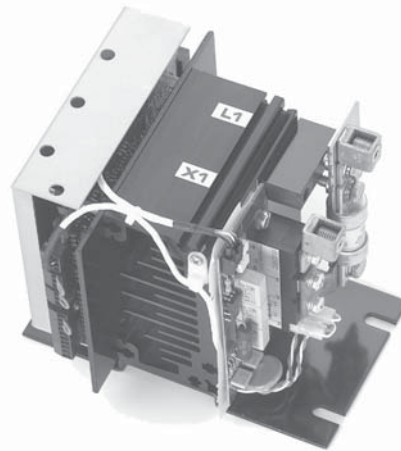


Controls

MiniMax 1

Single Phase SCR Power Pak



- 120-600 VAC @ 30-75 Amp

User Adjustable Firing Modes Include:

- On/Off Control Inputs:
120VAC, 240VAC, 5-32 VDC Dry Contact Closure
- Proportional Zero Cross or DOT Firing Power Control

Inputs:

4-20mA, 0-5 VDC, 1-5 VDC, 0-10 VDC

Remote Manual Adjust,
Remote Auto Manual Switch

- Flexible I/O Power Wiring
- Shorted SCR Detection (option)
- Easy Customer Interface
- Remote Stop
- Electronically Protected with Temperature Warning and Shutdown System
- Compact Size and Construction
- dv/dt Transient Voltage Protection
- MOV Protection
- DOT Fired with Single or Three Cycle Resolution (Jumper selectable)

Description

The MiniMax Series is specifically designed for the OEM market. The plug-in options, flexible I/O power wiring, space saving footprint, I²t fusing and universal approvals make it an excellent candidate for your product.

The Chromalox Model MiniMax 1 Single Phase Solid State SCR Power Controller is a highly versatile power pak with optional plug-in Shorted SCR Detection Boards. Firing modes can be switched between On/Off and proportional Zero Cross or DOT Firing power control at any time based on process needs.

Chromalox' exclusive DOT (Demand Oriented Transfer) firing switches the fewest number of cycles to provide the most precise zero crossover control. At 50% output the unit's output alternates between one electrical cycle on and one cycle off. At 51% the output continues with one cycle on / one cycle off and gradually integrates one extra "on" cycle for the additional one percent. With the exception of phase angle firing, DOT firing is the most precise method of SCR control. DOT firing is preferred in many applications because phase angle firing creates unwanted RFI. DOT is excellent for applications where consistent heater/process temperature control is critical.

Electrical Features

- SCRs PIV 1500V Minimum (1400 Volts on 600 Volt model)
- Isolated Semiconductor Power Blocks are used on all Current Ratings
- I²t Fusing

Safety Features

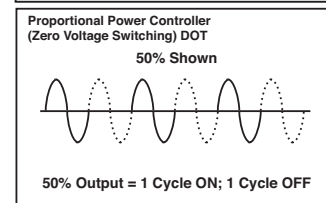
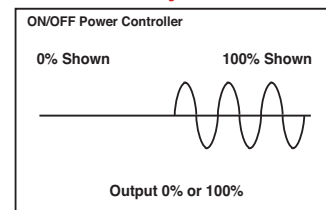
Personnel Safety

- 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 Stop
- Optional Shorted SCR Detection
- MOV

Wave Form Cycle Rate



Mechanical Features

- LED Indication of Firing
- Customer Control Connections are made on a Plug-In Screw Type Terminal Block
- Optional Remote Manual Adjust and Auto/Manual Switch
- Heatsink Mounted Temperature Sensor

Applications

- Resistive Heaters
- Electric Ovens
- Furnaces
- Kilns
- Environmental Chambers

SCR COMPONENTS

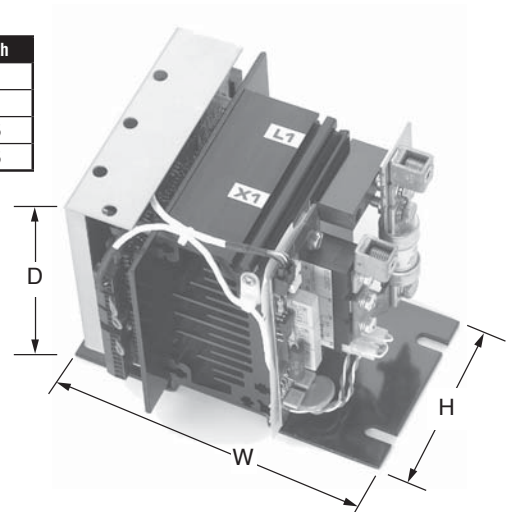
Controls

MiniMax 1 Single Phase SCR Power Pak *(cont'd.)*

Mounting Dimensions

MiniMax 1 Open

Amps	Height H	Width W	Depth D
30	6.25	7.5	6
50	6.25	7.5	6.5
75	6.25	9.5	7.5



Ordering Information

Complete the model number using the matrix provided.

Model SCR Power Pack

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

Code Control Configuration

5 Proportional Control, DOT Zero-Crossover Firing, Command Input Signals: 4-20mA, 0-5VDC, 1-5VDC (via Modbus RTU/485 only), 0-10VDC, Remote 0-1000 OHM Potentiometer w/Manual Override, Modbus RTU/RS485 Communications. RTD Heat Sink Temperature Sensor with Two Set-Points, Automatic Line Sensing 50/60HZ, Remote Permissive Shutdown Input, Form "C" Dry Contact Alarm Output, Staged Heating w/Digital Calibration Zero / Span Adjustments(4-8mA, 8-12mA,12-16mA,16-20mA(via Modbus RTU/RS485 only), LED Diagnostics: Command Input, Main/Trigger Boards Running, SCR Status per Phase, Diagnostic Kit via Modbus RTU/RS485: Highest Heat Sink Temperature, Last Heat Sink Temperature, Highest and Lowest Ambient Temperature, Line Frequency Monitoring, Third Party Certifications: UL, cUL, CE, DEMKO (650A and below).

Code Current at 50°C (122°F) Ambient

01 30 Amp
02 50 Amp
03 75 Amp

Code Line Voltage

1 120 - 480 VAC
2 575/600 VAC²

Code Instrument Power (10 Va Required)

1 120 to 240 VAC 50/60Hz

Code Remote Manual Adjust/Auto Manual Switch³

0 None
1 Pot with 0 - 100% dial and local/Remote Switch, Single Turn 1K ohm Potentiometer (Proportional control only)

- 1) SCR fusing is for semiconductor protection only, not wire protection.
- 2) Fuses are supplied loose for 575/600 VAC applications.
- 3) Potentiometer supplied loose for customer mounting.

Note:
Storage Temperature 14°F to 158°F (-10°C to 70°C).

CE application requires filters.

Chromalox Part Numbers

0005-60055 — Line filter, single phase, 230 VAC
0005-60057 — Line filter, 120-230 VAC

CE application requires filter.

Mmax I - 5 01 1 1 0 Typical Model Number