

# Explosion-Proof Heater Model CX1



### Model Code:

CX1	220	1	60	012	T2A	IIB	T
A	B	C	D	E	F	G	H

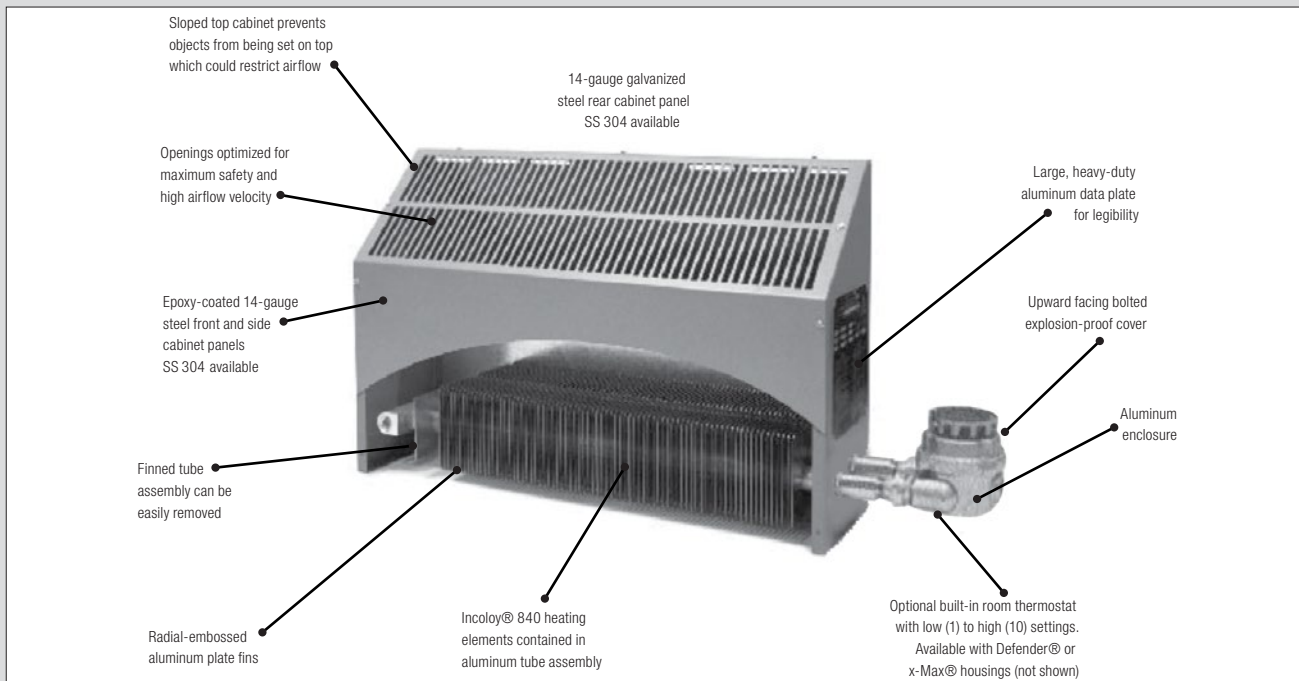
- A: Model Series
- B: 120, 208, 240, 277, 380, 400, 415  
480, 600 volt options
- C: 1-Phase
- D: 50 Hertz, 60 Hertz
- E: Heater Kilowatts
- F: Rated Area (Temperature)  
T2a=536°F, T3=392°F
- G: T-Code (Grouping) IIB=Group C & D  
IIC=Group A, B, C & D
- H: T=Built-In Thermostat



- Sloped-top cabinet
- No exposed copper or brass
- High-velocity airflow
- 14GA steel cabinet
- Available with stainless-steel construction
- One of the shortest cabinet lengths available
- Optional built-in thermostat
- Incoloy® 840 heating elements
- Radial-embossed aluminum plate fins
- Galvanized steel mounting brackets
- IP55 moisture ingress protection
- Approvals - Groups A, B, C, D; IIA, IIB & IIC; available

## CX1 Explosion-Proof Heater

For hazardous locations heating, rely on the Ruffneck™ CX1 ProVector® for the most dependable, trouble-free service available. Explosion-proof air heaters were designed to satisfy the demanding requirements of the oil and gas well drilling industry. The harsh operating conditions of this application require the utmost in heater reliability.



## Engineering Specifications

Contractor shall supply and install CX1 Series explosion-proof heaters by King Electrical Mfg. Company. Heaters shall be of the wattage and voltage as indicated on the plans.

### Hazardous Location Classifications

**Without Built-in Thermostat:** Defender® housing Class I, Div. 1 & 2, Groups B, C, & D; Zones 1 & 2, Groups IIA, IIB + H,x-Max® housing Class I, Div. 1 & 2, Groups A, B, C, & D; Zones 1 & 2, Groups IIA, IIB, & IIC.

**With Built-in Thermostat:** XCT Defender® thermostat: Class I, Div. 1 & 2, Groups C & D; Zones 1 & 2, Groups IIA & IIB XT thermostat: Class I, Div. 1 & 2, Groups A, B, C, & D; Zones 1 & 2, Groups IIA, IIB, & IIC.

**Enclosure:** Defender® housing is cast aluminum with bolt on cover. Groups IIB, x-Max® housing is extruded aluminum with two screwed on covers. The x-Max® housing offers IP55 moisture ingress protection. Groups IIC.

**Mounting Brackets:** Two 14-gauge (0.075" / 12 mm) galvanized steel brackets for standard cabinet. Stainless-steel brackets provided with optional stainless-steel cabinet.

**Heating Elements:** Two Incoloy® 840 sheathed elements

**Temperature Code Rating:** Temperature Code T2A - 536°F (280°C) or T3 - 392°F (200°C).

**Temperature Limitations:** Operational: -49°F to 104°F (-45°C to 40°C) Storage: -49°F to 176°F (-45°C to 80°C). Optional up to 300°F (149°C) available.

**Cabinet Material:** 14-gauge (0.075" / 1.90mm) epoxy coated steel with galvanized rear panel. Optional - 14-gauge 304 stainless-steel cabinet and mounting hardware available

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## Ordering Information - Performance Data for CX1 ProVector®

MODEL	kW (BTU/hr)	UNIT VOLTAGE (VOLTS)	BASIC UNIT	GAS GROUP				SUPPLY WIRE SIZE (AWG)***	UNIT CURRENT (AMPS)	MAX. CIRCUIT FUSE (AMPS)*	CABINET LENGTH in(mm)	TEMP. CODE
				IIB+H2 W/O T'STAT	IIB W/ T'STAT	IIC W/O T'STAT	IIC W/ T'STAT					
CX1-120160-012-T3	1.2	120	•	•	•	•	•	12	10.0	15	31.3 (796)	T3
CX1-120160-018-T3	1.8	120	•	•	•	•	•	12	15.0	20	31.3 (796)	T3
CX1-208160-012-T3	1.2	208	•	•	•	•	•	12	5.8	15	31.3 (796)	T3
CX1-208160-018-T3	1.8	208	•	•	•	•	•	12	8.7	15	31.3 (796)	T3
CX1-208160-036-T3**	3.6	208	•	•	•	•	•	12	17.3	20	49.5 (1256)	T3
CX1-208160-048-T2A	4.8	208	•	•	•	•	•	8	23.1	25	49.5 (1256)	T2A
CX1-208160-076-T2A	7.6	208	•	•	•	•	•	8	36.5	40	59.5 (1511)	T2A
CX1-240160-012-T3	1.2	240	•	•	•	•	•	12	5.0	15	31.3 (796)	T3
CX1-240160-018-T3	1.8	240	•	•	•	•	•	12	7.5	15	31.3 (796)	T3
CX1-240160-036-T3**	3.6	240	•	•	•	•	•	12	15.0	20	49.5 (1256)	T3
CX1-240160-048-T2A	4.8	240	•	•	•	•	•	10	20.0	25	49.5 (1256)	T2A
CX1-240160-076-T2A	7.6	240	•	•	•	•	•	8	31.7	35	59.5 (1511)	T2A
CX1-277160-012-T3	1.2	277	•	•	•	•	•	12	4.3	15	31.3 (796)	T3
CX1-277160-018-T3	1.8	277	•	•	•	•	•	12	6.5	15	31.3 (796)	T3
CX1-277160-036-T3**	3.6	277	•	•	•	•	•	12	13.0	15	49.5 (1256)	T3
CX1-277160-048-T2A	4.8	277	•	•	•	•	•	12	17.3	20	49.5 (1256)	T2A
CX1-277160-076-T2A	7.6	277	•	•	•	•	•	8	27.4	30	59.5 (1511)	T2A
CX1-380160-0075-T3	0.75	380	•	•	•	•	•	12	2.0	15	31.3 (796)	T3
CX1-380160-0113-T3	1.13	380	•	•	•	•	•	12	3.0	15	31.3 (796)	T3
CX1-380160-012-T3	1.2	380	•	•	•	•	•	12	3.2	15	31.3 (796)	T3
CX1-380160-018-T3	1.8	380	•	•	•	•	•	12	4.7	15	31.3 (796)	T3
CX1-380160-0226-T2A	2.26	380	•	•	•	•	•	12	5.9	15	31.3 (796)	T2A
CX1-380160-0301-T3	3.01	380	•	•	•	•	•	12	7.9	15	49.5 (1256)	T3
CX1-380160-036-T3**	3.6	380	•	•	•	•	•	12	9.5	15	49.5 (1256)	T3
CX1-380160-0476-T2A	4.76	380	•	•	•	•	•	10	12.5	15	59.5 (1511)	T2A
CX1-380160-048-T2A	4.8	380	•	•	•	•	•	12	12.6	15	49.5 (1256)	T2A
CX1-380160-076-T2A	7.6	380	•	•	•	•	•	10	20.0	25	59.5 (1511)	T2A
CX1-400160-0083-T3	0.83	400	•	•	•	•	•	12	2.1	15	31.3 (796)	T3
CX1-400160-012-T3	1.2	400	•	•	•	•	•	12	3.0	15	31.3 (796)	T3
CX1-400160-0125-T3	1.25	400	•	•	•	•	•	12	3.1	15	31.3 (796)	T3
CX1-400160-018-T3	1.8	400	•	•	•	•	•	12	4.5	15	31.3 (796)	T3
CX1-400160-025-T2A	2.5	400	•	•	•	•	•	12	6.3	15	31.3 (796)	T2A
CX1-400160-0333-T3	3.33	400	•	•	•	•	•	12	8.3	15	49.5 (1256)	T3
CX1-400160-036-T3**	3.6	400	•	•	•	•	•	12	9.0	15	49.5 (1256)	T3
CX1-400160-048-T2A	4.8	400	•	•	•	•	•	12	12.0	15	49.5 (1256)	T2A
CX1-400160-0528-T2A	5.28	400	•	•	•	•	•	10	13.2	15	59.5 (1511)	T2A
CX1-400160-076-T2A	7.6	400	•	•	•	•	•	10	19.0	20	59.5 (1511)	T2A
CX1-415160-009-T3	0.9	415	•	•	•	•	•	12	2.2	15	31.3 (796)	T3
CX1-415160-012-T3	1.2	415	•	•	•	•	•	12	2.9	15	31.3 (796)	T3
CX1-415160-0135-T3	1.35	415	•	•	•	•	•	12	3.3	15	31.3 (796)	T3
CX1-415160-018-T3	1.8	415	•	•	•	•	•	12	4.3	15	31.3 (796)	T3
CX1-415160-0269-T2A	2.69	415	•	•	•	•	•	12	6.5	15	31.3 (796)	T2A
CX1-415160-0359-T3	3.59	415	•	•	•	•	•	12	8.7	15	49.5 (1256)	T3
CX1-415160-036-T3**	3.6	415	•	•	•	•	•	12	8.7	15	49.5 (1256)	T3
CX1-415160-048-T2A	4.8	415	•	•	•	•	•	12	11.6	15	49.5 (1256)	T2A
CX1-415160-0568-T2A	5.68	415	•	•	•	•	•	10	13.7	15	59.5 (1511)	T2A
CX1-415160-076-T2A	7.6	415	•	•	•	•	•	10	18.3	20	59.5 (1511)	T2A
CX1-480160-012-T3	1.2	480	•	•	•	•	•	12	2.5	15	31.3 (796)	T3
CX1-480160-018-T3	1.8	480	•	•	•	•	•	12	3.8	15	31.3 (796)	T3
CX1-480160-036-T3**	3.6	480	•	•	•	•	•	12	7.5	15	49.5 (1256)	T3
CX1-480160-048-T2A	4.8	480	•	•	•	•	•	12	10.0	15	49.5 (1256)	T2A
CX1-480160-076-T2A	7.6	480	•	•	•	•	•	10	15.8	20	59.5 (1511)	T2A
CX1-600160-012-T3	1.2	600	•	•	•	•	•	12	2.0	15	31.3 (796)	T3
CX1-600160-018-T3	1.8	600	•	•	•	•	•	12	3.0	15	31.3 (796)	T3
CX1-600160-036-T3**	3.6	600	•	•	•	•	•	12	6.0	15	49.5 (1256)	T3
CX1-600160-048-T2A	4.8	600	•	•	•	•	•	12	8.0	15	49.5 (1256)	T2A
CX1-600160-076-T2A	7.6	600	•	•	•	•	•	12	12.7	15	59.5 (1511)	T2A

# Explosion-Proof Heater Model CX1

All units are single phase

\*Or equivalent breaker as per local electrical inspection authority requirements.

\*\* For 3.6 kW heaters rated T3 cabinet length is 49.5" (1256mm). 3.6 kW heaters rated T2A cabinet length is 31.3" (796mm)

\*\*\* Ensure supply wire size adheres to applicable local and national electrical codes

**Notes**

1. Heater is functioning normally if, at rated voltage, the current draw is within 10% of the value in this table.
2. Operation at lower voltages that rated will result in reduced output and current draw.  
Actual Output (kW) = [(Supply Voltage) ÷ (Rated Voltage)]<sup>2</sup> × Rated Unit Wattage (kW)
3. Add suffix "T" for optional built-in thermostat. Thermostat not available on IIB + H models.

4. Add suffix "H" for high-temperature ambient storage option. High temperature storage option is not available with thermostat option. Not available on IIB models.

5. For IIB model with XCT built-in thermostat - Class I, Div. 1 & 2, Groups C & D; Zones 1 & 2, Groups IIA and IIB

6. For IIC model with XT built-in thermostat - Class I, Div. 1 & 2, Groups A,B,C & D; Zones 1 & 2, Groups IIA, IIB, IIC

7. IIC Grouping units come with x-Max® housing

8. Remote mounted, Defender, explosion-proof room thermostats are not suitable for Group B & IIC applications

9. Remote contactors are required on all 600V heaters, and heaters with a current draw greater than 22 amps

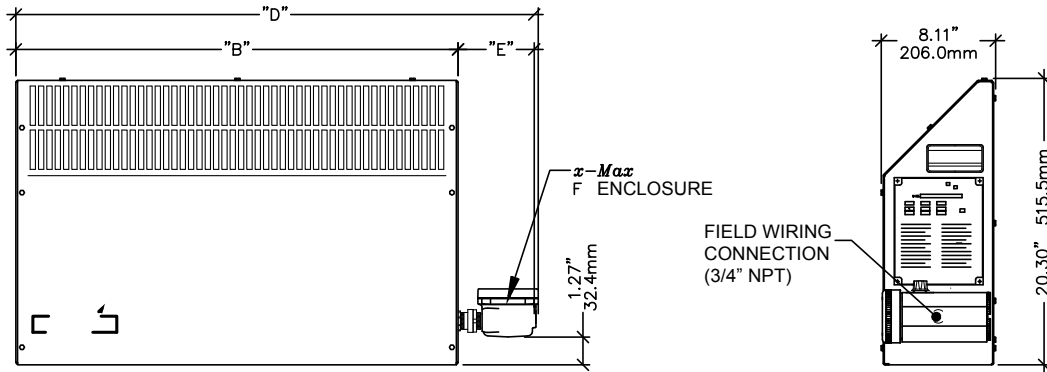
(supplied & installed by others), when utilizing XT-311 remote thermostat.

10. Temperature code ratings: T2A - 536°F (280°C), T3 - 392°F (200°C)

## Specifications

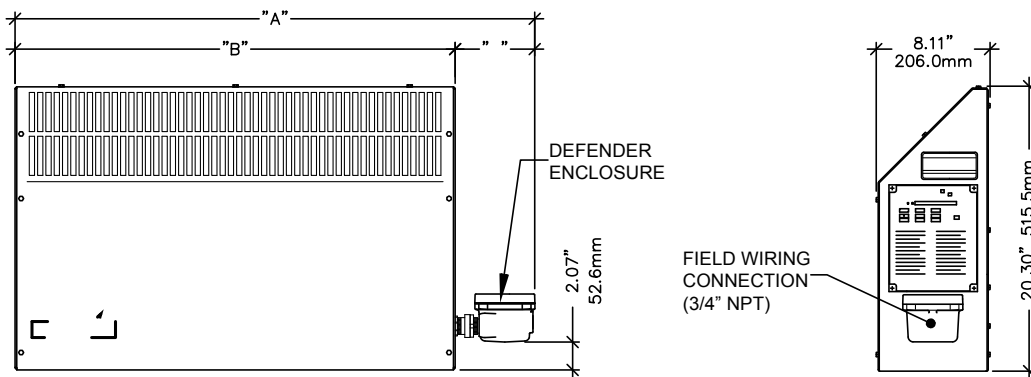
NOMINAL WATTAGE (kW)	CABINET LENGTH "B"	NET WEIGHT (lbs)	SHIPPING WEIGHT (lbs)
0.75 - 2.69 & 3.6 (T2a)	31.3	55.3	65
3.01 - 3.59 & 3.6 (T3) & 4.8	49.4	80.7	92.8
4.76, 5.28 - 7.6	59.5	95	105

**CX1 ProVector® Physical Dimensions with x-Max® housing**



HEATER KW RATING	"D" DIMENSION		"B" DIMENSION	"E" DIMENSION	
	W/ EXTENSION	WITH EXTENSION		W/ EXTENSION	WITH EXTENSION
0.75 - 2.69, 3.6 (T2A)	37.6" 954mm	39.6" 1007mm	31.34" 796.0mm	6.2" 158mm	8.3" 211mm
3.01 - 3.59, 3.6 (T3), 4.8	55.7" 1414mm	57.8" 1467mm	49.45" 1256.0mm	6.2" 158mm	8.3" 211mm
4.76, 5.28 - 7.6	65.7" 1669mm	67.8" 1722mm	59.49" 1511.0mm	6.2" 158mm	8.3" 211mm

**CX1 ProVector® Physical Dimensions with Defender® housing**



HEATER KW RATING	"A" DIMENSION		"B" DIMENSION	"C" DIMENSION	
	W/ EXTENSION	WITH EXTENSION		W/ EXTENSION	WITH EXTENSION
0.75 - 2.69, 3.6 (T2A)	36.9" 938mm	39.0" 991mm	31.34" 796.0mm	.6" 142mm	7.7" 195mm
3.01 - 3.59, 3.6 (T3), 4.8	55.0" 1398mm	57.1" 1441mm	49.4" 1256.0mm	5.6" 142mm	7.7" 195mm
4.76, 5.28 - 7.6	65.1" 1653mm	67.2" 1706mm	59.49" 1511.0mm	.6" 142mm	7.7" 195mm

Notes: Heaters with built-in thermostat come with tube extensions.