

NE2180CK COMPRESSOR

TECHNICAL SPECIFICATION



HUANGSHI DONPER COMPRESSOR CO., LTD.

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1. Compressor Type

Compressor model	NE2180CK
Rated voltage/frequency	220-240V~50Hz
Refrigerant	R404A
Application	Low/Middle back pressure (L/MBP)
Cooling method	Fan Cooling
Start torque	High starting torque (HST)
Control device	Capillary tube
Motor type	CSR
Running capacitor	15μF
Starting capacitor	100μF

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 ³	kg	ml	w	w	w	w	w	w	w	w	w/w	w/w
18	12.4±0.4	370±10	507	630	840	910	1084	1304	1542	684	1.30	1.01

Note: These datas come from the test without a current starting 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℃

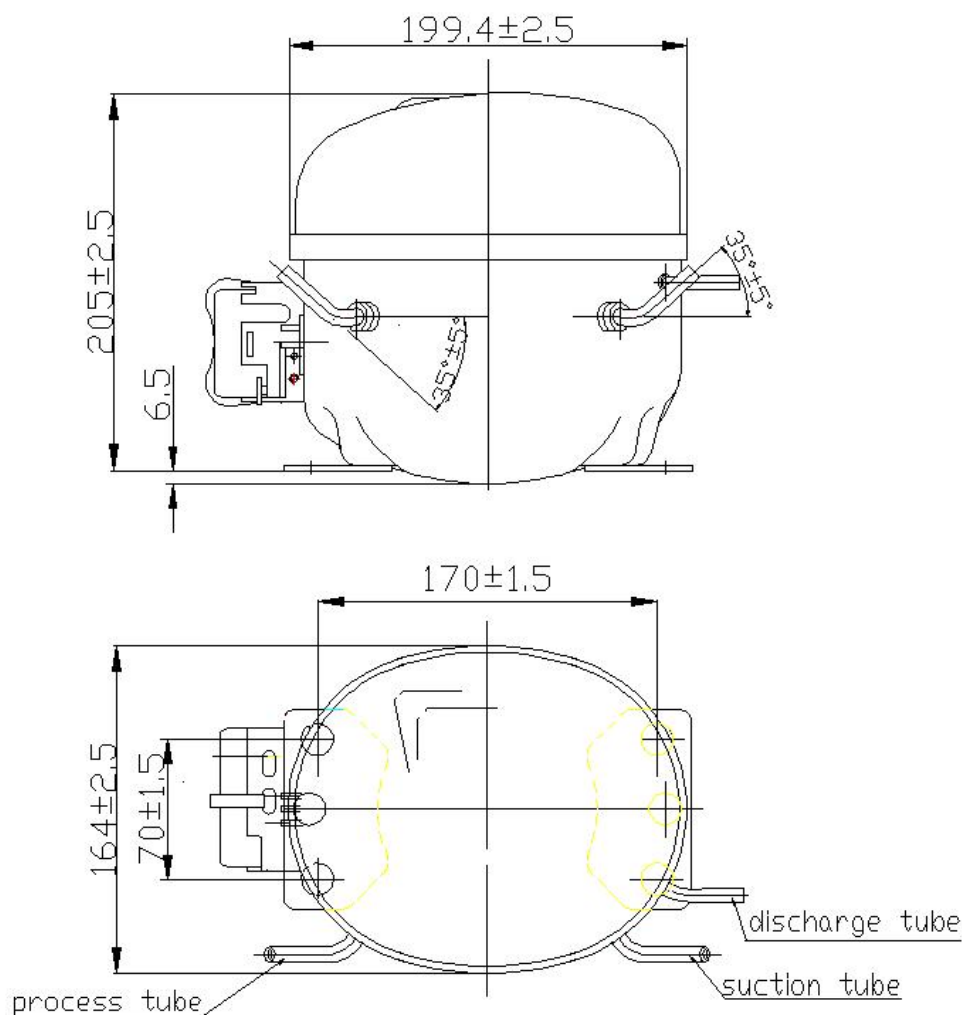
3. Running Condition

Ambient temp.	0~43℃
Evaporating temp.	-35~0℃
Voltage range	187~254V
Max. condensing temp.	65℃
Max. winding temp.	130℃
Max. shell temp.	110℃
Max. discharge temp.	130℃
Start voltage	187V [1.1/1.1MPa(abs)]
Shell min. resistance to pressure	35bar

4. Compressor Mechanical Information

Oil type	POE
Viscosity	28.8~35.2 mm ² /s (40℃)
Oil charged	370±10ml
Diameter of suction tube (I.D.)	Φ 8.15±0.1mm
Diameter of discharge tube(I.D.)	Φ 6.15±0.1mm
Diameter of process tube (I.D.)	Φ 6.15±0.1mm
Material of suction tube, process tube and discharge tube	copper tube
Compressor noise	≤58dB(A)
Vibration	≤2.0m/s ²
Protecting gas	-0.06~-0.02MPa

5. Compressor Shape



Caution: Suction tube and process tube can not be exchanged

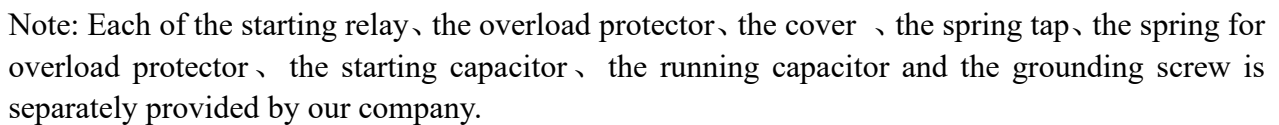
Unmarked tolerance: ±5mm

Unmarked Angle: ±10°

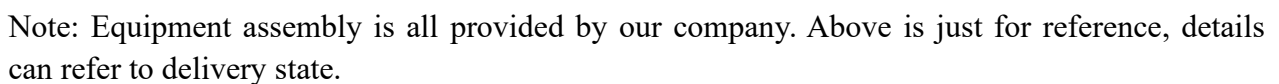
The diagram illustrates the internal wiring of a capacitor-start motor. Key components include:

- CSR**: Capacitor Switching Relay, located at the top.
- overload protector**: A thermal protection device connected between the CSR and the main winding.
- starting relay**: Controls the engagement of the starting capacitor.
- NTC**: Negative Temperature Coefficient thermistor used for temperature sensing.
- Starting capacitor**: Provides additional torque during motor startup.
- Running capacitor**: Maintains efficient operation during normal running.

The circuit shows connections for power supply (L), neutral (N), ground, and various internal terminals (1, 2, 3, 4) leading to the windings and capacitors.



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



8. Starting relay and overload protector

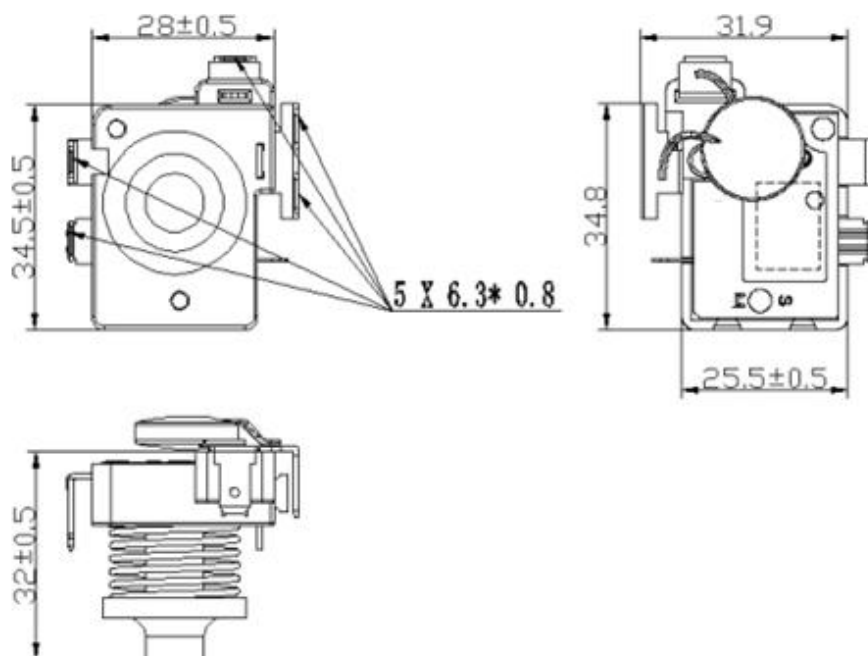
8.1 Starting relay

Model	QL2-8.1		MTRP0071
Supplier	Changshu Tianyin Electromechanical Co. Ltd.	Hangzhou Star shuaier Electric Appliance Co.,Ltd	ELSING (SUZHOU) ELECTRICAL CONTROLS CO.,LTD
Max.Close Current A	8.1		
Min Open Currente S	6.8		

Assembly force \leq 100N Disassembly force \geq 25N

Flammability: Anti-flammability

QL2-8.1/ MTRP0071



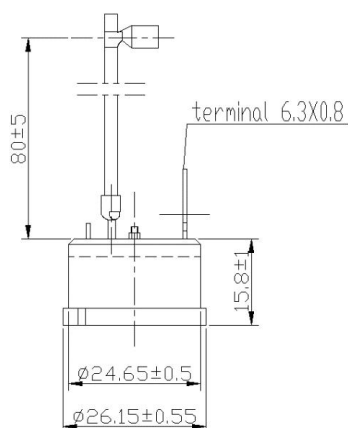
8.2 Overload protector

Model	B180-120		T0163
Supplier	Changshu Tianyin Electromechanical Co. Ltd.	Hangzhou Star shuaier Electric Appliance Co.,Ltd	ELSING (SUZHOU) ELECTRICAL CONTROLS CO.,LTD
Max.T.C Amp.(25°C) A	18.0		
Trip time S	6~16		
Reset time S	10~80		
Open temp. $\pm 5^{\circ}\text{C}$	120		
Close temp. $\pm 9^{\circ}\text{C}$	61		

Assembly force \leq 80N Disassembly force \geq 12.5N

Flammability: Anti-flammability

B180-120/T0163



9. Capacitor

Type	Starting capacitor	Running capacitor
Model μF	100	15
Rated voltage V.AC	330	450
Supplier and model	Huangshan Zhenzhou Electronic Technology Co., Ltd. CD60	Anhui Feida Electrical Technology Co., Ltd. CBB65A-2
		Anhui Tongfeng Electronics Co.,Ltd. CBB65
	FUXIN JIEKEDA ELECTRONIC CO.LTD CD60	Ningguo Yuhua Electrical Products Co.,Ltd CBB65

10. Delivery State

No	Name	Model	Quantity	CODE
1	Compressor	NE2180CK	1pcs	
2	Rubber plug	$\Phi 10.3$	1pcs	Installed on the compressor
		$\Phi 8.2$	2pcs	Installed on the compressor
3	Rubber grommet	H model	4pcs	
4	Starting relay	QL2-8.1	1pcs	Changshu Tianyin Electromechanical Co.,Ltd.
		MTRP0071		Hangzhou Star shuaier Electric Appliance Co.,Ltd. ELSING (SUZHOU) ELECTRICAL CONTROLS CO.,LTD
5	Overload protector	B180-120	1pcs	Changshu Tianyin Electromechanical Co.,Ltd.
		T0163		Hangzhou Star shuaier Electric Appliance Co.,Ltd. ELSING (SUZHOU) ELECTRICAL CONTROLS CO.,LTD

6	Starting capacitor	100μF	1pcs	Huangshan Zhenzhou Electronic Technology Co., Ltd
				FUXIN JIEKEDA ELECTRONIC CO.LTD
7	Running capacitor	15μF	1pcs	Anhui Feida Electrical Technology Co., Ltd.
				Anhui Tongfeng Electronics Co.,Ltd.
				Ningguo Yuhua Electrical Products Co.,Ltd
8	Cover	E1	1pcs	
9	Grounding screw	QET.1-24C	1pcs	
10	Spring tap	QET-09B	1pcs	
11	Spring for overload protector	QET-07	1pcs	
12	Sleeve	Φ 10×17	4pcs	
13	Anchor bolt assembly	M6×30	4pcs	
14	Nut	QET-27	4pcs	
15	Fixed frame	Q34L-14A	1pcs	
16	Capacitor bracket	Q34L-13A	1pcs	
17	Connecting screw	M4×6	1pcs	
18	Self-tapping screws	ST4.2×13	2pcs	

Notes:1. Except for special remakes, all electrical parts and equipment assembly are supplied separately, not installed on the compressor.

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

11. Package、Storage and Transportation

Package type		unrecyclable
Quantity		60 pcs/box
Transportation		By sea
Storage		Max. 2 layers
Cross Weight	Kg	779±24
Net Weight	Kg	744±24
Volume	m ³	0.96
Dimension: length ×width ×height		cm 103×89×105
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.

12、 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 R404A 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℃.When continuously operating under the maximum ambient temperature 43℃ , the condensing pressure and the peak pressure should not exceed as showing in the following table.

Refrigerant	R404A
Max. condensing pressure	2.68MPa
Peak	3.0MPa

- (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)、 R404A systems require a filter with drying agent whith suitable for R404A refrigerant
- (15)、 The vacuum pump and the charging system must only be dedicated to R404A
- (16)、 The refrigeration system should minimize the content of chlorion and moisture, and must be free of paraffin and silicon oil.
- (17)、 The organic substance non-compatable with R404A cannot be used in the refrigeration system.