

# Chromalox®

## Installation, Operation and MAINTENANCE

### SERVICE REFERENCE

DIVISION 4	SECTION CAF-6, CCAS-8
SALES REFERENCE (Supersedes PF492)	PF492-1
161-506170-001	
DATE JULY, 2002	

## Draft Barrier Heaters Type CAF-6 and CCAS-8



CAF-6



CCAS-8

TABLE 1 — Specifications

Model	Model	Volts	Phase	Watts	Amps	BTUH	Dimensions (In.)			Weight (Lbs.)
							Height	Length	Depth	
CAF-6F205	CCAS-8F205	120	1	500	4.2	1,706	6/7.5	24.3	2.5	7
CAF-6F205	CCAS-8F205	208	1	500	2.4	1,706	6/7.5	24.3	2.5	7
CAF-6F205	CCAS-8F205	240	1	500	2.1	1,706	6/7.5	24.3	2.5	7
CAF-6F205	CCAS-8F205	277	1	500	1.8	1,706	6/7.5	24.3	2.5	7
CAF-6F307	CCAS-8F307	120	1	750	6.3	2,559	6/7.5	36.3	2.5	9.5
CAF-6F307	CCAS-8F307	208	1	750	3.6	2,559	6/7.5	36.3	2.5	9.5
CAF-6F307	CCAS-8F307	240	1	750	3.1	2,559	6/7.5	36.3	2.5	9.5
CAF-6F307	CCAS-8F307	277	1	750	2.7	2,559	6/7.5	36.3	2.5	9.5
CAF-6F410	CCAS-8F410	120	1	1000	8.3	3,412	6/7.5	48.3	2.5	12
CAF-6F410	CCAS-8F410	208	1	1000	4.8	3,412	6/7.5	48.3	2.5	12
CAF-6F410	CCAS-8F410	240	1	1000	4.2	3,412	6/7.5	48.3	2.5	12
CAF-6F410	CCAS-8F410	277	1	1000	3.6	3,412	6/7.5	48.3	2.5	12
CAF-6F512	CCAS-8F512	120	1	1250	10.4	4,265	6/7.5	60.3	2.5	15
CAF-6F512	CCAS-8F512	208	1	1250	6	4,265	6/7.5	60.3	2.5	15
CAF-6F512	CCAS-8F512	240	1	1250	5.2	4,265	6/7.5	60.3	2.5	15
CAF-6F512	CCAS-8F512	277	1	1250	4.5	4,265	6/7.5	60.3	2.5	15
CAF-6F615	CCAS-8F615	120	1	1500	12.5	5,118	6/7.5	72.3	2.5	18
CAF-6F615	CCAS-8F615	208	1	1500	7.2	5,118	6/7.5	72.3	2.5	18
CAF-6F615	CCAS-8F615	240	1	1500	6.3	5,118	6/7.5	72.3	2.5	18
CAF-6F615	CCAS-8F615	277	1	1500	5.4	5,118	6/7.5	72.3	2.5	18
CAF-6F717	CCAS-8F717	208	1	1750	8.4	5,971	6/7.5	84.3	2.5	21.5
CAF-6F717	CCAS-8F717	240	1	1750	7.3	5,971	6/7.5	84.3	2.5	21.5
CAF-6F717	CCAS-8F717	277	1	1750	6.3	5,971	6/7.5	84.3	2.5	21.5
CAF-6F820	CCAS-8F820	208	1	2000	9.6	6,824	6/7.5	96.3	2.5	25
CAF-6F820	CCAS-8F820	240	1	2000	8.3	6,824	6/7.5	96.3	2.5	25
CAF-6F820	CCAS-8F820	277	1	2000	7.2	6,824	6/7.5	96.3	2.5	25
CAF-6F922	CCAS-8F922	208	1	2250	10.8	7,677	6/7.5	108.3	2.5	29
CAF-6F922	CCAS-8F922	240	1	2250	9.4	7,677	6/7.5	108.3	2.5	29
CAF-6F922	CCAS-8F922	277	1	2250	8.1	7,677	6/7.5	108.3	2.5	29
CAF-6F025	CCAS-8F025	208	1	2500	12	8,530	6/7.5	120.3	2.5	33
CAF-6F025	CCAS-8F025	240	1	2500	10.4	8,530	6/7.5	120.3	2.5	33
CAF-6F025	CCAS-8F025	277	1	2500	9	8,530	6/7.5	120.3	2.5	33

## MODEL NUMBER DESCRIPTION

TABLE 2

CAF-6 or CCAS-8	B	2	05	11	01	A1	Code	Control Options (Factory Installed)	Wiring	Refer to Diagram
Type		Code Length 2 = 2 ft. 3 = 3 ft. 4 = 4 ft. 5 = 5 ft. 6 = 6 ft. 7 = 7 ft. 8 = 8 ft. 9 = 9 ft. 10 = 10 ft.	Code Wattage (See Table)	Code Voltage/Phase 11 = 120/1 21 = 208/1 31 = 240/1 41 = 277/1	Code Painted 68 = Almond 02 = White	Code Anodized 07 = Bronze 10 = Clear	00 = No Optional Control		A	
							A1 = Built-in SP tamperproof thermostat 120 - 277V		C	
							A2 = Built-in DP tamperproof thermostat 120 - 277V		E	
							F1 = Built-in SP adjustable thermostat 120 - 277V		C	
							F2 = Built-in DP adjustable thermostat 120 - 277V		E	
							A4 = Built-in 24V low voltage relay 120 - 277V		D	
							A5 = Built-in 24V low voltage relay and transformer 120 - 277V		F	
							A8 = Built-in disconnect switch, rated 277V@20A		B	
							B1 = Built-in SP tamperproof thermostat and disconnect		G	
							B2 = Built-in DP tamperproof thermostat and disconnect		H	
F3 = Built-in SP adjustable thermostat and disconnect		G								
F4 = Built-in DP adjustable thermostat and disconnect		H								
D1 = Built-in low voltage relay and disconnect										
D2 = Built-in low voltage transformer and disconnect										
Code Inlet Location F = Front B = Bottom										

## GENERAL

This document explains the correct procedure for the installation and safe operation of all models of Draft Barrier and Pedestal Mounted Heaters.

Draft Barrier Heating Systems are designed to be installed in accordance with the National Electrical Code and with local codes by a qualified person.

### General Information —

Draft Barriers and Pedestal Mounted Heaters are intended for wall, sill or floor mounting.

The heaters are designed so that they may be used as an individual cabinet convector, in a wall-to-wall configuration or as an end-to-end continuous perimeter room heating system.

Draft Barrier heating systems are supported by a wide selection of controls and accessories designed to solve any heating requirement.

### Before You Unpack —

1. Make certain that the number of cartons received agrees with the Bill of Lading, Packing List and original order. Also check that the correct style (Model) and color have been shipped.
2. Every heater is carefully inspected and shipped with a clear Bill of Lading.  
Obvious external and/or concealed damage must be reported to the carrier for remedy.

### WARNING: Hazard of Fire

1. **DO NOT INSTALL HEATERS AGAINST ANY HIGHLY COMBUSTIBLE SURFACES SUCH AS LOW DENSITY CELLULOSE FIBRE.**
2. **DO NOT LOCATE HEATER BELOW ELECTRICAL CONVENIENCE RECEPTACLES.**
3. **DO NOT STORE OR USE GASOLINE OR FLAMMABLE LIQUIDS IN THE VICINITY OF THE HEATERS.**

**WARNING: Hazard of Fire. The normal operating temperatures of cabinet convectors are relatively high and proper operation requires free circulation**

**of room air through the heating element. Bottom air inlet heaters must be mounted with minimum of 2" from finished floor.**

**WARNING: Hazard of Fire. Keep electrical cords, drapes, rugs and other furnishings away from the heater.**

**WARNING: Hazard of Fire. Furniture must be placed no closer than four inches from the heater (see Figure 1)**

**WARNING: Hazard of Fire. Drapes must clear the top of heater by at least twelve inches; or, if floor length drapes are used, they must clear the finished floor by three inches and the minimum clearance from the back fold to the front cover should be at least four inches (see Figure 1)**

**WARNING: Hazard of Fire. When the floor is to be finished in carpet, allow clearance under the heaters and corners for carpet installation. Bottom air inlet heaters are to be mounted a minimum of 2" from the finished floor.**

**WARNING: Hazard of Fire. Rugs may be placed up to a heater provided that they are not of a thickness that would block the air-intake. Bottom air inlet heaters are to be mounted a minimum of 2" from the finished floor.**

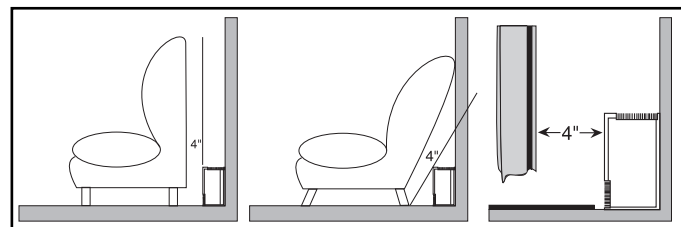


Figure 1: Furniture & Drapes

## GENERAL

### Draft Barrier Heater Installation (Wall)

1. Once the correct mounting height is established, scribe or snap a level line on the wall to maintain each heater back plate in horizontal alignment, when mounting.
2. Remove heater front cover by lifting top rear edge to unsnap cover from back plate (store cover in safe location to avoid damage to the finish). (See Figure 2).
3. Remove all appropriate knockouts from terminal boxes, particularly terminal box end knockouts when installing continuous run heating. (See Figure 3).
4. Mount the back panel to the wall using suitable fasteners (not supplied). Should the wall surface be uneven, secure the heater backplate to the high spots only to avoid a distorted appearance.

### Draft Barrier Heater Installation (Floor)

1. Unpack the heater and pedestal(s) from the carton (The pedestals are packed at the end of carton) and lift the front/top panels up and off the heater.
2. Disassemble the pedestal base from the pedestal pad.
3. Remove the desired terminal box cover(s) and supply wire entry knockouts from the terminal boxes.
4. Secure a pedestal to each end of the heater bottom with #8 screws provided aligning the back and front edges of the pad with the heater. This will align the supply entry knockout with opening in pedestal pad.  
*TIP:* Units longer than 4 feet will be provided with 3 or more pedestals. The extra pedestals should be used to support the middle of heaters.
5. Place heater on the pedestal base(s) and tighten all screws.  
*TIP:* The height of the heater can be adjusted on the pedestal to aid in leveling the heater by loosening the securing bolt at the side of the pedestals.
6. Remove the terminal box cover and proceed to wiring instructions.

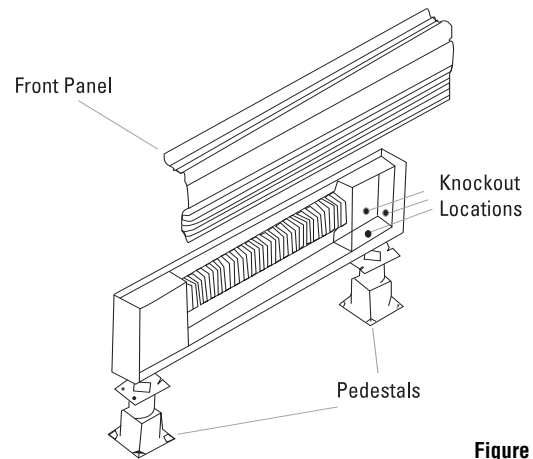


Figure 2

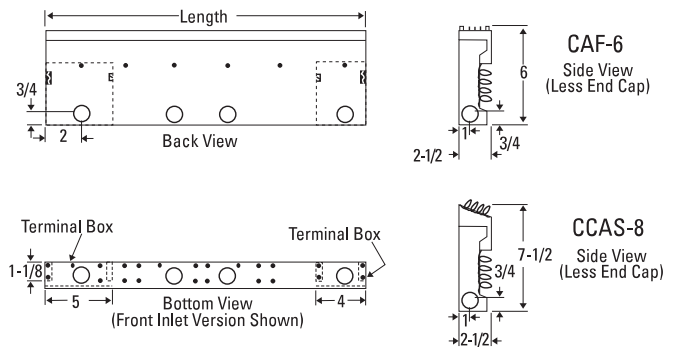


Figure 3

## WIRING

### Ground Continuity —

**WARNING: Hazard of Electric Shock. Any installation involving electric heaters must be effectively grounded in accordance with the National Electrical Code to eliminate shock hazard.**

### Prior To Installation —

**WARNING: Hazard of Electric Shock. Disconnect all power before installing heater.**

1. All branch circuit and service supply wiring must be completed to the heater terminal box location.
2. Check heater nameplate ratings to be sure heater voltage is same as service supply.
3. Service supply entry is usually made to one heater terminal box (see Figure 3) with through wiring (Factory Installed) being used for interconnection of all heaters in a continuous run installation.

**Note:** When heaters are mounted end to end, remove the finishing end plate, install a chase nipple and locknut in the terminal box end knockout to ensure grounding continuity and to protect the wiring.

Where heaters are spaced apart, remove the finishing end plate, and use rigid conduit (Provided by customer) for through wiring

and ground continuity. Do not exceed the allowable number of conductors allowed by the National electrical code.

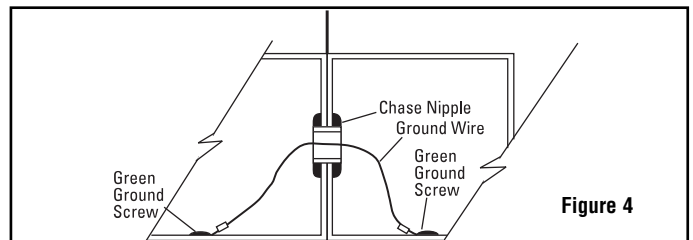


Figure 4

**Note:** See Table 3 for recommended service supply wire sizes.

4. Knockouts are provided at the back, bottom and ends of all heater backs (see Figure 3). Terminal boxes are located at both ends of every heater.

# WIRING

**Table 3: Service Supply Wiring Sizes**

Recommended Minimum supply wire sizes are listed in the table below:

Maximum Watts Per Circuit Using 75 Degree C. Wire								
	Rough In Wire Size	120V	208V	240V	277V	347V	480V	600V
Copper	14	1440	2496	2880	3324	4164	5760	7200
Wire	12	1920	3328	3840	4432	5552	7680	9600
	10	2880	4992	5760	6648	8328	11520	14400

1. Wire all heaters and controls in accordance with the appropriate wiring diagram provided on page 4.
2. Run a ground jumper from the ground screw in one terminal box to the ground screw in the adjacent terminal box. (See Figure 4.)

**Table 4: Terminal Box Volumes (Cubic Inches)**

Heater Style	Left Hand Box 4" Wide	Right Hand Box 5" Wide
CAF-6, CCAS-8	33.25	41.50

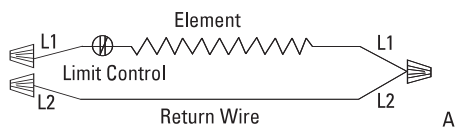
3. Do a final and complete check of all wiring, then replace the terminal box covers being careful not to pinch any wires.
4. The front/top panel may now be installed.

**WARNING: To prevent the risk of fire, do not operate the heater without the front/top panels in place.**

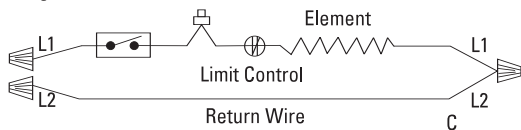
5. Place the front panel over the flange of the bottom panel. Hook the top back edge of the front panel over the back panel, and snap onto the plastic clips.

## WIRING DIAGRAMS

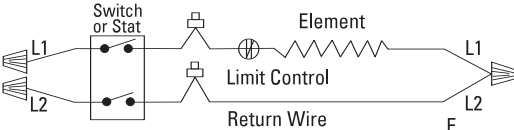
Heater Only (No Controls)



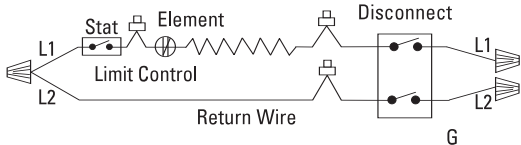
Single Pole Stat



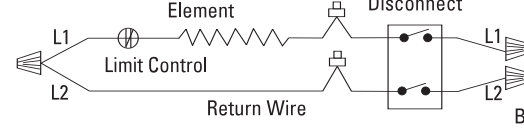
Double Pole Stat



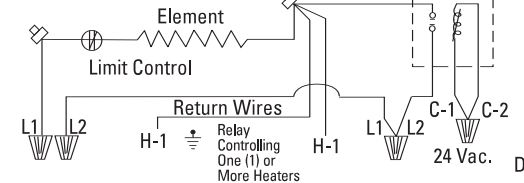
Thermostat (SP) and Disconnect



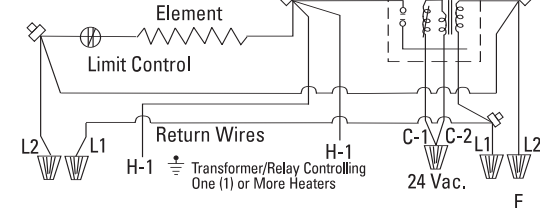
Double Pole Disconnect



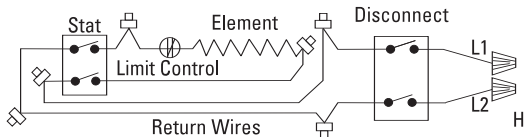
Heater with LVD



Heater with LVC



Thermostat (DP) and Disconnect



**Limited Warranty:**

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

# Chromalox®

**PRECISION HEAT AND CONTROL**

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