

# XEC1 Protektor SERIES SUBMITTAL

Explosion-proof Convection Air Heater

For Hazardous Locations

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## Single Phase - T2B (260°C / 500°F) Division System / T2 (300°C / 572°F) Zone System

KW	Volts	Ph	Cabinet Length In. (mm)	Base Model Code before Options ? = Select an Electrical Enclosure A or B or C based on availability	Total Amps (A)	"Electrical Enclosure Code" ? See below for built-in T1 thermostat, wall mount BTX1 or XET1 thermostat or your own control device				☒
						Built-in T1 Thermostat	Wall Mount BTX1 Thermostat	Wall Mount XET1 Thermostat	Your Own Control Device	
2.26	380	1	31.3 (795)	XEC1-0226-3801-?-T2B-31-A	5.9	C	B or C	B	B or C	<input type="checkbox"/>
2.50	400	1	31.3 (795)	XEC1-0250-4001-?-T2B-31-A	6.3	C	B or C	B	B or C	<input type="checkbox"/>
2.69	415	1	31.3 (795)	XEC1-0269-4151-?-T2B-31-A	6.5	C	B or C	B	B or C	<input type="checkbox"/>
3.03	220	1	31.3 (795)	XEC1-0303-2201-?-T2B-31-A	13.8	C	B or C	B	B or C	<input type="checkbox"/>
3.03	254	1	31.3 (795)	XEC1-0303-2541-?-T2B-31-A	11.9	C	B or C	B	B or C	<input type="checkbox"/>
3.03	440	1	31.3 (795)	XEC1-0303-4401-?-T2B-31-A	6.9	C	B or C	B	B or C	<input type="checkbox"/>
3.31	230	1	31.3 (795)	XEC1-0331-2301-?-T2B-31-A	14.4	C	B or C	B	B or C	<input type="checkbox"/>
3.60	208	1	31.3 (795)	XEC1-0360-2081-?-T2B-31-A	17.3	C	A or B or C	B	A or B or C	<input type="checkbox"/>
3.60	240	1	31.3 (795)	XEC1-0360-2401-?-T2B-31-A	15.0	C	A or B or C	B	A or B or C	<input type="checkbox"/>
3.60	277	1	31.3 (795)	XEC1-0360-2771-?-T2B-31-A	13.0	C	A or B or C	B	A or B or C	<input type="checkbox"/>
3.60	380	1	31.3 (795)	XEC1-0360-3801-?-T2B-31-A	9.5	C	B or C	B	B or C	<input type="checkbox"/>
3.60	400	1	31.3 (795)	XEC1-0360-4001-?-T2B-31-A	9.0	C	B or C	B	B or C	<input type="checkbox"/>
3.60	415	1	31.3 (795)	XEC1-0360-4151-?-T2B-31-A	8.7	C	B or C	B	B or C	<input type="checkbox"/>
3.60	480	1	31.3 (795)	XEC1-0360-4801-?-T2B-31-A	7.5	C	A or B or C	B	A or B or C	<input type="checkbox"/>
3.60	600	1	31.3 (795)	XEC1-0360-6001-?-T2B-31-A *	6.0	Not Available	A or B	B	A or B or C	<input type="checkbox"/>
4.03	220	1	49.5 (1257)	XEC1-0403-2201-?-T2B-49-A	18.3	C	B or C	B	B or C	<input type="checkbox"/>
4.03	440	1	49.5 (1257)	XEC1-0403-4401-?-T2B-49-A	9.2	C	B or C	B	B or C	<input type="checkbox"/>
4.04	254	1	49.5 (1257)	XEC1-0404-2541-?-T2B-49-A	15.9	C	B or C	B	B or C	<input type="checkbox"/>
4.41	230	1	49.5 (1257)	XEC1-0441-2301-?-T2B-49-A	19.2	C	B or C	B	B or C	<input type="checkbox"/>
4.76	380	1	59.5 (1511)	XEC1-0476-3801-?-T2B-59-A	12.5	C	B or C	B	B or C	<input type="checkbox"/>
4.80	208	1	49.5 (1257)	XEC1-0480-2081-?-T2B-49-A #	23.1	Not Available	A or B	B	A or B or C	<input type="checkbox"/>
4.80	240	1	49.5 (1257)	XEC1-0480-2401-?-T2B-49-A	20.0	C	A or B or C	B	A or B or C	<input type="checkbox"/>
4.80	277	1	49.5 (1257)	XEC1-0480-2771-?-T2B-49-A	17.3	C	A or B or C	B	A or B or C	<input type="checkbox"/>
4.80	380	1	49.5 (1257)	XEC1-0480-3801-?-T2B-49-A	12.6	C	B or C	B	B or C	<input type="checkbox"/>
4.80	400	1	49.5 (1257)	XEC1-0480-4001-?-T2B-49-A	12.0	C	B or C	B	B or C	<input type="checkbox"/>
4.80	415	1	49.5 (1257)	XEC1-0480-4151-?-T2B-49-A	11.6	C	B or C	B	B or C	<input type="checkbox"/>
4.80	480	1	49.5 (1257)	XEC1-0480-4801-?-T2B-49-A	10.0	C	A or B or C	B	A or B or C	<input type="checkbox"/>
4.80	600	1	49.5 (1257)	XEC1-0480-6001-?-T2B-49-A *	8.0	Not Available	A or B	B	A or B or C	<input type="checkbox"/>
5.28	400	1	59.5 (1511)	XEC1-0528-4001-?-T2B-59-A	13.2	C	B or C	B	B or C	<input type="checkbox"/>
5.68	415	1	59.5 (1511)	XEC1-0568-4151-?-T2B-59-A	13.7	C	B or C	B	B or C	<input type="checkbox"/>
6.27	380	1	71.8 (1824)	XEC1-0627-3801-?-T2B-71-A	16.5	C	B or C	B	B or C	<input type="checkbox"/>
6.39	220	1	59.5 (1511)	XEC1-0639-2201-?-T2B-59-A #	29.0	Not Available	B	B	B or C	<input type="checkbox"/>
6.39	254	1	59.5 (1511)	XEC1-0639-2541-?-T2B-59-A #	25.2	Not Available	B	B	B or C	<input type="checkbox"/>
6.39	440	1	59.5 (1511)	XEC1-0639-4401-?-T2B-59-A	14.5	C	B or C	B	B or C	<input type="checkbox"/>
6.94	400	1	71.8 (1824)	XEC1-0694-4001-?-T2B-71-A	17.4	C	B or C	B	B or C	<input type="checkbox"/>
6.98	230	1	59.5 (1511)	XEC1-0698-2301-?-T2B-59-A #	30.4	Not Available	B	B	B or C	<input type="checkbox"/>
7.48	415	1	71.8 (1824)	XEC1-0748-4151-?-T2B-71-A	18.0	C	B or C	B	B or C	<input type="checkbox"/>

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## Continued (Single Phase - T2B (260°C / 500°F) Division System / T2 (300°C / 572°F) Zone System)

KW	Volts	Ph	Cabinet Length In. (mm)	Base Model Code before Options ? = Select an Electrical Enclosure A or B or C based on availability †	Total Amps (A)	"Electrical Enclosure Code" ? See below for built-in T1 thermostat, wall mount BTX1 or XET1 thermostat or your own control device				☒
						Built-in T1 Thermostat	Wall Mount BTX1 Thermostat	Wall Mount XET1 Thermostat	Your Own Control Device	
7.60	208	1	59.5 (1511)	XEC1-0760-2081-?-T2B-59-A #	36.5	Not Available	A or B	B	A or B or C	<input type="checkbox"/>
7.60	240	1	59.5 (1511)	XEC1-0760-2401-?-T2B-59-A #	31.7	Not Available	A or B	B	A or B or C	<input type="checkbox"/>
7.60	277	1	59.5 (1511)	XEC1-0760-2771-?-T2B-59-A #	27.4	Not Available	A or B	B	A or B or C	<input type="checkbox"/>
7.60	380	1	59.5 (1511)	XEC1-0760-3801-?-T2B-59-A	20.0	C	B or C	B	B or C	<input type="checkbox"/>
7.60	400	1	59.5 (1511)	XEC1-0760-4001-?-T2B-59-A	19.0	C	B or C	B	B or C	<input type="checkbox"/>
7.60	415	1	59.5 (1511)	XEC1-0760-4151-?-T2B-59-A	18.3	C	B or C	B	B or C	<input type="checkbox"/>
7.60	480	1	59.5 (1511)	XEC1-0760-4801-?-T2B-59-A	15.8	C	A or B or C	B	A or B or C	<input type="checkbox"/>
7.60	600	1	59.5 (1511)	XEC1-0760-6001-?-T2B-59-A *	12.7	Not Available	A or B	B	A or B or C	<input type="checkbox"/>
8.40	440	1	71.8 (1824)	XEC1-0840-4401-?-T2B-71-A	19.1	C	B or C	B	B or C	<input type="checkbox"/>
10.00 \$	380	1	71.8 (1824)	XEC1-1000-3801-C-T2B-71-A #	26.3	Not Available	Not Available	Not Available	C	<input type="checkbox"/>
10.00 \$	400	1	71.8 (1824)	XEC1-1000-4001-C-T2B-71-A #	25.0	Not Available	Not Available	Not Available	C	<input type="checkbox"/>
10.00 \$	415	1	71.8 (1824)	XEC1-1000-4151-C-T2B-71-A #	24.1	Not Available	Not Available	Not Available	C	<input type="checkbox"/>
10.00 \$	480	1	71.8 (1824)	XEC1-1000-4801-C-T2B-71-A	20.8			Not Available	C	<input type="checkbox"/>
10.00 \$	600	1	71.8 (1824)	XEC1-1000-6001-C-T2B-71-A *	16.7	Not Available	Not Available	Not Available	C	<input type="checkbox"/>

(\*) (#) Exceeds 480 Volt or 22 Amp rating on factory built-in T1 thermostat. To add the factory supplied wall mount thermostats, Electrical Enclosure A or B is required. If using your own temperature control device, a remote contactor may be required. Ensure control devices comply to local electrical code and meets the heater's electrical ratings and is suitable for the area's hazardous atmosphere classification.

(†) Refer to Page 4 of XEC1 brochure for XEC1 Model and Option Code Reference Chart

(?) A = 120VAC Controls in Large Electrical Enclosure; B = 24VAC Controls in Large Electrical Enclosure; C= Line Voltage Electrical Enclosure (small Y junction box). Large Electrical Enclosure A & B include a contactor, transformer, and printed circuit board with fuses.

(Δ) AS = Assembly stock (approximately 1 to 2 weeks); NS = Non-stock (contact factory for lead time)

(S) All 10 kW heaters include a 3/4" (6.35 mm) diameter 304 safety guard pre-installed over the outlet grills.

- Supply voltage must be within +/- 10% of rated heater voltage. Actual Output (kW) = [Line voltage]<sup>2</sup> ÷ (Rated Voltage)<sup>2</sup> x Rated Unit Wattage (kW)
- For best heat distribution and comfort, a wall thermostat is recommended.

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## Hazardous location rating for heater:

### Division System

Class I, Division 1 & 2, Groups B, C & D, T2B

### Zone System

Class I, Zone 1 & 2, Ex db, Groups IIA, IIB+H<sup>2</sup>, Gb

Class I, Zone 1 & 2, AEx db, Groups IIA, IIB+H<sup>2</sup>, Gb

Ta = -50°C to +40°C, IP66, Type 4, T2

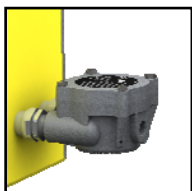
### Factory Built-in Options

Code	Description	<input checked="" type="checkbox"/>
<b>T1</b>	Built-in Thermostat, Bi-metal (Not available with 600V models, any 3-phase models, or 1-phase models that have a line current exceeding 22 Amps.)	<input type="checkbox"/>
<b>LC</b>	Left Side Electrical Enclosure (standard location is on the right side)	<input type="checkbox"/>

### Electrical Enclosure (must select at least one)

Code	Description	<input checked="" type="checkbox"/>
<b>A*</b>	120VAC, Large Electrical Enclosure	<input type="checkbox"/>
<b>B*</b>	24VAC, Large Electrical Enclosure (safer) (Required with XET1 wall thermostat)	<input type="checkbox"/>
<b>C</b>	Line Voltage, Small Electrical Enclosure (Y Junction Box). Not suitable for wall mount XET1 electronic thermostats.	<input type="checkbox"/>

\* Our wall mount thermostats require Electrical Enclosure A or B on all 600V models, all 3-phase models, or 1-phase heater models with a line current exceeding 22 Amps.



Electrical Enclosure "C" using line voltage



Electrical Enclosure "C" with optional built-in "T1" thermostat and using line voltage



Electrical Enclosure "A" (120VAC) or "B" (24VAC)



Left Side Electrical Enclosure Option Code "LC"

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## Wall Mount Accessories

Catalog Number	Description	<input checked="" type="checkbox"/>
BTX1-N-B *	<p><b>Wall mount SPDT <u>bi-metal</u> hazardous location thermostat. <i>Requires XEC1 heater electrical enclosure A or B or C depending on heater model selected.</i></b></p> <p>Temperature adjustment range: 40°F to 80°F (5°C to 25°C); 3/4" - NPT conduit opening on top and bottom; Ship wt - 3.5 lbs (1.6 kg)</p> <p>22 Amps Resistive Load, 480 VAC Max; 1/2 HP@125 VAC; 1 HP@ 250 VAC (suitable for 24 volt or 120 volt control circuit)</p> <p>Class I, Division 1 &amp; 2, Groups B, C &amp; D Class I, Zone 1 &amp; 2, Ex db, Groups IIA, IIB+H<sup>2</sup>, T6, Gb                      Class II, Division 1, Groups E, F &amp; G Class I, Zone 1 &amp; 2, AEx db, Groups IIA, IIB+H<sup>2</sup>, T6, Gb                      Class II, Division 2, Groups F &amp; G; Class III; T6 Class II, Zone 21 &amp; 22, Ex tb, Groups IIIA, IIIB &amp; IIIC, T85°C, Db</p> <p>-50°C ≤ T amb ≤ +40°C, IP66, Type 4 Class II, Zone 21 &amp; 22, AEx tb, Groups IIIA, IIIB &amp; IIIC, T85°C, Db</p>	<input type="checkbox"/>
XET1-1-N-B*	<p><b>Wall mount <u>electronic</u> hazardous location thermostat. <i>Requires XEC1 heater electrical enclosure B.</i></b></p> <p>Temperature adjustment range: 40°F to 80°F (5°C to 25°C); 3/4" – NPT conduit opening on top and bottom; Ship wt – 3.4 lbs (1.5 kg)</p> <p>20 to 36 VAC 50/60Hz; 1 Amp max continuous (suitable for 24 volt control circuit only)</p> <p>Class I, Division 1 &amp; 2, Groups B, C &amp; D Class I, Zone 1 &amp; 2, Ex db, Groups IIA, IIB+H<sup>2</sup>, T6, Gb                      Class II, Division 1, Groups E, F &amp; G Class I, Zone 1 &amp; 2, AEx db, Groups IIA, IIB+H<sup>2</sup>, T6, Gb                      Class II, Division 2, Groups F &amp; G; Class III; T6 Class II, Zone 21 &amp; 22, Ex tb, Groups IIIA, IIIB &amp; IIIC, T85°C, Db</p> <p>-50°C ≤ T amb ≤ +40°C, IP66, Type 4 Class II, Zone 21 &amp; 22, AEx tb, Groups IIIA, IIIB &amp; IIIC, T85°C, Db</p>	<input type="checkbox"/>
XDC-01	<p><b>Wall mount hazardous location disconnect switch. <u>Not suitable for Hydrogen gas atmosphere</u></b></p> <p>600V, 50A max; 15 HP@208/240V, 3 phase; 30 HP@480/600V, 3 phase; 2 HP@120V, 1 phase; 7.5 HP@240V, 1 phase</p> <p>Class I, Division 1 &amp; 2, Groups C &amp; D; Class II, Division 1, Groups E, F &amp; G; Class II, Division 2, Groups F &amp; G; Class III</p> <p>Class I, Zone 1 &amp; 2, Grp IIA &amp; IIB, T5</p>	<input type="checkbox"/>

\* Our wall mount thermostats require Electrical Enclosure A or B on all 600V models, all 3-phase models, or 1-phase heater models with a line current exceeding 22 Amps.

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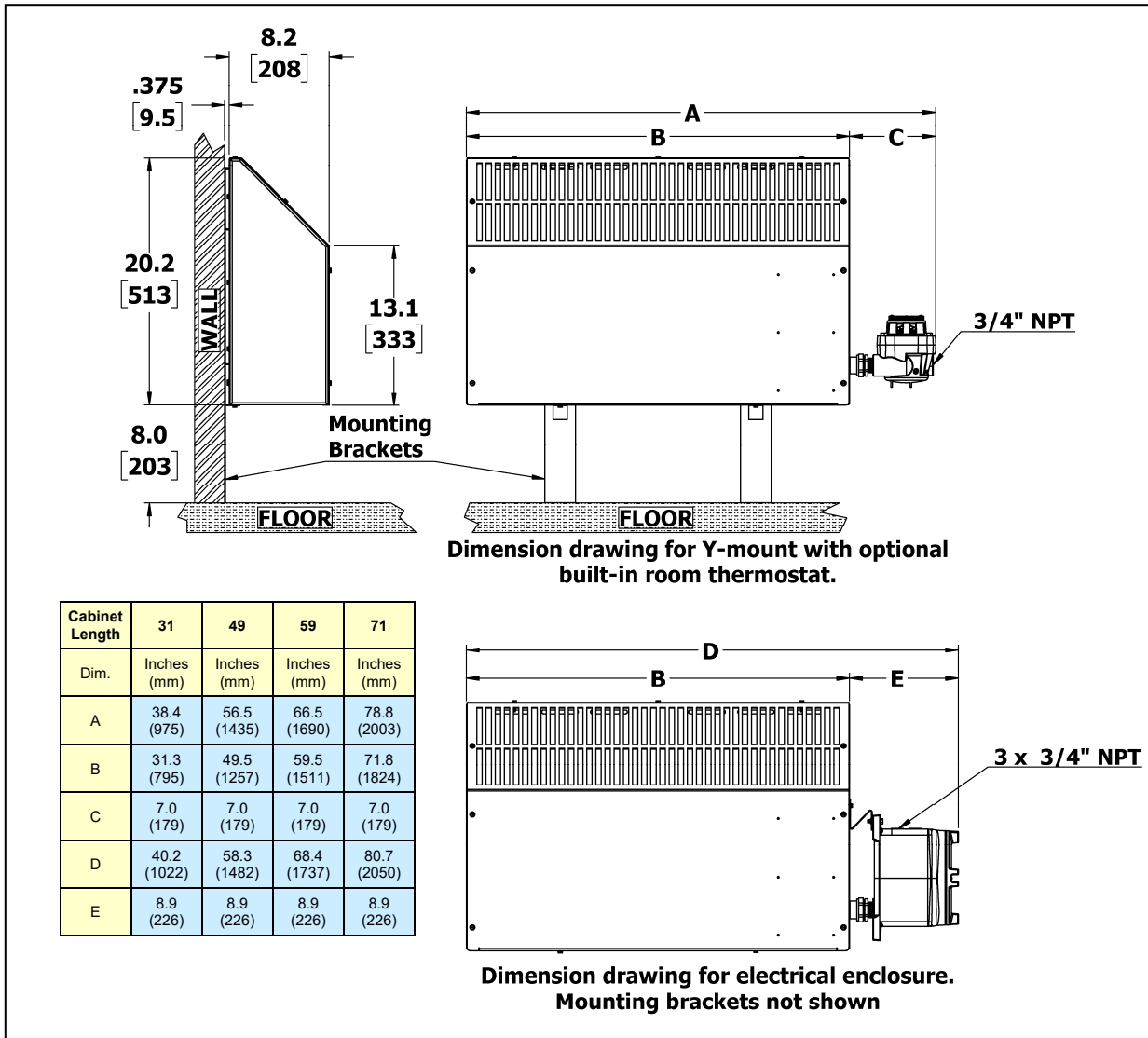


## XEC1 Weights by Model Size

XEC1 Cabinet Length in. (mm)		31.3 (795)	49.5 (1257)	59.5 (1511)	71.8 (1824)
Approximate Net Weight Lbs (kg)	Heater with Electrical Enclosure "C"	57 (25.9)	84 (38.1)	96 (43.5)	113 (51.3)
	Heater with Electrical Enclosure "A or B"	73 (33.1)	100 (45.4)	112 (50.8)	129 (58.5)
Approximate Shipping Weight* Lbs (kg)	Heater with Electrical Enclosure "C"	75 (33.9)	107 (48.6)	121 (54.9)	143 (64.8)
	Heater with Electrical Enclosure "A or B"	91 (41.1)	123 (56.0)	137 (62.3)	159 (72.0)

\* All heaters are individually packed in cardboard packaging and then strapped to a wooden pallet.

## XEC1 Physical Dimensions



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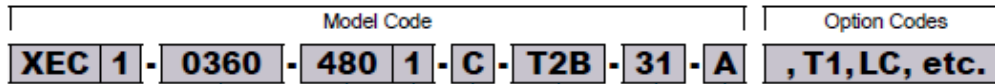
Explosion-proof Convection Air Heater

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## XEC1 Model Coding

Model and Option Code Reference Chart



Model Series
XEC 1
Generation
For major revisions

Power Output	
0.40 kW	0040
0.60 kW	0060
0.75 kW	0075
0.83 kW	0083
0.90 kW	0090
1.01 kW	0101
1.10 kW	0110
1.13 kW	0113
1.20 kW	0120
1.25 kW	0125
1.35 kW	0135
1.51 kW	0151
1.61 kW	0161
1.65 kW	0165
1.67 kW	0167
1.80 kW	0180
2.26 kW	0226
2.50 kW	0250
2.54 kW	0254
2.69 kW	0269
3.01 kW	0301
3.03 kW	0303
3.13 kW	0313
3.31 kW	0331
3.33 kW	0333
3.34 kW	0334
3.47 kW	0347
3.59 kW	0359
3.60 kW	0360
3.74 kW	0374
4.03 kW	0403
4.04 kW	0404
4.20 kW	0420
4.41 kW	0441
4.59 kW	0459
4.76 kW	0476
4.80 kW	0480
5.00 kW	0500
5.28 kW	0528
5.68 kW	0568
6.27 kW	0627
6.39 kW	0639
6.94 kW	0694
6.98 kW	0698
7.48 kW	0748
7.60 kW	0760
8.40 kW	0840
10.00 kW ±	1000

Factory Built-in Options	
T1	Thermostat, Bi-metal (BTX1)
LC	Left Side Electrical Enclosure (standard location is on RIGHT side)
ZZ	Special Build (factory use only)

Product Revision No.	
For minor revisions	

Cabinet Length	
31	31.3 in (795 mm)
49	49.5 in (1257 mm)
59	59.5 in (1511 mm)
71	71.8 in (1824 mm)

Division System Temperature Code	
T2B	260°C (500°F)
T3A	180°C (356°F)

Electrical Enclosure	
A	120VAC, Large Enclosure
B	24VAC, Large Enclosure (safer) (Required with XET1 wall thermostat)
C	Line Voltage, Small Enclosure (Y Junction box)

Phase	
1	1 Phase
3	3 Phase

Heater Line Voltage	
120	120 Volts
208	208 Volts
220	220 Volts
230	230 Volts
240	240 Volts
254	254 Volts
277	277 Volts
347	347 Volts
380	380 Volts
400	400 Volts
415	415 Volts
440	440 Volts
480	480 Volts
600	600 Volts

Not available with 600V models, any 3-phase models, or 1-phase models that have a line current exceeding 22 amps.

A or B on all 600V models, all 3-phase models, or 1-phase heater models with a line current exceeding 22 Amps. Refer to pages 8 to 11 for specific selection details.

Not suitable for wall mount XET1 electronic thermostat

All 3-phase heaters with a wall mount thermostat require Electrical Enclosure A or B

- For best heat distribution and comfort, a wall mount thermostat is recommended.
- All models suitable for 50Hz or 60Hz operation.
- This model coding illustration is intended to explain how a product model number is described and engraved on the heater data plate. Not all voltage, wattage, built-in options and electrical enclosure combinations are available. Refer to product performance data on Pages 8 to 11 for exact product availability.
- Our wall mount thermostats require Electrical Enclosure A or B on all 600V models, all 3-phase models, or 1-phase heater models with a line current exceeding 22 Amps. Refer to Pages 8 to 11 for specific selection details.
- (±) All 10 kW heaters include a 1/4" (6.35 mm) diameter 304 stainless steel safety guard pre-installed over the outlet grills.
- **WARNING:** Supply voltage must be within +/- 10% of rated heater voltage.
- Operating at voltages other than rated will result in different kW output and amp draw.

$$\text{Actual Output (kW)} = \left[ \frac{(\text{Supply Voltage})^2 + (\text{Rated Voltage})^2}{2} \right] \times \text{Rated Unit Output (kW)}$$