

### COMPRESSOR DEFINITION

Designation	<b>F F10HBK</b>
Nominal Voltage/Frequency	<b>220 V 60 Hz</b>
Engineering Number	<b>513200394</b>

### A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	R-134a		
3 Nominal voltage and frequency	220 / 60	[ V / Hz ]	
4 Application type	Low-Medium-High Back Pressure		
4.1 Evaporating temperature range	-35°C to 15°C	(-31°F to 59°F)	
5 Motor type	RSIR/CSIR		
6 Starting torque	LST - Low Starting Torque		
7 Expansion device	Capillary tube		
8 Compressor cooling	Operating voltage range		
		50 Hz	60 Hz
8.1 LBP (32°C Ambient temperature)	Static	-	198 to 242 V
8.2 LBP (43°C Ambient temperature)	Static	-	198 to 242 V
8.3 HBP (32°C Ambient temperature)	Fan	-	198 to 242 V
8.4 HBP (43°C Ambient temperature)	Fan	-	198 to 242 V
9 Maximum condensing temperature			
9.1 Operating	14.2	[kgf/cm <sup>2</sup> ] (202 psig)	/ °C - °F
9.2 Peak	15.9	[kgf/cm <sup>2</sup> ] (226 psig)	/ °C - °F
10 Maximum winding temperature	130	[ °C ]	

### B - MECHANICAL DATA

1 Commercial designation	1/4+	[hp]
2 Displacement	9.04	[cm <sup>3</sup> ] (0.552 cu.in)
2.1 Bore [mm]	24.000	
2.2 Stroke [mm]	20.000	
3 Lubricant charge	280	[ml] (9.47 fl.oz.)
3.1 Lubricants approved		
3.2 Lubricants type/viscosity	ESTER / ISO22	
4 Weight (with oil charge)	11.39	[kg] (25.11 lb.)
5 Nitrogen charge	0.2 to 0.3	[kgf/cm <sup>2</sup> ] (2.84 to 4.27 psig)

### C - ELETRICAL DATA

1 Nominal Voltage/Frequency/Number of Phases	220 V 60 Hz 1 ~ (Single phase)	
2 Starting device type	Current Relay	
2.1 Starting device	213516450/213516477	
3 Start capacitor	88-108(220)	[µF(VAC minimum)]
4 Run capacitor	-	[µF(VAC minimum)]
5 Motor protection	MRP56AMZ-5590	
6 Start winding resistance	17.40	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	6.30	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (60 Hz)	23.30	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (60 Hz)	2.75	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (60 Hz)	3.20	[A] - Measured according to UL 984
11 Approval boards certification	CE - TUV - UKCA - UL	

### D - PERFORMANCE - CHECK POINT DATA

TEST CONDITIONS: @220V60Hz			ASHRAEHBP32 Fan		Evaporating temperature (Condensing temperature		7.2°C (44.96°F) 54.4°C (129.92°F)	
Cooling capacity +/- 5%			Power consumption +/- 5%	Current consumption +/- 5%	Gas flow rate +/- 5%	EFFICIENCY RATE +/- 7%		
[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
3530	890	1034	462	2.48		7.64	1.93	2.24

TEST CONDITIONS: @220V60Hz			ASHRAELBP32 Static		Evaporating temperature (Condensing temperature		-23.3°C (-9.94°F) 54.4°C (129.92°F)	
Cooling capacity +/- 5%			Power consumption +/- 5%	Current consumption +/- 5%	Gas flow rate +/- 5%	EFFICIENCY RATE +/- 7%		
[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
840	212	246	215	1.83	4.77	3.90	0.98	1.14

### E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V60Hz			ASHRAE32 Static		(Condensing temperature 45°C (+113°F))				
Evaporating temperature	Cooling capacity +/- 5%			Power consumption +/- 5%	Current consumption +/- 5%	Gas flow rate +/- 5%	EFFICIENCY RATE +/- 7%		
°C (°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35 (-31)	399	101	117	163	3.30	2.25	2.49	0.63	0.73
-30 (-22)	595	150	174	186	3.38	3.38	3.18	0.80	0.93
-25 (-13)	828	209	243	213	3.49	4.71	3.85	0.97	1.13
-20 (- 4)	1105	279	324	243	3.64	6.29	4.52	1.14	1.32
-15 (+ 5)	1436	362	421	276	3.81	8.19	5.19	1.31	1.52
-10 (+14)	1826	460	535	310	4.02	10.45	5.89	1.48	1.72
-5 (+23)	2286	576	670	347	4.25	13.14	6.60	1.66	1.93
0 (+32)	2821	711	827	385	4.51	16.31	7.35	1.85	2.15
+5 (+41)	3441	867	1008	424	4.79	20.02	8.14	2.05	2.38
+10 (+50)	4152	1046	1217	463	5.10	24.33	8.98	2.26	2.63
+15 (+59)	4964	1251	1454	502	5.43	29.30	9.88	2.49	2.89

TEST CONDITIONS: @220V60Hz			ASHRAE32 Static		(Condensing temperature 55°C (+131°F))				
Evaporating temperature	Cooling capacity +/- 5%			Power consumption +/- 5%	Current consumption +/- 5%	Gas flow rate +/- 5%	EFFICIENCY RATE +/- 7%		
°C (°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35 (-31)	364	92	107	156	3.29	2.05	2.30	0.58	0.68
-30 (-22)	537	135	157	184	3.38	3.06	2.89	0.73	0.85
-25 (-13)	749	189	219	214	3.51	4.27	3.47	0.88	1.02
-20 (- 4)	1008	254	295	248	3.67	5.74	4.06	1.02	1.19
-15 (+ 5)	1322	333	387	285	3.85	7.54	4.65	1.17	1.36
-10 (+14)	1698	428	498	323	4.07	9.71	5.27	1.33	1.54
-5 (+23)	2145	541	629	364	4.32	12.33	5.92	1.49	1.73
0 (+32)	2671	673	783	405	4.59	15.44	6.60	1.66	1.93
+5 (+41)	3282	827	962	448	4.90	19.10	7.33	1.85	2.15
+10 (+50)	3989	1005	1169	491	5.23	23.38	8.12	2.05	2.38
+15 (+59)	4797	1209	1406	535	5.58	28.32	8.97	2.26	2.63

### E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V60Hz		ASHRAE32 Static			(Condensing temperature 65°C (+149°F) )					
Evaporating temperature		Cooling capacity +/- 5%			Power consumption +/- 5%	Current consumption +/- 5%	Gas flow rate +/- 5%	EFFICIENCY RATE +/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35	(-31)	276	70	81	144	3.26	1.56	1.91	0.48	0.56
-30	(-22)	425	107	125	176	3.39	2.42	2.42	0.61	0.71
-25	(-13)	616	155	181	211	3.55	3.51	2.93	0.74	0.86
-20	(- 4)	856	216	251	250	3.74	4.87	3.45	0.87	1.01
-15	(+ 5)	1153	290	338	291	3.96	6.57	3.99	1.00	1.17
-10	(+14)	1514	382	444	334	4.22	8.66	4.55	1.15	1.33
-5	(+23)	1949	491	571	379	4.51	11.20	5.14	1.30	1.51
0	(+32)	2464	621	722	425	4.82	14.24	5.78	1.46	1.69
+5	(+41)	3067	773	899	472	5.17	17.85	6.48	1.63	1.90
+10	(+50)	3768	949	1104	520	5.54	22.08	7.23	1.82	2.12
+15	(+59)	4572	1152	1340	568	5.94	26.99	8.05	2.03	2.36

### F - EXTERNAL CHARACTERISTICS

1 Base plate	Universal EG/F/AMEM version 2		
2 Tray holder	No		
3 Connectors			
3.1 SUCTION	8.2 +0.12/-0.08	[mm]	(0.323" +0.005"/-0.003")
3.1.1 Material	Copper		
3.1.2 Shape	Straight		
3.2 DISCHARGE	6.5 +0.12/-0.08	[mm]	(0.256" +0.005"/-0.003")
3.2.1 Material	Copper		
3.2.2 Shape	Straight		
3.3 PROCESS	6.5 +0.12/-0.08	[mm]	(0.256" +0.005"/-0.003")
3.3.1 Material	Copper		
3.3.2 Shape	Straight		
3.4 Oil cooler (Copper)	No	[mm]	
3.5 Connector sealing	Rubber Plugs		