

L83CU1 COMPRESSOR

TECHNICAL SPECIFICATION



HUANGSHI DONPER COMPRESSOR CO., LTD.

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1、Compressor Type

| | |
|-------------------------|----------------------------|
| Compressor model | L83CU1 |
| Rated voltage/frequency | 220-240V~50Hz |
| Refrigerant | R290 |
| Application | Low back pressure (LBP) |
| Cooling method | Fan Cooling |
| Start torque | High starting torque (HST) |
| Control device | Capillary tube |
| Motor type | CSIR |
| Starting capacitor | 50μF |
| Running capacitor | / |

2、Performance Data

| Displacement | Net Wt. | Oil Charge | Cooling Capacity(≥95%) | | | | | | | | COP(≥95%) | |
|-----------------|---------|------------|------------------------|-----|-----|-------|-----|-----|-----|-------------|------------|-------------|
| | | | ASHRAE | | | | | | | CECO MAF | ASH RAE | CECO MAF |
| | | | -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 |
| 8.3 | 9.0±0.4 | 200±10 | 238 | 305 | 380 | 400 | 502 | 649 | 789 | 304 | 1.40 | 1.24 |

Note: These datas come from the test without 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℃ |

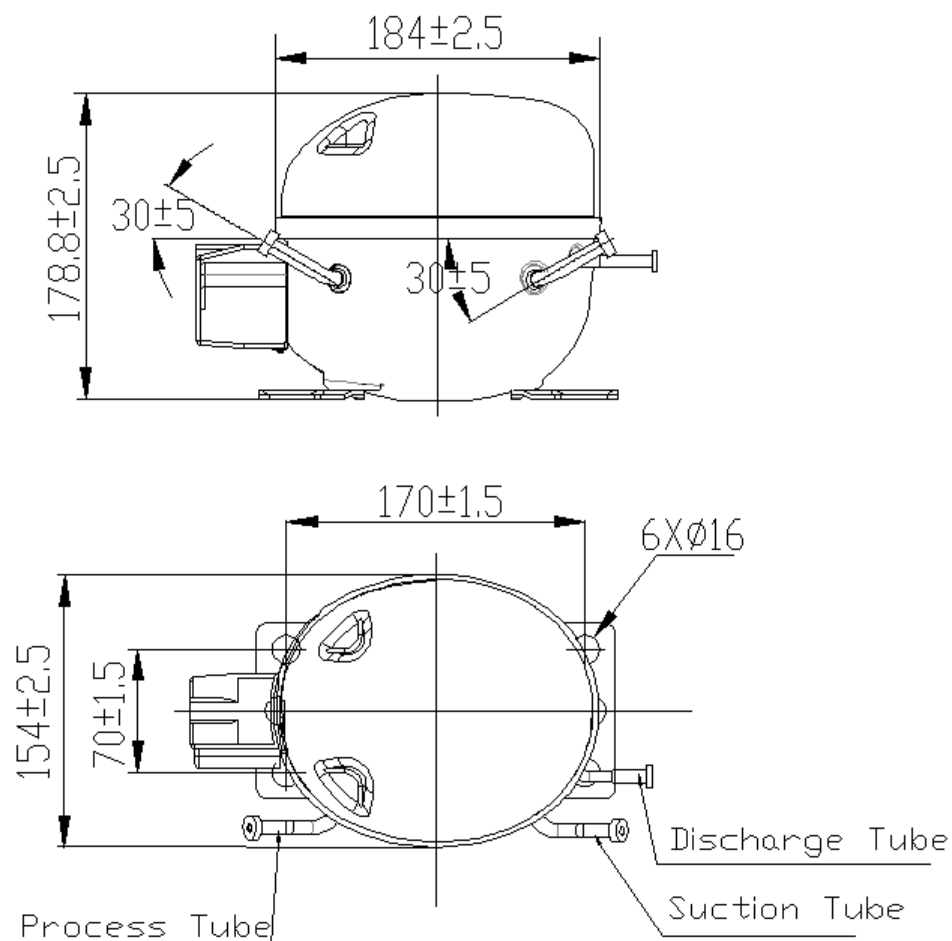
3、Running Condition

| | |
|-----------------------------------|------------------------|
| Ambient temp. | 0~43℃ |
| Evaporating temp. | -35~-15℃ |
| Voltage range | 187~254V |
| Max. condensing temp. | 65℃ |
| Max. winding temp. | 130℃ |
| Max. shell temp. | 110℃ |
| Max. discharge temp. | 130℃ |
| Start voltage | 187V [0.8/0.8MPa(abs)] |
| Shell min. resistance to pressure | 35bar |

4、Compressor Mechanical Information

| | |
|---|----------------------------------|
| Oil type | POE |
| Viscosity | 28.8~35.2mm ² /s(40℃) |
| Oil charged | 200±10ml |
| 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 | ≤48dB(A) |
| Vibration | ≤1.2m/s ² |
| Protecting gas | -0.06~-0.02MPa |

5、Compressor Shape

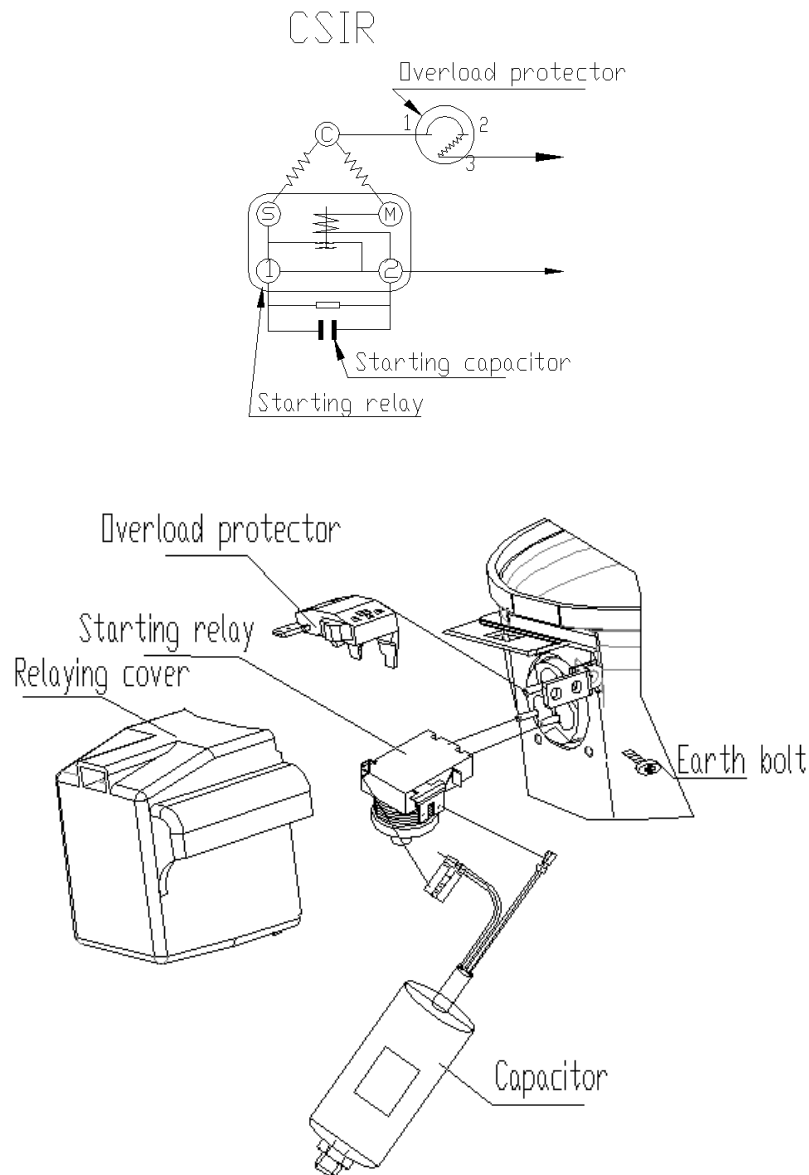


Caution: Suction tube and process tube can not exchange.

Unmarked tolerance: ±5mm

Unmarked Angle: ±10°

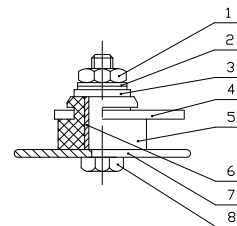
6、Wiring Diagram



Note: Each of the starting relay、the overload protector、the capacitor、the cover and the earth bolt is separately provided by our company.

7、Fixing of Mounting Bracket and Cabinet Base

- 1、Hexagon nut
- 2、Spring 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.

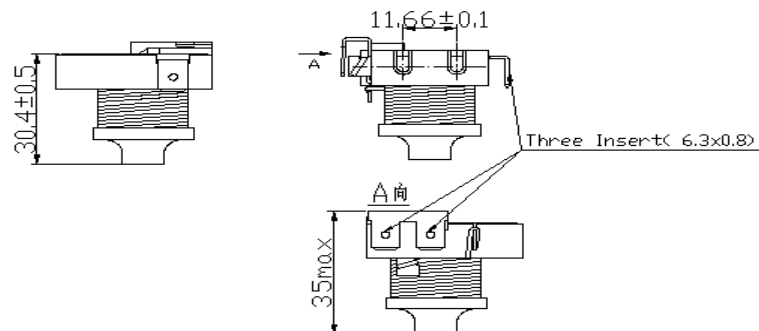
8、Starting Relay and Overload Protector

8.1 Starting relay

| Model | QL2-4.95 | MTRP 3815 |
|---------------|---|--|
| Supplier | Hangzhou Star shuaier Electric Appliance Co.,Ltd. | Elsing (Suzhou) Electrical Controls Co.,Ltd. |
| Max current A | 4.95 | |
| Min current A | 4.15 | |

Assembly force $\leq 100\text{N}$ Disassembly force $\geq 25\text{N}$

Flammability: Anti-flammability

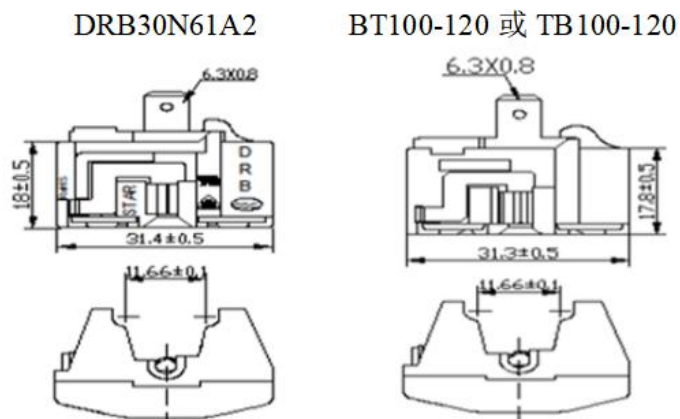


8.2 Overload protector

| Model | DRB30N61A2 | BT100-120 | TB100-120 |
|-------------------------------------|---|---------------------------------------|--|
| Supplier | Hangzhou Star shuaier Electric Appliance Co.,Ltd. | Lanxi City Yueqiang Electric Co.,Ltd. | Foshan Shunde Ronggui Electric Circuit Mersurement Equipment Co., Ltd.Co.,Ltd. |
| Max.T.Camp.(25°C) A | 10.5 | | |
| Trip time S | 5~15 | | |
| Reset time S | 25~150 | | |
| Open temp. $\pm 5^{\circ}\text{C}$ | 125 | | |
| Close temp. $\pm 9^{\circ}\text{C}$ | 61 | | |

Assembly force $\leq 80\text{N}$ Disassembly force $\geq 12.5\text{N}$

Flammability: Anti-flammability



9、Capacitor

| | | |
|---------------|--|-----|
| Model | μF | 50 |
| Rated voltage | V.AC | 330 |
| Supplier | Fuxin Jiekeda Electronic Co.,Ltd. | |
| | Huangsan Zhenzhou Electronic technology Co.,Ltd. | |
| | Shanghai Haoye Electric CO.,LTD | |

10、Delivery State

| No. | Name | Model | Quantity | Code |
|-----|----------------------|---------------------|----------|--|
| 1 | Compressor | L83CU1 | 1 pcs | |
| 2 | Rubber plug | $\Phi 6.4$ | 1 pcs | |
| | | $\Phi 8.2$ | 2 pcs | |
| 3 | Rubber grommet | H model | 4 pcs | |
| 4 | Starting relay | QL2-4.95 | 1 pcs | Hangzhou Star shuaier Electric Appliance Co.,Ltd. |
| | | MTRP 3815 | | Elsing (Suzhou) Electrical Controls Co.,Ltd. |
| 5 | Overload protector | DRB30N61A2 | 1 pcs | Hangzhou Star shuaier Electric Appliance Co.,Ltd. |
| | | BT100-120 | | Lanxi City Yueqiang Electric Co.,Ltd. |
| | | TB100-120 | | Foshan Shunde Ronggui Electric Circuit Measurement Equipment Co., Ltd.Co.,Ltd. |
| 6 | Starting capacitor | 50 μF | 1 pcs | |
| 7 | Relaying cover | A1 | 1 pcs | |
| 8 | Anchor bolt assembly | M6 \times 30 | 4 pcs | |
| 9 | Nut | M6 | 4 pcs | |
| 10 | Sleeve | $\Phi 10 \times 17$ | 4 pcs | |
| 11 | Earth bolt | QET.1-24C | 1 pcs | |

Notes: 1. Except for the Rubber plug, other 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 | 60pcs/box |
| Transportation | By sea |
| Storage | Max. 2 layers |
| Cross Weight Kg | 575±24 |
| Net Weight Kg | 540±24 |
| Volume m ³ | 0.90 |
| Dimension: length×width×height cm | 103×89×98 |
| Main components | Plywood supporter、upper plywood 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 R290 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 | R290 |
| Max. condensing pressure | 2.01MPa |
| Peak | 2.44 MPa |

- (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)、R290 systems require a filter with drying agent which suitable for R290 refrigerant
- (15)、The vacuum pump and the charging system must only be dedicated to R290.
- (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 R290 cannot be used in the refrigeration system.