

# **AK140XY1A** COMPRESSOR

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## TECHNICAL SPECIFICATION

(FOR REFERENCE)



**DONPER**

HUANGSHI DONGBEI ELECTRICAL APPLIANCE CO., LTD.

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## 1. Compressor Type

Compressor model	AK140XY1A
Rated voltage/frequency	110-127V~60Hz
Refrigerant	R600a
Application	Low back pressure (L.B.P)
Cooling method	Static
Start torque	Low starting torque (LST)
Control device	Capillary tube
Motor type	RSCR
Running Capacitor	12 $\mu$ F

## 2. Performance Data

Displacement	Net Wt.	Oil Charge	Cooling Capacity( $\geq 95\%$ ) °C							COP( $\geq 95\%$ ) W/W		
			ASHRAE							CECOMAF	ASHRAE	CECOMAF
			-35	-30	-25	-23.3	-20	-15	-10	-25	-23.3	-25
cm <sup>3</sup>	kg	ml	w	w	w	w	w	w	w	w/w	w/w	
7.2	5.6 $\pm$ 0.5	140 $\pm$ 10	97	115	133	140	145	159	177	105	1.56	1.19

Note: The data comes from test with a PTC relay.

### • Testing condition:

Test conditions	L.B.P	
	ASHRAE	CECOMAF
Evaporating Temp.	-23.3°C	-25°C
Ambient Temp.	+32.2°C	+32°C
Condensing Temp.	+54.4°C	+55°C
Suction Temp.	+32.2°C	+32°C
Subcooling Temp.	+32.2°C	+55°C

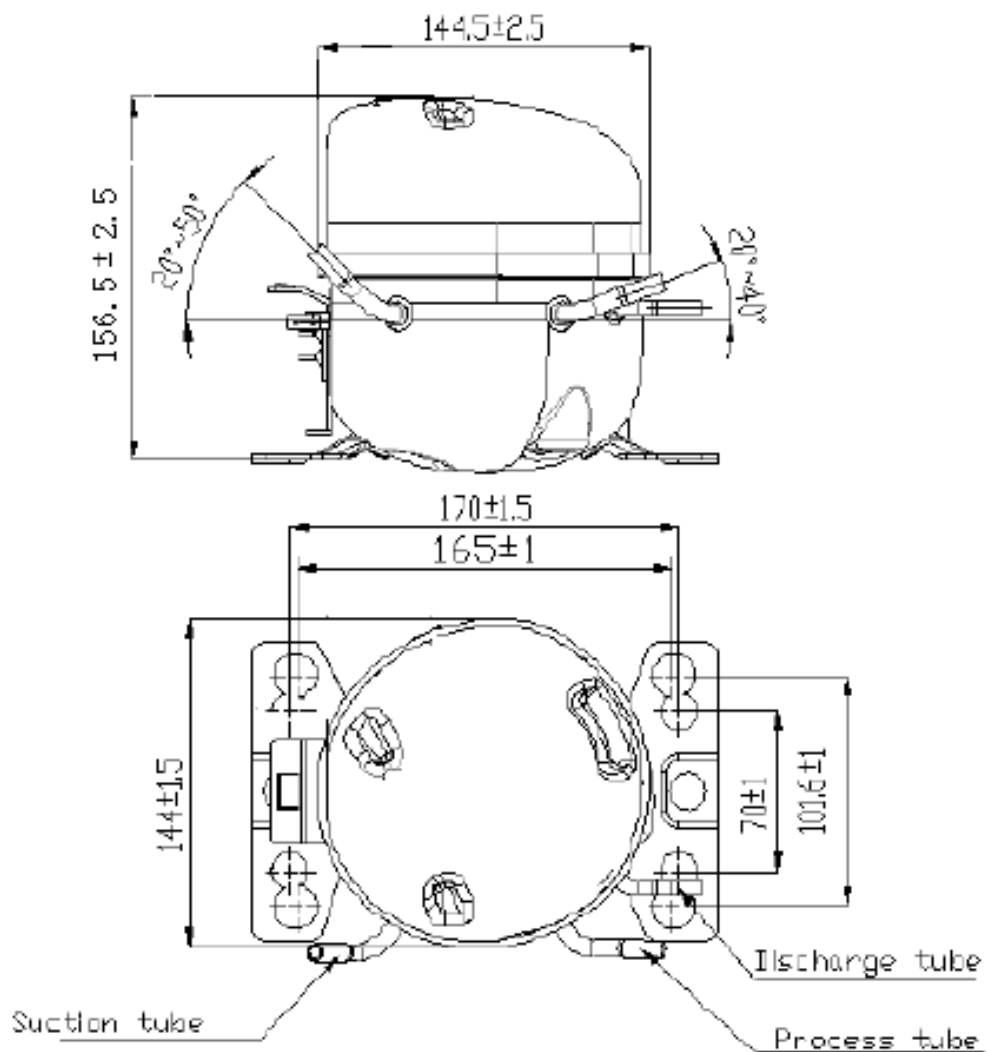
## 3. Running Condition

Ambient temp.	0~43°C
Evaporating temp.	-35~-10°C
Voltage range	94~135V
Max. condensing temp.	65°C
Max. winding temp.	130°C
Max. shell temp.	95°C
Max. discharge temp.	120°C
Start voltage	95V [0.3/0.3 MPa (abs)]
Shell min. resistance to pressure	3.5Mpa

#### 4. Compressor Mechanical Information

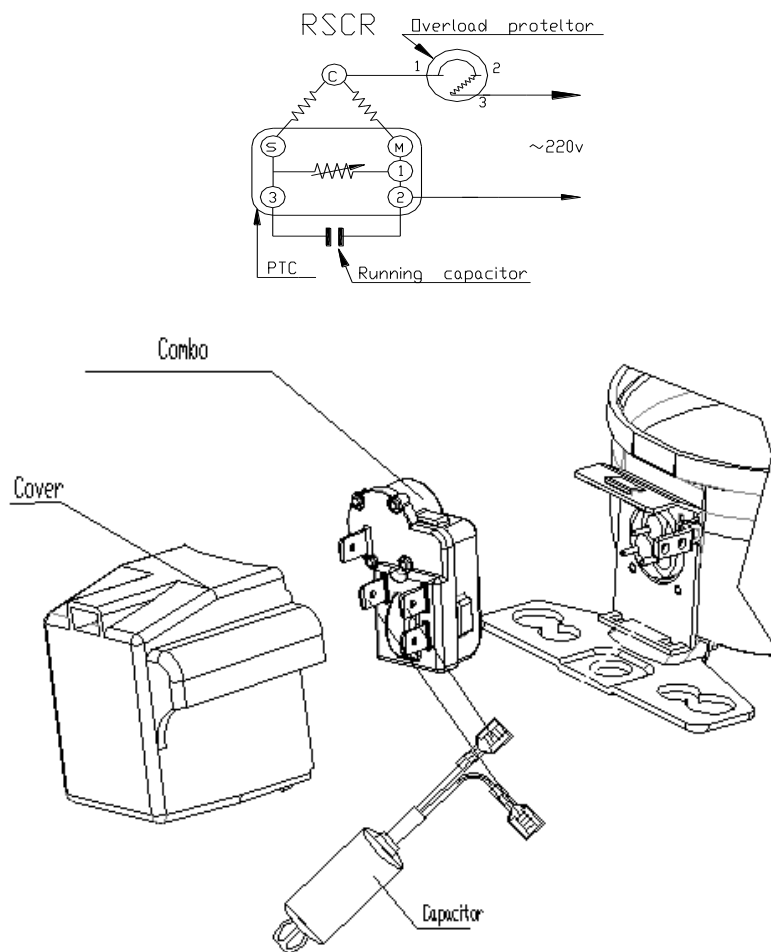
Oil type	Synthetic hydrocarbonlube oil
Viscosity	4.2~6.2mm <sup>2</sup> /S (40℃)
Oil charged	140±10ml
Diameter of suction tube (I.D.)	Φ6.5±0.1mm
Diameter of discharge tube(I.D.)	Φ4.9±0.1mm
Diameter of process tube (I.D.)	Φ6.5±0.1mm
Material of suction tube, process tube and discharge tube	Copper tube
Compressor noise	40dB(A)
Vibration	0.7m/s <sup>2</sup>
Protecting gas	Dry com.air (Dew point-60℃)

#### 5. Compressor Shape



Note: Suction tube and process tube can be changed

## 6. Wiring Diagram

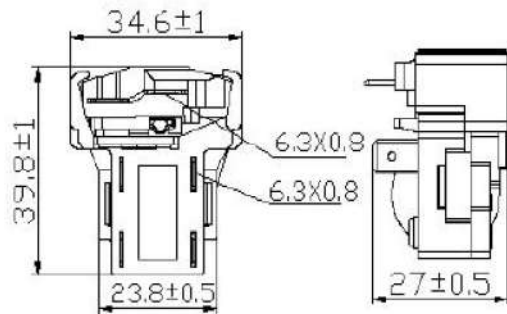


## 7. Starting relay and overload protector

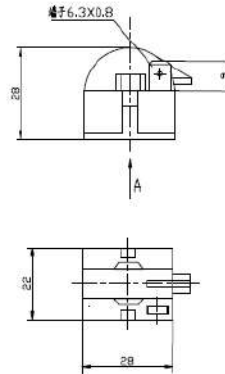
Compressor model		AK140XY1A		
Starting relay	Model	QPS2-B4R7G1 + DRB268S61A2	JPQ II -4.7+BT83-135	
	Resistance of Starting relay $\Omega$	$4.7 \pm 20\%$	$4.7 \pm 20\%$	
	Run time S	0.7~2.2	0.2~1.5	
	Reset time S	$\leq 100$	$\leq 85$	
	Max working voltage V	350	180	
	Max current A	8	12	
Protector	Max.T.C Amp. (25°C) A	8.3	7.5	
	Trip time S	5~15	5~15	

Reset time S	30~180	30~150	
Open temp. $\pm 5^{\circ}\text{C}$	135	120	
Close temp. $\pm 9^{\circ}\text{C}$	61	61	

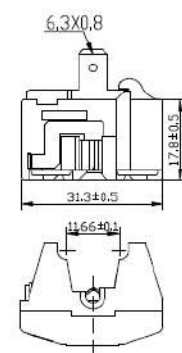
QPS2-B4R7G1+DRB268S61A2



JPQ II -4.7



BT83-135



## 8. Capacitor

Compressor model			AK140XY1A
Capacitor	Model	$\mu\text{F}$	12
	Rated voltage	V.AC	250
	Supplier and model		Shanghai Haoye Electronics CO.,LTD

## 9. Delivery State

No.	Name	Model	Quantity	CODE
1.	Compressor	AK140XY1A	1 pcs	
2.	MOUNTING ACCESSORIES	/	/	
2.1	Rubber grommet	QET.1-03V	4 pcs	Installed on the Compressor
2.2	Cover	A1	1 pcs	
3.	ELECTRICAL ACCESSORIES	/	/	
3.1	Starting relay and Overload protector	QPS2-B4R7G1 + DRB268S61A2	1 pcs	Installed on the Compressor
		JPQ II -4.7+BT83-135		
3.2	Capacitor	12 $\mu\text{F}$	1 pcs	

Notes:1.All electrical parts and equipment assembly are supplied separately.

2.All electrical parts and equipment assembly according to Delivery states are all provided by our company.

**10. Package, Storage and Transportation**

Package type	unreusable
Quantity	140pcs/box
Transportation	By truck or train
Storage	Max. 2 layers
Gross Weight Kg	768±46
Net Weight Kg	728±46
Volume m <sup>3</sup>	1.09
Dimension: length×width×height (cm)	114×81×119
Main components	Wooden supporter, upper wooden cover, foam divider, plastic sheet, cardboard cover, rain-proof cover, wrapping.
Movement	Keep the compressor in normal or vertical position.
Trans. test requirement	No allowable compressor's damage and performance loss.

## 11. Technical Items

- (1)、Don't take off the rubber plugs before using and installing compressor to prevent dust and moisture.
- (2)、Don't turn down or incline the compressor during storage, transportation or installation and avoid vibration and shock.
- (3)、The compressor must be kept horizontally during running, the inclination angle must be less than 5 °.
- (4)、A special polyester oil is charged in the R600a compressor and the charging volume has been optimized by DONPER. Don't pour out or add any refrigerant oil.
- (5)、The interval of compressor operation must be more than 4 minutes in order to obtain a pressure balance in the systems.
- (6)、Don't start or run in the case of vacuum or charge high voltage in the compressor. The compressor cannot be used to vacuumize the refrigeration system.
- (7)、The design of refrigeration system must be suitable to insure the oil could flow back to compressor.
- (8)、The maximum ambient temperature of the compressor operation is 43°C. When continuously operating under the maximum ambient temperature 43°C, the condensing pressure and the peak pressure should not exceed as showing in the following table.

Refrigerant	R600a
Max. condensing pressure	0.87MPa
Peak	1.09Mpa

- (9)、Widen the evaporating Temp. range of the compressor should be approved by DONPER.
- (10)、Compressor should be stored in a dry place.
- (11)、Compressor accessories (eg: starting relay, overload protector etc.) are put in the accessories box instead of fixing on the compressor.
- (12)、The stocking period must be less than 6 months after the date of production. If longer, you have to check whether the filled gas is sufficient. Replenishment must be done if necessary.
- (13)、It's necessary to keep the compressor without rubber plug as short time as possible (max time 10 min).
- (14)、R134a systems require a filter with drying agent which suitable for R600a refrigerant
- (15)、The vacuum pump and the charging system must only be dedicated to R600a.
- (16)、The refrigeration system should minimize the content of chlorine and moisture, and must be free of paraffin and silicon oil.
- (17)、The organic substance non-compatible with R600a cannot be used in the refrigeration system.