

COMPRESSOR DEFINITION

Designation	FMS A7C
Nominal Voltage/Frequency	230 V 90-315 Hz
Engineering Number	518000049

A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	R-600a		
3 Nominal voltage and frequency	230 / 90-315	[V / Hz]	
4 Application type	Low-Medium Back Pressure (Hot Gas Defrost not allowed)		
4.1 Evaporating temperature range	-35°C to 0°C	(-31°F to 32°F)	
5 Motor type	BPM		
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)	-	-	-
8.2 LBP (43°C Ambient temperature)	-	-	-
8.3 HBP (32°C Ambient temperature)	-	-	-
8.4 HBP (43°C Ambient temperature)	-	-	-
9 Maximum condensing temperature			
9.1 Operating	6.9	[kgf/cm ²] (98 psig)	/ °C - °F
9.2 Peak	7.8	[kgf/cm ²] (111 psig)	/ °C - °F
10 Maximum winding temperature	130	[°C]	

B - MECHANICAL DATA

1 Commercial designation	1/9	[hp]
2 Displacement	5.19	[cm ³] (0.317 cu.in)
2.1 Bore [mm]	21.000	
2.2 Stroke [mm]	15.000	
3 Lubricant charge	140	[ml] (4.73 fl.oz.)
3.1 Lubricants approved		
3.2 Lubricants type/viscosity	ALQUILB / ISO5	
4 Weight (with oil charge)	3.58	[kg] (7.89 lb.)
5 Nitrogen charge	-	[kgf/cm ²]

C - ELECTRICAL DATA

1 Nominal Voltage/Frequency/Number of Phases	230 V 90-315 Hz 3~ (Three phase)	
2 Starting device type	Inverter	
2.1 Starting device	CF02F01M	
3 Start capacitor	-	[µF(VAC minimum)]
4 Run capacitor	-	[µF(VAC minimum)]
5 Motor protection	CF02F01 M 0.0 XX F X	
6 Start winding resistance	17.50	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	17.50	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (90/315 Hz)	2.17	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (90/315 Hz)	1.25	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (90/315 Hz)	-	[A] - Measured according to UL 984
11 Approval boards certification	CE - IRAM - UKCA	

D - PERFORMANCE - CHECK POINT DATA

TEST CONDITIONS: @220V1800RPM			ASHRAELBP32 Static		Evaporating temperature (Condensing temperature)		-23.3°C (-9.94°F) 54.4°C (129.92°F)		
Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%			
[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]	
169	43	50	29	0.54	0.53	5.81	1.46	1.70	

TEST CONDITIONS: @220V2800RPM			ASHRAELBP32 Static		Evaporating temperature (Condensing temperature)		-23.3°C (-9.94°F) 54.4°C (129.92°F)		
Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%			
[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]	
267	67	78	44	0.76	0.84	6.13	1.54	1.80	

TEST CONDITIONS: @220V4000RPM			ASHRAELBP32 Static		Evaporating temperature (Condensing temperature)		-23.3°C (-9.94°F) 54.4°C (129.92°F)		
Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%			
[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]	
379	96	111	63	1.06	1.19	6.01	1.51	1.76	

TEST CONDITIONS: @220V6300RPM			ASHRAELBP32 Static		Evaporating temperature (Condensing temperature)		-23.3°C (-9.94°F) 54.4°C (129.92°F)		
Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%			
[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]	
551	139	161	100	1.55	1.73	5.52	1.39	1.62	

E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V1800RPM		ASHRAE32 Static				(Condensing temperature 35°C (+95°F))				
Evaporating temperature	Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%			
	°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]
-35	(-31)	100	25	29	18	0.35	0.31	5.53	1.39	1.62
-30	(-22)	140	35	41	21	0.41	0.44	6.58	1.66	1.93
-25	(-13)	189	48	55	24	0.48	0.59	7.71	1.94	2.26
-20	(- 4)	246	62	72	28	0.54	0.77	8.93	2.25	2.62
-15	(+ 5)	313	79	92	30	0.60	0.98	10.30	2.60	3.02
-10	(+14)	391	98	115	33	0.65	1.23	11.85	2.99	3.47
-5	(+23)	481	121	141	35	0.68	1.52	13.61	3.43	3.99
0	(+32)	585	147	171	37	0.69	1.85	15.61	3.93	4.57

E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V1800RPM		ASHRAE32 Static			(Condensing temperature 45°C (+113°F))					
Evaporating temperature		Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35	(-31)	88	22	26	19	0.37	0.27	4.75	1.20	1.39
-30	(-22)	125	31	37	22	0.43	0.39	5.60	1.41	1.64
-25	(-13)	170	43	50	26	0.50	0.53	6.49	1.64	1.90
-20	(- 4)	226	57	66	30	0.58	0.71	7.45	1.88	2.18
-15	(+ 5)	292	74	86	34	0.65	0.92	8.52	2.15	2.50
-10	(+14)	371	93	109	38	0.72	1.17	9.73	2.45	2.85
-5	(+23)	463	117	136	42	0.78	1.46	11.12	2.80	3.26
0	(+32)	569	143	167	45	0.82	1.81	12.73	3.21	3.73

TEST CONDITIONS: @220V1800RPM		ASHRAE32 Static			(Condensing temperature 55°C (+131°F))					
Evaporating temperature		Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35	(-31)	76	19	22	19	0.39	0.24	3.97	1.00	1.16
-30	(-22)	109	27	32	23	0.45	0.34	4.74	1.20	1.39
-25	(-13)	151	38	44	28	0.52	0.47	5.52	1.39	1.62
-20	(- 4)	205	52	60	32	0.61	0.64	6.34	1.60	1.86
-15	(+ 5)	270	68	79	37	0.70	0.85	7.24	1.82	2.12
-10	(+14)	349	88	102	42	0.79	1.10	8.24	2.08	2.42
-5	(+23)	442	111	129	47	0.87	1.40	9.40	2.37	2.75
0	(+32)	550	139	161	52	0.94	1.75	10.73	2.70	3.14

TEST CONDITIONS: @220V2200RPM		ASHRAE32 Static			(Condensing temperature 35°C (+95°F))					
Evaporating temperature		Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35	(-31)	118	30	35	21	0.42	0.37	5.69	1.43	1.67
-30	(-22)	165	42	48	25	0.50	0.52	6.52	1.64	1.91
-25	(-13)	222	56	65	29	0.58	0.70	7.51	1.89	2.20
-20	(- 4)	291	73	85	33	0.65	0.91	8.70	2.19	2.55
-15	(+ 5)	373	94	109	37	0.71	1.18	10.09	2.54	2.96
-10	(+14)	471	119	138	40	0.76	1.49	11.72	2.95	3.44
-5	(+23)	586	148	172	43	0.80	1.85	13.61	3.43	3.99
0	(+32)	719	181	211	45	0.83	2.28	15.78	3.98	4.62

E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V2200RPM		ASHRAE32 Static			(Condensing temperature 45°C (+113°F))					
Evaporating temperature		Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35	(-31)	108	27	32	22	0.44	0.34	4.98	1.25	1.46
-30	(-22)	151	38	44	26	0.53	0.47	5.72	1.44	1.68
-25	(-13)	205	52	60	31	0.61	0.64	6.56	1.65	1.92
-20	(- 4)	272	69	80	36	0.69	0.85	7.51	1.89	2.20
-15	(+ 5)	353	89	103	41	0.77	1.11	8.61	2.17	2.52
-10	(+14)	449	113	132	46	0.84	1.42	9.87	2.49	2.89
-5	(+23)	563	142	165	50	0.91	1.78	11.31	2.85	3.31
0	(+32)	697	176	204	54	0.97	2.21	12.96	3.27	3.80

TEST CONDITIONS: @220V2200RPM		ASHRAE32 Static			(Condensing temperature 55°C (+131°F))					
Evaporating temperature		Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35	(-31)	94	24	28	23	0.46	0.30	4.15	1.04	1.22
-30	(-22)	135	34	40	28	0.55	0.42	4.91	1.24	1.44
-25	(-13)	187	47	55	33	0.64	0.59	5.70	1.44	1.67
-20	(- 4)	251	63	74	39	0.73	0.79	6.53	1.65	1.91
-15	(+ 5)	330	83	97	44	0.83	1.04	7.43	1.87	2.18
-10	(+14)	426	107	125	50	0.93	1.34	8.43	2.12	2.47
-5	(+23)	540	136	158	57	1.02	1.71	9.53	2.40	2.79
0	(+32)	673	170	197	63	1.11	2.13	10.78	2.72	3.16

TEST CONDITIONS: @220V2800RPM		ASHRAE32 Static			(Condensing temperature 35°C (+95°F))					
Evaporating temperature		Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35	(-31)	151	38	44	27	0.53	0.47	5.64	1.42	1.65
-30	(-22)	211	53	62	32	0.62	0.66	6.50	1.64	1.90
-25	(-13)	284	72	83	38	0.72	0.89	7.47	1.88	2.19
-20	(- 4)	372	94	109	43	0.82	1.17	8.61	2.17	2.52
-15	(+ 5)	477	120	140	48	0.90	1.50	9.96	2.51	2.92
-10	(+14)	600	151	176	52	0.96	1.89	11.55	2.91	3.38
-5	(+23)	744	188	218	55	0.99	2.35	13.44	3.39	3.94
0	(+32)	911	229	267	57	0.99	2.89	15.67	3.95	4.59

E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V2800RPM		ASHRAE32 Static			(Condensing temperature 45°C (+113°F))					
Evaporating temperature		Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35	(-31)	136	34	40	28	0.55	0.43	4.90	1.23	1.43
-30	(-22)	193	49	57	34	0.63	0.61	5.73	1.44	1.68
-25	(-13)	264	66	77	40	0.73	0.83	6.60	1.66	1.93
-20	(- 4)	349	88	102	46	0.84	1.10	7.55	1.90	2.21
-15	(+ 5)	453	114	133	52	0.94	1.43	8.63	2.17	2.53
-10	(+14)	575	145	169	58	1.04	1.81	9.87	2.49	2.89
-5	(+23)	719	181	211	64	1.13	2.27	11.33	2.85	3.32
0	(+32)	886	223	260	68	1.19	2.81	13.04	3.29	3.82

TEST CONDITIONS: @220V2800RPM		ASHRAE32 Static			(Condensing temperature 55°C (+131°F))					
Evaporating temperature		Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35	(-31)	117	30	34	29	0.58	0.37	4.03	1.01	1.18
-30	(-22)	171	43	50	35	0.65	0.54	4.94	1.25	1.45
-25	(-13)	239	60	70	41	0.74	0.75	5.81	1.46	1.70
-20	(- 4)	323	81	95	48	0.85	1.01	6.68	1.68	1.96
-15	(+ 5)	425	107	124	56	0.98	1.34	7.58	1.91	2.22
-10	(+14)	546	138	160	64	1.11	1.72	8.58	2.16	2.51
-5	(+23)	690	174	202	71	1.24	2.18	9.70	2.44	2.84
0	(+32)	857	216	251	78	1.36	2.72	11.00	2.77	3.22

TEST CONDITIONS: @220V4000RPM		ASHRAE32 Static			(Condensing temperature 35°C (+95°F))					
Evaporating temperature		Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35	(-31)	214	54	63	39	0.75	0.67	5.49	1.38	1.61
-30	(-22)	296	74	87	47	0.87	0.93	6.27	1.58	1.84
-25	(-13)	397	100	116	56	1.01	1.25	7.14	1.80	2.09
-20	(- 4)	521	131	153	64	1.15	1.64	8.16	2.06	2.39
-15	(+ 5)	670	169	196	71	1.27	2.11	9.40	2.37	2.75
-10	(+14)	848	214	248	78	1.36	2.67	10.89	2.74	3.19
-5	(+23)	1056	266	309	83	1.41	3.34	12.69	3.20	3.72
0	(+32)	1298	327	380	86	1.41	4.11	14.87	3.75	4.36

E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V4000RPM		ASHRAE32 Static			(Condensing temperature 45°C (+113°F))					
Evaporating temperature		Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35	(-31)	193	49	56	41	0.77	0.60	4.74	1.19	1.39
-30	(-22)	273	69	80	49	0.88	0.85	5.57	1.40	1.63
-25	(-13)	372	94	109	58	1.02	1.17	6.41	1.62	1.88
-20	(- 4)	493	124	144	67	1.17	1.55	7.31	1.84	2.14
-15	(+ 5)	638	161	187	77	1.32	2.01	8.32	2.10	2.44
-10	(+14)	811	204	238	85	1.46	2.56	9.49	2.39	2.78
-5	(+23)	1014	256	297	93	1.57	3.21	10.89	2.74	3.19
0	(+32)	1250	315	366	100	1.64	3.96	12.55	3.16	3.68

TEST CONDITIONS: @220V4000RPM		ASHRAE32 Static			(Condensing temperature 55°C (+131°F))					
Evaporating temperature		Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35	(-31)	164	41	48	43	0.79	0.51	3.82	0.96	1.12
-30	(-22)	243	61	71	51	0.89	0.76	4.80	1.21	1.41
-25	(-13)	340	86	99	60	1.03	1.07	5.68	1.43	1.67
-20	(- 4)	458	115	134	70	1.19	1.44	6.53	1.65	1.91
-15	(+ 5)	600	151	176	81	1.37	1.89	7.40	1.87	2.17
-10	(+14)	768	194	225	92	1.55	2.42	8.34	2.10	2.44
-5	(+23)	967	244	283	103	1.71	3.06	9.41	2.37	2.76
0	(+32)	1197	302	351	113	1.84	3.80	10.65	2.68	3.12

TEST CONDITIONS: @220V6300RPM		ASHRAE32 Static			(Condensing temperature 35°C (+95°F))					
Evaporating temperature		Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35	(-31)	316	80	93	59	1.13	0.99	5.33	1.34	1.56
-30	(-22)	428	108	126	74	1.30	1.34	5.81	1.46	1.70
-25	(-13)	573	144	168	89	1.50	1.80	6.47	1.63	1.89
-20	(- 4)	754	190	221	103	1.71	2.37	7.31	1.84	2.14
-15	(+ 5)	975	246	286	117	1.92	3.07	8.34	2.10	2.44
-10	(+14)	1242	313	364	130	2.09	3.92	9.55	2.41	2.80
-5	(+23)	1558	393	457	142	2.24	4.93	10.95	2.76	3.21
0	(+32)	1928	486	565	153	2.32	6.11	12.52	3.16	3.67

E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V6300RPM		ASHRAE32 Static			(Condensing temperature 45°C (+113°F))					
Evaporating temperature		Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35	(-31)	285	72	83	64	1.15	0.89	4.48	1.13	1.31
-30	(-22)	394	99	115	78	1.31	1.23	5.07	1.28	1.49
-25	(-13)	534	135	156	92	1.51	1.68	5.78	1.46	1.69
-20	(- 4)	710	179	208	107	1.74	2.23	6.59	1.66	1.93
-15	(+ 5)	925	233	271	123	1.97	2.91	7.52	1.89	2.20
-10	(+14)	1185	299	347	138	2.20	3.74	8.55	2.16	2.51
-5	(+23)	1493	376	437	154	2.41	4.72	9.70	2.44	2.84
0	(+32)	1854	467	543	170	2.58	5.88	10.95	2.76	3.21

TEST CONDITIONS: @220V6300RPM		ASHRAE32 Static			(Condensing temperature 55°C (+131°F))					
Evaporating temperature		Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35	(-31)	262	66	77	69	1.19	0.82	3.79	0.95	1.11
-30	(-22)	363	91	106	81	1.32	1.14	4.48	1.13	1.31
-25	(-13)	494	124	145	95	1.52	1.55	5.21	1.31	1.53
-20	(- 4)	660	166	193	111	1.75	2.07	5.98	1.51	1.75
-15	(+ 5)	864	218	253	128	2.01	2.72	6.79	1.71	1.99
-10	(+14)	1111	280	326	146	2.28	3.51	7.63	1.92	2.24
-5	(+23)	1406	354	412	165	2.55	4.45	8.51	2.14	2.49
0	(+32)	1753	442	514	185	2.79	5.56	9.42	2.37	2.76

F - EXTERNAL CHARACTERISTICS

1 Base plate	European Standard ES/FMS		
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	Slanted 75° up		
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	Slanted parallel to Base Plate		
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	Slanted 75° up		
3.4 Oil cooler (Copper)	No	[mm]	
3.5 Connector sealing	Rubber Plugs		