

### COMPRESSOR DEFINITION

Designation	<b>F FU160UAX</b>
Nominal Voltage/Frequency	<b>220 V 60 Hz</b>
Engineering Number	<b>513200975</b>

### A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	R-290		
3 Nominal voltage and frequency	220 / 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	CSIR		
6 Starting torque	HST - 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	-	187 to 240 V
8.2 LBP (43°C Ambient temperature)	Fan	-	187 to 242 V
8.3 HBP (32°C Ambient temperature)	-	-	-
8.4 HBP (43°C Ambient temperature)	-	-	-
9 Maximum condensing temperature			
9.1 Operating	18.4	[kgf/cm <sup>2</sup> ] (262 psig)	/ °C - °F
9.2 Peak	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	7.95	[cm <sup>3</sup> ] (0.485 cu.in)
2.1 Bore [mm]	22.500	
2.2 Stroke [mm]	20.000	
3 Lubricant charge	280	[ml] (9.47 fl.oz.)
3.1 Lubricants approved		
3.2 Lubricants type/viscosity	ALQUILB / ISO32	
4 Weight (with oil charge)	10	[kg] (22.05 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	4TM762MDBYY-53	
6 Start winding resistance	12.27	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	4.27	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (60 Hz)	25.60	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (60 Hz)	2.61	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (60 Hz)	2.95	[A] - Measured according to UL 984
11 Approval boards certification	IRAM - 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]
1670	421	489	318	2.64	4.97	5.25	1.32	1.54

### 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)	1072	270	314	233	2.44	2.56	4.60	1.16	1.35
-30	(-22)	1356	342	397	252	2.45	3.94	5.37	1.35	1.57
-25	(-13)	1692	426	496	273	2.47	5.90	6.19	1.56	1.81
-20	(- 4)	2087	526	611	295	2.52	7.45	7.09	1.79	2.08
-15	(+ 5)	2549	642	747	316	2.57	7.60	8.09	2.04	2.37
-10	(+14)	3088	778	905	335	2.62	5.37	9.23	2.33	2.70
-5	(+23)	3710	935	1087	352	2.67	- 0.25	10.53	2.65	3.09

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)	1020	257	299	248	2.45	3.20	4.10	1.03	1.20
-30	(-22)	1295	326	379	271	2.47	3.65	4.76	1.20	1.40
-25	(-13)	1619	408	474	297	2.52	5.04	5.45	1.37	1.60
-20	(- 4)	1999	504	586	322	2.58	6.38	6.21	1.56	1.82
-15	(+ 5)	2443	616	716	347	2.66	6.68	7.05	1.78	2.06
-10	(+14)	2960	746	867	370	2.73	4.96	8.00	2.02	2.34
-5	(+23)	3558	897	1043	391	2.80	0.21	9.11	2.29	2.67

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)	960	242	281	257	2.45	3.46	3.75	0.94	1.10
-30	(-22)	1234	311	362	286	2.49	3.12	4.32	1.09	1.27
-25	(-13)	1554	391	455	316	2.56	4.07	4.91	1.24	1.44
-20	(- 4)	1926	485	564	347	2.64	5.34	5.55	1.40	1.63
-15	(+ 5)	2360	595	692	377	2.74	5.93	6.25	1.58	1.83
-10	(+14)	2863	722	839	406	2.83	4.85	7.06	1.78	2.07
-5	(+23)	3444	868	1009	431	2.92	1.11	8.00	2.02	2.34

### E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V60Hz		ASHRAE32 Fan			(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)	899	227	263	262	2.48	- 0.20	3.44	0.87	1.01
-30	(-22)	1180	297	346	298	2.55	- 1.20	3.96	1.00	1.16
-25	(-13)	1502	379	440	335	2.64	- 0.53	4.48	1.13	1.31
-20	(- 4)	1875	472	549	372	2.74	0.80	5.03	1.27	1.47
-15	(+ 5)	2305	581	675	409	2.85	1.81	5.63	1.42	1.65
-10	(+14)	2802	706	821	443	2.96	1.52	6.31	1.59	1.85
-5	(+23)	3373	850	988	475	3.06	- 1.08	7.11	1.79	2.08

### F - EXTERNAL CHARACTERISTICS

1 Base plate	Universal EG/F/AMEM version 2		
2 Tray holder	Yes		
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		