

### COMPRESSOR DEFINITION

Designation	<b>F GS70HA</b>
Nominal Voltage/Frequency	<b>220-240 V 50-60 Hz</b>
Engineering Number	<b>513200338</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 Back Pressure		
4.1 Evaporating temperature range	-35°C to -10°C	(-31°F to 14°F)	
5 Motor type	RSCR		
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	198 to 255 V	198 to 242 V
8.2 LBP (43°C Ambient temperature)	Static	198 to 255 V	198 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	1/5+	[hp]
2 Displacement	6.36	[cm <sup>3</sup> ] (0.388 cu.in)
2.1 Bore [mm]	22.500	
2.2 Stroke [mm]	16.000	
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)	11.48	[kg] (25.31 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	PTC	
2.1 Starting device	7M220MD3/8EA17C3/8EA5B3/QPS2-A22MD3	
3 Start capacitor	-	[µF(VAC minimum)]
4 Run capacitor	5(330)	[µF(VAC minimum)]
5 Motor protection	4TM189NFBYY-53	
6 Start winding resistance	14.90	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	12.60	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (50/60 Hz)	6.00/5.00	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (50/60 Hz)	0.90/0.80	[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	IRAM - UL	

### 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]
600	151	176	117	0.58	3.41	5.13	1.29	1.50

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]
710	179	208	137	0.63	4.03	5.20	1.31	1.52

### 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)	314	79	92	77	0.37	1.78	4.09	1.03	1.20
-30 (-22)	440	111	129	91	0.44	2.49	4.84	1.22	1.42
-25 (-13)	598	151	175	107	0.51	3.39	5.62	1.42	1.65
-20 (- 4)	790	199	231	122	0.58	4.49	6.47	1.63	1.90
-15 (+ 5)	1020	257	299	138	0.65	5.82	7.41	1.87	2.17
-10 (+14)	1290	325	378	152	0.72	7.39	8.47	2.13	2.48

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)	251	63	73	72	0.35	1.42	3.44	0.87	1.01
-30 (-22)	377	95	111	89	0.43	2.14	4.21	1.06	1.23
-25 (-13)	533	134	156	107	0.51	3.02	4.96	1.25	1.45
-20 (- 4)	720	181	211	126	0.60	4.10	5.72	1.44	1.67
-15 (+ 5)	943	238	276	145	0.68	5.38	6.51	1.64	1.91
-10 (+14)	1204	303	353	164	0.77	6.90	7.36	1.86	2.16

### 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]	[W/W]
-35 (-31)	174	44	51	64	0.32	0.99	2.75	0.69	0.81	
-30 (-22)	302	76	89	84	0.41	1.71	3.58	0.90	1.05	
-25 (-13)	457	115	134	105	0.50	2.59	4.33	1.09	1.27	
-20 (- 4)	641	161	188	127	0.60	3.65	5.03	1.27	1.47	
-15 (+ 5)	857	216	251	150	0.71	4.89	5.71	1.44	1.67	
-10 (+14)	1110	280	325	174	0.82	6.36	6.39	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]	[W/W]
-35 (-31)	374	94	109	88	0.43	2.11	4.24	1.07	1.24	
-30 (-22)	518	131	152	107	0.51	2.94	4.87	1.23	1.43	
-25 (-13)	703	177	206	126	0.59	3.99	5.59	1.41	1.64	
-20 (- 4)	932	235	273	146	0.68	5.31	6.38	1.61	1.87	
-15 (+ 5)	1210	305	355	167	0.77	6.91	7.26	1.83	2.13	
-10 (+14)	1540	388	451	188	0.87	8.82	8.20	2.07	2.40	

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]	[W/W]
-35 (-31)	307	77	90	86	0.42	1.74	3.61	0.91	1.06	
-30 (-22)	446	112	131	105	0.50	2.53	4.26	1.07	1.25	
-25 (-13)	624	157	183	127	0.59	3.54	4.94	1.25	1.45	
-20 (- 4)	847	213	248	149	0.69	4.82	5.66	1.43	1.66	
-15 (+ 5)	1118	282	327	174	0.80	6.38	6.42	1.62	1.88	
-10 (+14)	1441	363	422	200	0.92	8.25	7.20	1.81	2.11	

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)	224	57	66	78	0.39	1.27	2.87	0.72	0.84	
-30 (-22)	353	89	103	99	0.48	2.00	3.55	0.90	1.04	
-25 (-13)	521	131	153	123	0.58	2.96	4.24	1.07	1.24	
-20 (- 4)	733	185	215	149	0.69	4.17	4.91	1.24	1.44	
-15 (+ 5)	992	250	291	178	0.82	5.66	5.58	1.41	1.63	
-10 (+14)	1304	329	382	210	0.97	7.47	6.22	1.57	1.82	

### 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		