

### COMPRESSOR DEFINITION

Designation	<b>F F18,5HAK</b>
Nominal Voltage/Frequency	<b>220-240 V 50-60 Hz</b>
Engineering Number	<b>513200560</b>

### A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	R-134a		
3 Nominal voltage and frequency	220-240 / 50-60	[ 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	187 to 255 V	187 to 242 V
8.2 LBP (43°C Ambient temperature)	Static/Fan	187 to 255 V	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	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	7.15	[cm <sup>3</sup> ] (0.436 cu.in)
2.1 Bore [mm]	22.500	
2.2 Stroke [mm]	18.000	
3 Lubricant charge	280	[ml] (9.47 fl.oz.)
3.1 Lubricants approved		
3.2 Lubricants type/viscosity	ESTER / ISO10	
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	220-240 V 50-60 Hz 1 ~ (Single phase)	
2 Starting device type	Current Relay	
2.1 Starting device	213516078/213516086	
3 Start capacitor	64-77(200)	[µF(VAC minimum)]
4 Run capacitor	-	[µF(VAC minimum)]
5 Motor protection	4TM757KDBYY-53	
6 Start winding resistance	29.70	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	8.35	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (50/60 Hz)	17.00/16.00	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (50/60 Hz)	1.80/1.75	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (50/60 Hz)	-	[A] - Measured according to UL 984
11 Approval boards certification	CCC - CE - IRAM - TUV - UKCA - UL - VDE	

### D - PERFORMANCE - CHECK POINT DATA

TEST CONDITIONS: @220V50Hz			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]	
700	176	205	152	1.35	3.98	4.60	1.16	1.35	

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]	
700	176	205	152	1.35	3.98	4.60	1.16	1.35	

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]	
830	209	243	171	1.21	4.72	4.85	1.22	1.42	

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]	
830	209	243	171	1.21	4.72	4.85	1.22	1.42	

### E - PERFORMANCE - CURVES

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]
-35	(-31)	381	96	112	111	1.21	2.16	3.40	0.86	1.00
-30	(-22)	518	131	152	127	1.25	2.93	4.09	1.03	1.20
-25	(-13)	690	174	202	143	1.28	3.92	4.87	1.23	1.43
-20	(- 4)	904	228	265	158	1.31	5.14	5.74	1.45	1.68
-15	(+ 5)	1163	293	341	174	1.35	6.64	6.68	1.68	1.96
-10	(+14)	1474	372	432	191	1.40	8.45	7.68	1.94	2.25
-5	(+23)	1842	464	540	211	1.46	10.60	8.72	2.20	2.56

### E - PERFORMANCE - CURVES

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)	314	79	92	109	1.21	1.78	2.93	0.74	0.86	
-30 (-22)	462	116	135	128	1.25	2.62	3.60	0.91	1.06	
-25 (-13)	637	160	187	148	1.29	3.62	4.32	1.09	1.27	
-20 (- 4)	846	213	248	167	1.33	4.81	5.07	1.28	1.49	
-15 (+ 5)	1093	275	320	187	1.39	6.24	5.84	1.47	1.71	
-10 (+14)	1385	349	406	209	1.45	7.93	6.62	1.67	1.94	
-5 (+23)	1726	435	506	233	1.54	9.93	7.39	1.86	2.16	

TEST CONDITIONS: @220V50Hz		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)	250	63	73	103	1.21	1.41	2.43	0.61	0.71	
-30 (-22)	405	102	119	126	1.25	2.30	3.15	0.79	0.92	
-25 (-13)	581	146	170	149	1.30	3.30	3.86	0.97	1.13	
-20 (- 4)	783	197	229	172	1.35	4.45	4.55	1.15	1.33	
-15 (+ 5)	1016	256	298	196	1.41	5.80	5.21	1.31	1.53	
-10 (+14)	1285	324	377	222	1.50	7.36	5.83	1.47	1.71	
-5 (+23)	1597	402	468	250	1.61	9.18	6.38	1.61	1.87	

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)	430	108	126	117	1.04	2.43	3.64	0.92	1.07	
-30 (-22)	607	153	178	140	1.10	3.44	4.35	1.10	1.27	
-25 (-13)	822	207	241	162	1.17	4.67	5.09	1.28	1.49	
-20 (- 4)	1080	272	317	185	1.25	6.15	5.87	1.48	1.72	
-15 (+ 5)	1391	350	408	208	1.34	7.94	6.70	1.69	1.96	
-10 (+14)	1761	444	516	232	1.43	10.09	7.60	1.91	2.23	
-5 (+23)	2198	554	644	256	1.53	12.64	8.56	2.16	2.51	

### E - PERFORMANCE - CURVES

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)	360	91	105	115	1.05	2.03	3.16	0.80	0.93
-30	(-22)	536	135	157	139	1.11	3.04	3.85	0.97	1.13
-25	(-13)	748	189	219	164	1.19	4.25	4.54	1.14	1.33
-20	(- 4)	1004	253	294	191	1.28	5.71	5.23	1.32	1.53
-15	(+ 5)	1311	330	384	220	1.39	7.48	5.93	1.49	1.74
-10	(+14)	1676	422	491	251	1.51	9.61	6.66	1.68	1.95
-5	(+23)	2108	531	618	285	1.65	12.13	7.41	1.87	2.17

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)	301	76	88	112	1.03	1.70	2.68	0.68	0.79
-30	(-22)	465	117	136	136	1.09	2.63	3.39	0.85	0.99
-25	(-13)	664	167	195	163	1.18	3.77	4.05	1.02	1.19
-20	(- 4)	906	228	266	194	1.29	5.16	4.68	1.18	1.37
-15	(+ 5)	1198	302	351	227	1.42	6.84	5.28	1.33	1.55
-10	(+14)	1548	390	454	264	1.57	8.87	5.87	1.48	1.72
-5	(+23)	1964	495	576	305	1.73	11.30	6.45	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		
3.1.2 Shape	Straight		
3.2 DISCHARGE	4.94 +0.08/-0.08	[mm]	(0.194" +0.003"/-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		