

COMPRESSOR DEFINITION

Designation	F F110HAK
Nominal Voltage/Frequency	115-127 V 60 Hz
Engineering Number	513200331

A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	R-134a		
3 Nominal voltage and frequency	115-127 / 60	[V / Hz]	
4 Application type	Low-Medium Back Pressure		
4.1 Evaporating temperature range	-35°C to -5°C	(-31°F to 23°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/Fan	-	103 to 135 V
8.2 LBP (43°C Ambient temperature)	Static/Fan	-	103 to 135 V
8.3 HBP (32°C Ambient temperature)	-	-	-
8.4 HBP (43°C Ambient temperature)	-	-	-
9 Maximum condensing temperature			
9.1 Operating	14.2	[kgf/cm ²] (202 psig)	/ °C - °F
9.2 Peak	15.9	[kgf/cm ²] (226 psig)	/ °C - °F
10 Maximum winding temperature	130	[°C]	

B - MECHANICAL DATA

1 Commercial designation	1/3	[hp]
2 Displacement	9.04	[cm ³] (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)	11.42	[kg] (25.18 lb.)
5 Nitrogen charge	0.2 to 0.3	[kgf/cm ²] (2.84 to 4.27 psig)

C - ELETRICAL DATA

1 Nominal Voltage/Frequency/Number of Phases	115-127 V 60 Hz 1 ~ (Single phase)	
2 Starting device type	Current Relay	
2.1 Starting device	213516248/213516264	
3 Start capacitor	233-280(120)	[µF(VAC minimum)]
4 Run capacitor	-	[µF(VAC minimum)]
5 Motor protection	4TM795KFBZZ-53	
6 Start winding resistance	7.20	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	1.90	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (60 Hz)	32.50	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (60 Hz)	4.10	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (60 Hz)	-	[A] - Measured according to UL 984
11 Approval boards certification	CE - TUV - UKCA - UL	

D - PERFORMANCE - CHECK POINT DATA

TEST CONDITIONS: @115V60Hz			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]
1030	260	302	212	2.93	5.85	4.85	1.22	1.42

E - PERFORMANCE - CURVES

TEST CONDITIONS: @115V60Hz			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)	519	131	152	140	2.54	2.94	3.69	0.93	1.08
-30 (-22)	768	194	225	167	2.67	4.35	4.60	1.16	1.35
-25 (-13)	1045	263	306	196	2.83	5.93	5.36	1.35	1.57
-20 (- 4)	1362	343	399	226	3.00	7.75	6.04	1.52	1.77
-15 (+ 5)	1732	436	507	258	3.19	9.89	6.72	1.69	1.97
-10 (+14)	2168	546	635	289	3.40	12.42	7.46	1.88	2.19
-5 (+23)	2683	676	786	321	3.63	15.44	8.35	2.10	2.45

TEST CONDITIONS: @115V60Hz			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)	384	97	113	132	2.53	2.17	2.91	0.73	0.85
-30 (-22)	637	160	187	162	2.66	3.61	3.89	0.98	1.14
-25 (-13)	916	231	268	196	2.83	5.20	4.67	1.18	1.37
-20 (- 4)	1235	311	362	232	3.04	7.03	5.33	1.34	1.56
-15 (+ 5)	1606	405	470	270	3.28	9.17	5.94	1.50	1.74
-10 (+14)	2041	514	598	309	3.55	11.70	6.58	1.66	1.93
-5 (+23)	2555	644	749	349	3.85	14.70	7.32	1.85	2.15

TEST CONDITIONS: @115V60Hz			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)	288	73	84	114	2.45	1.63	2.53	0.64	0.74
-30 (-22)	536	135	157	149	2.59	3.04	3.53	0.89	1.03
-25 (-13)	809	204	237	188	2.78	4.59	4.29	1.08	1.26
-20 (- 4)	1121	282	328	230	3.02	6.38	4.89	1.23	1.43
-15 (+ 5)	1483	374	435	275	3.31	8.47	5.41	1.36	1.58
-10 (+14)	1910	481	560	323	3.64	10.94	5.91	1.49	1.73
-5 (+23)	2414	608	707	373	4.03	13.88	6.47	1.63	1.89

F - EXTERNAL CHARACTERISTICS

1 Base plate	Universal EG/F/AMEM version 2		
2 Tray holder	No		
3 Connectors			
3.1 SUCTION	6.5 +0.12/-0.08	[mm]	(0.256" +0.005"/-0.003")
3.1.1 Material	Copper plated steel		
3.1.2 Shape	Slanted		
3.2 DISCHARGE	5 +0.18/-0.06	[mm]	(0.197" +0.007"/-0.002")
3.2.1 Material	Copper plated steel		
3.2.2 Shape	Slanted		
3.3 PROCESS	6.5 +0.12/-0.08	[mm]	(0.256" +0.005"/-0.003")
3.3.1 Material	Copper plated steel		
3.3.2 Shape	Slanted		
3.4 Oil cooler (Copper)	No	[mm]	
3.5 Connector sealing	Rubber Plugs		