

# Inverter Model

## YIW72C1G-V100

\*1 Compressor Basic Performance Specification

1.1 Compressor Specification	
Model	YIW72C1G-V100
Type	LP Cavity Hermetic Scroll Compressor
Application	Heating pump
Refrigerant	R410A
Displacement (cm <sup>3</sup> /rev)	72.0
Cap(W) (a)	40692
Power Input (W) <sup>(a)</sup>	10344
Running Current (a) <sup>(a)</sup>	16.5
COP <sup>(a)</sup>	3.96
Rated Voltage (V)	380-420V
Phase (Hz)	3~ 50/60 HZ
Lowest Running Voltage (V)	342
Highest Running Voltage (V)	462
Lock Rotor Current <sup>(a)</sup>	30.0
Rated Motor Speed (R/Min) <sup>(c)</sup>	4500
Comp Weight With Oil (kg)	29.0
Oil	POE (Coefficient Of Viscosity 32)
Oil Charge (First Charge, L)	1.40
(Recharge, L)	1.25
Oil Circulation (%) <sup>(f)</sup>	<1%
Rated Sound (Sound Power) <sup>(g)</sup>	73
Max Running Sound (Sound Power)	78
Maximal Vib (mm, Peak-Peak) <sup>(h)</sup>	0.10
Maximal Moisture (mg)	500

Maximal Impurity (mg)	100
Lowest Voltage Start (V) <sup>(d)</sup>	323
MOV (V) <sup>(e)</sup>	342
1.2 Motor Specifications	
Motor Type	Permanent Magnets Motor
Pole	4
Running frequency (Hz)	40~200
Running speed (RPM)	1200~6000
Running voltage (V)	75~380
Start voltage (V)@900RPM/8N·m	75
Magnet flux (mWb.t)@20°C	876.8
Demagnetization current(A)@110°C	120
q axis inductance (mH)	7.43
d axis inductance (mH)	3.49
Highest Running Current (A)	21
Motor Insulation Temperature (°C)	130 (B level)
Resistance @ 25°C Ambient (Ω)	0.285 ( ± 10%)
Insulation Voltage (V)	2000
Leakage Current (mA)	<5
Insulation Resistance (MΩ)	>20
Ground resistance (Ω)	<0.1
1.3 Safe Running Conditions	
Highest Running Pressure	
High Side (Mpa)	4.3
Low Side (Mpa)	2.0
气密性试验压力(Mpa)	3.8
Max Discharge Temperature	125°C
Compressor Start-off Revolution	3min
deceleration limit (r/s)	2-5

Running Condition Notes:

- a) Test Condition: First Rated Running Point;
- b) Test Condition: ET/CT/SH/SC/AT 15/65/11.9/8.3/46.1°C, 90% Rated Voltage, 5400 rpm;
- c) Test Condition: First Rated Running Point
- d) Discharge Pressure & Suction Pressure= Refrigerant 40°C Saturation Absolute Pressure
- e) Running Over Load Condition: ET/CT/SH/SC/AT 15/65/11.9/8.3/46.1°C, 5400 rpm
- f) First Rated Point, Oil circulation
- g) First Rated Point, A class average sound power
- h) First Rated Point, Maximal Shell Running Displacement Under Normal Direction



Rated Condition, Allowed capacity and cop  $\geq$  95% Rated, power  $\leq$  105 Rated (Performance And Sound Test Needed 48hrs Break In Running)

Seq	Parameter	First Rated Running Point
1	Evaporating T	5.0
2	Condensing T	55.0
3	Ambient T	35.0
4	Return Gas T	16.1
5	Superheat K	11.1
6	Subcooling K	8.3
7	Rated Voltage(V)~ Phase (Hz)	380-420V 3~ 50/60Hz
8	Motor Speed RPM	4500

\*4 Internal Protection Parts

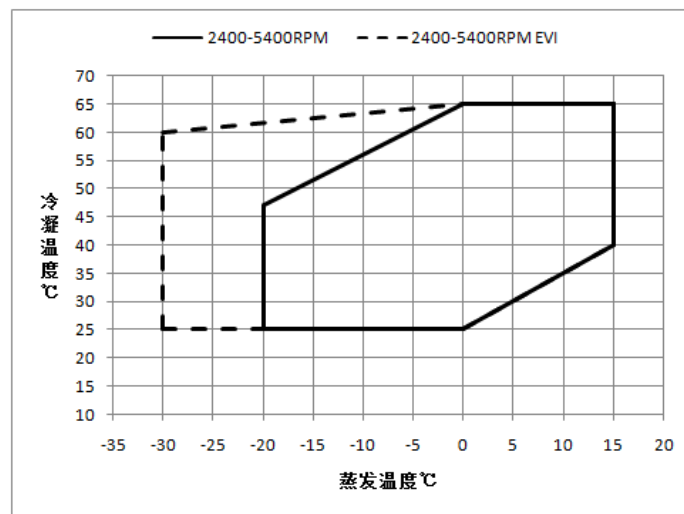
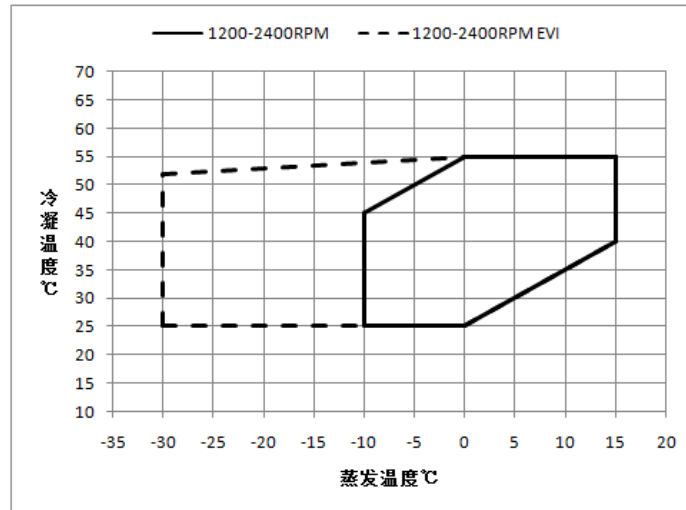
- Internal protector Protection
- Internal Pressure Release Valve Protection

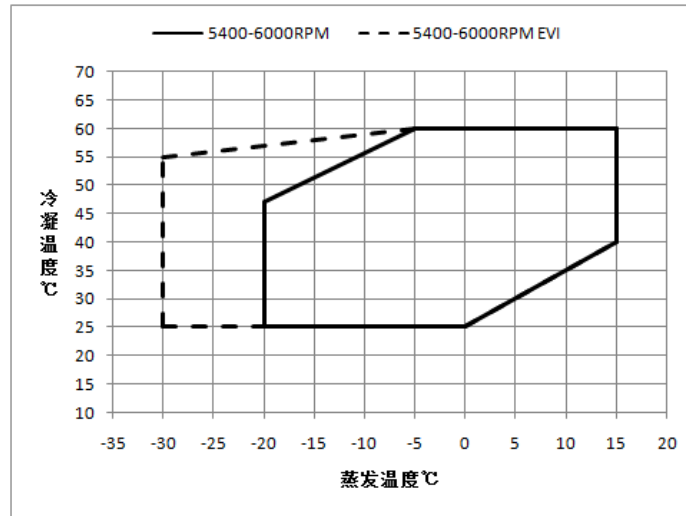
Pressure Release Valve Open Range: 3.97—4.31Mpa

\*5 压缩机附件

YIH72C1G-100			
Accessory	Description	P/N	PCS
1	Rubber Grommet	070-0003-00	4
2	Sleeve	010-0014-00	4

\*6 Compressor Running Envelope





\* 8 EVI Control logic:

EVI control conditions: discharge temperature  $\leq 90\text{ }^{\circ}\text{C}$ , control injection superheat 6K

Discharge temperature  $> 90\text{ }^{\circ}\text{C}$ , control the injection quantity so that the discharge temperature is equal to  $90\text{ }^{\circ}\text{C}$

\*7 Performance Curve

7.1 4500RPM

制热量W (制冷量 +功率)	55	22136	27204	34985	44322
	45	21189	27445	35218	45543
	35	20863	27418	36121	46654
功率W	55	9356	9413	9655	9927
	45	7634	7700	7846	8178
	35	6184	6301	6582	6967

Cap And Power Is Under  $11.1\text{ }^{\circ}\text{C}$  Superheat,  $8.3\text{ }^{\circ}\text{C}$  sub cooling, ambient temperature  $35\text{ }^{\circ}\text{C}$

\*8 Notes

- 1) The compressor should not be used to be operated under vacuum, compress air, run without load or reverse;
- 2) The compressor should not be opened in the atmosphere for more than 15 minutes;



- 3) The compressor continuous running time should be more than 10minutes, the duration between two start-ups shall exceed three minutes, the compressor should not start/stop frequently to avoiding oil being pumped together with the refrigerant;
- 4) Before starting, discharge pressure – suction pressure $\leq$ 0.3Mpa;
- 5) The running voltage shall be within  $\pm 10\%$  of the rated voltage;
- 6) In low temperature application, because lots of refrigerant may migrate to the compressor cavity, deposit at the bottom of the compressor, it may cause the problem of lubrication and oil return, it is better to install the crankshaft heating device;
- 7) The system should set basic protection of pressure, temperature, over-current, phase-loss and oil return device etc.
- 8) Do not put the compressor horizontally or put it upside down.
- 9) Starting Speed Control
  - 9.1 Ambient Temperature $\geq 10^{\circ}\text{C}$  , 3000RPM
  - 9.2  $0^{\circ}\text{C} \leq$  Ambient Temperature  $< 10^{\circ}\text{C}$ , 4500RPM
  - 9.3 Ambient Temperature  $< 0^{\circ}\text{C}$ , 4800RPM

\*10 Drawing

