

# FE2 Series Explosion-Proof Electric Air Heaters



FE2 heaters are CE Marked & ATEX Approved to Directive 94/9/EC for use in hazardous locations. They are designed for dry indoor industrial applications such as oil refineries, petrochemical plants, pulp and paper mills, hazardous waste storage facilities, wastewater treatment plants, etc., where specific explosive gases or dusts maybe present. IP55 rated units available.

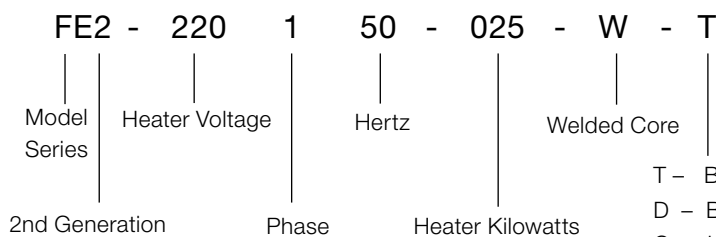
All FE2 heaters utilize the VacuCore® liquid-to-air heat exchanger. The induced vacuum within the sealed core provides greater efficiency, even distribution of heat across the face of the exchanger, and a faster warm-up. When necessary, the entire core can be safely and easily replaced with a new exchanger or core.

The heater core assembly is contained in a sturdy, epoxy-coated, 12-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.

All aspects and details of the FE2 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.



## Model Coding



- T – Built-in thermostat
- D – Built-in disconnect switch
- C – Heresite® coating
- A – Stainless steel cabinet
- U – Continuous fan
- B – Low ambient option -50°F (-50°C)
- M25 – M25 adapter field entry
- L – Large junction box

Table 9 – Performance Data for 50 Hertz FE2

CE DEMKO 10 ATEX 0910365X  II 2 G, Ex d IIB T3 Gb  1 Ex d IIB T3 Gb X

Volts	Model	Nominal Wattage	BTU/hr	Phase	Air Temperature Rise		
		kW			Total Current A	°C	°F
220	FE2-220150-025	2.5	8,550	1	11.4	10.6	19.2
	FE2-220150-042	4.2	14,350		19.1	17.9	32.2
	FE2-220150-063	6.3	21,500		28.6	15.8	28.4
	FE2-220150-084	8.4	28,700		38.2	21	37.8
	FE2-220150-126	12.6	43,050		57.3	15.3	27.6
230	FE2-230150-028	2.8	9,550		12	12	21.6
	FE2-230150-046	4.6	15,700		20	19.8	35.6
	FE2-230150-069	6.9	23,550		29.9	17.4	31.4
	FE2-230150-092	9.2	31,400		39.9	23.2	41.8
	FE2-230150-138	13.8	47,150		59.9	17	30.5
240	FE2-240150-030	3	10,250		12.4	12.8	23.1
	FE2-240150-050	5	17,100		20.8	21.4	38.5
	FE2-240150-075	7.5	25,600		31.2	18.8	33.9
	FE2-240150-100	10	34,150		41.7	25.1	45.2
	FE2-240150-150	15	51,250		62.5	18.3	32.9
380	FE2-380350-025	2.5	8,550		3.8	11.2	20.1
	FE2-380350-042	4.2	14,350		6.4	18.7	33.7
	FE2-380350-063	6.3	21,500		9.6	16.5	29.7
	FE2-380350-084	8.4	28,700		12.8	22	39.7
	FE2-380350-125	12.5	42,700		19	15.9	28.7
	FE2-380350-167	16.7	57,050	25.4	21.3	38.3	
	FE2-380350-209	20.9	71,400	31.8	12.9	23.3	
400	FE2-400350-028	2.8	9,550	4.1	12.3	22.1	
	FE2-400350-046	4.6	15,700	6.6	20.2	36.3	
	FE2-400350-069	6.9	23,550	10	17.8	32.1	
	FE2-400350-093	9.3	31,750	13.4	24	43.2	
	FE2-400350-139	13.9	47,450	20.1	17.4	31.4	
	FE2-400350-185	18.5	63,200	26.7	23.2	41.8	
	FE2-400350-231	23.1	78,900	33.3	14.1	25.4	
415	FE2-415350-037	3.7	12,650	5.1	16.2	29.1	
	FE2-415350-075	7.5	25,600	10.4	19.2	34.6	
	FE2-415350-149	14.9	50,900	20.7	18.6	33.4	
	FE2-415350-187*	18.7	63,850	26	23.3	41.9	
	FE2-415350-224	22.4	76,500	31.2	13.6	24.4	
	FE2-415350-262*	26.2	89,500	36.5	15.9	28.6	
440	FE2-440350-042	4.2	14,350	5.5	19.3	34.8	
	FE2-440350-084	8.4	28,700	11	21.8	39.2	
	FE2-440350-168	16.8	57,400	22	21	37.9	
	FE2-440350-210	21	71,700	27.6	12.7	22.9	
	FE2-440350-252*	25.2	86,050	33.1	15.2	27.4	
	FE2-440350-294*	29.4	100,400	38.6	17.8	32	

**Note:**

\*Available on "B" models only.

1. Minimum conductor size for 30°C (86°F) ambient. Derate conductor for ambient temperature. Use minimum 90°C (194°F) insulation.
2. Heater is functioning normally if at rated voltage the amp draw is within 10% of the value in this table.
3. Operation at lower voltage will result in reduced heat output and amp draw.
4. Add "T" to model number when adding a built-in thermostat.

5. Add "D" to model number for units with disconnect switch option.
6. Add "A" to model number for units with stainless-steel cabinet.
7. Add "C" to model number for Heresite® coated panels and core.
8. Add "U" to model number for units with a continuous fan.
9. Add "B" for minimum ambient temperature of -50°C. Contact factory for available models.
10. Add "M25" for M25 adapter field entry.

Table 10 – Performance Data for 60 Hertz FE2

CE DEMKO 10 ATEX 0910365X Ex II 2 G, Ex d IIB T3 Gb EAC 1 Ex d IIB T3 Gb X

Volts	Model	Nominal Wattage	BTU/hr	Phase	Total Current		Air Temperature Rise	
		kW			A	°C	°F	
220	FE2-220160-025	2.5	8,550	1	11.4	8.8	15.8	
	FE2-220160-042	4.2	14,350		19.1	14.8	26.6	
	FE2-220160-063	6.3	21,500		28.6	13	23.4	
	FE2-220160-084	8.4	28,700		38.2	17.4	31.3	
	FE2-220160-126	12.6	43,050		57.3	12.7	22.8	
230	FE2-230160-028	2.8	9,550		12	9.8	17.7	
	FE2-230160-046	4.6	15,700		20	16.2	29.1	
	FE2-230160-069	6.9	23,550		29.9	14.3	25.7	
	FE2-230160-092	9.2	31,400		39.9	19	34.2	
	FE2-230160-138	13.8	47,150		59.9	13.9	24.9	
240	FE2-240160-030	3	10,250		12.4	10.5	19	
	FE2-240160-050	5	17,100		20.8	17.6	31.7	
	FE2-240160-075	7.5	25,600		31.2	15.5	27.9	
	FE2-240160-100	10	34,150		41.7	20.7	37.2	
	FE2-240160-150	15	51,250		62.5	15.1	27.1	
440	FE2-440360-042	4.2	14,350		5.5	14.8	26.6	
	FE2-440360-084	8.4	28,700		11	17.4	31.3	
	FE2-440360-168	16.8	57,400		22	16.9	30.4	
	FE2-440360-210	21	71,700		27.6	10.2	18.4	
	FE2-440360-252*	25.2	86,050		33.1	13.4	24.1	
	FE2-440360-294*	29.4	100,400	38.6	15.6	28.1		
480	FE2-480360-030	3	10,250	3.6	10.5	19		
	FE2-480360-050	5	17,100	6	17.6	31.7		
	FE2-480360-075	7.5	25,600	9	15.5	27.9		
	FE2-480360-100	10	34,150	12	20.7	37.2		
	FE2-480360-150	15	51,250	18	15.1	27.1		
	FE2-480360-200	20	68,300	24.1	20.1	36.1		
	FE2-480360-250*	25	85,400	30.1	12.2	22.9		
	FE2-480360-300*	30	102,450	36.1	14.6	27.5		
	FE2-480360-350*	35	119,550	42.1	17.1	32		

**Note:**

\*Available on "B" models only.

1. Minimum conductor size for 30°C (86°F) ambient. Derate conductor for ambient temperature. Use minimum 90°C (194°F) insulation.
2. Heater is functioning normally if at rated voltage the amp draw is within 10% of the value in this table.
3. Operation at lower voltage will result in reduced heat output and amp draw.
4. Add "T" to model number when adding a built-in thermostat.

5. Add "D" to model number for units with disconnect switch option.
6. Add "A" to model number for units with stainless-steel cabinet.
7. Add "C" to model number for Heresite® coated panels and core.
8. Add "U" to model number for units with a continuous fan.
9. Add "B" for minimum ambient temperature of -50°C. Contact factory for available models.
10. Add "M25" for M25 adapter field entry.

**Installation Instructions**

- The FE2 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.
- The FE2 heaters are to be used only in atmospheres having an ignition temperature higher than Temperature Code T3 200°C (329°F) for Class I & II.
- Altitude restrictions apply - see specifications above.
- Heaters should be connected to a fixed power supply and must be permanently mounted in a level, upright position during operation.
- Read and be aware of the terms of our Warranty located in the owner's manual.
- Refer to the Owner's Manual.

Table 11 – Specifications for 50 Hertz FE2

		Nominal kW							
		2.5 – 3.0	3.7 – 5.0	6.3 – 7.5	8.4 – 10.0	12.5 – 13.9	14.9 – 20	20.9 – 21	22.4 – 29.4
Altitude (max.)	ft	12,000	8,000	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
Air Flow (min.)	@ 70°F (CFM)	387		678		1,404		2,905	
	@ 21°C (m³/hr)	658		1,152		2,385		4,936	
Horizontal Air 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 (min.)	RPM	1360							
Fan Diameter	in	12			16			20	
	mm	305			406			508	
Net Weight	without DS5	lbs	174		202		235		
		kg	79		92		107		
	with DS5	lbs	186		214		247		
		kg	84		97		112		
Shipping Weight	without DS5	lbs	228		252		286		
		kg	103		114		130		
	with DS5	lbs	240		264		298		
		kg	109		120		135		

\*Weights are an approximate maximum.

Table 12 – Specifications for 60 Hertz FE2

		Nominal kW							
		2.5 – 3.0	3.7 – 5.0	6.3 – 7.5	8.4 – 10	12.5 – 13.9	14.9 – 20	20.9 – 21	22.4 – 35.0
Altitude (max.)	ft	12,000	8,000	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
Air Flow (min.)	@ 70°F (CFM)	394		670		1,380		2,838	
	@ 21°C (m³/hr)	669		1138		2,345		4,822	
Horizontal Air 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 Speed (min.)	RPM	1360							
Fan Diameter	in	12			16			20	
	mm	305			406			508	
Net Weight	without DS5	lbs	174		202		235		
		kg	79		92		107		
	with DS5	lbs	186		214		247		
		kg	84		97		112		
Shipping Weight	without DS5	lbs	228		252		286		
		kg	103		114		130		
	with DS5	lbs	240		264		298		
		kg	109		120		135		

\*Weights are an approximate maximum.

# General Specifications

1. Approvals	ATEX Approved (Directive 2014/34/EU)
2. Hazardous Location Classifications	<p>CE DEMKO 10 ATEX 0910365X</p> <p>Ex II 2 G, Ex d IIB T3 Gb</p> <p>ERC 1 Ex d IIB T3 Gb X</p>
3. Enclosures	NEMA Type 7 & 9. For dry, indoor use only. Do not immerse in water. Do not store or use in areas exposed to rain or snow
4. Motor Type	Explosion-proof. Thermally protected. Permanently lubricated ball bearings 1425 RPM @ 50 Hz or 1725 RPM @ 60 Hz
5. Fan	Aluminum blade. Steel spider and hub with 19 mm (3/4") bore
6. Fan Guard	Split design with close wire spacing. Meets latest EN standards
7. Mounting Holes	Four 16 mm (5/8") diameter holes at top of heater
8. Heating Elements	Three long-life, low watt-density, high grade metal-sheathed elements
9. Temperature High-Limit	Automatic reset type, snap-action bimetal, open on temperature rise. Rated 100,000 cycles at 10 amps, handles 0.130 amps
10. Control Circuit	115 V, 0.130 amps, 15 VA. (Grounded)
11. Optional Built-in Thermostat	Explosion-proof. 2°C to 28°C (36°F to 82°F) Explosion-proof XTE 412. 0°C to 40°C (43°F to 104°F)
12. Control Transformer	Multi-tap primary, 115 V secondary, 50 VA
13. Contactor	75 amp. Rated for 1,000,000 mechanical operations. 120 V, 15 VA coil (separately fused - protected)
14. Heat Transfer Fluid	Long life formulated Propylene Glycol and water, freeze protected to -45°C (-49°F)
15. Cabinet Material	12-gauge (0.075" / 2 mm) steel. Epoxy coated with five-stage pretreatment, including iron phosphate
16. Core	Steel with integral aluminum fins, vacuum charged and hermetically sealed
17. Conduit Material	Heavy wall, 0.122" (3 mm) steel-plated
18. Overpressure Protection	Preset 690 kPa (100 psig) seep pressure relief valve, aluminum body, not field serviceable
19. Operational Temperature Limitations	-20°C to 40°C (-4°F to 104°F) and -50°C to 40°C for "B" units
20. Ingress Protection	IP55 on select models

Table 13 – Cabinet Length, Net Weight, and Shipping Weight

		Nominal kW			
		0.75 – 2.69 & 3.6 (T2A)	3.01 – 3.59, 3.6 (T3) & 4.8	4.76, 5.28 – 7.6	3.13, 3.47, 3.74, 5.0, 6.26
Cabinet Length	in	31.3	49.4	59.5	71.8
	mm	796	1256	1511	1823
Net Weight	lbs	55	80.7	92.8	117.0
	kg	25.1	36.6	42.1	53.2
Shipping Weight	lbs	65	95	105	142
	kg	30	44	48	65.5