

### COMPRESSOR DEFINITION

Designation	<b>F FU160HAX</b>
Nominal Voltage/Frequency	<b>220-240 V 50 Hz</b>
Engineering Number	<b>513203002</b>

### A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	R-134a		
3 Nominal voltage and frequency	220-240 / 50	[ V / Hz ]	
4 Application type	Low-Medium Back Pressure (Commercial Compressors)		
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)	Fan	198 to 255 V	-
8.2 LBP (43°C Ambient temperature)	Fan	198 to 255 V	-
8.3 HBP (32°C Ambient temperature)	-	-	-
8.4 HBP (43°C Ambient temperature)	-	-	-
9 Maximum condensing pressures/temperature			
9.1 Operating (gauge)	16.2	[kgf/cm <sup>2</sup> ] (230 psig)	/ °C - °F
9.2 Peak (gauge)	20.6	[kgf/cm <sup>2</sup> ] (293 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	220-240 V 50 Hz 1 ~ (Single phase)	
2 Starting device type	Current Relay	
2.1 Starting device	213516005	
3 Start capacitor	88-108(250)	[μF(VAC minimum)]
4 Run capacitor	-	[μF(VAC minimum)]
5 Motor protection	MSP39AMK-5590	
6 Start winding resistance	20.37	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	5.50	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (50 Hz)	17.70	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (50 Hz)	-	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (50 Hz)	-	[A] - Measured according to UL 984
11 Approval boards certification	CCC - IRAM - VDE	

### D - PERFORMANCE - CHECK POINT DATA

TEST CONDITIONS: @220V50Hz			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]
1299	327	381	267	2.12	7.38	4.87	1.23	1.43

### E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V50Hz			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)	773	195	227	184	1.98	4.38	4.16	1.05	1.22
-30 (-22)	985	248	289	208	2.02	5.58	4.76	1.20	1.39
-25 (-13)	1242	313	364	233	2.06	7.05	5.39	1.36	1.58
-20 (- 4)	1564	394	458	260	2.12	8.90	6.07	1.53	1.78
-15 (+ 5)	1971	497	578	290	2.20	11.25	6.82	1.72	2.00
-10 (+14)	2482	626	727	323	2.29	14.22	7.67	1.93	2.25
-5 (+23)	3117	786	913	360	2.41	17.94	8.62	2.17	2.53
0 (+32)	3895	982	1141	402	2.55	22.52	9.70	2.44	2.84

TEST CONDITIONS: @220V50Hz			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)	707	178	207	189	2.00	4.00	3.76	0.95	1.10
-30 (-22)	972	245	285	217	2.04	5.51	4.46	1.12	1.31
-25 (-13)	1276	321	374	246	2.09	7.24	5.17	1.30	1.51
-20 (- 4)	1637	412	480	276	2.16	9.32	5.91	1.49	1.73
-15 (+ 5)	2075	523	608	309	2.25	11.85	6.69	1.69	1.96
-10 (+14)	2611	658	765	345	2.35	14.96	7.54	1.90	2.21
-5 (+23)	3263	822	956	384	2.48	18.78	8.47	2.13	2.48
0 (+32)	4051	1021	1187	428	2.64	23.42	9.50	2.39	2.78

TEST CONDITIONS: @220V50Hz			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)	637	161	187	189	1.99	3.61	3.38	0.85	0.99
-30 (-22)	908	229	266	223	2.05	5.15	4.05	1.02	1.19
-25 (-13)	1210	305	354	257	2.12	6.87	4.70	1.18	1.38
-20 (- 4)	1562	394	458	293	2.20	8.89	5.35	1.35	1.57
-15 (+ 5)	1984	500	581	330	2.31	11.32	6.02	1.52	1.76
-10 (+14)	2496	629	731	371	2.43	14.30	6.73	1.70	1.97
-5 (+23)	3117	786	913	415	2.59	17.94	7.49	1.89	2.20
0 (+32)	3867	975	1133	464	2.77	22.36	8.34	2.10	2.44

### 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		