

PRODUCT SPECIFICATION

COMPRESSOR MODEL

CR42K6M-TFM-XXXXX

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

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

DVM				01	F45-0615-0416 EN No.	A3 27.06.2015
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PRODUCT SPECIFICATION**MODEL : CR42K6M-TFM-XXXXX****A) MODEL DESCRIPTION**

Model Name	CR42K6M-TFM-XXXXX
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. SA22060)

B) PERFORMANCE SPECIFICATION @ RATED CONDITION

Parameter	Unit	ASRE / T	ARI
Cooling Capacity	Btu / hr	35,100	34,200
	kcal / hr	8,845	8,618
	W	10,278	10,014
	Nominal HP	- - -	3.5
Input Power	W	3,300	3,300
Input Current	A	6.1	6.1
EER = $\frac{\text{Cooling Capacity}}{\text{Input Power}}$	Btu / W-hr	10.64	10.36
	kcal / W-hr	2.68	2.61
	W / W	3.12	3.04

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

C) RATING CONDITIONS

Parameter	Unit	ASRE / T	ARI
Evaporating Temperature	°C (°F)	7.2 \pm 0.5 (45)	7.2 \pm 0.5 (45)
Condensing Temperature	°C (°F)	54.4 \pm 1 (130)	54.4 \pm 1 (130)
Ambient Temperature	°C (°F)	35 \pm 1 (95)	35 \pm 1 (95)
Sub-cooled Liquid Temperature	°C (°F)	46 \pm 1 (115)	46 \pm 1 (115)
Return Gas Temperature	°C (°F)	35 \pm 1 (95)	18.3 \pm 1 (65)
Test Voltage	V	400	400

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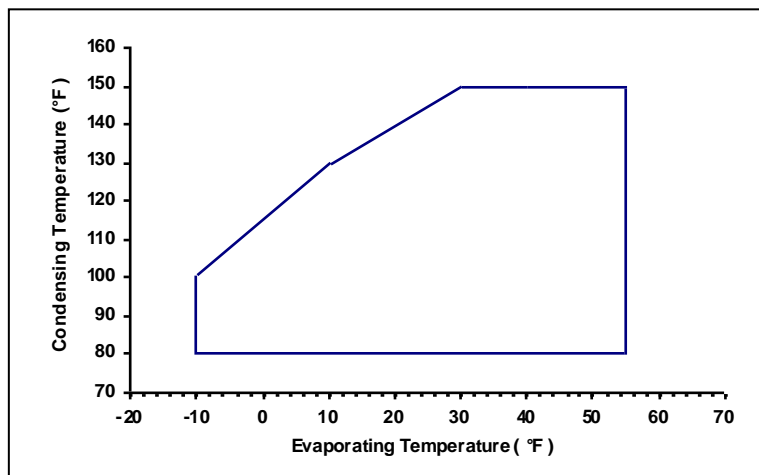
PRODUCT SPECIFICATION**MODEL : CR42K6M-TFM-XXXXX****D) MECHANICAL SPECIFICATIONS**

Parameter	Unit	Value
Number of Cylinders	Number	Two (2)
Displacement	cm ³ (inch ³) / rev	72.09 (4.399)
Net Weight	kg	32.7
Approximate Shipping Weight	kg	34.0
Oil Charge	cm ³ (Oz)	1,330 (45)
Oil Type	Refrigeration Grade	Mineral
IPRV (Pressure Differential)	kg/cm ² (psig)	31.65 / 38.68 (450 / 550)
** Crank - case Heater	W @ V	40 @ 240 For CR42K6M-TFM-102

** Recommended only for Heat Pump Application.

E) ELECTRICAL SPECIFICATIONS

Parameter	Unit	Value
Operating Voltage Range	V	342 To 462
Motor Circuit	---	Three Phase
Electrical Accessories	---	
➤ Start Capacitor	μF @ VAC	N/A
➤ Run Capacitor	μF @ VAC	N/A
➤ Relay	---	N/A
➤ Over Load Protector	---	Internal
Lock Rotor Ampere (LRA)	A	45.0
Maximum Continuous Current (MCC)	A	8.0
High Potential Test	(kV/second/mA)	2.3 / 1 / 5.5 ± 0.5

F) OPERATING ENVELOP @ 400 V, 50 Hz, 3 Phase

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G) PERFORMANCE TABLES

Superheating	11 °C (20 °F)	Voltage	400 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	c2
°C		-23.3	-17.8	-12.2	-6.7	-1.1	4.4	7.2	10.0	12.8	c3	37704.427
	(°F)	-10	0	10	20	30	40	45	50	55	c4	719.96584
37.8	100	9400	12800	17800	24000	31100	39600	44400	49700	55400	c5	-405.0531
43.3	110	-	11500	15900	21700	28500	36500	41000	46000	51300	c6	8.546321
48.9	120	-	-	14200	19500	25900	33300	37700	42300	47300	c7	-2.933499
54.4	130	-	-	12600	17200	23200	30300	34200	38500	43300	c8	2.195461
60.0	140	-	-	-	15000	20600	27100	30900	34800	39200	c9	0.014628
											c10	-0.030990

J) INPUT POWER (W)

Condensing Temperature		Evaporating Temperature									Coefficients	
											c1	c2
°C		-23.3	-17.8	-12.2	-6.7	-1.1	4.4	7.2	10.0	12.8	c3	3626.3311
	(°F)	-10	0	10	20	30	40	45	50	55	c4	-29.27225
37.8	100	1500	1680	1920	2190	2370	2480	2520	2550	2570	c5	-56.99447
43.3	110	-	1700	1950	2290	2520	2700	2770	2830	2880	c6	0.006110
48.9	120	-	-	1990	2370	2650	2890	2990	3070	3150	c7	0.516430
54.4	130	-	-	2020	2410	2750	3040	3300	3290	3400	c8	0.582846
60.0	140	-	-	-	2430	2820	3170	3450	3490	3620	c9	-0.003839
											c10	0.000663

K) INPUT CURRENT (A)

Condensing Temperature		Evaporating Temperature									Coefficients	
											c1	c2
°C		-23.3	-17.8	-12.2	-6.7	-1.1	4.4	7.2	10.0	12.8	c3	0.650545
	(°F)	-10	0	10	20	30	40	45	50	55	c4	-0.089835
37.8	100	4.2	4.3	4.6	4.8	5.0	5.2	5.2	5.2	5.3	c5	0.091114
43.3	110	-	4.3	4.7	4.9	5.2	5.6	5.6	5.6	5.8	c6	-0.000974
48.9	120	-	-	4.8	5.0	5.4	5.8	5.9	6.0	6.2	c7	0.002004
54.4	130	-	-	4.9	5.1	5.5	6.0	6.1	6.2	6.5	c8	-0.000791
60.0	140	-	-	-	5.2	5.6	6.2	6.3	6.5	6.8	c9	-0.000006
											c10	0.000012

L) MASS FLOW RATE (lbs / hr)

Condensing Temperature		Evaporating Temperature									Coefficients	
											c1	c2
°C		-23.3	-17.8	-12.2	-6.7	-1.1	4.4	7.2	10.0	12.8	c3	Under Evolution.
	(°F)	-10	0	10	20	30	40	45	50	55	c4	
37.8	100	Under Evolution.									c5	
43.3	110										c6	
48.9	120										c7	
54.4	130										c8	
60.0	140										c9	

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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PRODUCT SPECIFICATION**MODEL : CR42K6M-TFM-XXXXX****M) MECHANICAL SPECIFICATIONS**

Parameter	Unit	Value
Cylinder Bore Diameter	cm (inch)	4.98 (1.960)
Crank - Shaft Eccentricity	cm (inch)	0.93 (0.365)
Crank - Shaft Stroke	cm (inch)	1.85 (0.729)
Approximate Internal Free Volume (Without Oil)	cm ³ (inch ³)	8194 (500)
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	2.90	
Max. Allowable Motor Winding Temp.	°F (°C)	266 (130) B Class Insulation	
Relay			
Type	---	N/A	
Make - 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	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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P) SOUND & VIBRATION SPECIFICATIONS

Parameter	Unit	Value
Bare Compressor Sound	dBA	79.0 Maximum
Bare Compressor Vibration	µm	125.0 Maximum
Compressor Discharge Pulse	psi	10.0 Maximum

Q) TEST CONDITIONS

Parameter	Voltage	Suction Pressure	Discharge Pressure	Top Shell Temperature	Ambient Temperature
Unit	V	kg/cm ² (psig)	kg/cm ² (psig)	°C (°F)	°C (°F)
Overload (High Load)	400	6.50 (92.43)	30 (426.6)	--	55 (131)
Blocked Fan	400	6.33 (90)	28.12 (400)	--	--
Low Voltage Start :					
Equalised	342	11.9 (169)	11.9 (169)	62 (143.6)	--
Unequilised	342	8.4 (119)	18.9 (269)	62 (143.6)	--
Low Voltage Run	342	6.50 (92.43)	30 (426.6)	--	55 (131)

Note: Above test conditions are only for reference. Refer operating envelop and 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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