

Controls

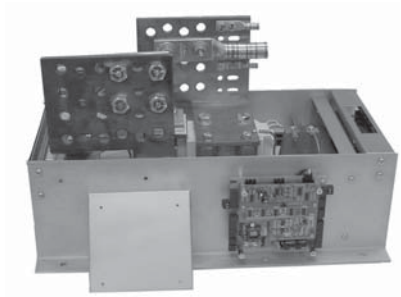
MaxPac I

Single Phase SCR Power Pak

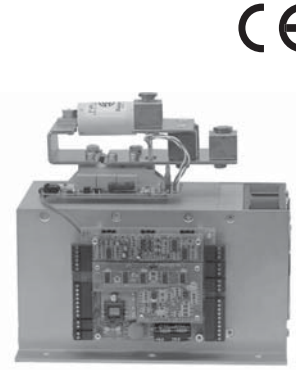
- 120-600 VAC @ 100-1200 Amp
- User Adjustable Firing Modes Include:**
- On/Off Control Inputs:
120VAC, 240VAC, 5-32 VDC Dry Contact Closure
 - Proportional Zero Cross or DOT Firing Power Control
- Inputs:**
- 4-20mA, 0-5 VDC, 1-5 VDC, 0-10 VDC
- Flexible I/O Power Wiring
 - Built-In Power Distribution
 - Shorted SCR Detection (Option)
 - Easy Customer Interface
 - Remote Stop
 - Electronically Protected with Temperature Warning and Shutdown System
 - Compact Size and Construction
 - Touch-Safe (Option on 100 to 650 Amp Models)
 - dv/dt Transient Voltage Protection
 - MOV Protection
 - Single or Three Cycle Resolution (Jumper Selectable)

Applications

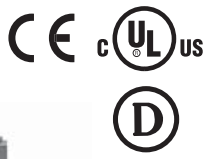
- Resistive Heaters
- Electric Ovens
- Furnaces
- Kilns
- Environmental Chambers



Touch Safe
*Shown without cover



Open Design



Description

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

The Chromalox Model MaxPac I 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's 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.

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
- Built-In Power Distribution

Electrical Features

- SCRs PIV 1200V Minimum (1500 Volts on 600 Volt model)
- Isolated Semiconductor Power Blocks are used on all Current Ratings up to 650 Amps
- UL 508 for units 650 Amps and under

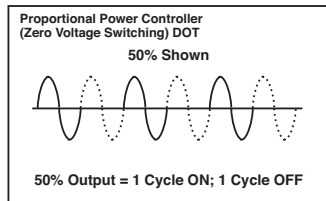
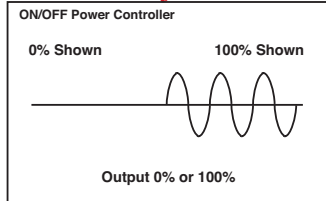
Safety Features

- Personnel Safety**
- Ground Potential Heat Sink up to 650 Amps
 - SCR to Heat Sink Isolation up to 650 Amps
 - Touch-Safe Option
 - CE Compliance; Line filters are required

Equipment/Process Safety

- Input to Output Isolation
- dv/dt Transient Voltage Protection
- Optional I²t Fusing
- Remote Stop
- Optional Shorted SCR Detection
- MOV

Wave Form Cycle Rate



SCR COMPONENTS

Controls

MaxPac I

Single Phase SCR Power Pak (cont'd.)

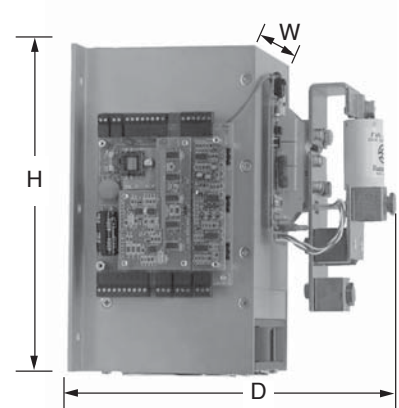
Mounting Dimensions

MaxPac I Open

Amps	Width W	Height H	Depth D
100	7.75	9.75	10
150	7.75	9.75	10
200	7.75	9.75	10
300	7.75	9.75	10
400	9.5	14.75	11
550	11	17.75	11
650	11	17.75	11
800	17	27	17
1000	17	27	17
1200	17	27	17

MaxPac I Closed

Amps	Width W	Height H	Depth D
100	9.5	14.75	11.8
150	9.5	14.75	11.8
200	9.5	14.75	11.8
300	9.5	14.75	11.8
400	9.5	14.75	11.8
550	11	17.75	11.8
650	11	17.75	11.8



Ordering Information

Complete the model number using the matrix provided.

Note: CE approval for all units, line filters required. UL Listed for units 650 amps and under.

Model	SCR Power Pack
MXPC I	Single Phase SCR Power Pack
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)
01	100 Amp Open Design
02	100 Amp Touch Safe Design
03	150 Amp OpenDesign
04	150 Amp Touch Safe Design
05	200 Amp OpenDesign
06	200 Amp Touch Safe Design
07	300 Amp OpenDesign
08	300 Amp Touch Safe Design
09	400 Amp OpenDesign
10	400 Amp Touch Safe Design
11	550 Amp OpenDesign
12	550 Amp Touch Safe Design
13	650 Amp OpenDesign
14	650 Amp Touch Safe Design
15	800 Amp OpenDesign
16	1000 Amp OpenDesign
17	1200 Amp OpenDesign

01	100 Amp	Open Design
02	100 Amp	Touch Safe Design
03	150 Amp	OpenDesign
04	150 Amp	Touch Safe Design
05	200 Amp	OpenDesign
06	200 Amp	Touch Safe Design
07	300 Amp	OpenDesign
08	300 Amp	Touch Safe Design
09	400 Amp	OpenDesign
10	400 Amp	Touch Safe Design
11	550 Amp	OpenDesign
12	550 Amp	Touch Safe Design
13	650 Amp	OpenDesign
14	650 Amp	Touch Safe Design
15	800 Amp	OpenDesign
16	1000 Amp	OpenDesign
17	1200 Amp	OpenDesign

MXPC I- 5 03 (Continued on next page)

Controls

MaxPac I Single Phase SCR Power Pak (cont'd.)

Ordering Information (cont'd.)

Complete the model number using the matrix provided.

Crimp Lug Chart		
Chromalox #	Panduit #	Conductor Size
0135-10002	LCD8-14A-L	#8 AWG
0135-10003	LCD6-14A-L	#6 AWG or #6 Weld
0135-10004	LCD4-14A-L	#4 AWG or #4 Weld
0135-10005	LCD2-56B-Q	#2 AWG
0135-10006	LCD1-56C-E	#1 AWG or #2 Weld
0135-10007	LCD1/0-12-X	#1/0 AWG or #1 Weld
0135-10008	LCD2/0-12-X	#2/0 AWG or #1/0 Weld
0135-10009	LCD3/0-12-X	#3/0 AWG or #2/0 Weld
0135-10010	LCD4/0-12-X	#4/0 AWG or #3/0 Weld
0135-10011	LCD250-12-X	250 MCM or #4/0 Weld
0135-10012	LCD300-12-X	300 MCM
0135-10013	LCD350-12-6	350 MCM
0135-10014	LCD400-12-6	400 MCM
0135-10015	LCD500-12-6	500 MCM

Model	SCR Power Pack					
MXPC 1	Single Phase SCR Power Pack					
Code	Line Voltage					
1	120 VAC - 480 VAC					
2	575/600 VAC					
Code	Instrument Power (100 Va Required)					
1	120 VAC 50/60 Hz					
2	230 VAC 50/60 HZ					
Code	Compression Lug Kits (Open Design up to 300 Amps) For Other Ranges See Crimp Lug Chart					
L0	None					
L1	100-150 Amp PAK (#2 - 4/0)/connection					
L2	200-300 Amp PAK (1/0 - 500mcm)/connection					
Code	Fusing Option ⁽¹⁾					
F00	None					
For 500 VAC Applications, Select One						
F01	100-150 Amp PAK (200 Amp Fuse)					
F02	200 Amp PAK (250 Amp Fuse)					
F03	300 Amp PAK (400 Amp Fuse)					
F04	400 Amp PAK (500 Amp Fuse)					
F05	550 Amp PAK (700 Amp Fuse)					
F06	650 Amp PAK (800 Amp Fuse)					
F07	800 Amp PAK (1000 Amp Fuse)					
F08	1000 Amp PAK (1200 Amp Fuses)					
F09	1200 Amp PAK (Two 1000 Amp Fuses)					
For 575/600 VAC Applications, Select One ⁽²⁾						
F10	100 Amp PAK (125 Amp Fuse)					
F11	150 Amp PAK (175 Amp Fuse)					
F12	200 Amp PAK (250 Amp Fuse)					
F13	300 Amp PAK (400 Amp Fuse)					
F14	400 Amp PAK (500 Amp Fuse)					
F15	550 Amp PAK (700 Amp Fuse)					
F16	650 Amp PAK (800 Amp Fuse)					
F17	800 Amp PAK (1000 Amp Fuse)					
F18	1000 Amp PAK (1200 Amp Fuse)					
F19	1200 Amp PAK (Two 1000 Amp Fuses)					
Remote Manual Adjust/Auto Manual Switch						
0	None					
1	Pot with 0 - 100% dial and Local/Remote Switch(2) Single Turn 1KΩ Potentiometer					
(cont'd.)	1	1	L1	F01	1	Typical Model Number

1) SCR Fusing is for semiconductor protection only, not wire protection.

2) 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

0005-60056 - Line filter, single phase, 440 VAC

0005-60057 - Line filter, 120-230 VAC

Current Rating	Open Design		Closed Design	
	Input Bus	Output Bus	Input Bus	Output Bus
100, 150, 200, 300	1 Crimp Lug / Phase	1 Crimp Lug / Phase	3 / Phase*	3 / Phase*
400	3 / Phase*	10 / Phase*	3 / Phase*	10 / Phase*
550, 650	4 / Phase*	12 / Phase*	4 / Phase*	12 / Phase*
800, 1200	4 / Phase*	12 / Phase*	N/A	N/A

* Accepts up to this number of NEMA standard lugs (See Crimp Lug Chart)

SCR COMPONENTS