

COMPRESSOR DEFINITION

Designation	FMS A4C
Nominal Voltage/Frequency	230 V 90-315 Hz
Engineering Number	518000063

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	1/16	[hp]
2 Displacement	2.83	[cm ³] (0.173 cu.in)
2.1 Bore [mm]	15.500	
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	CF02F01L	
3 Start capacitor	-	[µF(VAC minimum)]
4 Run capacitor	-	[µF(VAC minimum)]
5 Motor protection	CF02F01 L 00 XX F	
6 Start winding resistance	13.20	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	13.20	[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 - TUV - UKCA - UL - VDE	

D - PERFORMANCE - CHECK POINT DATA

TEST CONDITIONS: @115V2800RPM			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]	
148	37	43	26	0.51	0.46	5.78	1.46	1.69	

TEST CONDITIONS: @115V4000RPM			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]	
208	52	61	37	0.71	0.65	5.56	1.40	1.63	

TEST CONDITIONS: @115V6300RPM			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]	
294	74	86	59	1.00	0.92	5.03	1.27	1.47	

E - PERFORMANCE - CURVES

TEST CONDITIONS: @115V1800RPM		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)	58	15	17	11	0.23	0.18	5.44	1.37	1.60
-30	(-22)	79	20	23	13	0.27	0.25	6.25	1.58	1.83
-25	(-13)	104	26	31	15	0.31	0.33	7.19	1.81	2.11
-20	(- 4)	134	34	39	16	0.34	0.42	8.28	2.09	2.43
-15	(+ 5)	170	43	50	18	0.37	0.54	9.56	2.41	2.80
-10	(+14)	212	53	62	19	0.40	0.67	11.06	2.79	3.24
-5	(+23)	262	66	77	20	0.42	0.83	12.82	3.23	3.76
0	(+32)	319	80	94	21	0.45	1.01	14.86	3.74	4.35

E - PERFORMANCE - CURVES

TEST CONDITIONS: @115V1800RPM		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)	52	13	15	10	0.22	0.16	4.99	1.26	1.46
-30	(-22)	72	18	21	13	0.27	0.22	5.65	1.42	1.66
-25	(-13)	95	24	28	15	0.32	0.30	6.38	1.61	1.87
-20	(- 4)	124	31	36	17	0.36	0.39	7.20	1.82	2.11
-15	(+ 5)	158	40	46	19	0.40	0.50	8.17	2.06	2.39
-10	(+14)	199	50	58	21	0.44	0.63	9.29	2.34	2.72
-5	(+23)	247	62	72	23	0.48	0.78	10.62	2.68	3.11
0	(+32)	304	76	89	25	0.52	0.96	12.18	3.07	3.57

TEST CONDITIONS: @115V1800RPM		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)	40	10	12	10	0.20	0.12	4.12	1.04	1.21
-30	(-22)	60	15	18	12	0.26	0.19	4.82	1.22	1.41
-25	(-13)	84	21	25	15	0.32	0.26	5.54	1.40	1.62
-20	(- 4)	114	29	33	18	0.38	0.36	6.31	1.59	1.85
-15	(+ 5)	149	37	44	21	0.43	0.47	7.15	1.80	2.10
-10	(+14)	190	48	56	23	0.48	0.60	8.11	2.04	2.38
-5	(+23)	239	60	70	26	0.53	0.76	9.21	2.32	2.70
0	(+32)	296	75	87	28	0.58	0.94	10.48	2.64	3.07

TEST CONDITIONS: @115V2800RPM		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)	85	21	25	17	0.35	0.27	5.05	1.27	1.48
-30	(-22)	120	30	35	20	0.41	0.38	5.99	1.51	1.75
-25	(-13)	160	40	47	23	0.47	0.50	6.97	1.76	2.04
-20	(- 4)	207	52	61	26	0.52	0.65	8.08	2.04	2.37
-15	(+ 5)	263	66	77	28	0.57	0.83	9.36	2.36	2.74
-10	(+14)	330	83	97	30	0.61	1.04	10.89	2.74	3.19
-5	(+23)	409	103	120	32	0.64	1.29	12.73	3.21	3.73
0	(+32)	503	127	147	34	0.67	1.59	14.95	3.77	4.38

E - PERFORMANCE - CURVES

TEST CONDITIONS: @115V2800RPM		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)	72	18	21	16	0.34	0.23	4.48	1.13	1.31
-30	(-22)	108	27	32	20	0.41	0.34	5.37	1.35	1.57
-25	(-13)	147	37	43	24	0.48	0.46	6.24	1.57	1.83
-20	(- 4)	193	49	57	27	0.55	0.61	7.15	1.80	2.10
-15	(+ 5)	248	62	73	30	0.61	0.78	8.17	2.06	2.39
-10	(+14)	313	79	92	33	0.67	0.99	9.37	2.36	2.74
-5	(+23)	390	98	114	36	0.72	1.23	10.80	2.72	3.17
0	(+32)	481	121	141	39	0.76	1.52	12.54	3.16	3.68

TEST CONDITIONS: @115V2800RPM		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)	58	15	17	15	0.32	0.18	3.77	0.95	1.10
-30	(-22)	93	23	27	20	0.41	0.29	4.70	1.18	1.38
-25	(-13)	132	33	39	24	0.49	0.41	5.54	1.40	1.62
-20	(- 4)	177	45	52	28	0.57	0.56	6.35	1.60	1.86
-15	(+ 5)	230	58	67	32	0.64	0.72	7.20	1.81	2.11
-10	(+14)	293	74	86	36	0.71	0.92	8.15	2.05	2.39
-5	(+23)	367	93	108	40	0.78	1.16	9.27	2.34	2.72
0	(+32)	456	115	134	43	0.84	1.45	10.63	2.68	3.11

TEST CONDITIONS: @115V4000RPM		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	25	0.52	0.37	4.64	1.17	1.36
-30	(-22)	164	41	48	29	0.59	0.51	5.59	1.41	1.64
-25	(-13)	218	55	64	33	0.66	0.68	6.57	1.66	1.92
-20	(- 4)	284	72	83	37	0.74	0.89	7.63	1.92	2.23
-15	(+ 5)	364	92	107	41	0.81	1.15	8.82	2.22	2.58
-10	(+14)	459	116	134	45	0.87	1.45	10.19	2.57	2.99
-5	(+23)	572	144	167	48	0.93	1.81	11.81	2.98	3.46
0	(+32)	704	177	206	51	0.98	2.23	13.72	3.46	4.02

E - PERFORMANCE - CURVES

TEST CONDITIONS: @115V4000RPM		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)	103	26	30	24	0.49	0.32	4.25	1.07	1.24
-30	(-22)	150	38	44	29	0.58	0.47	5.13	1.29	1.50
-25	(-13)	206	52	60	34	0.68	0.65	5.99	1.51	1.76
-20	(- 4)	271	68	79	39	0.77	0.85	6.89	1.74	2.02
-15	(+ 5)	349	88	102	44	0.86	1.10	7.89	1.99	2.31
-10	(+14)	441	111	129	49	0.94	1.39	9.02	2.27	2.64
-5	(+23)	549	138	161	53	1.02	1.74	10.36	2.61	3.04
0	(+32)	676	170	198	57	1.09	2.14	11.94	3.01	3.50

TEST CONDITIONS: @115V4000RPM		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)	82	21	24	22	0.46	0.26	3.69	0.93	1.08
-30	(-22)	129	32	38	28	0.57	0.40	4.54	1.14	1.33
-25	(-13)	183	46	54	34	0.68	0.57	5.33	1.34	1.56
-20	(- 4)	246	62	72	40	0.79	0.77	6.12	1.54	1.79
-15	(+ 5)	320	81	94	46	0.89	1.01	6.95	1.75	2.04
-10	(+14)	408	103	119	52	0.99	1.29	7.89	1.99	2.31
-5	(+23)	510	129	149	57	1.08	1.61	8.98	2.26	2.63
0	(+32)	630	159	185	61	1.16	2.00	10.28	2.59	3.01

TEST CONDITIONS: @115V6300RPM		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)	174	44	51	42	0.82	0.54	4.13	1.04	1.21
-30	(-22)	233	59	68	49	0.94	0.73	4.79	1.21	1.40
-25	(-13)	310	78	91	56	1.06	0.97	5.58	1.41	1.64
-20	(- 4)	409	103	120	63	1.19	1.28	6.51	1.64	1.91
-15	(+ 5)	532	134	156	70	1.31	1.67	7.58	1.91	2.22
-10	(+14)	681	172	200	77	1.43	2.15	8.81	2.22	2.58
-5	(+23)	860	217	252	84	1.54	2.72	10.19	2.57	2.99
0	(+32)	1071	270	314	91	1.64	3.40	11.74	2.96	3.44

E - PERFORMANCE - CURVES

TEST CONDITIONS: @115V6300RPM		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)	157	40	46	41	0.79	0.49	3.86	0.97	1.13
-30	(-22)	215	54	63	48	0.92	0.67	4.49	1.13	1.32
-25	(-13)	290	73	85	56	1.06	0.91	5.20	1.31	1.52
-20	(- 4)	385	97	113	64	1.20	1.21	6.00	1.51	1.76
-15	(+ 5)	502	126	147	73	1.35	1.58	6.90	1.74	2.02
-10	(+14)	643	162	188	81	1.49	2.03	7.91	1.99	2.32
-5	(+23)	812	205	238	90	1.63	2.57	9.04	2.28	2.65
0	(+32)	1011	255	296	98	1.77	3.21	10.28	2.59	3.01

TEST CONDITIONS: @115V6300RPM		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)	133	34	39	38	0.76	0.42	3.47	0.87	1.02
-30	(-22)	192	48	56	47	0.90	0.60	4.11	1.03	1.20
-25	(-13)	265	67	78	55	1.05	0.83	4.78	1.21	1.40
-20	(- 4)	356	90	104	65	1.21	1.12	5.51	1.39	1.61
-15	(+ 5)	468	118	137	75	1.37	1.47	6.28	1.58	1.84
-10	(+14)	601	152	176	85	1.54	1.90	7.12	1.80	2.09
-5	(+23)	761	192	223	95	1.71	2.41	8.03	2.02	2.35
0	(+32)	948	239	278	105	1.87	3.01	9.01	2.27	2.64

F - EXTERNAL CHARACTERISTICS

1 Base plate	Universal 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	Straight		
3.3 PROCESS	6 +0.08/-0.08	[mm]	(0.236" +0.003"/-0.003")
3.3.1 Material	Copper(OD)		
3.3.2 Shape	Slanted 45° up		
3.4 Oil cooler (Copper)	No	[mm]	
3.5 Connector sealing	Rubber Plugs		