

CVEP

PDS CVEP

Convection Heater for Hazardous Locations



- 1.8 to 9.0kW (T-2A)
280°C (536°F)
- 1.6 to 4.0kW (T-3A)
180°C (356°F)
- 1.8 to 9.0kW (T-2)
300°C (572°F) Europe
- 1.6 to 4.0kW (T-3) Europe
200°C (392°F)
- 120V to 575V
(1 or 3 Phase)
- Prewired Control Options
- UL and CSA Listed for
Class I or II, Groups B, C
& D Division 1 & 2 Envi-
ronments



- European Models Meet
ATEX Directive 94/9/EC



EEx d IIB T3/T2
ITS04ATEX11896

Chromalox®
PRECISION HEAT AND CONTROL

Description

The Chromalox CVEP convection heater is designed and manufactured to provide a rugged, corrosion-resistant heat source for areas where volatile flammable liquids, gases or vapors are present.

North American Models

All basic models without controls are UL listed and CSA certified for use in areas designated as Class 1, Division 1 or 2 Group B, C or D locations.

The CVEP is available in ratings where the maximum allowable heater temperature is 180°C (365°F) NEC identification T3A; or 280°C (536°F) NEC identification T2A.

European Models

European model ratings are for use where the maximum allowable heater temperature is 300°C (572°F) T-2 at 1.8kW, 3.6kW, 4.5kW, 7.6kW, 9.0kW or 200°C (392°F) T-3 at 1.6kW, 3.2kW and 4.0kW.

Applications

- Petroleum Refineries, Gasoline Storage and Dispensing Areas
- Industrial Areas Using Flammable Liquids in Dip Tanks
- Petrochemical Manufacturers
- Dry Cleaning Plants
- Utility and Natural Gas Plants
- Aircraft Hangers/Fueling Areas
- Solvent Extraction Plants
- Storage Areas for Flammable Products or Batteries
- Sewage Treatment Plants
- Hydrogen Atmospheres

Features

Prewired Control Options - Integral thermostat, contactor and transformer eliminate the need to purchase and wire separate controls, simplifying installation and reducing costs. (North American approvals only)

Heavy Duty, Corrosion Resistant Housing constructed of polyester powder coated 16 Gauge Steel.

High Quality, Long Life Heating Element - Sealed, heavy duty, low watt-density high grade resistance wire in MgO core. Element is inserted in copper and aluminum fin tube assembly, designed for low temperatures and long life.

Explosion-Proof Junction Boxes included for conduit entry and ease of power wiring.

Sloped Top Cabinet Ensures Maximum Ventilation by preventing objects from being set on top which could restrict airflow.

Easily Mounted with integral mounting brackets provided for wall installation.

CVEP - Convection Heater For Hazardous Locations

Models With Built-In Controls (North American Models Only)

Specifications

Chromalox CVEP heaters are available for immediate shipment from stock with built-in controls to reduce field installation costs. The control options include a built-in thermostat, contactor and/or control voltage transformer. Control voltages of 24V, 120V, 208V, 240V or 277V are available. Thermostat, contactor and control options are given on page 8. The following listing represents CVEP heaters with controls that are available from stock.

Stocked Models

kW	Volts	Phase	Model No.	Status	PCN	Weight (Lbs.)	Dimensions (In.)
3.6	208	1	CVEP-36-81-00-42	S	028644	60	Fig. 1
3.6	240	1	CVEP-36-21-00-42	S	028660	60	Fig. 1
3.6	480	1	CVEP-36-41-32-42	S	028652	70	Fig. 3



Remote Temperature Control

WR-80EP Explosion-Proof Thermostat Remote Mounting



- Comfort/space heating applications
- UL/CSA listed (Class I, Group D; Class II Groups E, F & G)
- Calibrated dial and adjustment knob to simplify setting
- Hydraulic action thermal element unaffected by vibration, no leveling required
- 1/2" female pipe wiring connection

Temp. Range (°F)	Maximum Rating (amps/watts)			
	120Vac	240Vac	277Vac	480Vac
40-90	25/3000	22/5280	18/5000	125V/A*
Model No.	Status	PCN	Wt (kg)	
WR-80EP	S	266124	5lbs (2-3)	

* Pilot duty (use with a-c contactor)

TAM-EX Explosion-Proof Ambient Thermostat Remote Mounting

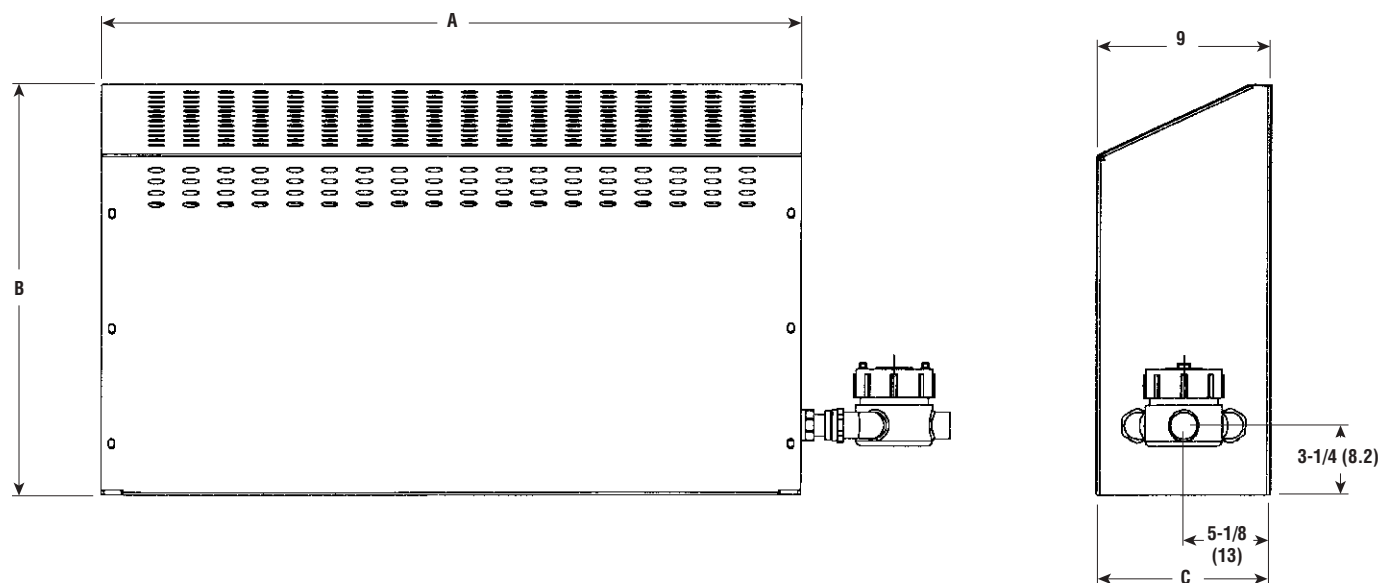


- Remote wall thermostat for use in Europe
- Thermostat for controlling ambient temperature with sensing bulb mounted on the side of enclosure
- IP54 aluminum enclosure with integral "d" type microswitch (certification EExdIIC)
- Temperature adjustment possible without isolating power or removing cover through cover mounted window
- Supplied with 3m of cable, protected by flexible, stainless steel sleeve permanently connected to microswitch

Ref.	Range	Diff.	Ts Mini.	Ts Max.	Tm Mini.	Tm Max.	Contact	Wt. (kg)
TAM050 EX	+50°C	2°C	-70	+70	-20	40	5A/250Vac	0 (4)

Convection Heater For Hazardous Locations - CVEP

Dimensions In. (cm)



Dimensions In. (cm)

kW	A	B	C
1.6, 1.8 and 3.6	34 (86.4)	20-1/16 (51)	8-15/16 (22.7)
3.2 and 7.6	58 (147.3)	20-1/16 (51)	8-15/16 (22.7)
4.0, 4.5 and 9.0	70 (177.8)	20-1/16 (51)	8-15/16 (22.7)

Power & Temperature Control Options

Power Control Combination	Thermostat Option	Figure Number
00	00	1
00*	40	5
00*	42	2
30 - 35*	00	4
30 - 35*	40	4
30 - 35*	42	3

*North American Models Only

Dimensions In. (cm)

Figure 1

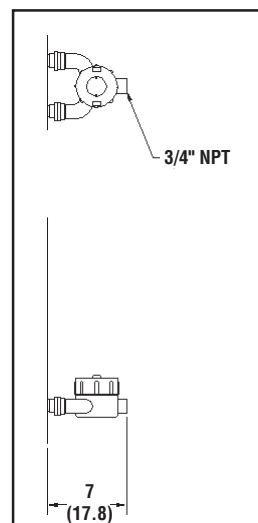


Figure 2

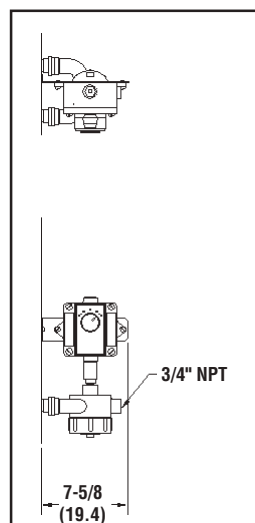


Figure 3

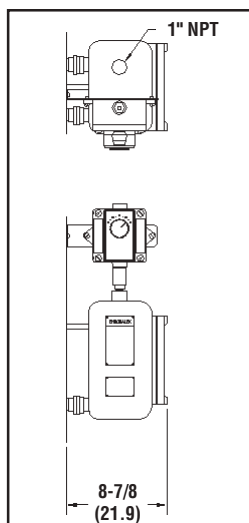


Figure 4

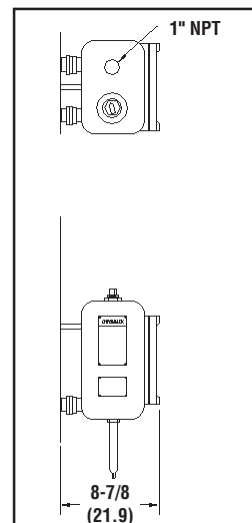
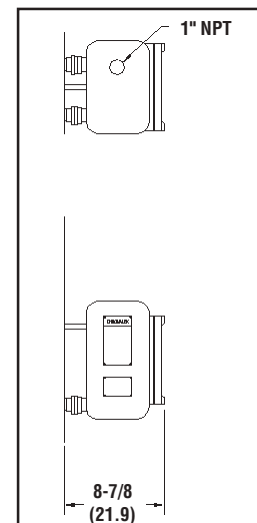


Figure 5



CVEP - Convection Heater For Hazardous Locations

Sample Specification

1. General

- 1.1 The Explosion-Proof Convection Air Heater Model Number _____ Rated _____ Volts, _____ Phase, _____ Watts, shall be designed and constructed for use in hazardous locations.
- 1.2 ☐ For Groups B, C and D Check This Block
The Heater shall be Underwriters Laboratories Inc. Listed and Canadian Standards Association Certified for constant use in Class I, Groups B, C and D, Division 1 or 2 hazardous locations, and National Electric Code minimum gas ignition temperature identification number
☐ T2A, 280°C (536°F) or ☐ T3A, 180°C (356°F).
- 1.3 ☐ For Groups C and D Check This Block
The Heater shall be Underwriters Laboratories Inc. Listed and Canadian Standards Association Certified for constant use in Class I, Groups C and D Division 1 or 2 hazardous locations, and National Electric Code minimum gas ignition temperature identification number
☐ T2A, 280°C (536°F) or ☐ T3A, 180°C (356°F).
- 1.4 ☐ For European Models, Check this Block (1.8kW, 3.6kW, 4.5kW, 7.6kW, or 9.0kW)
The heater shall be certified to be in conformity with the Council Directive 94/9/EC and labeled for  II 3 EEx d II2G T2.
Minimum gas ignition temperature 300°C (572°F).
- 1.5 ☐ For European Models, Check this Block. (1.6kW, 3.2kW or 4.0kW)
The heater shall be certified to be in conformity with the Council Directive 94/9/EC and labeled for  II 3 EEx d II2G T3.
Minimum gas ignition temperature 200°C (392°F) T3.
- 1.6 The Heater shall be the natural convection type intended for wall mounting.

2. Construction

- 2.1 The back panel shall be designed to be easily mounted to the wall using keyhole slots.
- 2.2 The back panel shall be fabricated from 16 gauge steel, 9" (22.7) deep by 20" (50.8) high, coated with corrosion resistant polyester powder paint.
- 2.3 The back panel shall include perforations and a baffle to direct outside air between the panel and the mounting surface.
- 2.4 The front cabinet shall be easily removable by unthreading 4 bolts from threaded inserts.
- 2.5 The front cabinet shall be fabricated from 16 gauge steel, 9" (22.8) deep by 20" (50.8) high, coated with corrosion resistant polyester powder paint.
- 2.6 The front cabinet shall be sloped to prevent objects from being placed on top causing restricted air flow.

3. Elements

- 3.1 The elements shall be constructed of heavy duty resistance wire (80% Nickel, 20% Chromium) insulated by magnesium oxide refractory, which has been highly compacted to transmit heat and act as an electrical insulator.
- 3.2 The elements to be contained in a metal tube, which is then swaged to an O.D. of 1.25" (3.18).
- 3.3 The element assembly is inserted into a copper tube with 3" x 3.25" (7.6x 8.25) aluminum fins spaced at 48 fins per linear foot.
- 3.4 The finned assembly is to be mounted to the rear panel by polyester powder coated brackets.

4. Controls (Optional)

- 4.1 The CVEP shall include the following built-in control features (North American Approvals Only):
☐ operating temperature control
☐ magnetic contactor
☐ control transformer with ☐ 120V ☐ 24V secondary
- 4.2 The control components shall be factory installed, wired and tested.

5. Terminal Box (For units without transformer or contactor options)

The terminal box shall be constructed of malleable iron or aluminum, to include a grounding lug and to be UL listed for Class I Hazardous locations (as indicated in 1. General Specifications above.)

Convection Heater For Hazardous Locations - CVEP

Technical Data - CVEP without Controls (North American Approvals)

Temperature Rating T3A 356°F (180°C) Group B, C and D

Ordering Information

kW	BTU	Volts	Phase	Amps	Model No.	Status*	PCN	Wt. (Lbs.)
1.6	5,500	208	1	7.7	CVEP-16-81-00-00	NS	088336	58
		208	3	4.5	CVEP-16-83-00-00	NS	086844	
		240	1	6.7	CVEP-16-21-00-00	NS	086852	
		240	3	3.8	CVEP-16-23-00-00	NS	086860	
		277	1	5.8	CVEP-16-71-00-00	NS	086879	
		480	1	3.3	CVEP-16-41-00-00	NS	086887	
		480	3	1.9	CVEP-16-43-00-00	NS	086895	
		575	1	2.8	CVEP-16-61-00-00	NS	086908	
3.2	11,000	208	1	15.4	CVEP-32-81-00-00	NS	086916	94
		208	3	9.0	CVEP-32-83-00-00	NS	086924	
		240	1	13.3	CVEP-32-21-00-00	NS	086932	
		240	3	7.7	CVEP-32-23-00-00	NS	086940	
		277	1	11.6	CVEP-32-71-00-00	NS	086959	
		480	1	6.7	CVEP-32-41-00-00	NS	086967	
		480	3	3.8	CVEP-32-43-00-00	NS	086975	
		575	1	5.6	CVEP-32-61-00-00	NS	086983	
4.0	13,600	208	1	19.2	CVEP-40-81-00-00	NS	086991	112
		208	3	11.1	CVEP-40-83-00-00	NS	087003	
		240	1	16.7	CVEP-40-21-00-00	NS	087011	
		240	3	9.6	CVEP-40-23-00-00	NS	087020	
		277	1	14.4	CVEP-40-71-00-00	NS	087038	
		480	1	8.3	CVEP-40-41-00-00	NS	087046	
		480	3	4.8	CVEP-40-43-00-00	NS	087054	
		575	1	7.0	CVEP-40-61-00-00	NS	087062	

Temperature Rating T2A 536°F (280°C)

Group B, C and D

Ordering Information

kW	BTU	Volts	Phase	Amps	Model No.	Status	PCN	Wt. (Lbs.)
1.8	6,156	120	1	15.0	CVEP-18-11-00-00	NS	028759	46
		208	1	8.7	CVEP-18-81-00-00	NS	028767	
		208	3	5.0	CVEP-18-83-00-00	NS	028775	
		240	1	7.5	CVEP-18-21-00-00	NS	028783	
		240	3	4.4	CVEP-18-23-00-00	NS	028791	
		277	1	6.5	CVEP-18-71-00-00	NS	028804	
		480	1	3.75	CVEP-18-41-00-00	NS	028812	
		480	3	2.2	CVEP-18-43-00-00	NS	028820	
3.6	12,300	208	1	17.3	CVEP-36-81-00-00	S	087070	58
		208	3	10.0	CVEP-36-83-00-00	NS	087089	
		240	1	15.0	CVEP-36-21-00-00	S	087097	
		240	3	8.7	CVEP-36-23-00-00	NS	087100	
		277	1	13.0	CVEP-36-71-00-00	S	087118	
		480	1	7.5	CVEP-36-41-00-00	S	087126	
		480	3	4.3	CVEP-36-43-00-00	NS	087134	
		575	1	6.3	CVEP-36-61-00-00	NS	087142	
7.6	24,000	208	1	36.5	CVEP-76-81-00-00	NS	085913	94
		208	3	21.1	CVEP-76-83-00-00	S	085921	
		240	1	31.7	CVEP-76-21-00-00	NS	085930	
		240	3	18.3	CVEP-76-23-00-00	S	085948	
		277	1	27.4	CVEP-76-71-00-00	NS	085956	
		480	1	15.8	CVEP-76-41-00-00	NS	085964	
		480	3	9.2	CVEP-76-43-00-00	S	085972	
		575	1	13.2	CVEP-76-61-00-00	NS	085980	
9.0	30,700	208	1	43.3	CVEP-90-81-00-00	NS	087230	112
		208	3	25.0	CVEP-90-83-00-00	NS	087249	
		240	1	37.5	CVEP-90-21-00-00	NS	087257	
		240	3	21.7	CVEP-90-23-00-00	NS	087265	
		277	1	32.5	CVEP-90-71-00-00	NS	087273	
		480	1	18.8	CVEP-90-41-00-00	NS	087281	
		480	3	10.8	CVEP-90-43-00-00	NS	087290	
		575	1	15.7	CVEP-90-61-00-00	NS	087302	

*Status: NS = Non-stock S = Stock

Other sizes and configurations are available. Contact your local Chromalox Sales Office.

To Order: Specify Quantity, Model Number, PCN, Volts and kW.

CVEP - Convection Heater For Hazardous Locations

Technical Data - CVEP Certified Ratings for Europe

Temperature Rating T3 200°C (392°F)

Ordering Information

kW	BTU	Volts	Phase	Amps	Model No.	Status	PCN	Wt. Kg (Lbs.)
1.6	5,500	208	1	7.7	CVEP-C-16-81-CE	NS		26 (58)
		220	1	7.3	CVEP-C-16-221-CE	NS		
		240	1	6.7	CVEP-C-16-21-CE	NS		
		380	3	2.4	CVEP-C-16-33-CE	NS		
		400	3	2.3	CVEP-C-16-403-CE	NS		
		415	3	2.2	CVEP-C-16-53-CE	NS		
		480	1	3.3	CVEP-C-16-41-CE	NS		
		480	3	1.9	CVEP-C-16-43-CE	NS		
		600	3	1.5	CVEP-C-16-93-CE	NS		
3.2	11,000	208	1	15.4	CVEP-C-32-81-CE	NS		43 (94)
		220	1	14.5	CVEP-C-32-221-CE	NS		
		240	1	13.3	CVEP-C-32-21-CE	NS		
		380	3	4.9	CVEP-C-32-33-CE	NS		
		400	3	4.6	CVEP-C-32-403-CE	NS		
		415	3	4.5	CVEP-C-32-53-CE	NS		
		480	1	6.7	CVEP-C-32-41-CE	NS		
		480	3	3.8	CVEP-C-32-43-CE	NS		
		600	3	3.1	CVEP-C-32-93-CE	NS		
4.0	13,600	208	1	19.2	CVEP-C-40-81-CE	NS		51 (112)
		220	1	18.2	CVEP-C-40-221-CE	NS		
		240	1	16.7	CVEP-C-40-21-CE	NS		
		380	3	6.1	CVEP-C-40-33-CE	NS		
		400	3	5.8	CVEP-C-40-403-CE	NS		
		415	3	5.6	CVEP-C-40-53-CE	NS		
		480	1	8.3	CVEP-C-40-41-CE	NS		
		480	3	4.8	CVEP-C-40-43-CE	NS		
		600	3	3.8	CVEP-C-40-93-CE	NS		

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To Order: Specify Quantity, Model Number, PCN, Volts and kW.

Note: European ratings are not available with built in controls.

Equipment marking:



II 2 G EEx d IIB T3

Convection Heater For Hazardous Locations - CVEP

Technical Data - CVEP Certified Ratings for Europe

Temperature Rating T2 572°F (300°C)

Ordering Information

kW	BTU	Volts	Phase	Amps	Model No.	Status	PCN	Wt. (Lbs.)
1.8	6,156	120	1	15.0	CVEP-C-18-11-00-00-CE	NS		46
		208	1	8.7	CVEP-C-18-81-00-00-CE	NS		
		208	3	5.0	CVEP-C-18-83-00-00-CE	NS		
		240	1	7.5	CVEP-C-18-21-00-00-CE	NS		
		240	3	4.4	CVEP-C-18-23-00-00-CE	NS		
		277	1	6.5	CVEP-C-18-71-00-00-CE	NS		
		380	3	2.7	CVEP-C-18-33-00-00-CE	NS		
		480	1	3.75	CVEP-C-18-41-00-00-CE	NS		
		480	3	2.2	CVEP-C-18-43-00-00-CE	NS		
3.6	12,300	208	1	17.3	CVEP-C-36-81-00-00-CE	NS		58
		208	3	10.0	CVEP-C-36-83-00-00-CE	NS		
		240	1	15.0	CVEP-C-36-21-00-00-CE	NS		
		240	3	8.7	CVEP-C-36-23-00-00-CE	NS		
		277	1	13.0	CVEP-C-36-71-00-00-CE	NS		
		380	3	5.5	CVEP-C-36-33-00-00-CE	NS		
		480	1	7.5	CVEP-C-36-41-00-00-CE	NS		
		480	3	4.3	CVEP-C-36-43-00-00-CE	NS		
		575	1	6.3	CVEP-C-36-61-00-00-CE	NS		
7.6	24,000	208	1	36.5	CVEP-C-76-81-00-00-CE	NS		94
		208	3	21.1	CVEP-C-76-83-00-00-CE	NS		
		240	1	31.7	CVEP-C-76-21-00-00-CE	NS		
		240	3	18.3	CVEP-C-76-23-00-00-CE	NS		
		277	1	27.4	CVEP-C-76-71-00-00-CE	NS		
		380	3	11.6	CVEP-C-76-33-00-00-CE	NS		
		480	1	15.8	CVEP-C-76-41-00-00-CE	NS		
		480	3	9.2	CVEP-C-76-43-00-00-CE	NS		
		575	1	13.2	CVEP-C-76-61-00-00-CE	NS		
9.0	30,700	208	1	43.3	CVEP-C-90-81-00-00-CE	NS		112
		208	3	25.0	CVEP-C-90-83-00-00-CE	NS		
		240	1	37.5	CVEP-C-90-21-00-00-CE	NS		
		240	3	21.7	CVEP-C-90-23-00-00-CE	NS		
		277	1	32.5	CVEP-C-90-71-00-00-CE	NS		
		380	3	13.7	CVEP-C-90-33-00-00-CE	NS		
		480	1	18.8	CVEP-C-90-41-00-00-CE	NS		
		480	3	10.8	CVEP-C-90-43-00-00-CE	NS		
		575	1	15.7	CVEP-C-90-61-00-00-CE	NS		

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Other sizes and configurations are available. Contact your local Chromalox Sales Office.

To Order: Specify Quantity, Model Number, PCN, Volts and kW.

Note: European ratings are not available with built in controls.

Equipment marking:



II 2 G EEx d IIB T2

