

THYRISTOR POWER REGULATOR



DESCRIPTION

ICD offers thyristor controlled power regulators for heating application. We offer wide range of modules suitable for three phase star / delta application which means heater load with neutral and heater operated on phase to phase. The regulators are suitable for single phase and three phase application for resistive type load and inductive type transformer coupled heater loads. The thyristor power regulators are suitable for various firing type like, phase angle controlled and burst firing.

It supports different heater connection such as star, star with neutral, delta and open delta. This thyristor power regulator are switched for fast responding loads and controller act fast for feedback response in order to maintain at desired heating level with respect to command input.

The module consists of micro-controller designed triggering board and adequately packed SCR's connected in back to back and mounted on aluminum heat sink duly isolated electrically. Heat is removed either by natural cooling for low capacity and forced air cooling by noiseless fans for higher capacity.

All the sub assembly of power regulator is housed in a compact module with aluminum top cover with terminals or bus bar extended for supply and load termination.

A thyristor unit is semiconductor device acting as a switch formed by two thyristor connected in anti-parallel. To switch on alternating current input signal will switch on the thyristor will be switched off at first zero crossing with no input signal. The benefits of thyristor power regulator unit compared with electro-mechanical contactor are numerous a. No moving parts, b. No maintenance, c. Capacity to switch very fast and d. Most importantly finest load regulation and energy saving feature is achieved. Thyristor are the only solution to control transformer and special loads that change resistance with temperature.

PROTECTION FEATURES

- Under/ over current alarm
- Phase loss indication
- Shorted SCR's
- Heat sink over temp trip and alarm
- Heater break alarm



FEATURES

- Digitally controlled thyristor triggering
- Phase angle controlled and burst firing (zero crossing switching)
- Rating 15amps – 400amps
- Voltage 200 – 500v ac
- Cooling by forced air cooling/Natural
- Continuous duty and operating temperature 55°c
- Built in CT's for control/ alarm / regulation
- Control input 4-20mA /0-20mA or 0-10V dc
- Optional digital display to show power output, voltage, current in rms.
- Single phase / 2 phase / 3 phase load connection
- Suitable for 3 phase star connection / 3 phase delta connection
- Adjustable power and current limit
- Modular in design for easy servicing of PCB's and power devices.
- Suitable for resistive, transformer couples heating loads like, silicon cartridge, tungsten lamps, IR element molybdenum heaters, heaters like ceramic cartridge, duct, strip and panel heaters
- Relay output for remote monitoring for faulty connections – phase unbalance, phase failure. MOV, Snubber are induced in the circuit

TECHNICAL SPECIFICATION

Model	:	ICD thyristor power regulators
Control input	:	4-20mA/0-20mA/0-10V DC
Input supply	:	230V AC Single Phase (OR) 415V AC 2 Phase (OR) 415V AC 3 Phase \pm 10%
Rated capacity in amps	:	27A/ 40A/ 57A/ 80A/ 125A/160A/ 200A/ 230A/ 350A/450Amps
Output type	:	Phase angle controlled, burst cycle firing on / off control
Load type	:	1. All resistive and 2. Primary controlled Transformer and secondary to heating elements
Output voltage	:	0 to 97%
Cooling	:	Forced air cooling
Alarm feature	:	over current / over temp / phase failure / load balance / SCR short
Soft start	:	0- 60 Sec
Output current limit	:	Available with built in CT's
Relay contact O/P	:	Run/ fault
Output protection cover	:	Available
Optional indication	:	Current/ voltage / power energy consumption with AC energy meter
Protection class	:	IP 20
Heat sink earth	:	Provided
Aux supply	:	230V AC \pm 10% 50Hz

APPLICATIONS

- Heat treatment
- Stress relieving
- Low voltage high current heating with transformer
- Electrolysis process
- Plastic extruders and injection molding
- DC rectifiers
- Multi zone heating system
- Environment control/ and chamber control
- Electromagnetic application
- Jewellery and wax melting

DIMENSIONS

Model 1 : 27 Amps	▶▶	W(206) x H(315) x D(230)mm
Model 2 : 57 Amps	▶▶	W(206) x H(315) x D(270)mm
Model 3 : 97 Amps	▶▶	W(450) x H(425) x D(275)mm

Dimensions for higher rating are given by request



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