PRODUCT SPECIFICATION

COMPRESSOR MODEL

CS20K6ME-TFM-XXXXX

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

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

DVM				01	F45-1019-0148 EN No.	A4 18.10.2019
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A) MODEL DESCRIPTION

Model Name	**CS20K6ME-TFM-XXXXX**
Compressor Type	Reciprocating, Connecting Rod Type
Application Group	Medium Temperature
Evaporating Temperature Range	(-)31.7 °C To (-)1.1 °C Or (-)25 °F To 30 °F
Refrigerant	R-404A
Rated Voltage & Circuit	380-420 V, 50Hz, 3 Phase,
Compressor Cooling	Fan: 400 ft^3 / minute
Typical Application	Cold Room Application

B) PERFORMANCE SPECIFICATION @ RATED CONDITION

Specification	**Unit**	**ARI**	**EN12900**
Cooling Capacity	Btu / hr	16100	16700
	kcal / hr	4057	4208
	W	4718	4894
Input Power	W	2520	2433
Input Current	A	5.2	4.8
$EER = \frac{\text{Cooling Capacity}}{\text{Input Power}}$	Btu / W-hr	6.39	6.86
	kcal / W-hr	1.61	1.73
	W / W	1.87	2.01

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

C) RATING CONDITIONS

Parameter	**Unit**	**ARI**	**EN12900**
Evaporating Temperature	°C (°F)	-6.7 (20)	-10(14)
Condensing Temperature	°C (°F)	48.9 (120)	45 (113)
Ambient Temperature	°C (°F)	35 (95)	35 (95)
Sub cooled Liquid Temp.	°C (°F)	48.9 (120)	45 (113)
Return Gas Temperature	°C (°F)	4.4 (40)	20 (68)
Test Voltage	V	400	400

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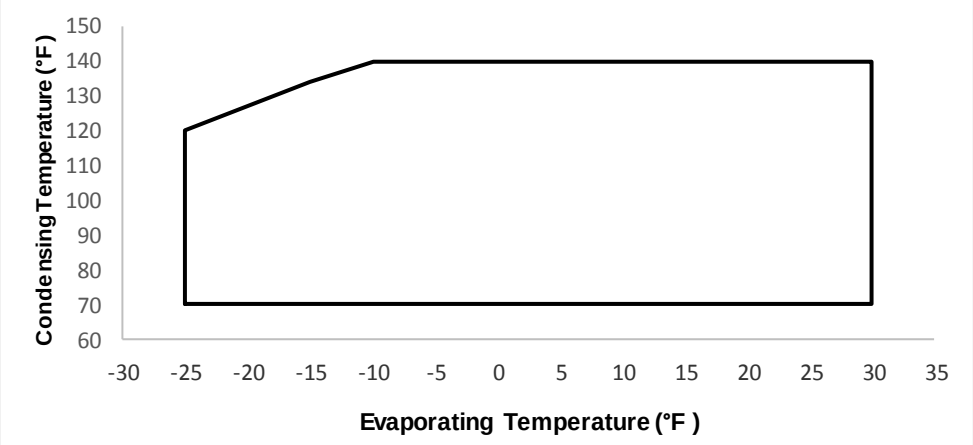
D) MECHANICAL SPECIFICATIONS

Parameter	Unit	Value
Number of Cylinders	Number	Two (2)
Displacement	cm^3 ($inch^3$) / rev	72.08 (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	POE
IPRV (Pressure Differential)	kg/cm^2 (psig)	31.64 / 38.67 (450 / 550)
Crank - Case Heater	W @ V	40 @ 240

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	9.7
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

Return Gas Temp.	4.4 °C (40 °F)	**Voltage**	400V, 50 Hz, 3 Phase
Sub - cooling	0 °C (0 °F)	**Compressor Cooling**	400 ft3 / minute
Ambient Temperature	35 °C (95 °F)	**Refrigerant**	R-404A

H) COOLING CAPACITY (Btu / h)

Condensing Temperature		**Evaporating Temperature**											**Coefficients**	
°C		**-31.7**	**-26.1**	**-23.3**	**-20.6**	**-17.8**	**-15.0**	**-12.2**	**-9.4**	**-6.7**	**-3.9**	**-1.1**	**c1**	29271.876067844900
	(°F)	**-25**	**-15**	**-10**	**-5**	**0**	**5**	**10**	**15**	**20**	**25**	**30**	**c2**	1044.372301522280
21.1	**70**	8455	12078	14152	16462	19052	21968	25255	28959	33123	37793	43015	**c3**	-45.744903156473
26.7	**80**	7376	10672	12535	14602	16918	19528	22478	25811	29574	33812	38569	**c4**	10.954613510039
32.2	**90**	6182	9182	10851	12691	14749	17068	19696	22676	26054	29874	34183	**c5**	-8.186082174598
37.8	**100**	4916	7654	9143	10772	12587	14633	16954	19596	22605	26024	29900	**c6**	-1.948139371125
43.3	**110**	3624	6130	7456	8890	10479	12266	14297	16617	19272	22306	25765	**c7**	0.060169626101
48.9	**120**	2350	4656	5834	7089	8467	10011	11768	13783	16100	18765	21822	**c8**	-0.063416047321
54.4	**130**	---	3275	4322	5414	6596	7914	9413	11137	13132	15444	18116	**c9**	0.015878684879
60.0	**140**	---	---	2963	3907	4911	6018	7274	8724	10413	12387	14690	**c10**	0.007371207575

J) INPUT POWER (W)

Condensing Temperature		**Evaporating Temperature**											**Coefficients**	
°C		**-31.7**	**-26.1**	**-23.3**	**-20.6**	**-17.8**	**-15.0**	**-12.2**	**-9.4**	**-6.7**	**-3.9**	**-1.1**	**c1**	2882.366056827150
	(°F)	**-25**	**-15**	**-10**	**-5**	**0**	**5**	**10**	**15**	**20**	**25**	**30**	**c2**	2.853799746762
21.1	**70**	1207	1472	1584	1685	1774	1853	1924	1986	2042	2092	2137	**c3**	-41.802202568854
26.7	**80**	1202	1480	1600	1709	1808	1897	1978	2052	2121	2184	2243	**c4**	-0.309436343931
32.2	**90**	1215	1507	1635	1752	1860	1959	2051	2137	2218	2294	2367	**c5**	0.204615688764
37.8	**100**	1238	1543	1678	1804	1921	2030	2133	2230	2323	2413	2500	**c6**	0.485534902174
43.3	**110**	1261	1577	1720	1854	1981	2100	2213	2322	2427	2530	2631	**c7**	0.001402166555
48.9	**120**	1272	1602	1752	1894	2029	2158	2283	2403	2520	2635	2750	**c8**	0.001570321469
54.4	**130**	---	1605	1763	1913	2058	2196	2331	2462	2592	2720	2848	**c9**	-0.000070727544
60.0	**140**	---	---	1765	1914	2059	2204	2349	2491	2633	2774	2916	**c10**	-0.001636807861

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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SPECIFICATION CONFIDENTIAL

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
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)
1st Cycle Trip Current		A	27
1st Cycle Trip On Time		second	3 To 10
Terminal Fused Cluster		---	¼" Quick connector
Wire Material		---	Hermetic Grade Round Enameled
Wire Enamel Designation & Construction		---	H Class, Dual Coated

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P) PERFORMANCE SPECIFICATIONS

Parameter	Unit	Value
Bare Compressor Sound	dBA	82.0 Maximum
Bare Compressor Vibration	µm	130.0 Maximum
Compressor Discharge Pulse	psi	10.0 Maximum

Q) TEST CONDITIONS

Parameter	Voltage	Suction Pressure	Discharge Pressure	Top Shell Temperature	Ambient Temperature
Unit / Test	V	kg/cm^2 (psig)	kg/cm^2 (psig)	°C (°F)	°C (°F)
Overload (High Load)	462	5.13 (73)	31.70 (451)	--	46 (115)
Blocked Fan	400	6.7 (95)	30.58 (435)	--	35(95)
Low Voltage Start: Unequalised Equalised	 342 342	 8 (114) 14.3 (203)	 25.3(360) 14.3(203)	 65(149) 65(149)	--
Low Voltage Run	342	5.13 (73)	31.70 (451)	--	46 (115)

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)	46 (115)
Maximum Discharge Line Temperature	°C (°F)	135 (275)
Maximum Return Gas Temperature	°C (°F)	43 (109)

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