

COMPRESSOR DEFINITION

Designation	FMX A4C
Nominal Voltage/Frequency	230 V 43 -134 Hz
Engineering Number	513908310

A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	R-600a		
3 Nominal voltage and frequency	230 / 43 -134	[V / Hz]	
4 Application type	Low-Medium Back Pressure (Fullmotion Compressors)		
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)	Static	187 to 255 V	-
8.2 LBP (43°C Ambient temperature)	Static	187 to 255 V	-
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	3.97	[cm ³] (0.242 cu.in)
2.1 Bore [mm]	19.000	
2.2 Stroke [mm]	14.000	
3 Lubricant charge	175	[ml] (5.92 fl.oz.)
3.1 Lubricants approved		
3.2 Lubricants type/viscosity	ALQUILB / ISO5	
4 Weight (with oil charge)	5.1	[kg] (11.24 lb.)
5 Nitrogen charge	-	[kgf/cm ²]

C - ELECTRICAL DATA

1 Nominal Voltage/Frequency/Number of Phases	230 V 43-134 Hz 3~ (Three phase)	
2 Starting device type	Inverter	
2.1 Starting device	CF02D02 M 0.0 X	
3 Start capacitor	-	[µF(VAC minimum)]
4 Run capacitor	-	[µF(VAC minimum)]
5 Motor protection	PFC CF02D02 M	
6 Start winding resistance	20.00	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	20.00	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (43 /134 Hz)	1.70	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (43 /134 Hz)	-	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (43 /134 Hz)	-	[A] - Measured according to UL 984
11 Approval boards certification	CCC - VDE	

D - PERFORMANCE - CHECK POINT DATA

TEST CONDITIONS: @220V1300RPM			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]	
74	19	22	15	0.15	0.23	5.00	1.26	1.47	

TEST CONDITIONS: @220V2000RPM			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]	
124	31	36	22	0.20	0.39	5.64	1.42	1.65	

TEST CONDITIONS: @220V3000RPM			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]	
185	47	54	33	0.28	0.58	5.59	1.41	1.64	

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]	
259	65	76	46	0.38	0.81	5.59	1.41	1.64	

E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V1300RPM		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)	50	13	15	9	0.13	0.16	5.61	1.41	1.65
-30	(-22)	71	18	21	11	0.14	0.22	6.65	1.67	1.95
-25	(-13)	96	24	28	12	0.14	0.30	7.81	1.97	2.29
-20	(- 4)	127	32	37	14	0.15	0.40	9.14	2.30	2.68
-15	(+ 5)	164	41	48	15	0.16	0.52	10.67	2.69	3.13
-10	(+14)	208	52	61	17	0.16	0.66	12.44	3.13	3.64
-5	(+23)	261	66	77	18	0.17	0.83	14.48	3.65	4.24
0	(+32)	323	81	95	20	0.17	1.02	16.83	4.24	4.93

E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V1300RPM		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)	37	9	11	9	0.12	0.12	4.19	1.06	1.23
-30	(-22)	59	15	17	11	0.13	0.19	5.39	1.36	1.58
-25	(-13)	85	21	25	13	0.15	0.27	6.56	1.65	1.92
-20	(- 4)	115	29	34	15	0.16	0.36	7.72	1.95	2.26
-15	(+ 5)	151	38	44	17	0.17	0.48	8.92	2.25	2.61
-10	(+14)	193	49	57	19	0.18	0.61	10.20	2.57	2.99
-5	(+23)	243	61	71	21	0.19	0.77	11.58	2.92	3.39
0	(+32)	301	76	88	23	0.20	0.95	13.10	3.30	3.84

TEST CONDITIONS: @220V1300RPM		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)	12	3	4	8	0.12	0.04	1.66	0.42	0.49
-30	(-22)	38	9	11	11	0.13	0.12	3.35	0.84	0.98
-25	(-13)	66	17	19	13	0.15	0.21	4.83	1.22	1.41
-20	(- 4)	98	25	29	16	0.17	0.31	6.14	1.55	1.80
-15	(+ 5)	134	34	39	18	0.18	0.42	7.32	1.85	2.15
-10	(+14)	176	44	52	21	0.20	0.55	8.41	2.12	2.46
-5	(+23)	224	56	66	24	0.22	0.71	9.44	2.38	2.77
0	(+32)	280	70	82	27	0.24	0.89	10.45	2.63	3.06

TEST CONDITIONS: @220V2000RPM		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)	79	20	23	14	0.14	0.25	5.66	1.43	1.66
-30	(-22)	108	27	32	17	0.17	0.34	6.58	1.66	1.93
-25	(-13)	147	37	43	19	0.20	0.46	7.68	1.94	2.25
-20	(- 4)	196	49	57	22	0.23	0.62	9.00	2.27	2.64
-15	(+ 5)	255	64	75	24	0.25	0.80	10.55	2.66	3.09
-10	(+14)	325	82	95	26	0.26	1.03	12.35	3.11	3.62
-5	(+23)	406	102	119	28	0.25	1.28	14.43	3.64	4.23
0	(+32)	498	125	146	29	0.21	1.58	16.82	4.24	4.93

E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V2000RPM		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)	57	14	17	13	0.15	0.18	4.32	1.09	1.26
-30	(-22)	87	22	26	16	0.17	0.27	5.34	1.35	1.56
-25	(-13)	127	32	37	20	0.20	0.40	6.42	1.62	1.88
-20	(- 4)	176	44	51	23	0.23	0.55	7.59	1.91	2.22
-15	(+ 5)	234	59	69	26	0.26	0.74	8.86	2.23	2.60
-10	(+14)	302	76	88	29	0.28	0.95	10.25	2.58	3.00
-5	(+23)	380	96	111	32	0.28	1.20	11.80	2.97	3.46
0	(+32)	469	118	137	35	0.26	1.49	13.51	3.41	3.96

TEST CONDITIONS: @220V2000RPM		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	13	0.15	0.12	3.14	0.79	0.92
-30	(-22)	70	18	21	16	0.16	0.22	4.34	1.09	1.27
-25	(-13)	109	28	32	20	0.19	0.34	5.48	1.38	1.61
-20	(- 4)	157	39	46	24	0.23	0.49	6.57	1.66	1.93
-15	(+ 5)	213	54	62	28	0.27	0.67	7.64	1.92	2.24
-10	(+14)	278	70	82	32	0.30	0.88	8.70	2.19	2.55
-5	(+23)	353	89	103	36	0.32	1.12	9.78	2.47	2.87
0	(+32)	437	110	128	40	0.32	1.38	10.91	2.75	3.20

TEST CONDITIONS: @220V3000RPM		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)	107	27	31	20	0.20	0.33	5.26	1.33	1.54
-30	(-22)	154	39	45	25	0.23	0.48	6.23	1.57	1.82
-25	(-13)	216	54	63	29	0.26	0.68	7.27	1.83	2.13
-20	(- 4)	293	74	86	34	0.30	0.92	8.47	2.13	2.48
-15	(+ 5)	384	97	113	39	0.33	1.21	9.93	2.50	2.91
-10	(+14)	489	123	143	42	0.35	1.54	11.73	2.96	3.44
-5	(+23)	608	153	178	44	0.36	1.92	13.96	3.52	4.09
0	(+32)	740	186	217	42	0.35	2.35	16.70	4.21	4.89

E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V3000RPM		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)	96	24	28	21	0.20	0.30	4.51	1.14	1.32
-30	(-22)	137	35	40	25	0.22	0.43	5.46	1.37	1.60
-25	(-13)	194	49	57	30	0.26	0.61	6.39	1.61	1.87
-20	(- 4)	266	67	78	36	0.31	0.84	7.39	1.86	2.16
-15	(+ 5)	354	89	104	41	0.35	1.11	8.54	2.15	2.50
-10	(+14)	457	115	134	46	0.39	1.44	9.94	2.51	2.91
-5	(+23)	574	145	168	49	0.41	1.81	11.67	2.94	3.42
0	(+32)	705	178	207	50	0.41	2.24	13.82	3.48	4.05

TEST CONDITIONS: @220V3000RPM		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)	64	16	19	20	0.19	0.20	3.23	0.81	0.95
-30	(-22)	101	25	30	24	0.22	0.32	4.27	1.08	1.25
-25	(-13)	155	39	45	30	0.27	0.49	5.20	1.31	1.52
-20	(- 4)	226	57	66	37	0.32	0.71	6.10	1.54	1.79
-15	(+ 5)	313	79	92	44	0.38	0.98	7.06	1.78	2.07
-10	(+14)	416	105	122	51	0.44	1.31	8.17	2.06	2.40
-5	(+23)	534	135	156	56	0.48	1.69	9.52	2.40	2.79
0	(+32)	667	168	196	60	0.51	2.12	11.18	2.82	3.28

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)	152	38	45	34	0.29	0.48	4.46	1.12	1.31
-30	(-22)	209	53	61	40	0.34	0.65	5.29	1.33	1.55
-25	(-13)	285	72	83	45	0.38	0.89	6.42	1.62	1.88
-20	(- 4)	383	96	112	49	0.42	1.20	7.78	1.96	2.28
-15	(+ 5)	505	127	148	54	0.45	1.59	9.33	2.35	2.73
-10	(+14)	654	165	192	59	0.48	2.06	11.02	2.78	3.23
-5	(+23)	832	210	244	65	0.53	2.63	12.78	3.22	3.75
0	(+32)	1041	262	305	73	0.59	3.30	14.58	3.67	4.27

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)	112	28	33	27	0.24	0.35	4.07	1.03	1.19
-30	(-22)	174	44	51	36	0.31	0.55	4.84	1.22	1.42
-25	(-13)	253	64	74	44	0.37	0.79	5.83	1.47	1.71
-20	(- 4)	352	89	103	50	0.42	1.11	7.00	1.76	2.05
-15	(+ 5)	472	119	138	57	0.46	1.49	8.29	2.09	2.43
-10	(+14)	617	155	181	64	0.51	1.95	9.65	2.43	2.83
-5	(+23)	788	199	231	71	0.57	2.49	11.03	2.78	3.23
0	(+32)	988	249	289	80	0.64	3.13	12.37	3.12	3.62

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)	73	18	21	24	0.22	0.23	3.09	0.78	0.91
-30	(-22)	140	35	41	35	0.31	0.44	3.95	0.99	1.16
-25	(-13)	221	56	65	44	0.38	0.69	4.96	1.25	1.45
-20	(- 4)	319	80	94	52	0.44	1.00	6.09	1.54	1.79
-15	(+ 5)	437	110	128	60	0.50	1.38	7.28	1.84	2.13
-10	(+14)	576	145	169	68	0.56	1.82	8.48	2.14	2.48
-5	(+23)	739	186	217	77	0.63	2.34	9.62	2.43	2.82
0	(+32)	929	234	272	86	0.71	2.94	10.67	2.69	3.13

F - EXTERNAL CHARACTERISTICS

1 Base plate	European Standard FMX		
2 Tray holder	No		
3 Connectors			
3.1 SUCTION	6.2 +0.05/+0.05	[mm]	(0.244" +0.002"/+0.002")
3.1.1 Material	Copper		
3.1.2 Shape	Slanted 45° up + 45° to Back		
3.2 DISCHARGE	4.2 +0.10/-0.05	[mm]	(0.165" +0.004"/-0.002")
3.2.1 Material	Copper		
3.2.2 Shape	Slanted 0° up + 37° to Back		
3.3 PROCESS	6.2 +0.05/+0.05	[mm]	(0.244" +0.002"/+0.002")
3.3.1 Material	Copper		
3.3.2 Shape	Slanted 45° up + 57° to Back		
3.4 Oil cooler (Copper)	No	[mm]	
3.5 Connector sealing	Rubber Plugs		