

### COMPRESSOR DEFINITION

Designation	<b>F FU160HAX</b>
Nominal Voltage/Frequency	<b>220 V 60 Hz</b>
Engineering Number	<b>513203007</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 Back Pressure (Light Commercial)		
4.1 Evaporating temperature range	-35°C to 0°C	(-31°F to 32°F)	
5 Motor type	CSIR		
6 Starting torque	LST/HST - Low/High starting torque		
7 Expansion device	Capillary tube or Expansion valve		
8 Compressor cooling	Operating voltage range		
		50 Hz	60 Hz
8.1 LBP (32°C Ambient temperature)	-	-	-
8.2 LBP (43°C Ambient temperature)	-	-	-
8.3 HBP (32°C Ambient temperature)	-	-	-
8.4 HBP (43°C Ambient temperature)	-	-	-
9 Maximum condensing pressures/temperature			
9.1 Operating (gauge)	14.2	[kgf/cm <sup>2</sup> ] (202 psig)	/ °C - °F
9.2 Peak (gauge)	15.9	[kgf/cm <sup>2</sup> ] (226 psig)	/ °C - °F
10 Maximum winding temperature	130	[ °C ]	

### B - MECHANICAL DATA

1 Commercial designation	1/2	[hp]
2 Displacement	12.92	[cm <sup>3</sup> ] (0.788 cu.in)
2.1 Bore [mm]	28.000	
2.2 Stroke [mm]	21.000	
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)	10.82	[kg] (23.85 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	213516584	
3 Start capacitor	88-108(330)	[μF(VAC minimum)]
4 Run capacitor	-	[μF(VAC minimum)]
5 Motor protection	MSP30AMK-5590	
6 Start winding resistance	11.80	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	4.90	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (60 Hz)	19.00	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (60 Hz)	3.90	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (60 Hz)	-	[A] - Measured according to UL 984
11 Approval boards certification	IMTRO - TUV - UL	

### D - PERFORMANCE - CHECK POINT DATA

TEST CONDITIONS: @220V60Hz			ASHRAELBP32 Fan		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]	
1533	386	449	310	2.25	8.71	4.94	1.24	1.45	

### E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V60Hz			ASHRAE32 Fan		(Condensing temperature 35°C (+95°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)	932	235	273	215	2.02	5.27	4.32	1.09	1.27	
-30 (-22)	1179	297	345	245	2.08	6.68	4.87	1.23	1.43	
-25 (-13)	1510	381	443	278	2.16	8.58	5.50	1.39	1.61	
-20 (- 4)	1939	489	568	315	2.27	11.03	6.18	1.56	1.81	
-15 (+ 5)	2479	625	726	358	2.41	14.15	6.91	1.74	2.03	
-10 (+14)	3142	792	921	407	2.58	18.01	7.68	1.94	2.25	
-5 (+23)	3943	994	1155	463	2.79	22.69	8.48	2.14	2.48	
0 (+32)	4895	1233	1434	528	3.04	28.30	9.29	2.34	2.72	

TEST CONDITIONS: @220V60Hz			ASHRAE32 Fan		(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)	892	225	261	221	2.05	5.05	4.00	1.01	1.17	
-30 (-22)	1189	300	348	256	2.12	6.74	4.62	1.16	1.35	
-25 (-13)	1554	392	455	294	2.22	8.83	5.29	1.33	1.55	
-20 (- 4)	2000	504	586	333	2.33	11.38	6.00	1.51	1.76	
-15 (+ 5)	2539	640	744	377	2.48	14.49	6.74	1.70	1.98	
-10 (+14)	3186	803	933	425	2.65	18.25	7.49	1.89	2.20	
-5 (+23)	3953	996	1158	479	2.86	22.74	8.26	2.08	2.42	
0 (+32)	4853	1223	1422	540	3.10	28.06	9.01	2.27	2.64	

TEST CONDITIONS: @220V60Hz			ASHRAE32 Fan		(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)	734	185	215	208	1.98	4.15	3.58	0.90	1.05	
-30 (-22)	1078	272	316	256	2.11	6.12	4.18	1.05	1.22	
-25 (-13)	1474	371	432	305	2.24	8.37	4.80	1.21	1.41	
-20 (- 4)	1933	487	566	354	2.40	11.00	5.45	1.37	1.60	
-15 (+ 5)	2469	622	723	405	2.58	14.09	6.10	1.54	1.79	
-10 (+14)	3095	780	907	460	2.78	17.73	6.76	1.70	1.98	
-5 (+23)	3825	964	1121	518	3.01	22.01	7.39	1.86	2.17	
0 (+32)	4673	1177	1369	582	3.27	27.01	8.01	2.02	2.35	

### 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		