



## 4230 Series SCR Control Panels



- SCR-Zero Crossover Control
- 75 to 400 Amps
- Louvered, Fan Cooled Enclosures
- Main Disconnect Switch with Shunt Trip
- 208-575 Volt
- Control Power Transformer
- 4232 Nema 1
  - 2 Leg, 3 Phase
  - 7820 DOT Fired SCR
  - SCR/Load Fusing
- 4233 Nema 1
  - 3 Leg, 3 Phase
  - 7930 DOT Fired SCR
  - SCR/Load Fusing
- 4234/35 Nema 4 or 4X
  - 2 Leg, 3 Phase
  - Up to 6 Circuits
  - Load Management Option

### Description

The 4230 Series of SCR Power Control Panels offers convenient, economical control of resistive loads and capabilities beyond the smaller, more compact 4530 series. An additional 46 Standard Options increase the application flexibility of the 4230 Series. These pre-engineered, pre-wired panels require only sensor, load and power supply connections - and totally eliminate the need to design your panel, specify and purchase separate components, and assemble them into a functioning power control system.

SCR power control efficiently and accurately proportions power to the resistive heating load. Unlike traditional contactor control, SCR's deliver:

- Reduced Power Cost
- Extended Heater Life
- Less Maintenance
- Improved Process Products
- Stable Process Temperature

### 4232/4233 Features

- Zero-crossover Distributed Fired SCR (DOT)
- Fan Cooling
- Load Fusing for Up to 3 Circuits
- Shunt Trip Disconnect

### 4235/4236 Features

- NEMA 4 and 4X Enclosures for Hosedown and Corrosive applications. (External Heatsinks Cool the SCRs)

- Up to 6 SCR Circuits
- Load and SCR Fusing
- Load Management Option: Distributes Firing of SCRs to Even Out the Demand. Great for Systems Using Generators.

### Common Features

- Temperature Controller
- Overtemperature Controller with manual reset
- I<sup>2</sup>T Fusing for SCR Protection
- Fused Control Power Transformer
- Manual Disconnect Switch
- Power "ON" Pilot Lamp
- Automatic Shutdown Device for Overtemperature Protection
- Remote Shutdown Interlock Terminals
- Drawings for Record
- Installation and Operation Manual

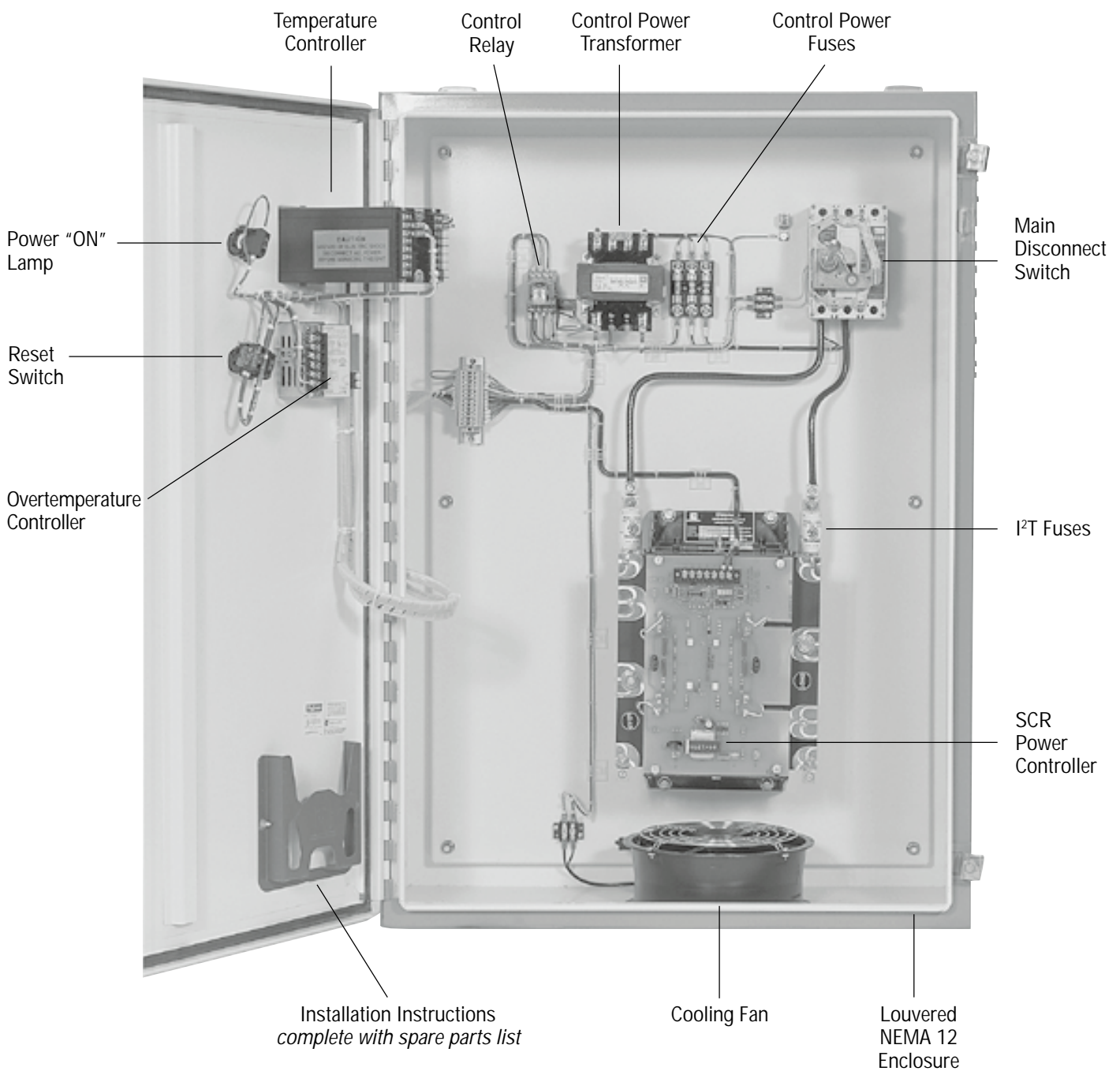
### Custom Panel Capability

In addition to the pre-engineered and field-proven standard control panels presented in this catalog, Chromalox has over 40 years of *custom power control systems* expertise. Working with world-scale engineering firms, military shipboard systems and the most demanding research institutes, Chromalox has encountered and conquered the challenges of even the most specialized requirements. This experience translates to efficient, economical solutions for virtually any heating and power control application.

## 4230 Series

### SCR Control Panels

*(cont'd.)*





## 4232

### SCR Control Panels (cont'd.)

#### Ordering Information

Complete the Model Number using the Matrix provided.

#### Model

4232 NEMA 12\*\*\* SCR Panel, 7820 SCR DOT Fired Zero-Crossover, I<sup>2</sup>T Three Leg Fusing, Shunt Trip Disconnect, Power On Pilot Lamp, Optional 2104 and 3101, LED Indication of Firing, Isolated SCRs and Forced Air Cooling.

Code	# CKTS	Max Amps/CKT**	Max Total Amps**	Enclosure Dimensions (In.)	SCR Component
03	1	75	75	24x24x12	7820-03
04	1	100	100	48x36x12	7820-04
05	1	125	125	48x36x12	7820-05
06	1	150	150	48x36x12	7820-06
07	1	175	175	48x36x12	7820-07
08	1	200	200	48x36x12	7820-08
09	1	250	250	60x36x12	7820-09
10	1	300	300	60x36x12	7820-10
11	1	400	400	60x36x12	7820-11

#### Code Voltage

1	208
2	240
3	380
4	415
5	480
6	575

#### Code Controller

0	Terminals for Remote Control Signal, 4-20 mA, 1-5 Vdc, 0-20 mA or 0-5 Vdc
1	One 2104-A0100 Temperature Controller.

#### Code Overtemperature Controllers

0	Terminals for Remote Shutdown.
1	One 3101-11000 High Limit Controller
2	Two 3101-11000 High Limit Controllers
3	Three 3101-11000 High Limit Controllers

#### Code Load Fusing Selection

9025(*)	25 Amps/per ckt
9030(*)	30 Amps/per ckt
9035(*)	35 Amps/per ckt
9040(*)	40 Amps/per ckt
9045(*)	45 Amps/per ckt
9050(*)	50 Amps/per ckt
9060(*)	60 Amps/per ckt
9070(*)	70 Amps/per ckt
9080(*)	80 Amps/per ckt
9090(*)	90 Amps/per ckt
9100(*)	100 Amps/per ckt
9110(*)	110 Amps/per ckt

4232 - 09 5 1 1 9110(3) Typical Model Number

\*Specify number of circuits (maximum 3 circuits of fusing).

\*\*Current rating with a maximum of 40°C (104°F) ambient external to the enclosure.

\*\*\*Ventilating a Nema 12 enclosure alters the rating to Nema 1



## 4233

### SCR Control Panels *(cont'd.)*

#### Ordering Information

Complete the Model Number using the Matrix provided.

#### Model

4233 NEMA 12\* SCR Fan Cooled SCR Panel, 7830-3-XX Dot Fired Zero-Crossover SCR Controller, I<sup>2</sup>T Fusing, Shunt Trip Disconnect, Power "On" Pilot Lamp, Optional 2104 and 3101 Controllers, Isolated SCR's, Three-Phase Three-Leg Switching, UL, cUL

Code	Max. Total Amps***	NEMA 12 Enclosure Dimensions	SCR Component
03	75	36x36x12	7830-3-03
04	100	48x36x12	7830-3-04
05	125	48x36x12	7830-3-05
06	150	48x36x12	7830-3-06
07	175	60x36x12	7830-3-07
08	200	60x36x12	7830-3-08
09	250	72x36x12	7830-3-09
10	300	72x36x12	7830-3-10
11	400	72x36x12	7830-3-11

#### Code Voltage

1	208
2	240
3	380
4	415
5	480
6	575

#### Code Controller

0	None-Terminals for Remote Control Signal
1	One 2104-A0100 Temperature Controller

#### Code Overtemperature Controllers

0	None-Terminals for Remote Shutdown
1	One 3101-11000 Overtemperature
2	Two 3101-11000 Overtemperature
3	Three 3101-11000 Overtemperature

#### Code Load Fuse Selection

9025(**)	25 Amps per Circuit
9030(**)	30 Amps per Circuit
9035(**)	35 Amps per Circuit
9040(**)	40 Amps per Circuit
9045(**)	45 Amps per Circuit
9050(**)	50 Amps per Circuit
9060(**)	60 Amps per Circuit
9070(**)	70 Amps per Circuit
9080(**)	80 Amps per Circuit
9090(**)	90 Amps per Circuit
9100(**)	100 Amps per Circuit
9110(**)	110 Amps per Circuit

4233 - 06 1 1 1 9050(3) Typical Model Number

\*Ventilating a NEMA 12 Enclosure derates the panel to NEMA 1

\*\*Specify number of circuits (maximum 3 circuits of fusing)

\*\*\*Current rating with a maximum of 40°C (104°F) ambient external to the enclosure.



## 4235, 4236

### SCR Control Panels (cont'd.)

#### Ordering Information

Complete the Model Number using the Matrix provided.

Model	Maximum Ambient 40°C (Outside Enclosure)						
4235	NEMA 4 SCR Panel, Three Phase, Two Leg SCR Circuits, Disconnect UL, cUL, Max. Ambient 40°C with External Heatsinks						
4236	NEMA 4X 304 Stainless Steel SCR Panel, Three Phase, Two Leg SCR Circuits (not UL), with disconnect with External Heatsinks						
Code	#Circuits	Max Amps Ckt.	Max Total Amps	NEMA 4 Enclosure Dim. (In.)	NEMA 4X Enclosure Dim. (In.)	Contactor Amps	Max Fuse Amps
124	1	24	24	20x16x8	20x16x8	40	30
148	1	48	48	24x20x8	24x20x8	75	60
172	1	72	72	30x24x10	30x24x12	120	90
224	2	24	48	24x20x8	24x20x8	40	30
248	2	48	96	30x24x8	30x24x8	75	60
272	2	72	144	36x30x10	36x30x10	120	90
324	3	24	72	24x24x8	24x24x8	40	30
348	3	48	144	36x30x8	36x30x8	75	60
372	3	72	216	48x30x10	48x36x12	120	90
424	4	24	96	30x24x8	30x24x8	40	30
448	4	48	192	48x30x10	48x36x12	75	60
472	4	72	288	60x36x10	60x36x12	120	90
524	5	24	120	36x30x8	36x30x8	40	30
548	5	48	240	48x36x10	48x36x12	75	60
572	5	72	360	60x36x10	60x36x12	120	90
624	6	24	144	36x30x8	36x30x8	40	30
648	6	48	288	48x36x10	48x36x12	75	60
672*	6	72	432	60x36x16	60x36x16	120	90
Code	Voltage						
1	208						
2	240						
3	380						
4	415						
5	480						
6	575						
Code	Controller						
0	None-Terminals for Remote Control Signal						
1	One 2104-R0100 Temp. Controller						
2	None-Terminals for Remote Control Signal to Load Management Option						
3	One 2104-A0100 Temp. Controller and Load Management Option						
Code	High Limit Controller(s)						
0	None-Terminals for Remote Shutdown						
1	One 3101-11000 High Limit						
2	Two 3101-11000 High Limits						
3	Three 3101-11000 High Limits						

4235 - 424 5 3 1 Typical Model Number

\*On Code "672" the NEMA 4X Enclosure is 316 Stainless Steel.