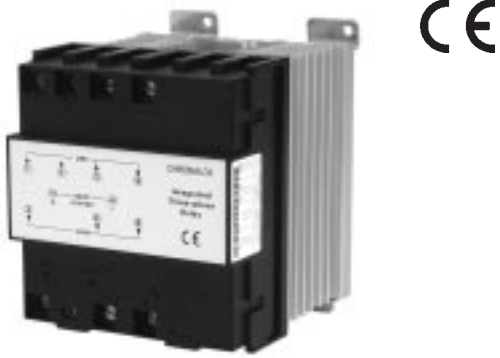


4003 Chromalox®

DIN Rail Mount Three Phase Zero-Crossover Fired SCR Power Controller



Sept. 1999
0037-75382

User Instructions

Description

The Chromalox 4003 Power Controllers are three phase, zero-crossover fired and include models that are 20 to 60 Amps, 120 to 600 Vac. These power controllers are designed to install easily onto a standard DIN rail or to be surface mounted on the back plane of an enclosure. An "ON" green LED indicates when the switch is closed (the heater is on). The input is 9 to 35 Vdc.

Thermal Protection feature provides SCR protection and indication. When the heat sink temperature exceeds 80°C, the control signal is turned off and the OH (Over Heat) indication turns on. When the heatsink cools, the 4003 output turns back on.

Model Identification

On receiving your 4003 unit, verify the model number on the unit using the following table.

Model	Solid State Power Controller
4003	Three Phase, Two-Leg, Zero-Crossover Fired Solid State Relay, DIN-Rail or Surface Mount
Code	Max. Rated Current @ 50°C
20	20 Amps
40	40 Amps
60	60 Amps
Code	Voltage
3	Up to 400 Vac
6	Up to 600 Vac
Code	Input
1	100 to 240 Vac
2	24 Vac
7	9-35 Vdc
Code	Heatsink Thermostat
0	None
1	Heatsink Thermostat for Thermal Protection*

4003 - 40 6 7 1 Typical Model No.

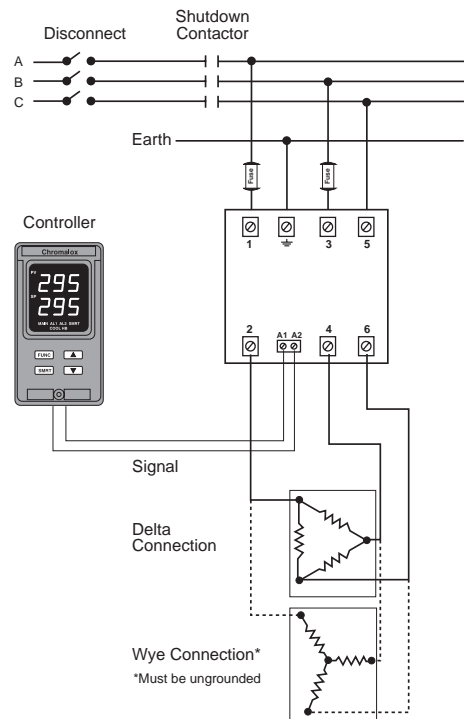
*Heatsink Thermostat not available on Vac Input Codes 1 & 2

Installation Notes and Warnings

1. Qualified personnel must do installation, wiring and maintenance.
2. Wiring must conform to National Electric Code (NEC) safety standards, as well as local codes.
3. A circuit breaker or fused disconnect is needed to protect all "hot" phases, the wiring and the load (heater). Before working on the system, open the disconnect or circuit breaker.
4. A shut down contactor should be used with a high limit controller to protect the heaters/process if an over-temperature condition occurs due to shorted SCR, or shorted thermocouple.
5. I²T fusing is used to protect only the SCR. It will not protect the wiring or the heater.
6. The heatsink, during continuous operation can reach temperatures higher than 180°F. Use caution to avoid burns.

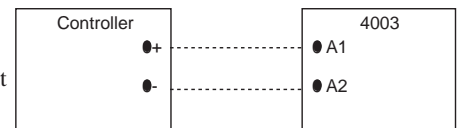
Wiring

Three Phase Wiring

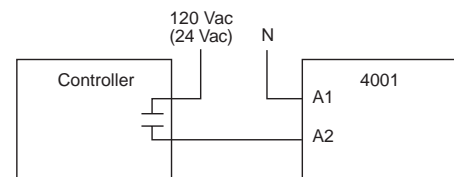


Input Wiring 9 - 35 Vdc

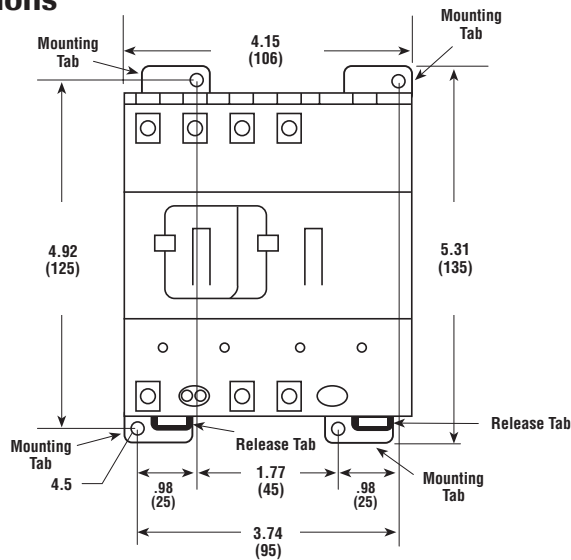
Controller driving a 4003 must be able to drive a constant current of 15 mA.



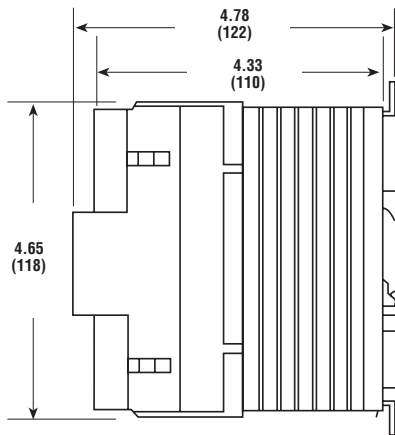
Input Wiring 100 - 240 Vac (or 24 Vac)



Mounting Dimensions



Front View



Side View

All Dimensions in Inches (mm)

Spacing

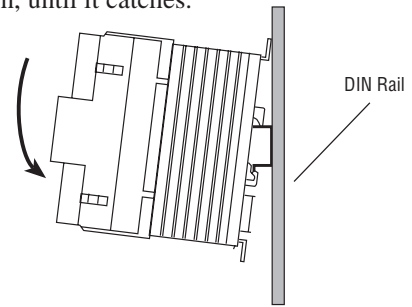
To provide sufficient heat dissipation for the 4003, install such that a minimum of 6" clearance above the unit and 4" clearance below the unit is established. 4003's can be placed next to each other (side by side). No special horizontal spacing is required. Since all SCR's are self heating, (approximately 1.2 W/Amp), the heat dissipation of the enclosure must be considered.

Wall Mounting

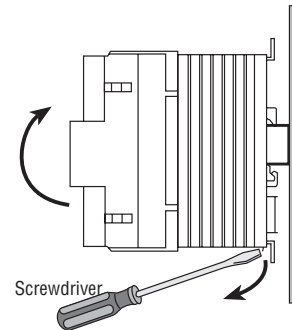
Use the mounting tabs on the top and bottom of the 4003. (see dimensions).

DIN Rail Mounting

Hook back of the 4003 to the top of the DIN Rail, then rotate the unit down, until it catches.



Removing: Place a flat blade screwdriver in one of the two release tabs. Pull down until tab releases. Place screwdriver in other release tab and pull down while rotating the bottom of the unit away from the rail. (see dimensions).



Output Rating Tables

All ratings are convection cooled. Better ratings can be achieved with fan cooling.

4003 20 Amp

Duty Cycle	Ambient Temp.	
	25°C (77°F)	50°C (122°F)
50%	45 A	35 A
75%	35 A	25 A
100%	30 A	20 A

4003 40 Amp

Duty Cycle	Ambient Temp.	
	25°C (77°F)	50°C (122°F)
50%	65 A	55 A
75%	55 A	45 A
100%	50 A	40 A

4003 60 Amp

Duty Cycle	Ambient Temp.	
	25°C (77°F)	50°C (122°F)
50%	95 A	85 A
75%	80 A	70 A
100%	70 A	60 A

Specifications

Firing Type	Zero-crossover
Control Input	Vdc Voltage (15 mA constant current) Off 0-4 Vdc On 9-35 Vdc
Voltage ac	100-240 Vac Models Off State 0 to 10 Vac On State 100 to 240 Vac (±10%) 24 Vac Models Off State 0 to 4 Vac On State 24 Vac (±15%)
Indicators	OH - Thermal Protection On ON - SCR
Output Voltage	Up to 400 Vac (SCR, Code 3) Up to 600 Vac (SCR, Code 6)
Isolation	3000V rms SCR to ground 7500 V _{PK} Input to Output
Operating Environment	32 to 122°F (0 to 50°C), from 0 to 85% Humidity (non-condensing)

Limited Warranty:

Please refer to the Chromalox limited warranty applicable to this product at <http://www.chromalox.com/customer-service/policies/termsofsale.aspx>.

Chromalox®
PRECISION HEAT AND CONTROL

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