

### COMPRESSOR DEFINITION

Designation	F FI7,5HAK
Nominal Voltage/Frequency	220-240 V 50-60 Hz
Engineering Number	513200309

### 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	6.76	[cm <sup>3</sup> ] (0.413 cu.in)
2.1 Bore [mm]	22.500	
2.2 Stroke [mm]	17.000	
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)	10.76	[kg] (23.72 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	213516159/213516353	
3 Start capacitor	64-77(180)	[µF(VAC minimum)]
4 Run capacitor	-	[µF(VAC minimum)]
5 Motor protection	4TM743KDBYY-53	
6 Start winding resistance	41.10	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	9.50	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (50/60 Hz)	14.50/14.00	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (50/60 Hz)	1.80/1.60	[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 - IRAM - TUV - 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]
650	164	190	149	1.30	3.69	4.35	1.10	1.27

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]
765	193	224	166	1.18	4.35	4.62	1.16	1.35

### E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V50Hz			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)	306	77	90	105	1.21	1.73	2.90	0.73	0.85
-30	(-22)	478	120	140	125	1.26	2.71	3.79	0.95	1.11
-25	(-13)	661	167	194	143	1.30	3.75	4.64	1.17	1.36
-20	(- 4)	867	218	254	159	1.34	4.93	5.48	1.38	1.61
-15	(+ 5)	1106	279	324	174	1.38	6.32	6.35	1.60	1.86
-10	(+14)	1391	351	408	191	1.42	7.97	7.28	1.83	2.13
-5	(+23)	1732	436	507	208	1.47	9.96	8.30	2.09	2.43

TEST CONDITIONS: @220V50Hz			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)	264	67	77	105	1.22	1.49	2.51	0.63	0.74
-30	(-22)	424	107	124	126	1.27	2.40	3.35	0.84	0.98
-25	(-13)	596	150	175	145	1.31	3.38	4.12	1.04	1.21
-20	(- 4)	792	200	232	163	1.35	4.51	4.86	1.23	1.42
-15	(+ 5)	1023	258	300	183	1.40	5.84	5.60	1.41	1.64
-10	(+14)	1300	328	381	203	1.45	7.45	6.38	1.61	1.87
-5	(+23)	1635	412	479	226	1.52	9.40	7.22	1.82	2.12

### E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V50Hz		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]
-35	(-31)	204	51	60	99	1.22	1.16	2.08	0.52	0.61
-30	(-22)	357	90	105	121	1.26	2.02	2.91	0.73	0.85
-25	(-13)	523	132	153	143	1.30	2.97	3.65	0.92	1.07
-20	(- 4)	715	180	209	165	1.35	4.07	4.34	1.09	1.27
-15	(+ 5)	942	237	276	188	1.41	5.38	5.00	1.26	1.46
-10	(+14)	1218	307	357	214	1.48	6.98	5.67	1.43	1.66
-5	(+23)	1551	391	455	244	1.58	8.92	6.37	1.61	1.87

TEST CONDITIONS: @220V60Hz		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]
-35	(-31)	377	95	111	115	1.03	2.13	3.26	0.82	0.96
-30	(-22)	553	139	162	136	1.09	3.13	4.04	1.02	1.19
-25	(-13)	768	193	225	159	1.16	4.36	4.83	1.22	1.42
-20	(- 4)	1025	258	300	182	1.24	5.83	5.64	1.42	1.65
-15	(+ 5)	1328	335	389	205	1.32	7.58	6.50	1.64	1.90
-10	(+14)	1681	423	492	227	1.40	9.63	7.41	1.87	2.17
-5	(+23)	2086	526	611	248	1.49	12.00	8.40	2.12	2.46

TEST CONDITIONS: @220V60Hz		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]
-35	(-31)	322	81	94	113	1.04	1.82	2.88	0.73	0.84
-30	(-22)	483	122	142	134	1.10	2.74	3.61	0.91	1.06
-25	(-13)	686	173	201	159	1.17	3.89	4.30	1.08	1.26
-20	(- 4)	932	235	273	186	1.25	5.30	5.00	1.26	1.46
-15	(+ 5)	1226	309	359	214	1.35	7.00	5.70	1.44	1.67
-10	(+14)	1572	396	461	244	1.46	9.01	6.43	1.62	1.88
-5	(+23)	1972	497	578	274	1.58	11.34	7.21	1.82	2.11

### E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V60Hz		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)	269	68	79	111	1.04	1.52	2.41	0.61	0.70
-30	(-22)	410	103	120	132	1.09	2.32	3.12	0.79	0.92
-25	(-13)	594	150	174	157	1.17	3.37	3.79	0.95	1.11
-20	(- 4)	824	208	241	187	1.26	4.69	4.41	1.11	1.29
-15	(+ 5)	1103	278	323	220	1.37	6.29	5.02	1.26	1.47
-10	(+14)	1435	362	420	255	1.50	8.22	5.62	1.42	1.65
-5	(+23)	1824	460	534	293	1.65	10.49	6.23	1.57	1.83

### 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		