MaxPac III

Three Phase, 3-Leg Power Pak

- 120-600 VAC @ 100-1200 Amp
- Automatic 50/60HZ Line Sensing

User Adjustable Firing Modes Include:

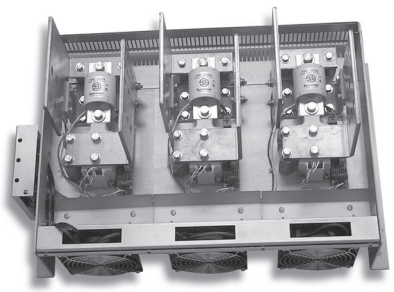
- On/Off Control Inputs: 120VAC, 240VAC, 5-32 VDC Dry Contact Closure
- Proportional Zero Cross or DOT Firing Power Control

Inputs:
4-20mA, 0-5 VDC, 1-5 VDC, 0-10 VDC Remote Manual Adjust, Remote Auto Manual Switch

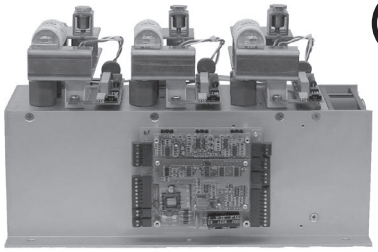
- Flexible I/O Power Wiring
- Built-In Power Distribution
- Shorted SCR Detection (option)
- Easy Customer Interface
- Remote Stop
- Electronically Protected with Temperature Warning and Shutdown System
- Compact Size and Construction
- Touch-Safe (option on 100 to 650 Amp models)
- dv/dt Transient Voltage Protection
- MOV Protection
- Six SCR Full Converter
- MOV Protection
- Three Phase Delta, 3-Wire Wye or 4-Wire Wye Connected Loads
- Single or Three Cycle Resolution (Jumper selectable)

Applications

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



Touch Safe Design
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, I^2t fusing and universal approvals make it an excellent candidate for your product.

The Chromalox Model MaxPac III is a Solid State, 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 cross-over control. At 50% output the unit's output alternates between three electrical cycles on and three cycles off. At 51% the output continues with three cycles on / three cycles off and gradually integrates three 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

- PIV 1200V Min at 480 VAC PIV 1500V Min at 600 VAC
- Isolated Semiconductor Power Blocks are used on all Current Ratings up to 650 Amps

Safety Features

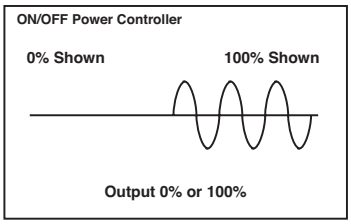
Personnel Safety

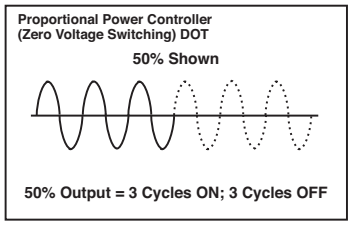
- Ground Potential Heat Sink up to 650 Amps
- SCR to Heat Sink Isolation up to 650 Amps
- UL 508 Listed for units 650 Amps and under
- CE Approval for all units with line filters required.

Equipment/Process Safety

- Input to Output Isolation
- dv/dt Transient Voltage Protection
- Optional I^2t Fusing
- Remote Stop
- Optional Shorted SCR Detection

Wave Form Cycle Rate





MaxPac III

Three Phase, 3-Leg Power Pak *(cont'd.)*

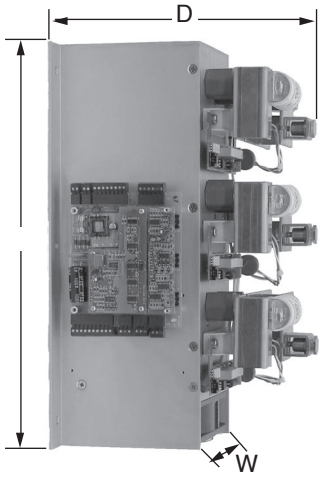
Mounting Dimensions

MaxPac III Open

	Width	Height	Depth
Amps	W	H	D
100	9	14.75	10
150	9	14.75	10
200	9	14.75	10
300	22.75	14.75	10
400	22.75	14.75	11
550	27	17.75	11
650	27	17.75	11
800	33	27	17
1000	33	27	17
1200	33	27	17

MaxPac III Closed

	Width	Height	Depth
Amps	W	H	D
100	22.75	14.75	11.8
150	22.75	14.75	11.8
200	22.75	14.75	11.8
300	22.75	14.75	11.8
400	22.75	14.75	11.8
550	27	20	17.75
650	27	20	17.75



Ordering Information

Complete the model number using the matrix provided.

Model	SCR Power Pack
MXPC III	3 Phase 3-Leg 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

MXPC III- **5** **04** **(Continued on next page)**

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

MaxPac III
Three Phase, 3-Leg Power Pak *(cont'd.)*

Ordering Information (cont'd.)

Complete the model number using the matrix provided.

Model	SCR Power Pack					
MXPC III	3 Phase Six SCR Power Pack					
Code	**Line Voltage**					
1	120 VAC - 480 VAC					
2	575/600 VAC					
3	50/60 Hz *For CE, 50 Hz Limited to 400V					
	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 (Select for all Touch Safe Design and for over 300 Amp Open Design)			
		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**	**F02**	**1**	**Typical Model Number**

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

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, three phase, 440 VAC
0005-60057 - Line filter, 120-230 VAC

	Open Design		Closed Design	
Current Rating	**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)