

PRODUCT SPECIFICATION

COMPRESSOR MODEL

CR34K6M-TFD-XXX

@ 50 Hz

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

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

DVM				01	F45-0713-0462 Current EN No.	A3 09.07.2013
Prepared by	Checked by	Verified by	Approved by	Page No.	CR34K6M-TFD-XXX(@50Hz) DOCUMENT No.	

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A) MODEL DESCRIPTION

Model Name	CR34K6M-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)

B) PERFORMANCE SPECIFICATION @ RATED CONDITION

Parameter	Unit	ARI
Cooling Capacity	Btu / hr	28,300
	kcal / hr	7,131
	W	8,294
	Nominal HP	2.36
Input Power	W	2,830
Input Current	A	5.3
EER = $\frac{\text{Cooling Capacity}}{\text{Input Power}}$	Btu / W-h	10.00
	kcal / W-h	2.52
	W / W	2.93

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

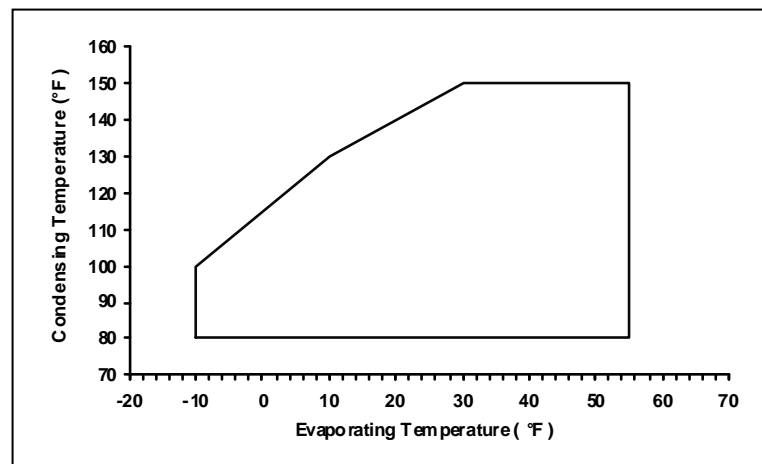
Parameter	Unit	Value
Number of Cylinders	Number	Two (2)
Displacement	cm ³ (inch ³) / rev	59.66 (3.640)
Net Weight	kg	31.0
Approximate Shipping Weight	kg	32.1
Oil Charge	cm ³ (Oz)	1,330 (45)
Oil Type	Refrigeration Grade	Mineral
IPRV (Pressure Differential)	kg/cm ² (psig)	31.64 / 38.67 (450 / 550)
** Crank - case Heater	W @ V	35 @ 240 FOR CR34K6M-TFD-XX2 35 @ 480 FOR CR34K6M-TFD-XX3

** 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	41
Maximum Continuous Current (MCC)	A	8.0
Motor Insulation	---	B Class
High Potential Test	(kV / second / mA)	2.3/1/5.5 ± 0.5

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



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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	1.99E+04
°C	(°F)	-23.3	-17.8	-12.2	-6.7	-1.1	4.4	7.2	10	12.8	c2	5.11E+02
		-10	0	10	20	30	40	45	50	55	c3	-2.0E+01
37.8	100	7045	10464	14598	19558	25455	32403	36305	40512	45037	c4	6.28E+00
43.3	110	-	9154	13069	17755	23326	29892	33583	37565	41853	c5	-8.43E-01
48.9	120	-	-	11554	15957	21190	27364	30840	34592	38636	c6	-1.1E+00
54.4	130	-	-	10076	14186	19071	24843	28300	31615	35410	c7	1.86E-02
60	140	-	-	-	12464	16991	22351	25378	28656	32198	c8	-2.71E-02
65	150	-	-	-	10814	14972	19910	22706	25739	29022	c9	-5.12E-03
											c10	3.77E-03

J) INPUT POWER (W)

Condensing Temperature		Evaporating Temperature									Coefficients	
											c1	1.16E+03
°C	(°F)	-23.3	-17.8	-12.2	-6.7	-1.1	4.4	7.2	10	12.8	c2	-1.6E+01
		-10	0	10	20	30	40	45	50	55	c3	-1.4E+00
37.8	100	1249	1489	1709	1898	2045	2140	2165	2172	2161	c4	-1.40E-01
43.3	110	-	1497	1764	2001	2197	2341	2391	2423	2438	c5	3.20E-01
48.9	120	-	-	1801	2087	2333	2528	2603	2662	2702	c6	1.11E-01
54.4	130	-	-	1815	2152	2449	2697	2830	2884	2951	c7	-1.78E-03
60	140	-	-	-	2192	2543	2844	2973	3085	3180	c8	3.86E-04
65	150	-	-	-	2205	2609	2966	3122	3263	3386	c9	7.04E-04
											c10	-6.35E-04

K) INPUT CURRENT (A)

Condensing Temperature		Evaporating Temperature									Coefficients	
											c1	6.59E+00
°C	(°F)	-23.3	-17.8	-12.2	-6.7	-1.1	4.4	7.2	10	12.8	c2	-1.00E-01
		-10	0	10	20	30	40	45	50	55	c3	-7.46E-02
37.8	100	3.15	3.44	3.75	4.03	4.24	4.33	4.31	4.25	4.13	c4	7.46E-04
43.3	110	-	3.34	3.77	4.15	4.45	4.61	4.63	4.59	4.50	c5	1.40E-03
48.9	120	-	-	3.77	4.25	4.64	4.87	4.92	4.91	4.85	c6	6.41E-04
54.4	130	-	-	3.75	4.33	4.80	5.10	5.30	5.20	5.16	c7	-7.78E-06
60	140	-	-	-	4.36	4.91	5.29	5.40	5.45	5.43	c8	-6.50E-06
65	150	-	-	-	4.35	4.98	5.42	5.56	5.63	5.64	c9	-9.35E-07
											c10	-2.11E-06

L) MASS FLOW RATE (lbs / hr)

Condensing Temperature		Evaporating Temperature									Coefficients	
											c1	2.12E+02
°C	(°F)	-23.3	-17.8	-12.2	-6.7	-1.1	4.4	7.2	10	12.8	c2	4.39E+00
		-10	0	10	20	30	40	45	50	55	c3	9.33E-02
37.8	100	98	143	197	261	335	421	468	520	574	c4	5.12E-02
43.3	110	-	131	184	247	319	404	451	501	555	c5	1.66E-02
48.9	120	-	-	170	232	303	386	432	482	535	c6	-1.03E-02
54.4	130	-	-	156	216	286	367	412	461	513	c7	1.99E-04
60	140	-	-	-	200	268	347	391	439	489	c8	-9.65E-05
65	150	-	-	-	183	249	326	369	415	465	c9	-1.10E-04
											c10	2.51E-05

Note: 1. Nominal Performance Values (+ 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)	1.07 (0.423)
Crank - Shaft Stroke	cm (inch)	2.15 (0.846)
Approximate Internal Free Volume (Without Oil)	cm ³ (inch ³)	6,800 (415)
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 4.08 To 4.63
	Aux.	Ω --
Nominal Motor Output Power	kW	2.5
Max. Allowable Motor Winding Temp.	°F (°C)	266 (130)
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-251-56
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	2 To 10
Terminal Fused Cluster	---	¼" Quick connector
Copper Wire Material	---	Hermetic Grade Round Enameled
Copper Wire Enamel Designation & Construction	---	H Class, Dual Coat

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P) PERFORMANCE SPECIFICATIONS

Parameter	Unit	Value
Bare Compressor Sound	dBA	74 Maximum
Bare Compressor Vibration	µm	140 Maximum
Compressor Discharge Pulse	psi	6.0 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 & Not for Customer Product Qualification.

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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