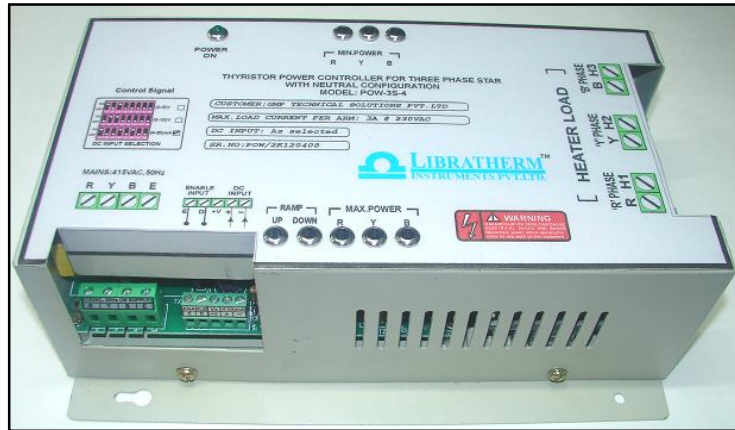
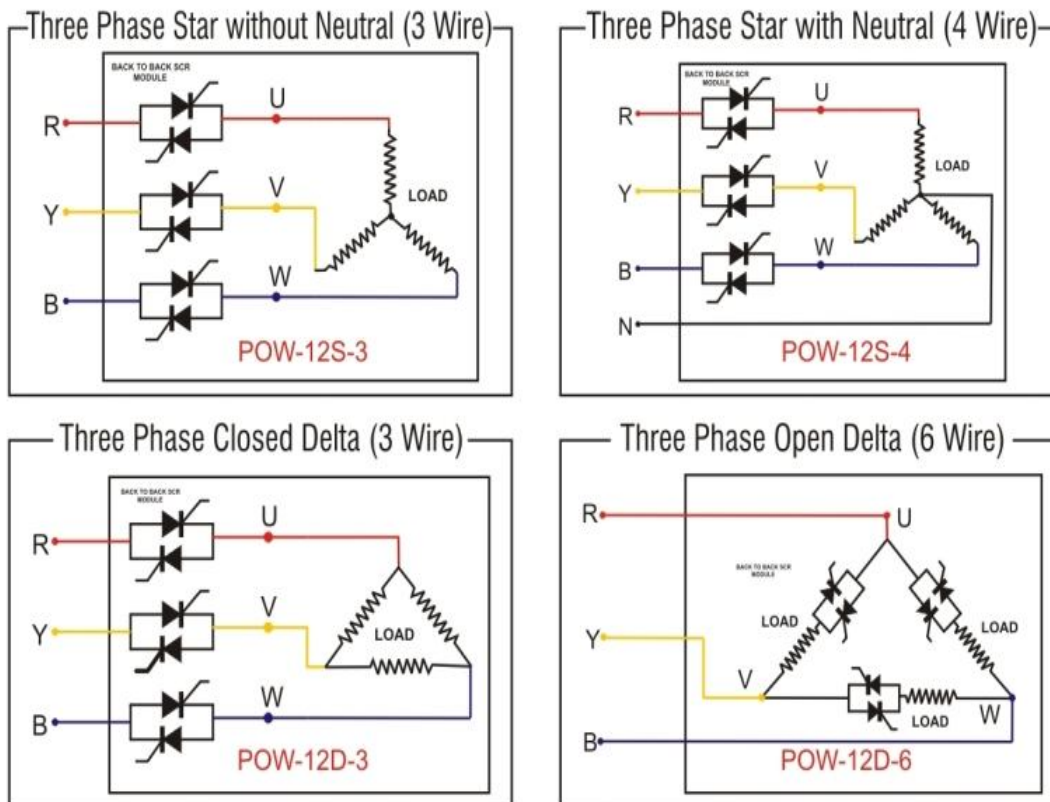


Three Phase Thyristor based Heater Power Controller (Product Code 21.5.1)



VARIOUS POSSIBLE THREE PHASE LOAD CONFIGURATION



Model Wise Descriptions:

Sr. No	Model	Product Description	Max. Wattage (KW)
21.5.1.1	POW-12S-3	Three Phase SCR Power Controller – suitable for 3 phase heaters connected in 3 wires Star without neutral configuration.	Max. 15 KW 25A /Phase
21.5.1.2	POW-12S-4	Three Phase SCR Power Controller – suitable for 3 phase heaters connected in 4 wires Star with neutral configuration.	Max. 15 KW 25A /Phase
21.5.1.3	POW-12D-3	Three Phase SCR Power Controller – suitable for 3 phase heaters connected in 3 wire close Delta configuration	Max. 18KW 25A / Phase
21.5.1.4	POW-12D-6	Three Phase SCR Power Controller – suitable for 3 phase heaters connected in 6 wire open Delta configuration	Max. 24KW 25A/Phase to Phase

Features:

- ❖ Suitable for 3 phase resistive heater load in all above load configurations.
- ❖ Can be used for both continuous or analog proportional and Time proportional action.
- ❖ Auto / Manual operation.
- ❖ Accepts (4-20)mA / (0-5)VDC / (0-10)VDC control input or external relay contact
- ❖ Soft start for smooth control
- ❖ Adjustable voltage limit per phase.
- ❖ Simple and Modular design for easy installation and operation.

Application:

Thyristor based Power controller has a varied application and can be used with heating elements like Nichrome, Tungsten, Kanthal, Infra-Red etc. where precise and accurate power control is required. There is significant power savings with respect to conventional contactor type 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 of Thyristor Power Controller:

Libratherm offers ready to use compact 3 phase SCR power controller for electrical heating loads ranging from 3 KW to 18KW @ 415VAC 3-phase supply. This power pack module comprises of SCR triggering card model LTC-15, rightly rated back to back connected SCRs (with electrically isolated base)- mounted on the heat sink. SCR devices are protected by suitable RC-snubbers. Heavy duty Terminal connectors are provided for AC 3 phase supply, control signal and heater wires. The entire assembly is mounted on MS powder coated plate/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. 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 settings.

Technical Specifications:

Available Configurations	Three phase (3 or 4 wire star and 3 or 6 wire delta – as shown above)
Control Action	Proportional using Phase angle control technique (self-synchronized).
Control Signal	(4-20) mA / (0-5) VDC / (0-10) VDC / Potentiometer (user selectable)
On/Off control	Using external potential free relay contacts in On/Off or PWM time proportional action.
Output	0 to 230VAC or 0 to 415VAC variable voltage across the heater load, proportional to the control signal and load configuration.
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 settings of per phase output voltage.
Load Type	Resistive (5A to 25A @ 110/230/415 VAC)
Supply Voltage	415 / 440VAC +/- 10%, 50/60 Hz. (RYB) or (RYB+N)
Termination	Heavy duty terminals for 2.5 to 4.0 sq.mm cable.
Size	170 (h) x 250(w) x 80(d) mm
Mounting	Power pack can be mounted on the base plate of the control panel using 4 x M6 bolts.

Proposed wiring diagram:

