

# **A145CY1A COMPRESSOR**

---

## **TECHNICAL SPECIFICATION**



HUANGSHI DONPER COMPRESSOR CO., LTD.

2023.12

# INDEX

	<b>page</b>
1. Compressor Type .....	2
2. Performance Data .....	2
3. Running Condition .....	2
4. Compressor Mechanical Information .....	3
5. Compressor Shape .....	3
6. Wiring Diagram .....	4
7. Fixing of mounting accessories.....	4
8. Starting relay and overload protector .....	5
9. Delivery State .....	6
10. Package、Storage and Transportation .....	6
11. Technical Items .....	7

## 1. Compressor Type

Compressor model	A145CY1A
Rated voltage/frequency	220-240V~50Hz
Refrigerant	R600a
Application	Low back pressure (LBP)
Cooling method	Static
Start torque	Low starting torque (LST)
Control device	Capillary tube
Motor type	RSIR
Running capacitor	/
Starting capacitor	/

## 2. Performance Data

Displacement	Net Wt.	Oil Charge	Cooling Capacity(≥95%)								COP(≥95%)	
			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/w
8.8	5.4±0.4	140±10	92	113	131	140	158	187	221	106	1.30	1.01

Note: These datas come from the test with a PTC relay

Testing condition:

Test conditions	LBP	
	ASHRAE	CECOMAF
Evaporating Temp.	-23.3℃	-25℃
Ambient Temp.	+32.2℃	+32℃
Condensing Temp.	+54.4℃	+55℃
Suction Temp.	+32.2℃	+32℃
Subcooling Temp.	+32.2℃	+55℃

## 3. Running Condition

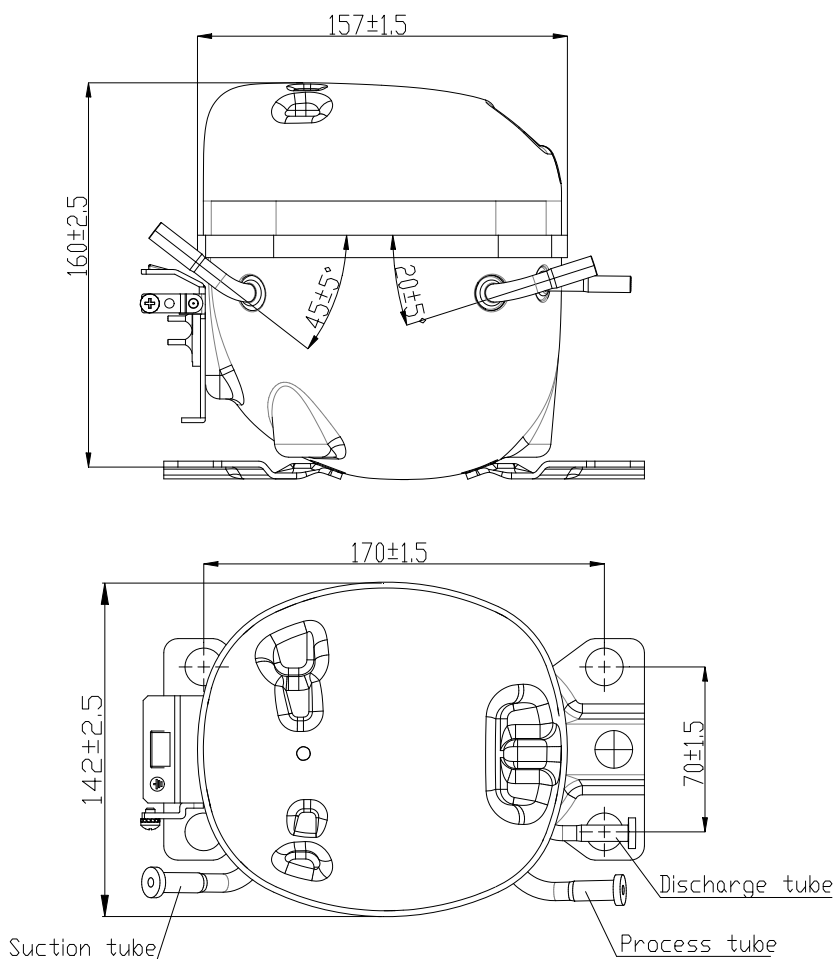
Ambient temp.	0~43℃
Evaporating temp.	-35~-15℃
Voltage range	187~254V
Max. condensing temp.	65℃
Max. winding temp.	120℃
Max. shell temp.	95℃
Max. discharge temp.	110℃

Start voltage	187V [0.3/0.3MPa(abs)]
Shell min. resistance to pressure	35bar

#### 4. Compressor Mechanical Information

Oil type	Synthetic oil
Viscosity	4.2~6.2mm <sup>2</sup> /s(40℃)
Oil charged	140±10ml
Min. oil volume in compressor	110ml
Diameter of suction tube (I.D.)	Φ 6.2±0.1mm
Diameter of discharge tube(I.D.)	Φ 4.9±0.1mm
Diameter of process tube (I.D.)	Φ 6.2±0.1mm
Material of suction tube, process tube and discharge tube	Copper tube
Compressor noise	39dB(A)
Vibration	0.7m/s <sup>2</sup>
Protecting gas	-0.06~-0.02MPa

#### 5. Compressor Shape

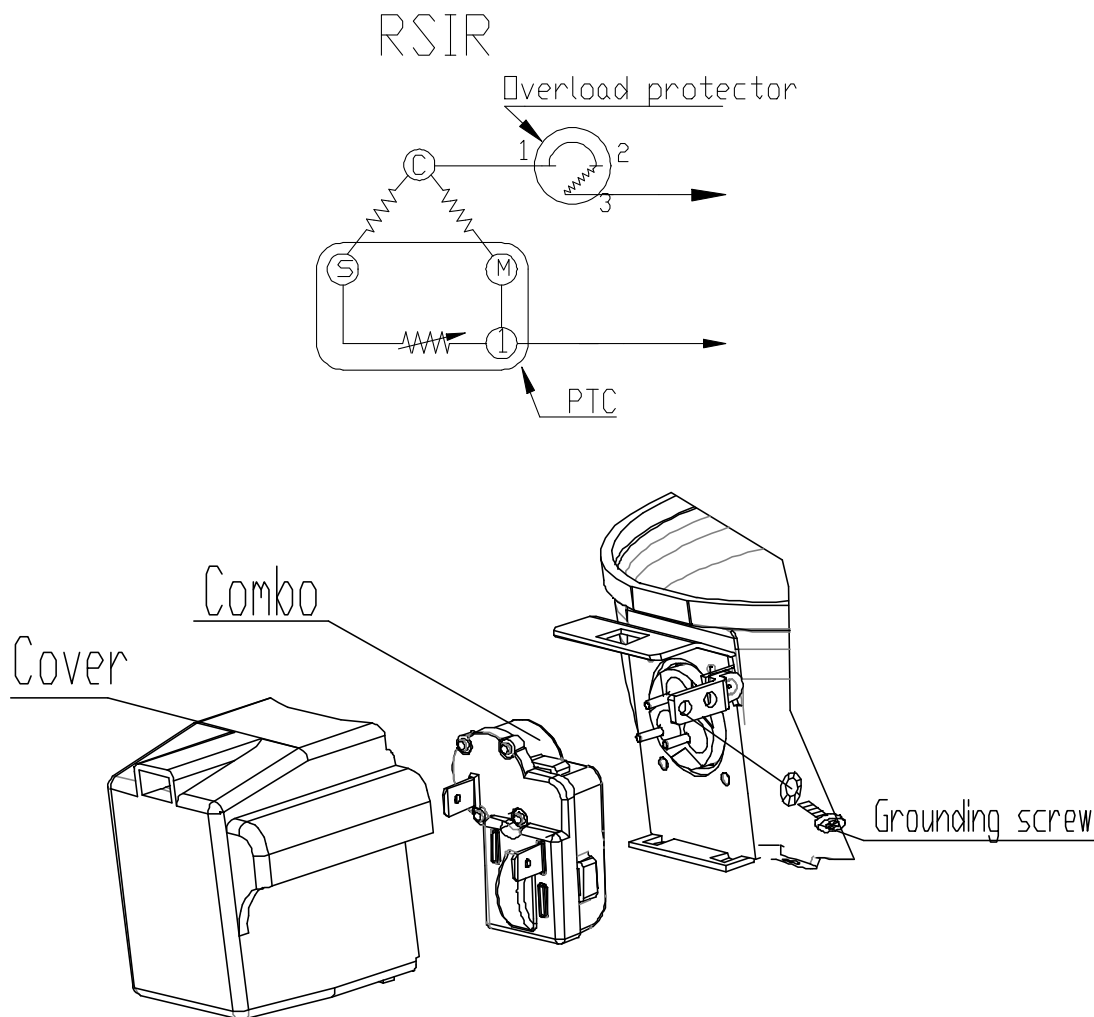


Caution:Suction tube and process tube can not be exchanged

Unmarked tolerance: ± 5mm

Unmarked Angle: ± 10°

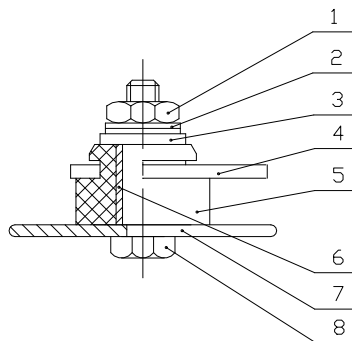
## 6. Wiring Diagram



Note: Each of the Combo, the grounding screw and the cover is separately provided by our company.

## 7. Fixing of mounting accessories

- 1、Hexagon nut
- 2、Lock washer
- 3、Flat washer
- 4、Compressor mounting bracket
- 5、Rubber grommet
- 6、Sleeve
- 7、Cabinet base
- 8、Screw



Note: Equipment assembly is all provided by our company. Above is just for reference, details can refer to delivery state.

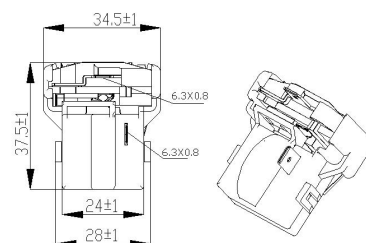
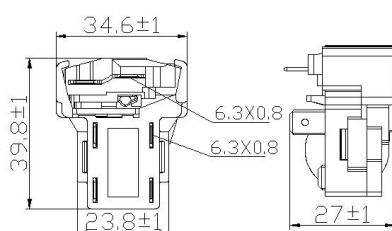
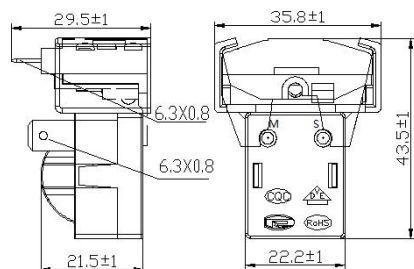
## 8. Combo starting relay and overload protector

Model		QP2-15 ZH +TB54-135	QPS2-B15MG1 +DRB20S61A2	JPQ II -15 BK +BT54-135
Supplier		Shunde Ronggui Electronic Circuit Measuring Equipment Co. Ltd.	Hangzhou Starshuaier Electric Appliance Co.,Ltd.	Lanxi City Yueqiang Electric Co.,Ltd.
Starting relay	Resistance of Starting relay $\Omega$	$15 \pm 20\%$		
	Run time S	0.2~1.5		
	Reset time S	$\leq 100$		
	Max working voltage V	350		
	Max current A	8		
Protector	Max.T.C Amp.(25°C) A	5.4		
	Trip time S	5~15		
	Reset time S	30~180		
	Open temp. $\pm 5^\circ\text{C}$	135		
	Close temp. $\pm 9^\circ\text{C}$	61		

ZHB54-135P15

QPS2-B15MG1+DRB20S61A2

JPQ II -15 BK+BT54-135



## 9. Delivery State

No.	Name	Model	Quantity	CODE
1	Compressor	A145CY1A	1pcs	
2	Rubber plug	$\Phi 6.4$	1pcs	Intallted on a compressor
3		$\Phi 8.2$	2pcs	Intallted on a compressor
4	Rubber grommet	M model	4pcs	
5	Combo starting relay and overload protector	QP2-15 ZH+ TB54-135	1pcs	Shunde Ronggui Electronic Circuit Measuring Equipment Co. Ltd.
		QPS2-B15MG1 +DRB20S61A2		Hangzhou Star shuaier Electric Appliance Co.,Ltd

		JPQ II -15 BK +BT54-135	1pcs	Lanxi City Yueqiang Electric Co.,Ltd
6	Relaying cover	A1	1pcs	
8	Grounding screw	QET.1-24C	1pcs	
9	Anchor bolt assembly	M6*30	4pcs	
10	Sleeve	$\Phi 10 \times 17$	4pcs	
11	Nut	M6	4pcs	

Notes:1.Except for special remarks, all other electrical components and mounting parts are not Installed on the compressor.

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

## 10. Package、Storage and Transportation

Package type	unrecyclable
Quantity	100pcs/box
Transportation	By sea
Storage	Max. 2 layers
Cross Weight      Kg	575±40
Net Weight      Kg	540±40
Volume      m <sup>3</sup>	1.09
Dimension: length×width×height      cm	114×89×109
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	0.98Mpa

- (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 inventory period of the compressor after leaving the factory should not exceed 6 months. If it exceeds 6 months, please check if the protective gas inside the compressor is under negative pressure.
- (13)、It's necessary to keep the compressor without rubber plug as short time as possible (max time 10 min).
- (14)、R600a 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.