bolts (200h x 155w center to center holes).
Precautions	User must ensure proper Air circulation inside the mounting panel using external FAN.

ORDERING CODE

Model	Product Description	Max.KW /Amps @ 380 - 440VAC	Part no.
POW-12-PA-3-10A	Three Phase SCR Power Regulator – suitable for 3 phase heaters connected in Star or Delta configuration.	Max.6 KW / 10A @ 415VAC	2501
POW-12-PA-3-20A	Three Phase SCR Power Regulator – suitable for 3 phase heaters connected in Star or Delta configuration.	Max. 12 KW/ 20A @ 415VAC	2502
POW-12-PA-3-30A	Three Phase SCR Power Regulator – suitable for 3 phase heaters connected in Star or Delta configuration.	Max.15KW/ 30A @ 415 VAC	2503

DIMENSIONAL DRAWING

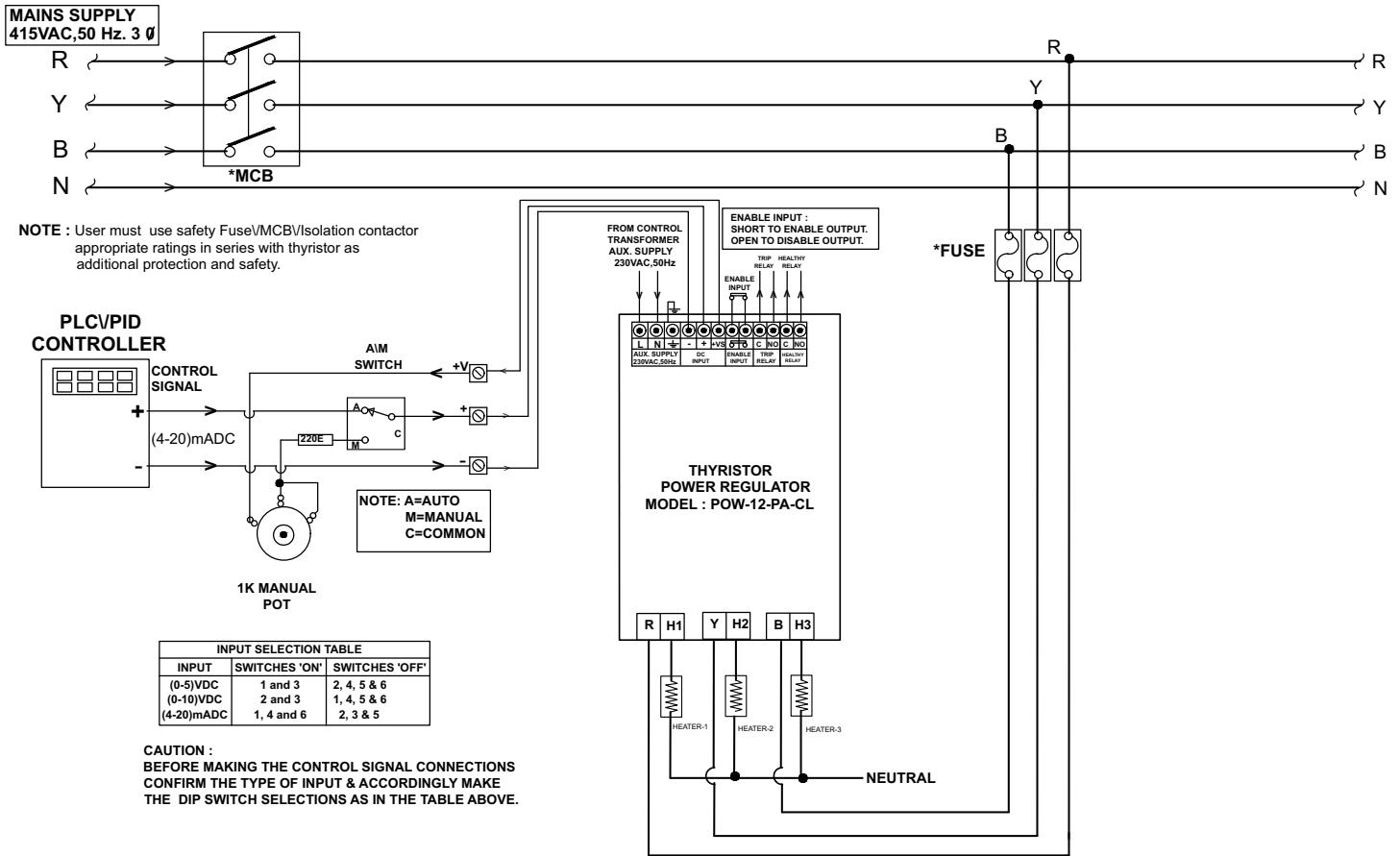
POW-12-PA-CL



ALL DIMENSIONS ARE IN mm

Note: Dimensions and specifications are subjected to change during product upgradation.

WIRING DIAGRAM



VARIOUS LOAD CONFIGURATIONS

