

PRODUCT SPECIFICATION

COMPRESSOR MODEL

CR37K6M-TFD-XXX
@ 50 Hz

BILL OF MATERIALS

101, 102, 103

Emerson Climate Technologies (India) Limited
Karad Dhebewadi Road
Karad - 415 110
INDIA

Note: Sales compressor drawing number and compressor model name are the same.

SC1				01	F45-0412-0260 Current EN No.	A3 07.04.2012
Prepared by	Checked by	Verified by	Approved by	Page No.	CR37K6M-TFD-XXX(@50Hz) DOCUMENT No.	

PRODUCT SPECIFICATION**MODEL: CR37K6M-TFD-XXX****A) MODEL DESCRIPTION**

Model Name	CR37K6M-TFD-XXX
Compressor Type	Reciprocating, Connecting Rod Type
Application Group	High Temperature (HBP)
Evaporating Temperature Range	(-23.3 °C To 12.8 °C Or (-)10 °F To 55 °F)
Refrigerant	R-22
Rated Voltage	380-420 V, 50 Hz, 3 Phase
Compressor Cooling	Fan : 400 ft ³ / minute
Typical Application	Air - Conditioning, Heat Pump
*Certifications & Approvals	UL (File No. SA12060)

* The Electrical Accessories are provided for reference and not included in the scope of Certification.

B) PERFORMANCE SPECIFICATION @ RATED CONDITION

Parameter	Unit	ARI
Cooling Capacity	Btu / hr	31,200
	kcal / hr	7,862
	W	9,144
	Nominal HP	2.6
Input Power	W	3000
Input Current	A	5.6
EER = $\frac{\text{Cooling Capacity}}{\text{Input Power}}$	Btu / W-hr	10.40
	kcal / W-hr	2.62
	W / W	3.05

Note: Above Performance Parameters are Nominal Values & subject to $\pm 5\%$ variation.

C) RATING CONDITIONS

Parameter	Unit	ARI
Evaporating Temperature	°C (°F)	7.2 \pm 0.5 (45)
Condensing Temperature	°C (°F)	54.4 \pm 1 (130)
Ambient Temperature	°C (°F)	35 \pm 1 (95)
Sub-cooled Liquid Temperature	°C (°F)	46 \pm 1 (115)
Return Gas Temperature	°C (°F)	18.3 \pm 1 (65)
Test Voltage	V	380

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D) MECHANICAL SPECIFICATIONS

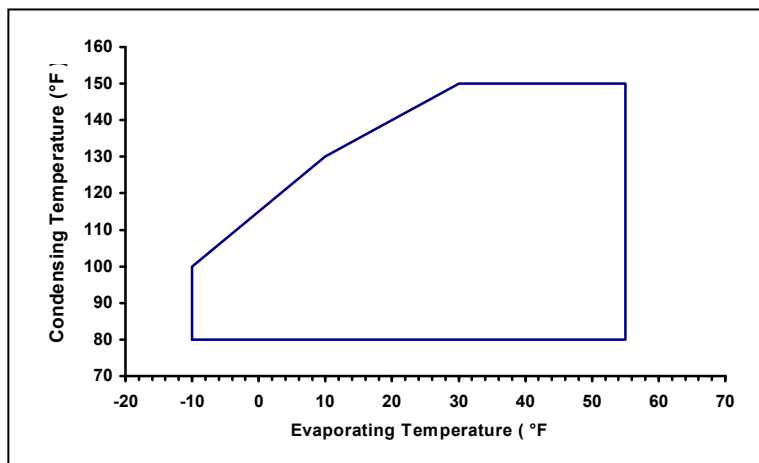
Parameter	Unit	Value
Number of Cylinders	Number	Two (2)
Displacement	cm ³ (inch ³) / rev	63.52 (3.87)
Net Weight	kg	32
Approximate Shipping Weight	kg	32.5
Oil Charge	cm ³ (Oz)	1,330 (45)
Oil Type	Refrigeration Grade	Mineral
IPRV (Pressure Differential)	kg/cm ² (psig)	31.64 / 38.67 (450 / 550)
** Crank - case Heater	W @ V	35 @ 240 FOR CR37K6M-TFD-102 35 @ 480 FOR CR37K6M-TFD-103

** Recommended only for Heat Pump Application.

E) ELECTRICAL SPECIFICATIONS

Parameter	Unit	Value
Operating Voltage Range	V	342 To 462
Motor Circuit	---	3 Phase
Electrical Accessories	---	
➤ Start Capacitor	μF @ V AC	N / A
➤ Run Capacitor	μF @ V AC	N / A
➤ Relay	---	N / A
➤ Over Load Protector	---	Internal
Locked Rotor Ampere (LRA)	A	45
Maximum Continuous Current (MCC)	A	9.1
High Potential Test	(kV / second / mA)	2.3/1/5.5 ± 0.5

F) OPERATING ENVELOP @ 380 V, 50 Hz, 3 Phase



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PRODUCT SPECIFICATION**MODEL: CR37K6M-TFD-XXX****G) PERFORMANCE TABLES**

Superheating	11 °C (20 °F)	Voltage	380 V, 50 Hz, 3 Phase
Sub - cooling	8.3 °C (15 °F)	Compressor Cooling	400 ft ³ / minute
Ambient Temperature	35 °C (95 °F)	-	-

H) COOLING CAPACITY (Btu / hr)

Condensing Temperature		Evaporating Temperature									Coefficients	
											c1	4.00E+04
°C	(°F)	-23.3	-17.8	-12.2	-6.7	-1.1	4.4	7.2	10.0	12.8	c2	8.41E+02
		-10	0	10	20	30	40	45	50	55	c3	-5.45E+02
37.8	100	6800	10700	15300	21200	28500	36200	40400	44700	49800	c4	6.91E+00
43.3	110	-	9500	13600	19200	26100	33200	37200	41300	45800	c5	-4.36E+00
48.9	120	-	-	12200	17000	23600	30600	34100	38200	42400	c6	3.38E+00
54.4	130	-	-	10700	15600	21200	27600	31200	34900	38900	c7	-1.55E-02
60.0	140	-	-	-	13300	18900	24800	28200	31800	35400	c8	-9.12E-03
65.6	150	-	-	-	11700	16500	22000	25100	28600	31900	c9	2.17E-03
											c10	-8.72E-03

J) INPUT POWER (W)

Condensing Temperature		Evaporating Temperature									Coefficients	
											c1	3.19E+03
°C	(°F)	-23.3	-17.8	-12.2	-6.7	-1.1	4.4	7.2	10.0	12.8	c2	-5.29E+00
		-10	0	10	20	30	40	45	50	55	c3	-4.40E+01
37.8	100	1355	1550	1810	2050	2260	2420	2480	2540	2600	c4	-6.96E-02
43.3	110	-	1565	1850	2140	2365	2530	2660	2710	2800	c5	2.53E-01
48.9	120	-	-	1880	2210	2500	2700	2820	2915	3015	c6	3.97E-01
54.4	130	-	-	1910	2260	2590	2900	3000	3135	3215	c7	-2.10E-03
60.0	140	-	-	-	2280	2660	3010	3185	3295	3415	c8	7.92E-04
65.6	150	-	-	-	2410	2700	3115	3350	3455	3615	c9	4.06E-04
											c10	-1.19E-03

K) INPUT CURRENT (A)

Condensing Temperature		Evaporating Temperature									Coefficients	
											c1	2.36E+00
°C	(°F)	-23.3	-17.8	-12.2	-6.7	-1.1	4.4	7.2	10.0	12.8	c2	-8.56E-03
		-10	0	10	20	30	40	45	50	55	c3	3.96E-02
37.8	100	4.0	4.1	4.2	4.5	4.6	4.8	5.0	5.0	5.1	c4	1.97E-04
43.3	110	-	4.1	4.3	4.6	4.8	5.0	5.2	5.2	5.3	c5	1.31E-05
48.9	120	-	-	4.3	4.7	4.9	5.2	5.4	5.5	5.6	c6	-2.79E-04
54.4	130	-	-	4.3	4.7	5.1	5.4	5.6	5.7	5.9	c7	-3.03E-06
60.0	140	-	-	-	4.8	5.2	5.6	5.8	6.0	6.2	c8	3.42E-07
65.6	150	-	-	-	4.9	5.3	5.8	6.0	6.3	6.5	c9	2.15E-06
											c10	5.69E-07

L) MASS FLOW RATE (lbs / hr)

Condensing Temperature		Evaporating Temperature									Coefficients	
											c1	3.80E+02
°C	(°F)	-23.3	-17.8	-12.2	-6.7	-1.1	4.4	7.2	10.0	12.8	c2	8.82E+00
		-10	0	10	20	30	40	45	50	55	c3	-4.68E+00
37.8	100	95	147	207	282	375	470	521	574	635	c4	5.94E-02
43.3	110	-	136	192	267	357	449	500	552	608	c5	-3.31E-02
48.9	120	-	-	180	247	338	432	479	533	588	c6	3.33E-02
54.4	130	-	-	166	238	318	408	458	509	564	c7	-2.98E-04
60.0	140	-	-	-	213	298	386	436	488	539	c8	1.64E-04
65.6	150	-	-	-	199	276	362	409	463	513	c9	9.31E-06
											c10	-1.02E-04

Note: 1. Nominal Performance Values ($\pm 5\%$) based on 24 h of 'Run In'. Subject to change without notice.
2. Compressor is intended to be operated in the range of condensing & evaporating temperatures where Performance values are specified in above tables.

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M) MECHANICAL SPECIFICATIONS

Parameter	Unit	Value
Cylinder Bore Diameter	cm (inch)	4.21 (1.656)
Crank - Shaft Eccentricity	cm (inch)	1.14 (0.450)
Crank - Shaft Stroke	cm (inch)	2.28 (0.900)
Approximate Internal Free Volume (Without Oil)	cm ³ (inch ³)	6,900 (421)
Maximum Residual Moisture	mg	300
Maximum Internal Solid Residue / Impurities	mg	40

N) ELECTRICAL SPECIFICATIONS

Parameter	Unit	Value
Motor Type	---	2 Pole, Induction, Three Phase
Nominal Motor Speed	rpm	2,900
Nominal Motor Winding Resistance (@ 25 °C)	Main	Ω 3.34 To 3.72
	Aux.	Ω --
Nominal Motor Output Power	kW	2.64
Max. Allowable Motor Winding Temp.	°F (°C)	266 (130) B Class Insulation
Relay		
Type	---	N / A
Part Number	---	N / A
Pick Up (Maximum)	V	N / A
Drop Out (Minimum)	V	N / A
Maximum Voltage Rating of Coils	V	N / A
Over Load Protector		
Type	---	Internal
Part Number		34HM-251-6
Disc Opening Temperature	°F (°C)	248 To 266 (120 To 130)
Disc Closing Temperature	°F (°C)	126 To 158 (52 To 70)
1 st Cycle Trip Current	A	27
1 st Cycle Trip On Time	second	3 To 10
Terminal Fused Cluster	---	¼" Quick connector
Copper Wire Material	---	Hermetic Grade Round Enameled
Copper Wire Enamel Designation & Construction	---	H Class, Dual Coated

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PRODUCT SPECIFICATION**MODEL: CR37K6M-TFD-XXX****P) PERFORMANCE SPECIFICATIONS**

Parameter	Unit	Value
Bare Compressor Sound	dBA	75 Maximum
Bare Compressor Vibration	µm	140 Maximum
Compressor Discharge Pulse	psi	8.0 Maximum

Q) TEST CONDITIONS

Parameter	Voltage	Suction Pressure	Discharge Pressure	Top Shell Temperature	Ambient Temperature
Test	V	kg/cm ² (psig)	kg/cm ² (psig)	°C (°F)	°C (°F)
Overload (High Load)	380	6.50 (92.43)	30 (426.6)	--	55 (131)
Blocked Fan	380	6.33 (90)	28.12 (400)	--	--
Low Voltage Start : Equalised	342	11.9 ± 0.5 (169)	11.9 ± 0.5 (169)	62 (143.6)	--
Low Voltage Run	342	6.50 (92.43)	30 (426.6)	--	55 (131)

Note: Above Test Conditions are for Reference Only. Refer Operating Envelop & Maximum Allowable Discharge Line Temperature for safe Operation of Compressor.

R) REFERENCE APPLICATION DETAIL CONDITIONS

Parameter	Unit	Value
Maximum Allowable Ambient Temperature	°C (°F)	55 (131)
Maximum Discharge Line Temperature	° C (°F)	129.4 (265)
Maximum Return Gas Temperature	° C (°F)	27 (80.6)

Note: Application Details are the guidelines for safe operation of compressor.

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