

### COMPRESSOR DEFINITION

Designation	<b>F F10BK</b>
Nominal Voltage/Frequency	<b>220-240 V 50 Hz</b>
Engineering Number	<b>513200423</b>

### A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	Blend		
3 Nominal voltage and frequency	220-240 / 50	[ V / Hz ]	
4 Application type	Low-Medium-High Back Pressure		
4.1 Evaporating temperature range	-35°C to 15°C	(-31°F to 59°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	198 to 255 V	-
8.2 LBP (43°C Ambient temperature)	Static	198 to 255 V	-
8.3 HBP (32°C Ambient temperature)	Fan	198 to 255 V	-
8.4 HBP (43°C Ambient temperature)	Fan	198 to 255 V	-
9 Maximum condensing pressures/temperature			
9.1 Operating (gauge)	14.5	[kgf/cm <sup>2</sup> ] (206 psig)	/ °C - °F
9.2 Peak (gauge)	18.2	[kgf/cm <sup>2</sup> ] (259 psig)	/ °C - °F
10 Maximum winding temperature	130	[ °C ]	

### B - MECHANICAL DATA

1 Commercial designation	1/4+	[hp]
2 Displacement	9.04	[cm <sup>3</sup> ] (0.552 cu.in)
2.1 Bore [mm]	24.000	
2.2 Stroke [mm]	20.000	
3 Lubricant charge	280	[ml] (9.47 fl.oz.)
3.1 Lubricants approved		
3.2 Lubricants type/viscosity	ALQUILB / ISO32	
4 Weight (with oil charge)	10.52	[kg] (23.19 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 Hz 1 ~ (Single phase)	
2 Starting device type	Current Relay	
2.1 Starting device	213516078/213516086	
3 Start capacitor	53-64(270)	[µF(VAC minimum)]
4 Run capacitor	-	[µF(VAC minimum)]
5 Motor protection	MSP57AMK-5590	
6 Start winding resistance	27.50	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	10.15	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (50 Hz)	15.50	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (50 Hz)	1.80	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (50 Hz)	2.15	[A] - Measured according to UL 984
11 Approval boards certification	IRAM - VDE	

### D - PERFORMANCE - CHECK POINT DATA

TEST CONDITIONS: @220V50Hz			ASHRAEHBP32 Static		Evaporating temperature (Condensing temperature)		7.2°C (44.96°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]	
2800	706	820	381	2.10	20.96	7.35	1.85	2.15	

TEST CONDITIONS: @220V50Hz			ASHRAEHBP32 Fan		Evaporating temperature (Condensing temperature)		7.2°C (44.96°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]	
2800	706	820	381	2.10	20.96	7.35	1.85	2.15	

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]	
795	200	233	203	1.40	5.82	3.92	0.99	1.15	

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]	
795	200	233	203	1.40	5.82	3.92	0.99	1.15	

### 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]
-35	(-31)	484	122	142	140	1.22	3.52	3.44	0.87	1.01
-30	(-22)	633	159	185	167	1.29	4.63	3.80	0.96	1.11
-25	(-13)	811	204	238	192	1.36	5.94	4.24	1.07	1.24
-20	(- 4)	1023	258	300	217	1.43	7.50	4.74	1.19	1.39
-15	(+ 5)	1274	321	373	241	1.51	9.36	5.31	1.34	1.56
-10	(+14)	1569	395	460	264	1.60	11.56	5.96	1.50	1.75
-5	(+23)	1911	482	560	287	1.69	14.13	6.67	1.68	1.95
0	(+32)	2305	581	676	309	1.79	17.14	7.45	1.88	2.18
+5	(+41)	2757	695	808	332	1.89	20.60	8.29	2.09	2.43
+10	(+50)	3271	824	958	355	2.01	24.58	9.21	2.32	2.70
+15	(+59)	3851	970	1128	378	2.13	29.11	10.20	2.57	2.99

### E - PERFORMANCE - CURVES

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)	431	109	126	144	1.25	3.14	3.00	0.75	0.88
-30	(-22)	565	142	166	170	1.30	4.13	3.35	0.84	0.98
-25	(-13)	728	183	213	195	1.37	5.33	3.75	0.94	1.10
-20	(- 4)	924	233	271	221	1.45	6.78	4.19	1.06	1.23
-15	(+ 5)	1160	292	340	248	1.54	8.52	4.67	1.18	1.37
-10	(+14)	1438	362	421	276	1.64	10.59	5.18	1.31	1.52
-5	(+23)	1764	444	517	305	1.76	13.05	5.74	1.45	1.68
0	(+32)	2142	540	628	335	1.89	15.92	6.34	1.60	1.86
+5	(+41)	2577	649	755	367	2.04	19.26	6.98	1.76	2.05
+10	(+50)	3074	775	901	401	2.20	23.11	7.66	1.93	2.24
+15	(+59)	3637	917	1066	437	2.38	27.51	8.38	2.11	2.45

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)	382	96	112	141	1.23	2.78	2.67	0.67	0.78
-30	(-22)	504	127	148	167	1.29	3.69	3.02	0.76	0.89
-25	(-13)	654	165	192	195	1.36	4.80	3.39	0.85	0.99
-20	(- 4)	839	211	246	225	1.46	6.15	3.77	0.95	1.10
-15	(+ 5)	1061	267	311	257	1.57	7.80	4.15	1.05	1.22
-10	(+14)	1327	334	389	293	1.71	9.78	4.56	1.15	1.33
-5	(+23)	1640	413	480	330	1.87	12.13	4.97	1.25	1.46
0	(+32)	2005	505	587	371	2.05	14.90	5.39	1.36	1.58
+5	(+41)	2427	612	711	415	2.26	18.14	5.82	1.47	1.71
+10	(+50)	2910	733	853	463	2.48	21.88	6.27	1.58	1.84
+15	(+59)	3460	872	1014	514	2.73	26.17	6.73	1.69	1.97

### F - EXTERNAL CHARACTERISTICS

1 Base plate	Universal EG/F/AMEM version 2		
2 Tray holder	No		
3 Connectors			
3.1 SUCTION	8.2 +0.12/-0.08	[mm]	(0.323" +0.005"/-0.003")
3.1.1 Material	Copper plated steel		
3.1.2 Shape	Slanted		
3.2 DISCHARGE	6.5 +0.12/-0.08	[mm]	(0.256" +0.005"/-0.003")
3.2.1 Material	Copper plated steel		
3.2.2 Shape	Slanted		
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	Slanted		
3.4 Oil cooler (Copper)	No	[mm]	
3.5 Connector sealing	Rubber Plugs		