

COMPRESSOR DEFINITION

Designation	FMS U9C
Nominal Voltage/Frequency	230 V 90-315 Hz
Engineering Number	518000036

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	6.51	[cm ³] (0.397 cu.in)
2.1 Bore [mm]	21.000	
2.2 Stroke [mm]	18.800	
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 - ELETRICAL 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	CF01F01 L	
3 Start capacitor	-	[µF(VAC minimum)]
4 Run capacitor	-	[µF(VAC minimum)]
5 Motor protection	CF01F01 L 00 XX	
6 Start winding resistance	15.35	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	15.35	[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)	-	[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	

D - PERFORMANCE - CHECK POINT DATA

TEST CONDITIONS: @115V1800RPM			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]	
232	58	68	43	0.86	0.73	5.42	1.37	1.59	

TEST CONDITIONS: @115V2800RPM			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]	
362	91	106	64	1.24	1.14	5.63	1.42	1.65	

TEST CONDITIONS: @115V4000RPM			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]	
512	129	150	92	1.72	1.61	5.54	1.40	1.62	

TEST CONDITIONS: @115V6300RPM			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]	
734	185	215	145	2.59	2.30	5.05	1.27	1.48	

E - PERFORMANCE - CURVES

TEST CONDITIONS: @115V1800RPM		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)	132	33	39	27	0.55	0.41	4.94	1.25	1.45
-30	(-22)	181	45	53	31	0.64	0.57	5.79	1.46	1.70
-25	(-13)	237	60	70	35	0.72	0.74	6.70	1.69	1.96
-20	(- 4)	305	77	89	40	0.78	0.96	7.70	1.94	2.26
-15	(+ 5)	386	97	113	44	0.85	1.22	8.82	2.22	2.58
-10	(+14)	484	122	142	48	0.91	1.53	10.09	2.54	2.96
-5	(+23)	601	152	176	52	0.99	1.90	11.55	2.91	3.38
0	(+32)	740	187	217	56	1.07	2.35	13.22	3.33	3.87

E - PERFORMANCE - CURVES

TEST CONDITIONS: @115V1800RPM		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)	121	30	35	27	0.55	0.38	4.45	1.12	1.30
-30	(-22)	169	43	50	33	0.67	0.53	5.14	1.30	1.51
-25	(-13)	226	57	66	39	0.78	0.71	5.87	1.48	1.72
-20	(- 4)	294	74	86	44	0.87	0.92	6.65	1.68	1.95
-15	(+ 5)	375	95	110	50	0.95	1.18	7.53	1.90	2.21
-10	(+14)	473	119	139	55	1.04	1.49	8.53	2.15	2.50
-5	(+23)	590	149	173	61	1.12	1.86	9.69	2.44	2.84
0	(+32)	728	184	213	67	1.22	2.31	11.02	2.78	3.23

TEST CONDITIONS: @115V1800RPM		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)	109	28	32	28	0.56	0.34	3.95	0.99	1.16
-30	(-22)	157	40	46	35	0.71	0.49	4.56	1.15	1.34
-25	(-13)	213	54	63	41	0.84	0.67	5.17	1.30	1.52
-20	(- 4)	280	71	82	48	0.95	0.88	5.82	1.47	1.70
-15	(+ 5)	360	91	106	55	1.06	1.13	6.52	1.64	1.91
-10	(+14)	457	115	134	62	1.16	1.44	7.32	1.84	2.15
-5	(+23)	572	144	168	69	1.26	1.81	8.24	2.08	2.42
0	(+32)	709	179	208	77	1.37	2.25	9.32	2.35	2.73

TEST CONDITIONS: @115V2200RPM		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)	161	40	47	32	0.65	0.50	4.98	1.25	1.46
-30	(-22)	220	56	65	38	0.76	0.69	5.83	1.47	1.71
-25	(-13)	290	73	85	43	0.85	0.91	6.73	1.70	1.97
-20	(- 4)	373	94	109	48	0.93	1.17	7.72	1.95	2.26
-15	(+ 5)	473	119	139	53	1.01	1.49	8.83	2.23	2.59
-10	(+14)	591	149	173	59	1.08	1.87	10.10	2.54	2.96
-5	(+23)	732	185	215	63	1.17	2.32	11.55	2.91	3.39
0	(+32)	899	226	263	68	1.26	2.85	13.23	3.33	3.88

E - PERFORMANCE - CURVES

TEST CONDITIONS: @115V2200RPM		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)	147	37	43	33	0.66	0.46	4.50	1.13	1.32
-30	(-22)	207	52	61	40	0.79	0.65	5.23	1.32	1.53
-25	(-13)	277	70	81	46	0.92	0.87	5.97	1.50	1.75
-20	(- 4)	360	91	105	53	1.02	1.13	6.76	1.70	1.98
-15	(+ 5)	458	115	134	60	1.12	1.44	7.64	1.93	2.24
-10	(+14)	575	145	169	66	1.22	1.81	8.64	2.18	2.53
-5	(+23)	714	180	209	73	1.32	2.26	9.79	2.47	2.87
0	(+32)	878	221	257	80	1.42	2.78	11.12	2.80	3.26

TEST CONDITIONS: @115V2200RPM		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)	130	33	38	33	0.66	0.41	3.95	0.99	1.16
-30	(-22)	189	48	56	41	0.83	0.59	4.62	1.16	1.35
-25	(-13)	258	65	76	49	0.98	0.81	5.27	1.33	1.54
-20	(- 4)	338	85	99	57	1.11	1.06	5.93	1.50	1.74
-15	(+ 5)	434	109	127	65	1.23	1.37	6.65	1.68	1.95
-10	(+14)	549	138	161	74	1.34	1.73	7.45	1.88	2.18
-5	(+23)	685	173	201	82	1.46	2.17	8.36	2.11	2.45
0	(+32)	845	213	248	90	1.57	2.68	9.43	2.38	2.76

TEST CONDITIONS: @115V2800RPM		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)	201	51	59	41	0.80	0.63	4.93	1.24	1.44
-30	(-22)	277	70	81	48	0.93	0.87	5.78	1.46	1.69
-25	(-13)	366	92	107	55	1.04	1.15	6.67	1.68	1.95
-20	(- 4)	472	119	138	62	1.15	1.48	7.64	1.92	2.24
-15	(+ 5)	599	151	175	69	1.25	1.88	8.72	2.20	2.56
-10	(+14)	750	189	220	75	1.35	2.37	9.96	2.51	2.92
-5	(+23)	931	234	273	82	1.46	2.94	11.39	2.87	3.34
0	(+32)	1143	288	335	88	1.56	3.62	13.04	3.28	3.82

E - PERFORMANCE - CURVES

TEST CONDITIONS: @115V2800RPM		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)	185	47	54	41	0.80	0.58	4.53	1.14	1.33
-30	(-22)	261	66	77	50	0.96	0.82	5.27	1.33	1.54
-25	(-13)	350	88	103	58	1.11	1.10	6.01	1.52	1.76
-20	(- 4)	456	115	134	67	1.25	1.43	6.80	1.71	1.99
-15	(+ 5)	582	147	171	76	1.38	1.83	7.67	1.93	2.25
-10	(+14)	732	185	215	84	1.51	2.31	8.65	2.18	2.54
-5	(+23)	911	229	267	93	1.63	2.88	9.79	2.47	2.87
0	(+32)	1121	282	328	102	1.75	3.55	11.11	2.80	3.26

TEST CONDITIONS: @115V2800RPM		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)	163	41	48	41	0.79	0.51	3.95	1.00	1.16
-30	(-22)	238	60	70	51	0.99	0.74	4.66	1.17	1.37
-25	(-13)	325	82	95	61	1.17	1.02	5.33	1.34	1.56
-20	(- 4)	428	108	125	71	1.34	1.34	6.01	1.52	1.76
-15	(+ 5)	551	139	161	82	1.49	1.73	6.74	1.70	1.97
-10	(+14)	698	176	204	92	1.64	2.20	7.54	1.90	2.21
-5	(+23)	872	220	255	103	1.78	2.76	8.46	2.13	2.48
0	(+32)	1077	271	316	114	1.91	3.42	9.53	2.40	2.79

TEST CONDITIONS: @115V4000RPM		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)	275	69	81	59	1.09	0.86	4.69	1.18	1.38
-30	(-22)	383	96	112	69	1.27	1.20	5.51	1.39	1.62
-25	(-13)	508	128	149	80	1.44	1.59	6.35	1.60	1.86
-20	(- 4)	659	166	193	91	1.60	2.07	7.25	1.83	2.12
-15	(+ 5)	838	211	246	102	1.75	2.64	8.24	2.08	2.42
-10	(+14)	1053	265	309	112	1.91	3.32	9.37	2.36	2.75
-5	(+23)	1309	330	383	123	2.06	4.14	10.68	2.69	3.13
0	(+32)	1609	406	472	132	2.21	5.10	12.20	3.08	3.58

E - PERFORMANCE - CURVES

TEST CONDITIONS: @115V4000RPM		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)	251	63	74	58	1.08	0.79	4.32	1.09	1.27
-30	(-22)	357	90	105	70	1.30	1.12	5.06	1.28	1.48
-25	(-13)	481	121	141	83	1.51	1.51	5.78	1.46	1.70
-20	(- 4)	630	159	185	96	1.70	1.98	6.53	1.65	1.91
-15	(+ 5)	808	204	237	110	1.89	2.54	7.34	1.85	2.15
-10	(+14)	1020	257	299	123	2.07	3.22	8.26	2.08	2.42
-5	(+23)	1273	321	373	137	2.26	4.03	9.31	2.35	2.73
0	(+32)	1571	396	460	150	2.44	4.98	10.55	2.66	3.09

TEST CONDITIONS: @115V4000RPM		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)	227	57	66	59	1.09	0.71	3.85	0.97	1.13
-30	(-22)	330	83	97	72	1.34	1.04	4.58	1.16	1.34
-25	(-13)	452	114	133	86	1.57	1.42	5.27	1.33	1.54
-20	(- 4)	598	151	175	101	1.79	1.88	5.94	1.50	1.74
-15	(+ 5)	773	195	226	116	2.00	2.43	6.64	1.67	1.95
-10	(+14)	982	248	288	132	2.21	3.10	7.41	1.87	2.17
-5	(+23)	1231	310	361	149	2.42	3.90	8.29	2.09	2.43
0	(+32)	1526	385	447	165	2.62	4.84	9.31	2.35	2.73

TEST CONDITIONS: @115V6300RPM		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)	400	101	117	98	1.72	1.25	4.08	1.03	1.19
-30	(-22)	567	143	166	123	2.10	1.78	4.62	1.16	1.35
-25	(-13)	740	186	217	138	2.33	2.32	5.35	1.35	1.57
-20	(- 4)	920	232	270	147	2.43	2.89	6.28	1.58	1.84
-15	(+ 5)	1113	280	326	150	2.45	3.50	7.41	1.87	2.17
-10	(+14)	1321	333	387	150	2.44	4.17	8.75	2.21	2.56
-5	(+23)	1546	390	453	150	2.44	4.89	10.32	2.60	3.02
0	(+32)	1794	452	526	151	2.49	5.68	12.11	3.05	3.55

E - PERFORMANCE - CURVES

TEST CONDITIONS: @115V6300RPM		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)	371	94	109	94	1.66	1.16	3.93	0.99	1.15
-30	(-22)	542	137	159	120	2.07	1.70	4.50	1.13	1.32
-25	(-13)	708	178	208	137	2.31	2.22	5.18	1.31	1.52
-20	(- 4)	872	220	256	146	2.43	2.74	5.99	1.51	1.75
-15	(+ 5)	1038	261	304	150	2.46	3.27	6.93	1.75	2.03
-10	(+14)	1208	304	354	151	2.45	3.81	8.00	2.02	2.35
-5	(+23)	1386	349	406	150	2.44	4.38	9.23	2.33	2.70
0	(+32)	1575	397	462	151	2.47	4.99	10.61	2.67	3.11

TEST CONDITIONS: @115V6300RPM		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)	339	85	99	94	1.65	1.06	3.63	0.91	1.06
-30	(-22)	514	130	151	120	2.08	1.61	4.25	1.07	1.25
-25	(-13)	674	170	198	137	2.33	2.12	4.92	1.24	1.44
-20	(- 4)	822	207	241	146	2.46	2.58	5.64	1.42	1.65
-15	(+ 5)	961	242	282	150	2.49	3.03	6.41	1.62	1.88
-10	(+14)	1095	276	321	151	2.47	3.45	7.25	1.83	2.13
-5	(+23)	1226	309	359	150	2.45	3.88	8.17	2.06	2.39
0	(+32)	1358	342	398	150	2.46	4.31	9.17	2.31	2.69

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 parallel to Base Plate		
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 74° up + 0° back		
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	Straight		
3.4 Oil cooler (Copper)	No	[mm]	
3.5 Connector sealing	Rubber Plugs		