

PRODUCT SPECIFICATION

COMPRESSOR MODEL

CR42K6M-PFZ-XXXXX

BILL OF MATERIAL

101, 101DM, 102

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 | F45-1018-0211 EN No. | A2 24.10.2018 |
| Prepared by | Checked by | Verified by | Approved by | Page No. | CR42K6M-PFZ-XXXXX DOCUMENT No. | |

PRODUCT SPECIFICATION**MODEL: CR42K6M-PFZ-XXXXX****A) MODEL DESCRIPTION**

| | |
|--|--|
| Model Name | CR42K6M-PFZ-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 | 220-240 V, 50 Hz, 1 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 | ASRE/T | ARI |
|--|------------|--------|--------|
| Cooling Capacity | Btu / hr | 36,100 | 35,200 |
| | kcal / hr | 9,100 | 8,870 |
| | W | 10,570 | 10,300 |
| | Nominal HP | --- | 3.5 |
| Input Power | W | 3,240 | 3,240 |
| Input Current | A | 15.4 | 15.4 |
| EER = $\frac{\text{Cooling Capacity}}{\text{Input Power}}$ | Btu / W-h | 11.15 | 10.85 |
| | kcal / W-h | 2.80 | 2.70 |
| | W / W | 3.26 | 3.20 |

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 | 220 | 220 |

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PRODUCT SPECIFICATION

MODEL: CR42K6M-PFZ-XXXXX

D) MECHANICAL SPECIFICATIONS

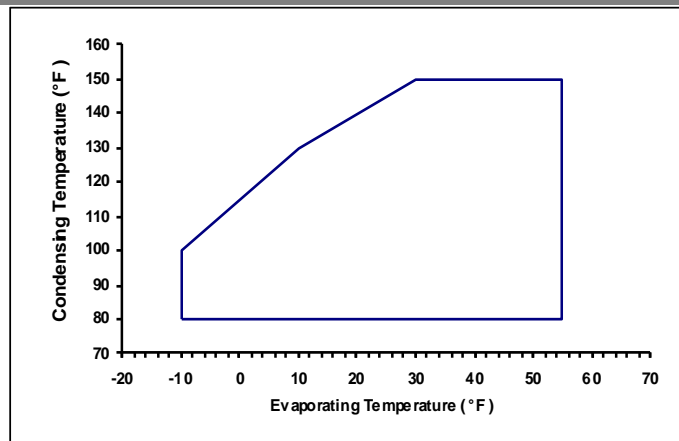
| Parameter | Unit | Value |
|------------------------------|--|-------------------------------|
| Number of Cylinders | Number | Two (2) |
| Displacement | cm ³ (inch ³) / rev | 72.08 (4.399) |
| Net Weight | kg | 34.9 |
| Approximate Shipping Weight | kg | 36.0 |
| Oil Charge | cm ³ (Oz) | 1,330 (45) |
| Oil Type | Refrigeration Grade | Mineral |
| IPRV (Pressure Differential) | kg/cm ² (psig) | 31.64 / 38.67 (450 / 550) |
| ** Crank - Case Heater | W @ V | 40W @240V Wherever Applicable |

** Recommended only for Heat Pump Application.

E) ELECTRICAL SPECIFICATIONS

| Parameter | Unit | Value |
|----------------------------------|--------------------|----------------------------|
| Operating Voltage Range | V | 198 To 264 |
| Motor Circuit | --- | CSCR |
| Electrical Accessories | --- | |
| ➤ Start Capacitor | μF @ V AC | 64-77 @ 330, 189-227 @ 330 |
| ➤ Run Capacitor | μF @ V AC | 60 @ 370, 65 @ 370 |
| ➤ Relay | --- | Potential |
| ➤ Over Load Protector | --- | Internal |
| Locked Rotor Ampere (LRA) | A | 104 |
| Maximum Continuous Current (MCC) | A | 24 |
| High Potential Test | (kV / second / mA) | 1.85 / 1 / 5.5 ± 0.5 |

F) OPERATING ENVELOPE @ 220 V, 50 Hz, 1 Phase



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| DVM | | | | 03 | F45-1018-0211 EN No. | A2 24.10.2018 |
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PRODUCT SPECIFICATION
MODEL: CR42K6M-PFZ-XXXXX

G) PERFORMANCE TABLES

| | | | |
|----------------------------|-----------------|---------------------------|------------------------------|
| Superheating | 11 °C (20 °F) | Voltage | 220 V, 50 Hz, 1 Phase |
| Sub - cooling | 8.3 °C (15 °F) | Compressor Cooling | 400 ft ³ / minute |
| Ambient Temperature | 35 °C (95 °F) | - | - |

H) COOLING CAPACITY (Btu / h)

| Condensing Temperature | | Evaporating Temperature | | | | | | | | | | Coefficients | |
|------------------------|------|-------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-----|------------------|--------------------|
| | | | | | | | | | | | | c1 | 23238.667252786100 |
| °C | (°F) | -23.3 | -17.8 | -12.2 | -6.7 | -1.1 | 4.4 | 7.2 | 10 | 12.8 | c2 | 732.632605722932 | |
| | | -10 | 0 | 10 | 20 | 30 | 40 | 45 | 50 | 55 | c3 | 4.535286541815 | |
| 37.8 | 100 | 8800 | 12400 | 17500 | 24000 | 31800 | 40700 | 45500 | 50600 | 56600 | c4 | 9.381385695798 | |
| 43.3 | 110 | -- | 10900 | 15600 | 21700 | 29000 | 37500 | 42000 | 46800 | 52000 | c5 | -2.387186801155 | |
| 48.9 | 120 | -- | -- | 13800 | 19400 | 26300 | 34300 | 38600 | 43100 | 47900 | c6 | -1.800292124651 | |
| 54.4 | 130 | -- | -- | 12100 | 17300 | 23700 | 31100 | 35200 | 39500 | 43900 | c7 | -0.019883016752 | |
| 60.0 | 140 | -- | -- | -- | 15300 | 21200 | 28100 | 31900 | 35900 | 40100 | c8 | -0.018302668120 | |
| | | | | | | | | | | | c9 | -0.005698470380 | |
| | | | | | | | | | | | c10 | 0.006709966435 | |

J) INPUT POWER (W)

| Condensing Temperature | | Evaporating Temperature | | | | | | | | | | Coefficients | |
|------------------------|------|-------------------------|-------|-------|------|------|------|------|------|------|-----------------------------|-----------------|------------------|
| | | | | | | | | | | | | c1 | -58.827630280075 |
| °C | (°F) | -23.3 | -17.8 | -12.2 | -6.7 | -1.1 | 4.4 | 7.2 | 10 | 12.8 | c2 <td>-9.136923030122</td> | -9.136923030122 | |
| | | -10 | 0 | 10 | 20 | 30 | 40 | 45 | 50 | 55 | c3 <td>37.325644438486</td> | 37.325644438486 | |
| 37.8 | 100 | 1490 | 1730 | 1980 | 2210 | 2400 | 2530 | 2570 | 2580 | 2560 | c4 <td>-0.190829990218</td> | -0.190829990218 | |
| 43.3 | 110 | -- | 1740 | 2030 | 2310 | 2550 | 2740 | 2810 | 2850 | 2860 | c5 <td>0.268998888343</td> | 0.268998888343 | |
| 48.9 | 120 | -- | -- | 2060 | 2390 | 2690 | 2940 | 3030 | 3110 | 3160 | c6 <td>-0.229438695375</td> | -0.229438695375 | |
| 54.4 | 130 | -- | -- | 2070 | 2450 | 2810 | 3110 | 3240 | 3350 | 3430 | c7 <td>-0.003834328943</td> | -0.003834328943 | |
| 60.0 | 140 | -- | -- | -- | 2500 | 2910 | 3280 | 3440 | 3580 | 3700 | c8 <td>0.002259776654</td> | 0.002259776654 | |
| | | | | | | | | | | | c9 <td>0.000699713041</td> | 0.000699713041 | |
| | | | | | | | | | | | c10 <td>0.000351484256</td> | 0.000351484256 | |

K) INPUT CURRENT (A)

| Condensing Temperature | | Evaporating Temperature | | | | | | | | | | Coefficients | |
|------------------------|------|-------------------------|-------|-------|------|------|------|------|------|------|-----------------------------|-----------------|-----------------|
| | | | | | | | | | | | | c1 | -1.613280504920 |
| °C | (°F) | -23.3 | -17.8 | -12.2 | -6.7 | -1.1 | 4.4 | 7.2 | 10 | 12.8 | c2 <td>-0.059228114277</td> | -0.059228114277 | |
| | | -10 | 0 | 10 | 20 | 30 | 40 | 45 | 50 | 55 | c3 <td>0.246164005209</td> | 0.246164005209 | |
| 37.8 | 100 | 8.0 | 8.9 | 9.9 | 10.9 | 11.8 | 12.4 | 12.5 | 12.6 | 12.5 | c4 <td>-0.000900810252</td> | -0.000900810252 | |
| 43.3 | 110 | -- | 8.9 | 10.1 | 11.3 | 12.4 | 13.3 | 13.6 | 13.8 | 13.8 | c5 <td>0.001591391146</td> | 0.001591391146 | |
| 48.9 | 120 | -- | -- | 10.2 | 11.6 | 13.0 | 14.1 | 14.5 | 14.9 | 15.1 | c6 <td>-0.001851195258</td> | -0.001851195258 | |
| 54.4 | 130 | -- | -- | 10.3 | 11.9 | 13.5 | 14.8 | 15.4 | 15.9 | 16.3 | c7 <td>-0.000022362171</td> | -0.000022362171 | |
| 60.0 | 140 | -- | -- | -- | 12.1 | 13.9 | 15.6 | 16.3 | 16.9 | 17.5 | c8 <td>0.000015551911</td> | 0.000015551911 | |
| | | | | | | | | | | | c9 <td>-0.000000268540</td> | -0.000000268540 | |
| | | | | | | | | | | | c10 <td>0.000004393645</td> | 0.000004393645 | |

L) MASS FLOW RATE (lbs/hr)

| Condensing Temperature | | Evaporating Temperature | | | | | | | | | | Coefficients | |
|------------------------|------|-------------------------|-------|-------|------|------|-----|-----|----|------|-----|--------------|------------------------|
| | | | | | | | | | | | | c1 | |
| °C | (°F) | -23.3 | -17.8 | -12.2 | -6.7 | -1.1 | 4.4 | 7.2 | 10 | 12.8 | c2 | | |
| | | -10 | 0 | 10 | 20 | 30 | 40 | 45 | 50 | 55 | c3 | | |
| 37.8 | 100 | Under Evolution | | | | | | | | | | c4 | Under Evolution |
| 43.3 | 110 | | | | | | | | | | | c5 | |
| 48.9 | 120 | | | | | | | | | | | c6 | |
| 54.4 | 130 | | | | | | | | | | | c7 | |
| 60.0 | 140 | | | | | | | | | | | c8 | |
| | | | | | | | | | | | c9 | | |
| | | | | | | | | | | | c10 | | |

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-PFZ-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) | 8,358 (510) |
| Maximum Residual Moisture | mg | 300 |
| Maximum Internal Solid Residue / Impurities | mg | 40 |

N) ELECTRICAL SPECIFICATIONS

| Parameter | Unit | Value |
|--|---------|--|
| Motor Type | --- | 2 Pole, Induction, Single Phase |
| Nominal Motor Speed | rpm | 2,900 |
| Nominal Motor Winding Resistance (@ 25 °C) | Main | Ω 0.67 To 0.79 |
| | Aux. | Ω 2.08 To 2.53 |
| Nominal Motor Output Power | kW | 2.74 |
| Max. Allowable Motor Winding Temp. | °F (°C) | 266 (130) B Class Insulation |
| Relay | | |
| Type | --- | Potential |
| Part Number | --- | 3ARR3CT24S5 or RVA-3AG 6D Or HLR3800-4G3C-5 |
| Pick Up (Maximum) | V | 185 To 205 |
| Drop Out (Minimum) | V | 55 To 115 |
| Maximum Voltage Rating of Coils | V | 330 |
| Over Load Protector | | |
| Type | --- | Internal |
| Part Number | | 15HM-1806-78 |
| Disc Opening Temperature | °F (°C) | 265 To 283 (129 To 139) |
| Disc Closing Temperature | °F (°C) | 140 To 172 (60 To 78) |
| 1 st Cycle Trip Current | A | 73 |
| 1 st Cycle Trip On Time | second | 2 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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| DVM | | | | 05 | F45-1018-0211 EN No. | A2 24.10.2018 |
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PRODUCT SPECIFICATION**MODEL: CR42K6M-PFZ-XXXXX****P) PERFORMANCE 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) | 220 | 6.50 (92.43) | 30 (426.6) | -- | 55 (131) |
| Blocked Fan | 220 | 6.33 (90) | 28.12 (400) | -- | -- |
| Low Voltage Start : Equalised (PSC) | 198 | 11.9 ± 0.5 (169) | 11.9 ± 0.5 (169) | 62 (143.6) | -- |
| Low Voltage Run | 198 | 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 DETIAL 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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