

COMPRESSOR DEFINITION

Designation	FMX A9CE
Nominal Voltage/Frequency	230 V 43-160 Hz
Engineering Number	513908208

A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	R-600a		
3 Nominal voltage and frequency	230 / 43-160	[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)	-	-	-
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	1/5	[hp]
2 Displacement	8.74	[cm ³] (0.533 cu.in)
2.1 Bore [mm]	22.500	
2.2 Stroke [mm]	22.000	
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)	4.9	[kg] (10.80 lb.)
5 Nitrogen charge	-	[kgf/cm ²]

C - ELETRICAL DATA

1 Nominal Voltage/Frequency/Number of Phases	230 V 43-160 Hz 3~ (Three phase)	
2 Starting device type	Inverter	
2.1 Starting device	CF02D01 M 0.0 X	
3 Start capacitor	-	[µF(VAC minimum)]
4 Run capacitor	-	[µF(VAC minimum)]
5 Motor protection	INVERTER CF02D01 M 0	
6 Start winding resistance	14.16	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	14.16	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (43/160 Hz)	-	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (43/160 Hz)	-	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (43/160 Hz)	-	[A] - Measured according to UL 984
11 Approval boards certification		

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 +/- 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]	
212	53	62	37	0.31	0.67	5.81	1.46	1.70	

TEST CONDITIONS: @220V2000RPM			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]	
334	84	98	54	0.44	1.05	6.14	1.55	1.80	

TEST CONDITIONS: @220V3000RPM			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]	
495	125	145	82	0.65	1.55	6.07	1.53	1.78	

TEST CONDITIONS: @220V4800RPM			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]	
740	186	217	131	1.02	2.32	5.65	1.42	1.66	

E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V1300RPM		ASHRAE32 Static				(Condensing temperature 35°C (+95°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)	127	32	37	22	0.20	0.40	5.83	1.47	1.71
-30	(-22)	171	43	50	26	0.23	0.54	6.66	1.68	1.95
-25	(-13)	227	57	67	30	0.26	0.71	7.63	1.92	2.24
-20	(- 4)	296	75	87	34	0.29	0.93	8.74	2.20	2.56
-15	(+ 5)	379	95	111	38	0.32	1.19	10.01	2.52	2.93
-10	(+14)	475	120	139	42	0.35	1.50	11.44	2.88	3.35
-5	(+23)	587	148	172	45	0.37	1.86	13.05	3.29	3.82
0	(+32)	715	180	210	47	0.38	2.27	14.85	3.74	4.35

E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V1300RPM		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)	114	29	33	23	0.21	0.36	5.05	1.27	1.48
-30	(-22)	155	39	45	27	0.25	0.49	5.71	1.44	1.67
-25	(-13)	208	53	61	32	0.29	0.65	6.46	1.63	1.89
-20	(- 4)	275	69	81	38	0.33	0.86	7.30	1.84	2.14
-15	(+ 5)	356	90	104	43	0.36	1.12	8.24	2.08	2.42
-10	(+14)	451	114	132	48	0.40	1.42	9.31	2.35	2.73
-5	(+23)	562	142	165	54	0.44	1.78	10.51	2.65	3.08
0	(+32)	690	174	202	58	0.46	2.19	11.85	2.99	3.47

TEST CONDITIONS: @220V1300RPM		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)	94	24	28	22	0.21	0.29	4.23	1.07	1.24
-30	(-22)	134	34	39	28	0.25	0.42	4.84	1.22	1.42
-25	(-13)	187	47	55	34	0.29	0.59	5.48	1.38	1.61
-20	(- 4)	254	64	74	41	0.34	0.80	6.18	1.56	1.81
-15	(+ 5)	335	84	98	48	0.39	1.05	6.94	1.75	2.03
-10	(+14)	431	109	126	55	0.45	1.36	7.77	1.96	2.28
-5	(+23)	544	137	159	63	0.50	1.72	8.68	2.19	2.54
0	(+32)	673	170	197	70	0.55	2.14	9.69	2.44	2.84

TEST CONDITIONS: @220V2000RPM		ASHRAE32 Static			(Condensing temperature 35°C (+95°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)	192	48	56	33	0.29	0.60	5.81	1.46	1.70
-30	(-22)	265	67	78	39	0.33	0.83	6.73	1.70	1.97
-25	(-13)	354	89	104	46	0.37	1.11	7.70	1.94	2.26
-20	(- 4)	461	116	135	52	0.41	1.45	8.77	2.21	2.57
-15	(+ 5)	587	148	172	59	0.46	1.85	9.97	2.51	2.92
-10	(+14)	733	185	215	65	0.51	2.31	11.32	2.85	3.32
-5	(+23)	902	227	264	70	0.56	2.85	12.85	3.24	3.76
0	(+32)	1094	276	321	74	0.62	3.47	14.60	3.68	4.28

E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V2000RPM		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)	184	46	54	35	0.30	0.57	5.22	1.32	1.53
-30	(-22)	250	63	73	42	0.34	0.78	5.99	1.51	1.75
-25	(-13)	335	84	98	49	0.39	1.05	6.78	1.71	1.99
-20	(- 4)	437	110	128	57	0.45	1.37	7.62	1.92	2.23
-15	(+ 5)	560	141	164	65	0.51	1.76	8.54	2.15	2.50
-10	(+14)	704	178	206	73	0.57	2.22	9.58	2.42	2.81
-5	(+23)	872	220	255	81	0.64	2.76	10.77	2.71	3.16
0	(+32)	1063	268	312	88	0.72	3.37	12.13	3.06	3.55

TEST CONDITIONS: @220V2000RPM		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)	156	39	46	35	0.30	0.49	4.42	1.11	1.30
-30	(-22)	220	55	64	43	0.36	0.69	5.15	1.30	1.51
-25	(-13)	301	76	88	52	0.42	0.95	5.86	1.48	1.72
-20	(- 4)	403	102	118	61	0.48	1.27	6.59	1.66	1.93
-15	(+ 5)	525	132	154	71	0.56	1.65	7.36	1.85	2.16
-10	(+14)	670	169	196	82	0.64	2.11	8.20	2.07	2.40
-5	(+23)	838	211	246	92	0.73	2.65	9.15	2.30	2.68
0	(+32)	1032	260	302	102	0.83	3.27	10.23	2.58	3.00

TEST CONDITIONS: @220V3000RPM		ASHRAE32 Static			(Condensing temperature 35°C (+95°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)	299	75	88	51	0.41	0.94	5.82	1.47	1.71
-30	(-22)	402	101	118	62	0.49	1.26	6.44	1.62	1.89
-25	(-13)	514	129	151	73	0.57	1.61	7.07	1.78	2.07
-20	(- 4)	642	162	188	83	0.65	2.02	7.76	1.95	2.27
-15	(+ 5)	798	201	234	94	0.73	2.51	8.54	2.15	2.50
-10	(+14)	988	249	290	104	0.80	3.12	9.45	2.38	2.77
-5	(+23)	1224	308	359	116	0.88	3.87	10.52	2.65	3.08
0	(+32)	1513	381	443	129	0.96	4.80	11.80	2.97	3.46

E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V3000RPM		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)	261	66	76	52	0.42	0.82	5.12	1.29	1.50
-30	(-22)	379	95	111	64	0.51	1.19	5.86	1.48	1.72
-25	(-13)	507	128	149	77	0.61	1.59	6.59	1.66	1.93
-20	(- 4)	655	165	192	89	0.70	2.06	7.35	1.85	2.15
-15	(+ 5)	831	210	244	101	0.79	2.62	8.18	2.06	2.40
-10	(+14)	1046	264	307	114	0.89	3.30	9.11	2.30	2.67
-5	(+23)	1308	330	383	129	0.99	4.14	10.18	2.57	2.98
0	(+32)	1626	410	477	145	1.09	5.15	11.44	2.88	3.35

TEST CONDITIONS: @220V3000RPM		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)	231	58	68	51	0.41	0.73	4.52	1.14	1.32
-30	(-22)	339	85	99	65	0.51	1.06	5.20	1.31	1.52
-25	(-13)	458	115	134	79	0.62	1.44	5.86	1.48	1.72
-20	(- 4)	600	151	176	93	0.72	1.89	6.52	1.64	1.91
-15	(+ 5)	773	195	227	107	0.83	2.43	7.23	1.82	2.12
-10	(+14)	986	249	289	123	0.94	3.11	8.02	2.02	2.35
-5	(+23)	1249	315	366	140	1.06	3.95	8.92	2.25	2.61
0	(+32)	1571	396	460	159	1.18	4.98	9.98	2.52	2.92

TEST CONDITIONS: @220V4800RPM		ASHRAE32 Static			(Condensing temperature 35°C (+95°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	85	0.66	1.35	5.06	1.28	1.48
-30	(-22)	597	151	175	103	0.78	1.87	5.77	1.46	1.69
-25	(-13)	788	198	231	121	0.91	2.47	6.50	1.64	1.90
-20	(- 4)	1014	255	297	140	1.05	3.18	7.27	1.83	2.13
-15	(+ 5)	1288	324	377	159	1.20	4.05	8.13	2.05	2.38
-10	(+14)	1622	409	475	178	1.35	5.12	9.12	2.30	2.67
-5	(+23)	2029	511	595	197	1.51	6.41	10.29	2.59	3.01
0	(+32)	2521	635	739	216	1.68	7.99	11.66	2.94	3.42

E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V4800RPM		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)	405	102	119	88	0.78	1.27	4.60	1.16	1.35
-30	(-22)	552	139	162	105	0.92	1.73	5.26	1.33	1.54
-25	(-13)	729	184	214	123	1.05	2.29	5.92	1.49	1.74
-20	(- 4)	946	238	277	143	1.20	2.97	6.62	1.67	1.94
-15	(+ 5)	1216	306	356	164	1.34	3.83	7.40	1.87	2.17
-10	(+14)	1551	391	455	186	1.49	4.89	8.30	2.09	2.43
-5	(+23)	1965	495	576	210	1.64	6.21	9.36	2.36	2.74
0	(+32)	2468	622	723	235	1.79	7.82	10.61	2.67	3.11

TEST CONDITIONS: @220V4800RPM		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)	381	96	112	88	0.77	1.19	4.31	1.09	1.26
-30	(-22)	506	128	148	105	0.94	1.59	4.86	1.22	1.42
-25	(-13)	666	168	195	124	1.11	2.09	5.39	1.36	1.58
-20	(- 4)	871	219	255	147	1.27	2.74	5.94	1.50	1.74
-15	(+ 5)	1134	286	332	172	1.44	3.57	6.57	1.65	1.92
-10	(+14)	1467	370	430	200	1.60	4.63	7.30	1.84	2.14
-5	(+23)	1883	475	552	230	1.76	5.96	8.17	2.06	2.39
0	(+32)	2394	603	702	263	1.91	7.59	9.23	2.33	2.71

F - EXTERNAL CHARACTERISTICS

1 Base plate	European Standard FMX		
2 Tray holder	Yes		
3 Connectors			
3.1 SUCTION	6.1 +0.10/+0.00	[mm]	(0.240" +0.004"/+0.000")
3.1.1 Material	Copper		
3.1.2 Shape	Slanted 45° up		
3.2 DISCHARGE	5.1 +0.10/+0.00	[mm]	(0.201" +0.004"/+0.000")
3.2.1 Material	Copper		
3.2.2 Shape	Slanted 45° up + 37° to Back		
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 + 57° to Back		
3.4 Oil cooler (Copper)	No	[mm]	
3.5 Connector sealing	Rubber Plugs		