

### COMPRESSOR DEFINITION

Designation	F FI7,5HAK
Nominal Voltage/Frequency	220-240 V 50-60 Hz
Engineering Number	513201007

### 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 / ISO10	
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		

### 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	148	1.30	3.69	4.39	1.11	1.29

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	163	1.18	4.35	4.70	1.18	1.38

### 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)	361	91	106	108	1.26	2.04	3.32	0.84	0.97
-30	(-22)	486	123	142	125	1.29	2.75	3.92	0.99	1.15
-25	(-13)	650	164	190	142	1.33	3.69	4.60	1.16	1.35
-20	(- 4)	852	215	250	158	1.37	4.85	5.38	1.35	1.58
-15	(+ 5)	1093	275	320	175	1.40	6.24	6.24	1.57	1.83
-10	(+14)	1373	346	402	190	1.44	7.86	7.20	1.81	2.11
-5	(+23)	1692	426	496	205	1.49	9.73	8.25	2.08	2.42

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)	297	75	87	104	1.25	1.68	2.86	0.72	0.84
-30	(-22)	438	110	128	125	1.29	2.48	3.50	0.88	1.03
-25	(-13)	608	153	178	146	1.33	3.45	4.17	1.05	1.22
-20	(- 4)	810	204	237	166	1.37	4.61	4.87	1.23	1.43
-15	(+ 5)	1041	262	305	185	1.42	5.94	5.61	1.41	1.64
-10	(+14)	1304	329	382	204	1.48	7.47	6.38	1.61	1.87
-5	(+23)	1598	403	468	222	1.53	9.19	7.18	1.81	2.11

### 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)	252	63	74	103	1.26	1.42	2.43	0.61	0.71
-30	(-22)	406	102	119	128	1.30	2.30	3.14	0.79	0.92
-25	(-13)	582	147	170	151	1.34	3.30	3.82	0.96	1.12
-20	(- 4)	780	197	229	175	1.39	4.44	4.48	1.13	1.31
-15	(+ 5)	1001	252	293	197	1.44	5.71	5.11	1.29	1.50
-10	(+14)	1244	314	365	219	1.51	7.13	5.72	1.44	1.68
-5	(+23)	1511	381	443	239	1.58	8.69	6.30	1.59	1.85

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)	414	104	121	112	1.06	2.34	3.71	0.93	1.09
-30	(-22)	571	144	167	134	1.11	3.24	4.26	1.07	1.25
-25	(-13)	777	196	228	157	1.18	4.41	4.93	1.24	1.44
-20	(- 4)	1031	260	302	181	1.25	5.87	5.70	1.44	1.67
-15	(+ 5)	1335	336	391	204	1.34	7.62	6.54	1.65	1.92
-10	(+14)	1689	426	495	227	1.42	9.68	7.44	1.87	2.18
-5	(+23)	2094	528	614	251	1.52	12.05	8.35	2.10	2.45

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)	356	90	104	111	1.04	2.02	3.22	0.81	0.94
-30	(-22)	498	125	146	133	1.12	2.82	3.76	0.95	1.10
-25	(-13)	689	174	202	157	1.21	3.91	4.38	1.10	1.28
-20	(- 4)	932	235	273	184	1.30	5.31	5.06	1.28	1.48
-15	(+ 5)	1227	309	360	213	1.39	7.01	5.77	1.45	1.69
-10	(+14)	1575	397	462	243	1.49	9.02	6.49	1.63	1.90
-5	(+23)	1977	498	579	275	1.59	11.37	7.18	1.81	2.10

### 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)	260	65	76	102	1.07	1.47	2.55	0.64	0.75
-30	(-22)	390	98	114	124	1.16	2.21	3.17	0.80	0.93
-25	(-13)	574	145	168	150	1.26	3.26	3.82	0.96	1.12
-20	(- 4)	811	204	238	180	1.36	4.62	4.49	1.13	1.32
-15	(+ 5)	1103	278	323	214	1.46	6.30	5.14	1.30	1.51
-10	(+14)	1450	365	425	252	1.56	8.31	5.76	1.45	1.69
-5	(+23)	1853	467	543	294	1.65	10.66	6.31	1.59	1.85

### 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		