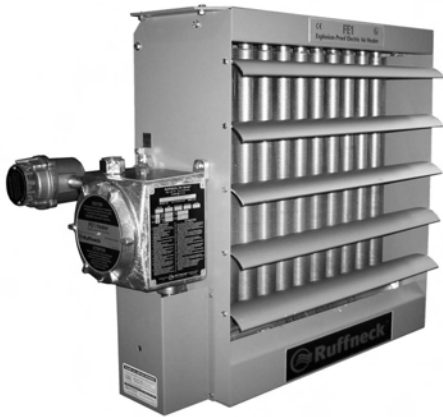


FE1 Explosion-Proof Electric Air Heaters



FE1 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 may be present.

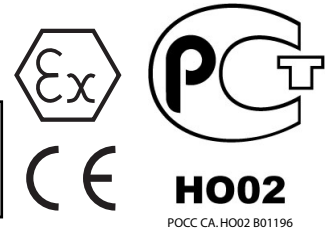
All FE1 heaters utilize the VacuCore® liquid-to-air heat exchanger. The induced vacuum within the sealed core provides greater efficiency, even distribution of heat across the face of the exchanger, and a faster warm-up. When necessary, the entire core can be safely and easily replaced with a new or factory reconditioned 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 louvers 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 FE1 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.

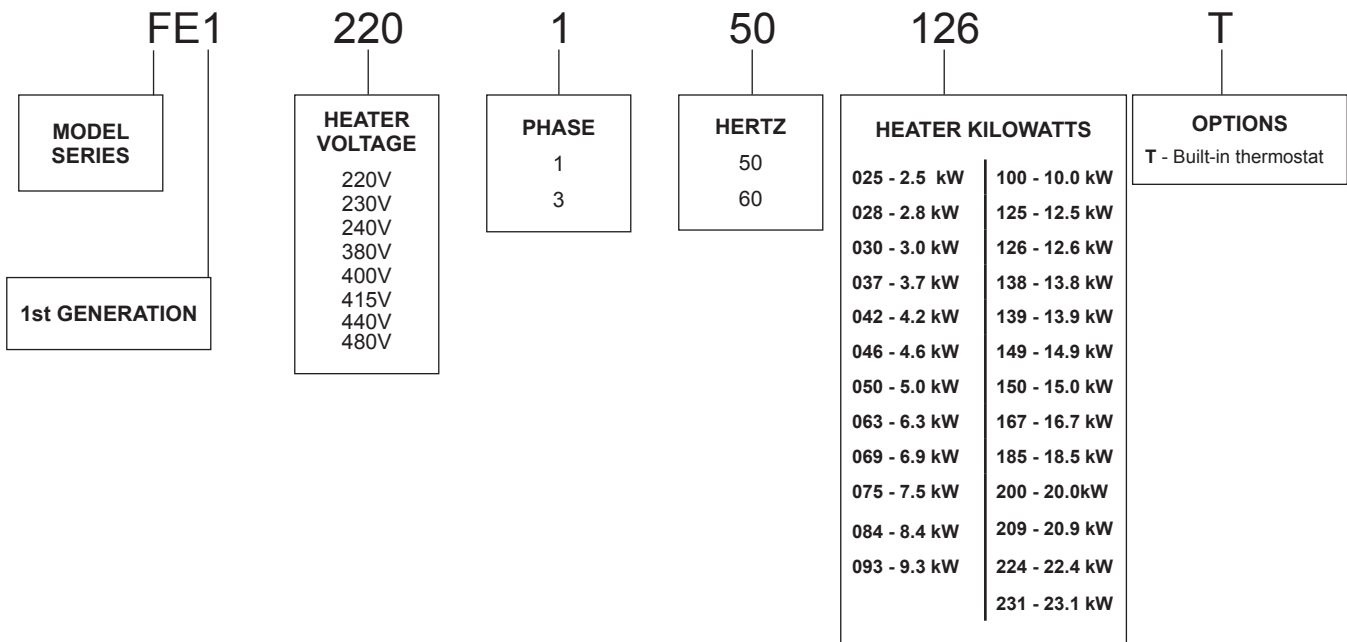


3-YEAR WARRANTY




POCC CA.HO02 B01196

Model Coding



General Specifications for all FE1 Models

Approvals	ATEX Approved (Directive 94/9/EC), GosStandart Certificate of Conformity (GOST)
Hazardous Location Classifications	CE ITS07ATEXQ5657  II 2 G, Ex d IIB T3 Zone 1
Enclosures	NEMA Type 7 & 9. For indoor use only. Do not immerse in water. Do not store or use in areas exposed to rain or snow.
Motor Type	Explosion-proof. Thermally protected. Permanently lubricated ball bearings.
Fan	Aluminum blades with steel spider and hub, 15.9 mm bore.
Fan Guard	Split design with close wire spacing. 6.3 mm diameter probe will not enter.
Mounting Holes	Two 14.3 mm diameter holes at top of heater.
Heating Elements	Three long-life, low watt-density, high grade metal-sheathed elements.
Temperature High-Limit	Automatic reset type, snap-action bimetal, open on temperature rise. Rated 100,000 cycles at 10 amps.
Control Circuit	120 Volts, 0.128 amps, 15VA. (Grounded)
Optional Built-in Thermostat	Flame-proof. 2°C to 28°C.
Control Transformer	Multiple primary, 120 volts secondary, 25 VA.
Contactors	40 or 75 amp. Rated for 500,000 mechanical operations. 120 Volts, 15 VA coil (separately fuse-protected).
Heat Transfer Fluid	Long-life formulated PROPYLENE glycol and water, freeze protected to -45°C.
Cabinet Material	14 gauge (1.90 mm) Steel. Epoxy coated with five-stage pretreatment, including iron phosphate. Optional Heresite® coating available for corrosive atmospheres.
Core	Core Steel with integral aluminum fins, vacuum charged and sealed. Optional Heresite® coating available for corrosive atmospheres.
Conduit Material	Heavy wall, 3.1 mm (0.122 in.) steel.
Overpressure Protection	Preset 690 kPa (100 psig) pressure relief valve, aluminum body, no serviceable parts.
Operational Temperature Limitations	-20°C to 40°C
Storage Limitations	-45°C to 80°C, short term to 150°C (302°F) maximum 16 hours continuous. Do not immerse in water. Do not store in areas exposed to rain or snow.

Performance Data for FE1 60 Hertz

CE ITS07ATEXQ5657 Ex II 2 G, Ex d IIB T3 Zone 1

	MODEL	VOLTAGE (V)	NOMINAL WATTAGE (kW)	BTU/hr	PHASE	TOTAL CURRENT (A)	AIR TEMPERATURE RISE	
							°F	°C
220 VOLT	FE112-220160-2.5	220	2.5	8,550	1	11.4	14.4	8.0
	FE112-220160-4.2	220	4.2	14,350	1	19.1	25.0	13.9
	FE112-220160-6.3	220	6.3	21,500	1	28.6	22.5	12.5
	FE112-220160-8.4	220	8.4	28,700	1	38.2	30.3	16.9
	FE116-220160-12.6	220	12.6	43,050	1	57.3	21.9	12.2
230 VOLT	FE112-230160-2.8	230	2.8	9,550	1	12.0	15.7	8.7
	FE112-230160-4.6	230	4.6	15,700	1	20.0	27.3	15.2
	FE112-230160-6.9	230	6.9	23,550	1	29.9	24.6	13.7
	FE112-230160-9.2	230	9.2	31,400	1	39.9	33.2	18.4
	FE116-230160-13.8	230	13.8	47,150	1	59.9	23.9	13.3
240 VOLT	FE112-240160-3.0	240	3.0	10,250	1	12.4	17.1	9.5
	FE112-240160-5.0	240	5.0	17,100	1	20.8	29.8	16.5
	FE112-240160-7.5	240	7.5	25,600	1	31.2	26.8	14.9
	FE112-240160-10.0	240	10.0	34,150	1	41.7	36.1	20.1
	FE116-240160-15.0	240	15.0	51,250	1	62.5	26.1	14.5
380 VOLT	FE112-380360-2.5	380	2.5	8,550	3	3.8	14.3	7.9
	FE112-380360-4.2	380	4.2	14,350	3	6.4	24.9	13.8
	FE112-380360-6.3	380	6.3	21,500	3	9.6	22.4	12.5
	FE112-380360-8.4	380	8.4	28,700	3	12.8	30.2	16.8
	FE116-380360-12.5	380	12.5	42,700	3	19.0	21.8	12.1
	FE116-380360-16.7	380	16.7	57,050	3	25.4	29.3	16.3
	FE120-380360-20.9	380	20.9	71,400	3	31.8	17.8	9.9
400 VOLT	FE112-400360-2.8	400	2.8	9,550	3	4.1	15.8	8.8
	FE112-400360-4.6	400	4.6	15,700	3	6.6	27.6	15.3
	FE112-400360-6.9	400	6.9	23,550	3	10.0	24.8	13.8
	FE112-400360-9.3	400	9.3	31,750	3	13.4	33.4	18.6
	FE116-400360-13.9	400	13.9	47,450	3	20.1	24.1	13.4
	FE116-400360-18.5	400	18.5	63,200	3	26.7	32.5	18.1
	FE120-400360-23.1	400	23.1	78,900	3	33.3	19.7	11.0
415 VOLT	FE112-415360-3.7	415	3.7	12,650	3	5.1	22.2	12.3
	FE112-415360-7.5	415	7.5	25,600	3	10.4	27.0	15.0
	FE116-415360-14.9	415	14.9	50,900	3	20.7	26.3	14.6
	FE120-415360-22.4	415	22.4	76,500	3	31.2	19.2	10.7
440 VOLT	FE112-440360-4.2	440	4.2	14,350	3	5.5	25.0	13.9
	FE112-440360-8.4	440	8.4	28,700	3	11.0	30.3	16.9
	FE116-440360-12.6	440	12.6	43,050	3	16.5	22.8	12.7
	FE116-440360-16.8	440	16.8	57,400	3	22.0	29.5	16.4
	FE120-440360-21.0	440	21.0	71,700	3	27.6	17.9	9.9
480 VOLT	FE112-480360-3.0	480	3.0	10,250	3	3.6	17.1	9.5
	FE112-480360-5.0	480	5.0	17,100	3	6.0	29.8	16.5
	FE112-480360-7.5	480	7.5	25,600	3	9.0	26.8	14.9
	FE112-480360-10.0	480	10.0	34,150	3	12.0	36.1	20.1
	FE116-480360-15.0	480	15.0	51,250	3	18.0	26.1	14.5
	FE116-480360-20.0	480	20.0	68,300	3	24.1	35.1	19.5

Notes:

1. To order a heater with a built-in room thermostat, add a "T" suffix to model number.
2. Heater is functioning normally if at rated voltage the amp draw is within 10% of the value in this table.

Performance Data for FE1 50 Hertz

CE ITS07ATEXQ5657 Ex II 2 G, EEx d IIB T3 Zone 1

	MODEL	VOLTAGE (V)	NOMINAL WATTAGE (kW)	BTU/hr	PHASE	TOTAL CURRENT (A)	AIR TEMPERATURE RISE	
							°F	°C
220 VOLT	FE112-220150-2.5	220	2.5	8,550	1	11.4	18.0	10.0
	FE112-220150-4.2	220	4.2	14,350	1	19.1	31.3	17.4
	FE112-220150-6.3	220	6.3	21,500	1	28.6	27.4	15.2
	FE112-220150-8.4	220	8.4	28,700	1	38.2	36.8	20.5
	FE116-220150-12.6	220	12.6	43,050	1	57.3	26.4	14.7
230 VOLT	FE112-230150-2.8	230	2.8	9,550	1	12.0	19.6	10.9
	FE112-230150-4.6	230	4.6	15,700	1	20.0	34.2	19.0
	FE112-230150-6.9	230	6.9	23,550	1	29.9	29.9	16.6
	FE112-230150-9.2	230	9.2	31,400	1	39.9	40.3	22.4
	FE116-230150-13.8	230	13.8	47,150	1	59.9	28.9	16.1
240 VOLT	FE112-240150-3.0	240	3.0	10,250	1	12.4	21.4	11.9
	FE112-240150-5.0	240	5.0	17,100	1	20.8	37.2	20.7
	FE112-240150-7.5	240	7.5	25,600	1	31.2	32.6	18.1
	FE112-240150-10.0	240	10.0	34,150	1	41.7	43.8	24.4
	FE116-240150-15.0	240	15.0	51,250	1	62.5	31.4	17.5
380 VOLT	FE112-380350-2.5	380	2.5	8,550	3	3.8	17.9	10.0
	FE112-380350-4.2	380	4.2	14,350	3	6.4	31.1	17.3
	FE112-380350-6.3	380	6.3	21,500	3	9.6	27.2	15.1
	FE112-380350-8.4	380	8.4	28,700	3	12.8	36.6	20.4
	FE116-380350-12.5	380	12.5	42,700	3	19.0	26.3	14.6
	FE116-380350-16.7	380	16.7	57,050	3	25.4	35.4	19.7
	FE120-380350-20.9	380	20.9	71,400	3	31.8	21.4	11.9
400 VOLT	FE112-400350-2.8	400	2.8	9,550	3	4.1	19.8	11.0
	FE112-400350-4.6	400	4.6	15,700	3	6.6	34.5	19.2
	FE112-400350-6.9	400	6.9	23,550	3	10.0	30.2	16.8
	FE112-400350-9.3	400	9.3	31,750	3	13.4	40.6	22.6
	FE116-400350-13.9	400	13.9	47,450	3	20.1	29.1	16.2
	FE116-400350-18.5	400	18.5	63,200	3	26.7	39.2	21.8
	FE120-400350-23.1	400	23.1	78,900	3	33.3	23.7	13.1
415 VOLT	FE112-415350-3.7	415	3.7	12,650	3	5.1	27.8	16.3
	FE112-415350-7.5	415	7.5	25,600	3	10.4	32.7	18.9
	FE116-415350-14.9	415	14.9	50,900	3	20.7	31.7	18.1
	FE120-415350-22.4	415	22.4	76,500	3	31.2	23.0	13.1
440 VOLT	FE112-440350-4.2	440	4.2	14,350	3	5.5	31.3	17.4
	FE112-440350-8.4	440	8.4	28,700	3	11.0	36.8	20.5
	FE116-440350-12.6	440	12.6	43,050	3	16.5	27.5	15.3
	FE116-440350-16.8	440	16.8	57,400	3	22.0	35.6	19.8
	FE120-440350-21.0	440	21.0	71,700	3	27.6	21.5	11.9
480 VOLT	FE112-480350-3.0	480	3.0	10,250	3	3.6	21.4	11.9
	FE112-480350-5.0	480	5.0	17,100	3	6.0	37.2	20.7
	FE112-480350-7.5	480	7.5	25,600	3	9.0	32.6	18.1
	FE112-480350-10.0	480	10.0	34,150	3	12.0	43.8	24.4
	FE116-480350-15.0	480	15.0	51,250	3	18.0	31.4	17.5
	FE116-480350-20.0	480	20.0	68,300	3	24.1	42.4	23.6

Notes:

1. To order a heater with a built-in room thermostat, add a "T" suffix to model number.
2. Heater is functioning normally if at rated voltage the amp draw is within 10% of the value in this table.

Specifications for 60 Hertz FE1

60 HERTZ		FE1							
		NOMINAL kW	2.5 to 3.0	3.7 to 5.0	6.3 to 7.5	8.4 to 10	12.5 to 13.9	14.9 to 20	20.9 to 21
Maximum Altitude	(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 Delivery @70°F	(CFM)	500		850		1,750		3,600	
	@21°F (m ³ /hr)	850		1,444		2,973		6,116	
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 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	

Weights are an approximate maximum.

Specifications for 50 Hertz FE1

50 HERTZ		FE1							
		NOMINAL kW	2.5 to 3.0	3.7 to 5.0	6.3 to 7.5	8.4 to 10	12.5 to 13.9	14.9 to 20	20.9 to 21
Maximum Altitude	(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 Delivery @70°F	(CFM)	400		700		1,450		3,000	
	@21°F (m ³ /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)	1,425				1,425		1,425	
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	

Weights are an approximate maximum.

Notes:

1. Minimum conductor size for 30°C (86°F) ambient. Derate conductor for ambient temperature. Use minimum 90°C (194°F) insulation.
2. Operation at lower voltage will result in reduced heat output and amp draw.
3. Add "T" to model number when adding a built-in thermostat.

Installation Conditions:

1. The FE1 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 FE1 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.
3. Altitude restrictions apply – see specifications above.
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.