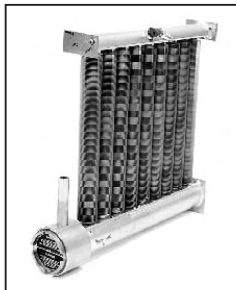
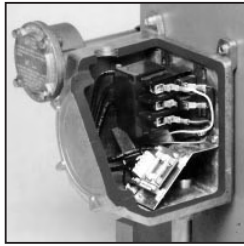


FX4 Explosion-Proof Electric Air Heaters

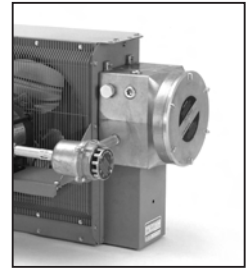
FX4 heaters are UL listed and/or CSA certified for use in hazardous locations. They are designed for dry indoor industrial applications such as oil refineries, petrochemical plants, pulp and paper mills, grain elevators, hazardous waste storage facilities, wastewater treatment plants, etc., where specific explosive gases or dusts may be present.



All FX4 heaters utilize the VacuCore® liquid-to-air heat exchanger. The induced vacuum within the sealed core provides greater efficiency, even distribution of heat across the face of the exchanger, and a faster warm-up. When necessary, the entire core can be safely and easily replaced with a new exchange unit.

The heater core assembly is contained in a sturdy, epoxy-coated 14-gauge steel cabinet which also carries the motor and fan assembly. Adjustable louvres allow

directional control of the airflow. A narrow gap, two-piece fan guard is provided to shield all moving parts. All fasteners are zinc plated for corrosion protection.

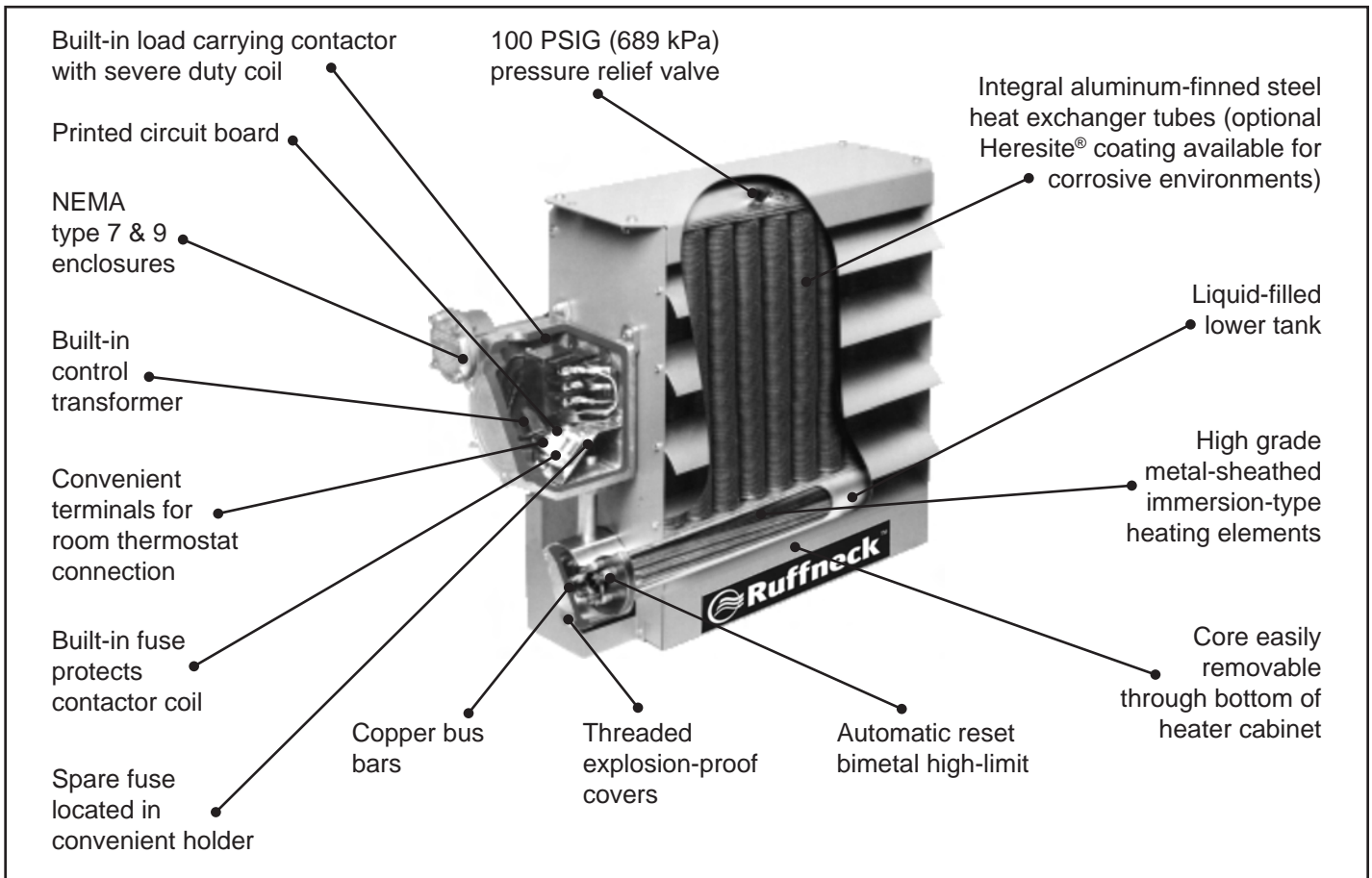


Ruffneck™ heaters are built to last. All Ruffneck™ products are subjected to exhaustive technical analysis and testing during design and development, and are manufactured under a registered quality assurance program. As a result, they have consistently proven their safety and reliability.

For hazardous location heating, rely on the Ruffneck™ FX4 heater for the most dependable, trouble-free service available.

SUITABLE FOR THE FOLLOWING HAZARDOUS LOCATION CLASSIFICATIONS:

- **Class I, Divisions 1 & 2, Groups C & D**
- **Class II, Divisions 1 & 2, Groups E, F & G**
- **Class I, Zones 1 & 2, Groups IIA & IIB**
- **Temperature Code T3B 165°C (329°F)**



Heresite® is a registered trademark of Heresite® Protective Coatings Inc.

3 - YEAR WARRANTY

Performance Data for 60 Hertz FX4

UL listed and/or CSA certified. Temperature Code T3B 165°C (329°F)

NOMINAL WATTAGE (kW)	MODEL	VOLTAGE	PHASE	TOTAL CURRENT (A)	AIR TEMPERATURE RISE		BTU/hr
					°F	°C	
3	FX4-208160-030	208	1	14.4	19.0	10.5	10,250
	FX4-240160-030	240	1	12.5			
	FX4-208360-030	208	3	8.3			
	FX4-240360-030	240	3	7.2			
	FX4-480160-030*	480	1	6.3			
	FX4-480360-030	480	3	3.6			
	FX4-600360-030*	600	3	2.9			
5	FX4-208160-050	208	1	24.0	31.6	17.6	17,050
	FX4-240160-050	240	1	20.8			
	FX4-208360-050	208	3	13.9			
	FX4-240360-050	240	3	12.0			
	FX4-480160-050*	480	1	10.4			
	FX4-480360-050	480	3	6.0			
	FX4-600360-050*	600	3	4.8			
7.5	FX4-208160-075	208	1	36.1	27.9	15.5	25,600
	FX4-240160-075	240	1	31.3			
	FX4-208360-075	208	3	20.8			
	FX4-240360-075	240	3	18.0			
	FX4-480160-075*	480	1	15.6			
	FX4-480360-075	480	3	9.0			
	FX4-600360-075*	600	3	7.2			
10	FX4-208160-100*†	208	1	48.1	37.2	20.6	34,100
	FX4-240160-100	240	1	41.7			
	FX4-208360-100	208	3	27.8			
	FX4-240360-100	240	3	24.1			
	FX4-480160-100*	480	1	20.8			
	FX4-480360-100	480	3	12.0			
	FX4-600360-100*	600	3	9.6			
15	FX4-240160-150*†	240	1	62.5	27.1	15.0	51,200
	FX4-208360-150	208	3	41.6			
	FX4-240360-150	240	3	36.1			
	FX4-480160-150*	480	1	31.3			
	FX4-480360-150	480	3	18.0			
	FX4-600360-150*	600	3	14.4			
20	FX4-208360-200*†	208	3	55.5	36.1	20.1	68,250
	FX4-240360-200*†	240	3	48.1			
	FX4-480160-200*	480	1	41.7			
	FX4-480360-200	480	3	24.1			
	FX4-600360-200*	600	3	19.2			
25	FX4-240360-250*†	240	3	60.1	21.9	12.2	85,300
	FX4-480360-250	480	3	30.1			
	FX4-600360-250*	600	3	24.1			
30	FX4-480360-300	480	3	36.1	26.3	14.6	102,350
	FX4-600360-300*	600	3	28.9			
35	FX4-480360-350	480	3	42.1	28.0	15.6	119,450
	FX4-600360-350*	600	3	33.7			

240V heaters are also suitable for 220V & 230V with derated wattage. 480V heaters are also suitable for 460V with derated wattage. 600V heaters are also suitable for 575V with derated wattage.

Note: (*) CSA certified only. (†) Exceeds the 48 amp. circuit limit of NEC 424-22

To order a heater with a built-in room thermostat, add a "T" suffix to model number.
Please specify CSA or UL heater when ordering.
Defender explosion-proof thermostats are suitable for all FX4 models.

See page 15 for model coding.

See page 13 for installation conditions.

Performance Data for 50 Hertz FX4

CSA certified only. Class I, Divisions 1 & 2, Groups C & D;
 Class II, Divisions 1 & 2, Groups E, F & G;
 Class I, Zones 1 & 2, Groups IIA & IIB.
 Temperature Code T3B 165°C (329°F)



NOMINAL WATTAGE (kW)	MODEL	VOLTAGE	PHASE	TOTAL CURRENT (A)	AIR TEMPERATURE RISE		BTU/hr
					°F	°C	
2.5	FX4-220150-025	220	1	11.4	19.7	11.0	8,550
4.2	FX4-220150-042	220	1	19.1	33.2	18.4	14,350
6.3	FX4-220150-063	220	1	28.6	28.4	15.8	21,500
8.4	FX4-220150-084	220	1	38.2	37.9	21.1	28,650
12.6	FX4-220150-126	220	1	57.3	27.5	15.3	43,000
2.5	FX4-380350-025	380	3	3.8	19.7	11.0	8,550
4.2	FX4-380350-042	380	3	6.4	33.2	18.4	14,350
6.3	FX4-380350-063	380	3	9.6	28.4	15.8	21,500
8.4	FX4-380350-084	380	3	12.8	37.9	21.1	28,650
12.5	FX4-380350-125	380	3	19.0	27.2	15.1	42,650
16.7	FX4-380350-167	380	3	25.4	36.4	20.2	57,000
20.9	FX4-380350-209	380	3	31.8	22.0	12.2	71,300
3.7	FX4-415350-037	415	3	5.1	29.2	16.2	12,600
7.5	FX4-415350-075	415	3	10.4	33.9	18.8	25,600
14.9	FX4-415350-149	415	3	20.7	32.5	18.0	50,850
22.4	FX4-415350-224	415	3	31.2	23.6	13.1	76,450

To order a heater with a built-in room thermostat, add a "T" suffix to model number.

Installation Conditions

1. The FX4 Series Electric Air Heaters are for dry indoor use only. Do not immerse in water. Do not store or use in areas exposed to rain or snow.
2. The FX4 heaters are to be used only in atmospheres having an ignition temperature higher than 165°C (329°F)
3. Altitude restrictions apply – see specifications on next page.
4. Heaters should be connected to a fixed power supply and must be permanently mounted in a level, upright position during operation.
5. Read and be aware of the terms of our Warranty located in the owner's manual.
6. Refer to Owner's Manual.

Specifications for 60 Hertz FX4

60 HERTZ		FX4										
		NOMINAL kW		3	5	7.5	10	15	20	25	30	35
Maximum Altitude	(ft.)	12,000	8,000	10,000	7,000	10,000	7,000	10,000	7,000	10,000	7,000	6,000
	(m)	3,658	2,438	3,048	2,134	3,048	2,134	3,048	2,134	3,048	2,134	1,829
Air Delivery @ 70°F	(CFM)	500		850		1,750		3,600		3,950		
	@ 21°C (m³/hr.)	850		1,444		2,973		6,116		6,711		
Horizontal Throw	(ft.)	15		30		40		70				
	(m)	4.6		9.1		12.2		21.3				
Maximum Mounting Height (to underside)	(ft.)	7		10		10		20				
	(m)	2.1		3.0		3.0		6.1				
Motor Power	(HP)	1/2			1/2			1/2				
	(kW)	0.373			0.373			0.373				
Motor Speed	(RPM)	1,725			1,725			1,725				
Fan Diameter	(in.)	12			16			20				
	(mm)	305			406			508				
Net Weight	(lbs.)	131			153			192				
	(kg)	59.5			69.5			87.3				
Shipping Weight	(lbs.)	180			202			241				
	(kg)	81.8			91.8			109.5				

See page 16 for general specifications common to all FX4 models.

Weights are an approximate maximum.

Specifications for 50 Hertz FX4

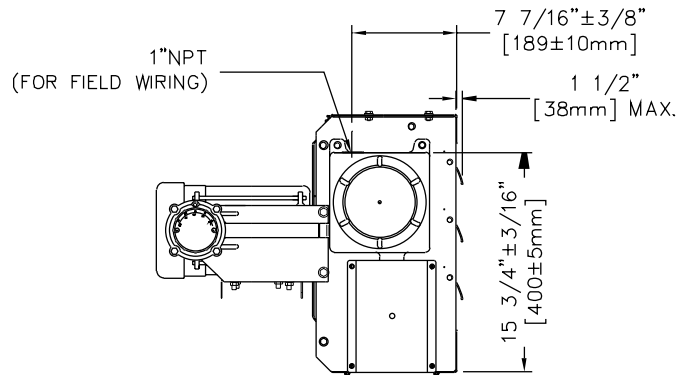
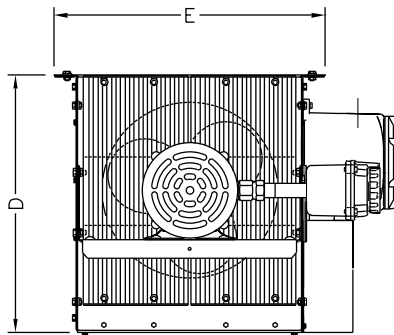
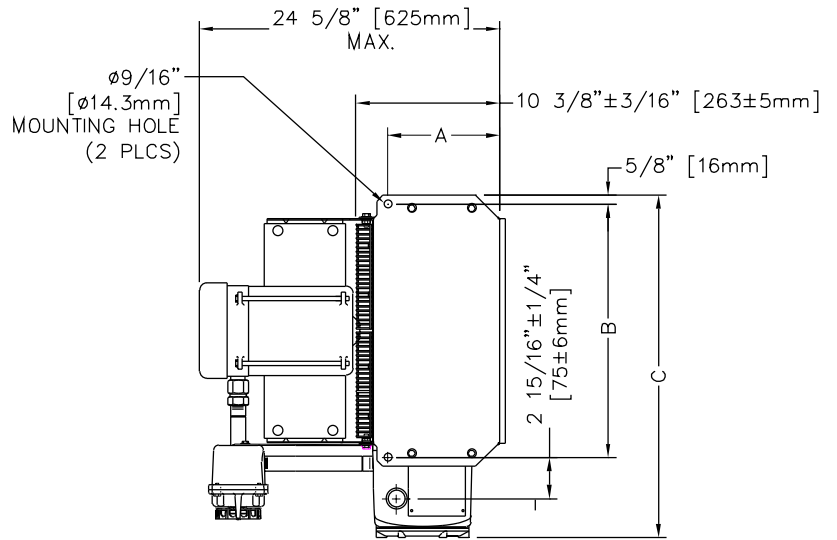
50 HERTZ		FX4									
		NOMINAL kW		2.5	3.7 & 4.2	6.3 & 7.5	8.4	12.5 & 12.6	14.9 & 16.7	20.9	22.4
Maximum Altitude	(ft.)	12,000	8,000	10,000	7,000	10,000	7,000	10,000	7,000	10,000	7,000
	(m)	3,658	2,438	3,048	2,134	3,048	2,134	3,048	2,134	3,048	2,134
Air Delivery @ 70°F	(CFM)	400		700		1,450		3,000			
	@ 21°C (m³/hr.)	679		1,189		2,463		5,096			
Horizontal Throw	(ft.)	13		25		35		60			
	(m)	4.0		7.6		10.7		18.2			
Maximum Mounting Height (to underside)	(ft.)	7		10		10		20			
	(m)	2.1		3.0		3.0		6.1			
Motor Speed	(RPM)	1,437				1,437		1,437			
Fan Diameter	(in.)	12				16		20			
	(mm)	305				406		508			
Net Weight	(lbs.)	131				153		192			
	(kg)	59.5				69.5		87.3			
Shipping Weight	(lbs.)	180				202		241			
	(kg)	81.8				91.8		109.5			

See page 16 for general specifications common to all FX4 models.

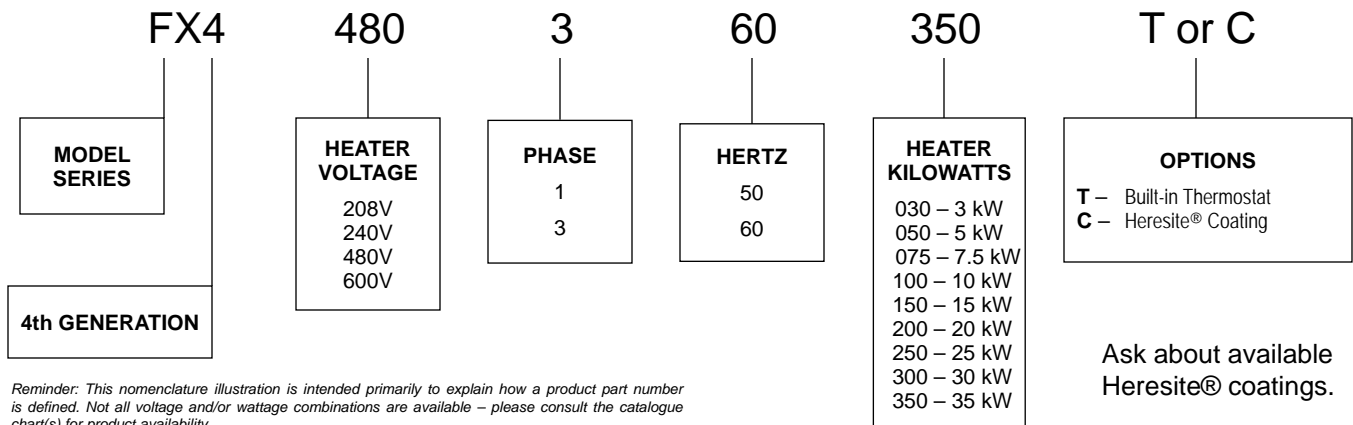
Weights are an approximate maximum.

DIM.	kW	2.5-10	12.5-20	20.9-35	DIM. TOL. ±
		A	in.	8-1/16	
	mm	204	170	179	3
B	in.	18-3/16	22-3/16	26-3/16	1/8
	mm	462	564	665	3
C	in.	24-5/8	28-5/8	32-5/8	5/16
	mm	625	727	828	8
D	in.	18-1/2	22-1/2	26-1/2	1/8
	mm	470	572	674	3
E	in.	19-7/16	23-7/16	27-7/16	1/8
	mm	494	596	697	3

DIMENSIONAL TOLERANCES ±1/8" [±3mm] UNLESS OTHERWISE SPECIFIED.





Model Coding



Reminder: This nomenclature illustration is intended primarily to explain how a product part number is defined. Not all voltage and/or wattage combinations are available - please consult the catalogue chart(s) for product availability.

Side by Side Comparison - FX5 to FX4

Common Features for the FX5 & FX4 Specifications	
Hazardous Location Classifications	Class I, Divisions 1 & 2, Groups C & D Class II, Divisions 1 & 2, Groups E, F & G Class I, Zones 1 & 2, Group IIA & IIB Temperature Code T3B 165°C (329°F)
Motor Type	Explosion-Proof. Thermally protected. Permanently lubricated ball bearings.
Fan	Aluminum blade. Steel spider and hub with 5/8 in. (15 mm) bore.
Fan Guard	Split design with close wire spacing. ¼ in. (6.3mm) diameter probe will not enter.
Heating Elements	Long-life metal-sheathed elements
Control Circuit	120 Volts, 0.128 amps, 15VA. (Grounded)
Optional Built-in Thermostat	Explosion-proof. 36°F to 82°F (2°C to 28°C)
Control Transformer	Multiple voltage primary, 120V secondary, 25VA.
Contactors	40 or 75 amp. Rated for 500,000 mechanical operations. 120 Volts, 15VA coil (separately fuse-protected).
Conduit Material	Heavy wall, 0.122 in. (3 mm), steel
Overpressure Protection	Preset 100 psig (690 kPa) pressure relief valve, aluminum body, no serviceable parts.
Operational Temperature Range	-4°F to 104°F (-20°C to 40°C)

Distinctive Features for the FX5 & FX4 Specifications		
	FX5	FX4
Approvals		
Junction Box (h x w x d)	10.25" (230 mm) x 8.00" (180 mm) x 9.12" (205 mm)	6.94" (156 mm) x 6.56" (147 mm) x 5.125" (115 mm)
Temperature High-Limit	Same as FX4 plus an additional ambient high limit.	Automatic reset type, snap-action bimetal, open on temperature rise. Rated 100,000 cycles at 10 amp, handles 0.128 amps.
Heating Elements	Propylene Glycol	Propylene Glycol
Cabinet Material	Same as FX4 with optional stainless steel casing.	14 ga. (0.075 in.-1mm) epoxy powder coated steel. Optional Heresite coating available for corrosive atmospheres.
Core	HD Core	XD Core
Field Connections	Two 1" NPT	One 1" NPT
Weight (for 15kW unit)	168 lbs. (76.36 kgs)	144 lbs. (65.38 kgs)
Weight with disconnect (for 15kW unit)	180 lbs. (81.82 kgs)	n/a
Optional Built-in Disconnect Switch	DS5 uses x-Max® construction	DS4 is no longer available
Optional Pilot Light	Explosion-proof light fixture with replaceable bulb	n/a
Optional 3 - Way Switch	Explosion-proof 3 position fan switch (on, off, fan only).	n/a
Mounting Holes	Four 9/16 in. (14 mm) diameter holes at the top of heater	Two 9/16 in. (14 mm) diameter holes at the top of heater.