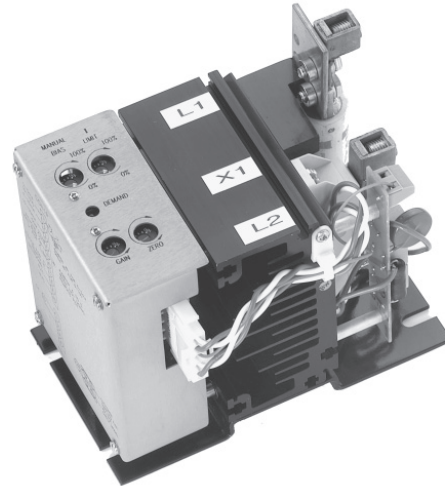


Single Phase SCR Power Pak



Features:

- 120-575 Vac @ 30-75 Amp
- Phase Angle Firing
- Isolated Control Circuit
Inputs:
 - 0-5mA, 0-20mA
 - 0-50mA, 1-5mA
 - 4-20mA, 10-50mA
 - 0-5Vdc, 0-10Vdc
- Flexible I/O Power Wiring
- Optional Current Limit
- Easy Customer Interface
- Remote Shutdown
- Soft Start
- Line Voltage Compensation
- Compact Size and Construction
- dv/dt Transient Voltage Protection
- MOV Protection

Description

The MiniMax Series is specifically designed for the OEM market. The current limit, soft start option, flexible I/O power wiring, space saving footprint, with UL and cUL approvals make it an excellent candidate for your product.

Typical Applications:

- Resistive Heaters
- Electric Ovens
- Furnaces
- Kilns

The Chromalox Model MiniMax 1P utilizes Phase Angle firing to modulate power to an inductive or resistive load. Phase Angle control has the advantage of proportioning every cycle thereby providing very fine resolution of power. Fast responding loads in which the resistance changes as a function of temperature are excellent candidates for Phase Angle control.

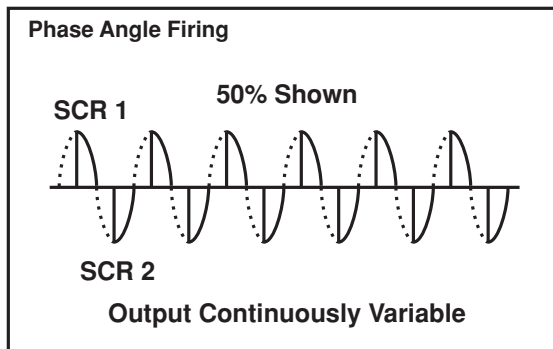
The MiniMax Soft Start feature assures that the load power is gradually increased from zero to the value set by the command signal in the event of a power interruption. In addition to the Soft Start feature, optional Current Limit is used to protect the load, fuses, SCR controller, and the total system from large surge currents that could occur at startup. Chromalox MiniMax offers separate and adjustable Zero, Gain, Manual Bias, and Current Limit potentiometers for ease of calibration. Screw type plug-in connectors for input signals, remote shutdown, and optional Remote Manual Bias are standard for easy customer interface.



ISO 9001
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Chromalox®
PRECISION HEAT AND CONTROL

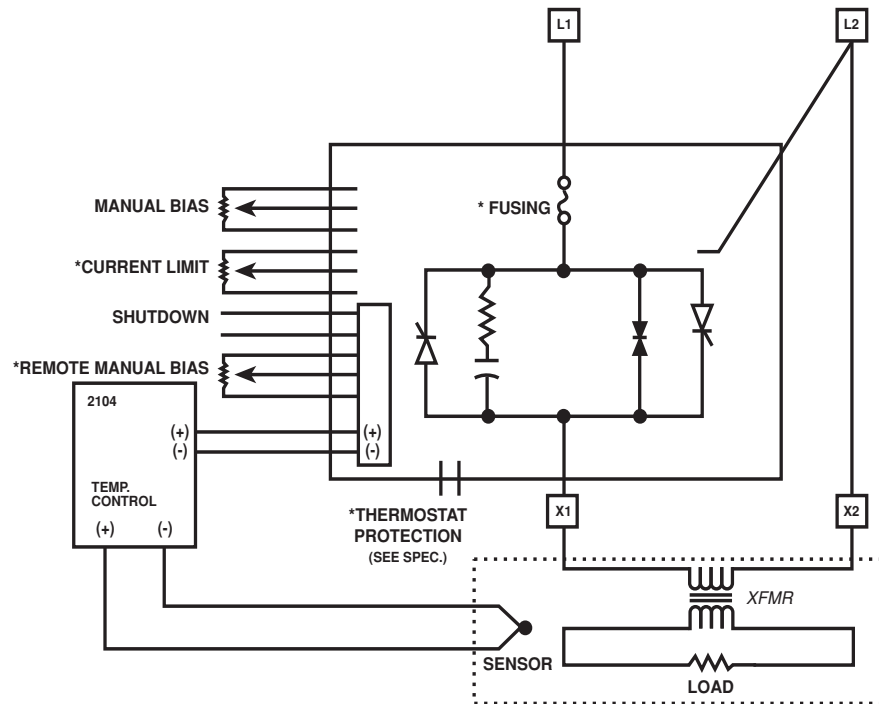
Wave Form Cycle Rate



MiniMax 1P Power Pak

Phase Angle Firing

This firing technique makes this power controller universal for inductive and resistive loads. Adjustable zero, gain, manual bias and optional current limit potentiometers offer ease of calibration. The MiniMax Soft Start and Current Limit features offer protection and control in the event of a power interruption or large surge currents that could occur at startup.



MiniMax 1P Power Pak

Specifications

Control Inputs

Accepts all of the following as standard:

| Signal Input | Input Impedance |
|--------------------|-----------------|
| 1-5/0-5mA | 1K Ohms |
| 4-20/0-20mA | 250 Ohms |
| 10-50/0-50mA | 100 Ohms |

Optional Remote Manual Adjust

Output Voltage 0-99% RMS line voltage

Resolution (Prop.) Better than 0.1%

Line Voltage 120, 208, 240, 277, 480
and 575 VAC
± 10%, 50/60 Hz

Load Current Rating 30, 50, 75

Ambient Temperature 0-50°C (32-122°F)

SCR Capability Dielectric withstand
capability 1500V RMS min.

Surge Rating Typically fifteen (15) times
nominal RMS rating for
8.3 milliseconds

Isolation SCR's isolation 2500V
Input-output isolation 1500V

Heatsink Ground potential

Thermostat..... 4 Amp @ 120V resistive
2 Amp @ 240V resistive
NC Contact Standard

Current Limit 10-100% of rated
output current

Soft Start 25% demand per second
typical reset speed
8.3 milliseconds

Mechanical Features

- LED Indication of Firing.
- Customer Control Connections are made on a Plug-In Screw Type Terminal Block.
- Optional Remote Manual Adjust
- Heatsink Mounted Temperature Thermostat NC

Electrical Features

- SCRs PIV 1200V Minimum (1400 Volts on 575 Volt model)
- Isolated Semiconductor Power Blocks are used on all Current Ratings
- I²T Fusing

Safety Features

Personnel Safety

- Ground Potential Heat Sink
- SCR to Heat Sink Isolation

Equipment/Process Safety

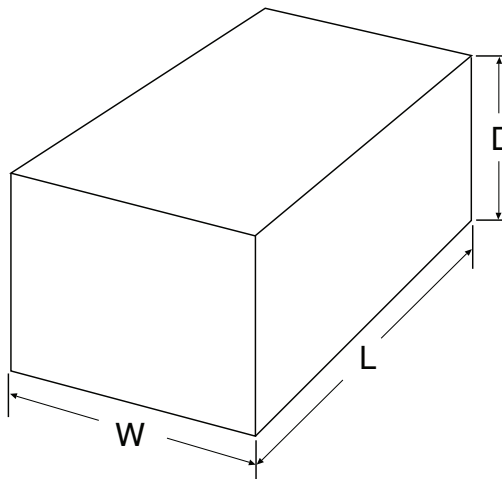
- Input to Output Isolation
- dv/dt Transient Voltage Protection
- I²t Fusing for SCR Protection
- Remote Shutdown
- MOV
- Current Limit
- Soft Start

MiniMax 1P Power Pak

Mounting Dimensions

MiniMax 1P Open

| | Height | Length | Depth |
|------|--------|--------|-------|
| Amps | H | L | D |
| 30 | 5 | 7.5 | 6 |
| 50 | 5 | 7.5 | 6.5 |
| 75 | 5 | 7.5 | 7.5 |



Ordering Information

Model **1P Power Pack**

Mmax 1P **Single Phase SCR Power Controller Complete with Lugs and I²T Fusing^{1,2}**

Code Control Configuration

- 1** Phase Angle Control (Accepts: 1 - 5/0 - 5mA, 4 - 20/0 - 20mA, 10 - 50/0 - 50mA)
- 2** Phase Angle Control with Current Limit

Code Current at 50°C (104°F) Ambient

- 01** 30 Amp
- 02** 50 Amp
- 03** 75 Amp

Code Voltage

- 1** 120 Vac
- 2** 208 Vac
- 3** 240 Vac
- 4** 277 Vac
- 5** 480 Vac
- 6** 575 Vac²

Code Remote Manual Adjust/Auto Manual Switch³

- 0** None
- 1** Pot with 0-100% dial and local/Remote Switch, Single Turn
1K ohm Potentiometer

Mmax 1P - 2 01 1 1 Typical Model Number

- 1) SCR fusing is for semiconductor protection only, not wire protection.
- 2) Fuses are supplied loose for 575 Vac applications.
- 3) Potentiometer supplied loose for customer mounting.

Note:

Storage temperature 14°F to 158°F (-10°C to 70°C).
SCR units calibrated for 4-20mA input.

Mmax 1P PDS
November 2004