

### COMPRESSOR DEFINITION

Designation	<b>F GS70HA</b>
Nominal Voltage/Frequency	<b>220-240 V 50-60 Hz</b>
Engineering Number	<b>513200402</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 / ISO22	
4 Weight (with oil charge)	11.25	[kg] (24.80 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]	
607	153	178	119	0.57	3.45	5.11	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	139	0.64	4.03	5.11	1.29	1.50	

### 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)	325	82	95	82	0.40	1.84	3.98	1.00	1.17
-30 (-22)	459	116	135	96	0.47	2.60	4.81	1.21	1.41
-25 (-13)	616	155	180	110	0.55	3.50	5.61	1.41	1.64
-20 (- 4)	802	202	235	125	0.62	4.56	6.43	1.62	1.88
-15 (+ 5)	1026	259	301	140	0.69	5.86	7.32	1.85	2.15
-10 (+14)	1296	326	380	155	0.75	7.42	8.34	2.10	2.44

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)	242	61	71	78	0.39	1.37	3.11	0.78	0.91
-30 (-22)	380	96	111	94	0.47	2.16	4.00	1.01	1.17
-25 (-13)	538	136	158	111	0.55	3.06	4.81	1.21	1.41
-20 (- 4)	724	182	212	129	0.63	4.12	5.59	1.41	1.64
-15 (+ 5)	945	238	277	147	0.72	5.39	6.40	1.61	1.87
-10 (+14)	1209	305	354	166	0.80	6.92	7.27	1.83	2.13

### 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)	186	47	55	72	0.36	1.05	2.62	0.66	0.77	
-30 (-22)	324	82	95	91	0.45	1.84	3.54	0.89	1.04	
-25 (-13)	480	121	141	110	0.54	2.72	4.34	1.09	1.27	
-20 (- 4)	660	166	194	131	0.64	3.76	5.05	1.27	1.48	
-15 (+ 5)	874	220	256	153	0.74	4.99	5.74	1.45	1.68	
-10 (+14)	1129	284	331	175	0.84	6.47	6.45	1.62	1.89	

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)	357	90	105	94	0.44	2.02	3.82	0.96	1.12	
-30 (-22)	528	133	155	114	0.54	2.99	4.64	1.17	1.36	
-25 (-13)	723	182	212	133	0.63	4.11	5.44	1.37	1.59	
-20 (- 4)	949	239	278	152	0.72	5.40	6.23	1.57	1.82	
-15 (+ 5)	1214	306	356	172	0.81	6.93	7.03	1.77	2.06	
-10 (+14)	1523	384	446	193	0.91	8.73	7.87	1.98	2.30	

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)	282	71	83	88	0.42	1.59	3.19	0.80	0.94	
-30 (-22)	441	111	129	110	0.53	2.50	4.01	1.01	1.17	
-25 (-13)	627	158	184	132	0.63	3.56	4.76	1.20	1.40	
-20 (- 4)	846	213	248	155	0.74	4.82	5.49	1.38	1.61	
-15 (+ 5)	1107	279	324	178	0.84	6.32	6.20	1.56	1.82	
-10 (+14)	1416	357	415	204	0.96	8.11	6.92	1.74	2.03	

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)	194	49	57	80	0.39	1.10	2.41	0.61	0.71	
-30 (-22)	343	87	101	104	0.51	1.95	3.27	0.83	0.96	
-25 (-13)	522	132	153	129	0.62	2.96	4.06	1.02	1.19	
-20 (- 4)	738	186	216	155	0.74	4.20	4.78	1.20	1.40	
-15 (+ 5)	997	251	292	183	0.86	5.69	5.46	1.38	1.60	
-10 (+14)	1307	329	383	213	1.00	7.49	6.13	1.54	1.80	

### F - EXTERNAL CHARACTERISTICS

1 Base plate	Universal EG/F		
2 Tray holder	Yes		
3 Connectors			
3.1 SUCTION	6.5 +0.12/-0.08	[mm]	(0.256" +0.005"/-0.003")
3.1.1 Material	Copper plated steel		
3.1.2 Shape	Straight		
3.2 DISCHARGE	5 +0.18/-0.06	[mm]	(0.197" +0.007"/-0.002")
3.2.1 Material	Copper plated steel		
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 plated steel		
3.3.2 Shape	Straight		
3.4 Oil cooler (Copper)	No	[mm]	
3.5 Connector sealing	Rubber Plugs		