



# CCX XtremeDuty™ HIGH-PRESSURE CIRCULATION HEATER

**PROCESS HEATING FOR HIGH-PRESSURE  
SAFE OR HAZARDOUS LOCATION AREAS**

*Safe, electric heating of most any temperature-sensitive  
liquid or gas in a compact size.*

**Features include:**

- Meets IECEx, ATEX certifications
- Rated to 3,500 psi (241 bar) at 392°F (200°C) with option to 7,500 psi (517 bar)
- Rugged, marine-grade cast aluminum body
- Thermally stable heating chamber
- 316 Stainless Steel process piping and connection with option for INCOLOY,\* Hastelloy,\* or other alloys
- Horizontal or vertical mounting
- 120 to 690 V, 1 or 3 phase
- 3 to 30 kW
- ASME and PED certification
- Three (3) Type J thermocouples installed for temperature monitoring
- Heavy-wall, butt-weld end connections minimize any potential leakage points



***The Chromalox CCX cast block heater is ideal for heating fluids and gases where cleanliness, uniform temperature control, and high pressures are required . . . even in hazardous area locations.***

### **Steady-State Process Heating for Long-Term, Consistent Temperature Output**

The unique construction of the Chromalox CCX heater allows for the indirect heating of fluids or gases up to pressures of 3,500 psi (241 bar), with an option for up to 7,500 psi (517 bar), at a process temperature of 392°F (200°C). Indirect heating, with proper control, ensures that maximum film temperature can never be exceeded. This means most any temperature-sensitive liquid can be electrically heated.

### **Rugged Construction for Durability, Performance, Accuracy, and Long Service Life**

Heavy-wall spiral seamless 316 stainless steel process piping is cast into an aluminum body with INCOLOY\* heating elements. The seamless, one-piece spiraled pipe provides an independent path for process fluid or gas. Its stainless steel construction ensures compatibility with a wide variety of applications, even corrosive fluids.

The aluminum body serves as the heat transfer medium between the heating elements and the process piping. The solid marine-grade aluminum cast construction provides exceptionally uniform thermal

distribution of heat over a large surface area, excellent controllability, and helps ensure long service life.

Terminal housings are IEC and ATEX rated for either safe or hazardous locations.

The CCX heater is available with many options so that it can be suited for your particular needs.

### **Applications**

Chromalox CCX heaters are suited for a variety of industrial process applications, including:

- Seal gas heating / condensation prevention for turbines
- Fuel-oil preheating
- Steam superheating
- Corrosive / acidic solutions
- De-ionized water
- Oil warming
- Water pre-heat
- Natural gas
- Air, CO<sub>2</sub>, and nitrogen heating

\*INCOLOY is the registered trademark of Huntington Alloys Corporation. Hastelloy is the registered trademark of Haynes International, Inc.

## FEATURES / BENEFITS / OPTIONS

### Standard Features

Seamless, 316 stainless steel process piping .....	Corrosion-resistant design, ASME and PED rated for 3,500 psi (241 bar) operation
Moisture-resistant terminal enclosure .....	CE & ATEX rated for IEC Zone 2, safe area
Multiple sensors .....	Provides both process and overtemperature monitoring
Marine-grade aluminum casting .....	External corrosion resistance for harsh environments
Butt-weld connections .....	Welded, sealed connections minimize potential leakage
Heavy-wall INCOLOY* 800 elements .....	High-temperature, corrosion-resistant offering
Compact footprint .....	Space-saving design
Pre-drilled floor mounting plate .....	Pre-drilled mounting plate for easy installation
Integrated heat distribution .....	Stringent temperature control of film interface

### Options

Hazardous rated certified by ATEX & IECex	Bracket for wall or horizontal mounting
7,500 psi (517 bar) construction	316 stainless steel heating elements
1 in. 316 stainless steel process piping (specify 3,500 psi/241 bar or 7,500 psi/517 bar design)	2500# 316 stainless steel ANSI flanged connections (specify ¾ or 1 in. size, for 3,500 psi/241 bar design only)
Electro-polished process piping	Vertical lifting eyes
Exterior insulation with 316 stainless jacketing	Anti-condensation heater for terminal enclosure
Extended voltage capability (up to 690 V)	RTD temperature sensors

### Technical Specifications

General	
Power Ratings:	3 to 30 kW
Thermal Output:	10,236 to 102,360 Btu/h
Voltages:	120 to 690 V
Phase:	Single or three phase
Hz:	50/60 Hz
Process Conditions (max):	3,500 psi (241 bar)/7,500 psi (517 bar) at 392°F (200°C)
Hazardous Location Classification:	ATEX: II 2G Exde IIC T3 or T3Gb
Temperature Codes:	ATEX: T3 (392°F/1,200°C)
ATEX Certification:	IEC Cert. No. IECEx ITS15.0018X, ATEX Cert. No. ITS14ATEX18050X
Pressure Codes:	ASME Section VIII and PED
Installation	
Floor Mount (Standard):	14 x 18½ in. (356 x 470 mm) baseplate with four (4) ½ in. (13 mm) dia. bolt holes
Wall Mount (optional):	18¼ x 18½ in. (464 x 470 mm) baseplate with four (4) ½ in. (13 mm) dia. bolt holes
Overall Height:	50¾ in. (1,280 mm)
Weight:	550 lb (250 kg)
Mounting Orientation:	Any configuration will work. Refer to certificate for complete details.
Ambient Temperature (min.):	-4°F (-20°C)
Ambient Temperature (max.):	104°F (40°C) or 140°F (60°C). Refer to certificate for complete details.
Environment:	Hazardous location, outdoor rated to IP66

Process Monitoring	
Process Temperature:	One (1) Type J thermocouple for process temperature sensing
High-Limit Temperature:	Two (2) Type J thermocouples for heating temperature sensing
Pressure Relief:	To be provided by the installer in accordance with local codes. Not to exceed maximum heater design rating.

Chamber Materials	
Process Piping:	316 stainless steel
Heat Exchanger:	Marine-grade cast aluminum
Heating Elements:	Heavy-wall INCOLOY, 0.504 in. (12.8 mm) diameter

Miscellaneous	
Process Connections:	Butt-weld prepped for user installation
Electrical Power Connections:	M10 terminal studs
Sensor Connections:	Terminal block with 3 mm connections
Insulation Materials:	Fiberglass
Insulation Jacketing:	316 stainless steel

# CHROMALOX WORLDWIDE LOCATIONS



- Sales Offices
- Manufacturing Facilities

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