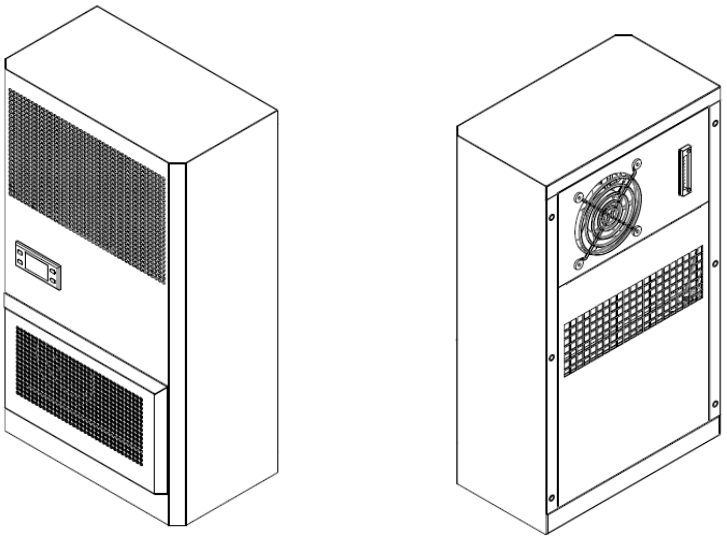
User Manual

Industrial Air Conditioner Series



Reading this manual carefully before installation and using!

Foreword

The manual describes industrial air conditioner series, wiring, operating instructions.

The manual is mainly used to guide users to install and maintain the series of air conditioners.

For the series of products of any operation must be made by the professional technicists according to the requirements of the manual.

Change History

Version	Change History	Date
A	Created	2017-11-06

contents

Declaration

RoHS Compliance Declaration of
Cabinet AC air conditioner

European Guidelines 2011/65/EU (RoHS)

Legal regulation for Substances

Dear Sir/Madam,

Referring to the European guideline of 2011/65/EU, we confirmed that according to the current status of our knowledge and in accordance with the regulations, we could produce products complying with above mentioned guidelines especially for below type:

A 0＊＊ / H＊＊

Yours sincerely

1. Brief Introduction

1.1 Product description

This product is widely used in the indoor machine, battery cabinet, industrial control cabinet need to be cooling occasions

Grid application scope: AC 230VAC±15%　50Hz/60Hz

Other power supply system, please refer to the nameplate.

Warning: In the process of transportation, storage and use must be in strict accordance with the instructions on the package to keep air conditioning placed vertically upward.

1.2 Model description

For example：

A　0＊＊ / H＊＊

A: Standard air conditioner；

0＊＊: ＊＊×100W（L35/L35）// Cooling Capacity is ＊＊×100W（L35/L35）

A: 230VAC　50/60Hz//Power: 230VAC　50/60Hz；

H＊＊: ＊＊×100W（L35/L35）// Heating Capacity is ＊＊×100W（L35/L35）。

1.3 Conform to the standard

Standard	Description
GB/T 17626	Electromagnetic compatibility(EMC)
GB4706.1	Safety household and similar electrical appliance
GB4798.1	Environmental conditions existing in the application of electric and electronic products - storage
GB4798.2	Environmental conditions existing in the application of electric and electronic products - transport
GB4798.3	Environmental conditions existing in the application of electric and electronic products - use
CE	The third party certification

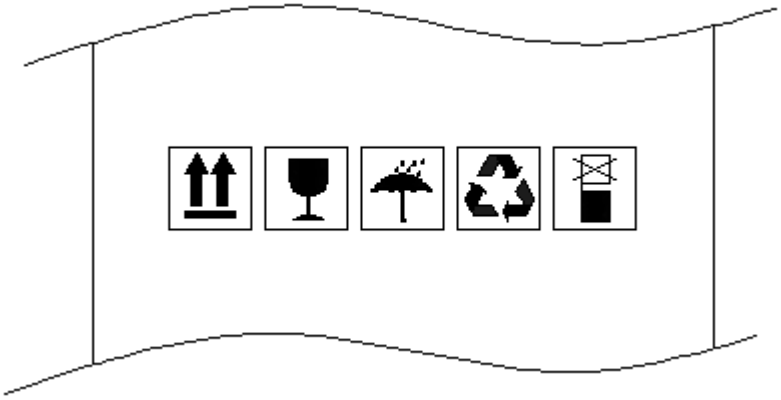
2. Packing and Shipping

- Air conditioner packed in paper cases, the package includes Annex.

- The air conditioner during the transportation, please pay attention to the following matters:

Warning

Figure2-1 Packing mark



- During Handling or transport, Air conditioner must be upward placed as.  No inverted, flat, excessive tilt and collision.
- Air conditioner is precision instrument, in handling or transport process, should be handled with care, package boxes do not step, prohibit standing or placing other heavy objects.
- During Handling or transporting, pay attention to moisture, water, rain.

3. Installation

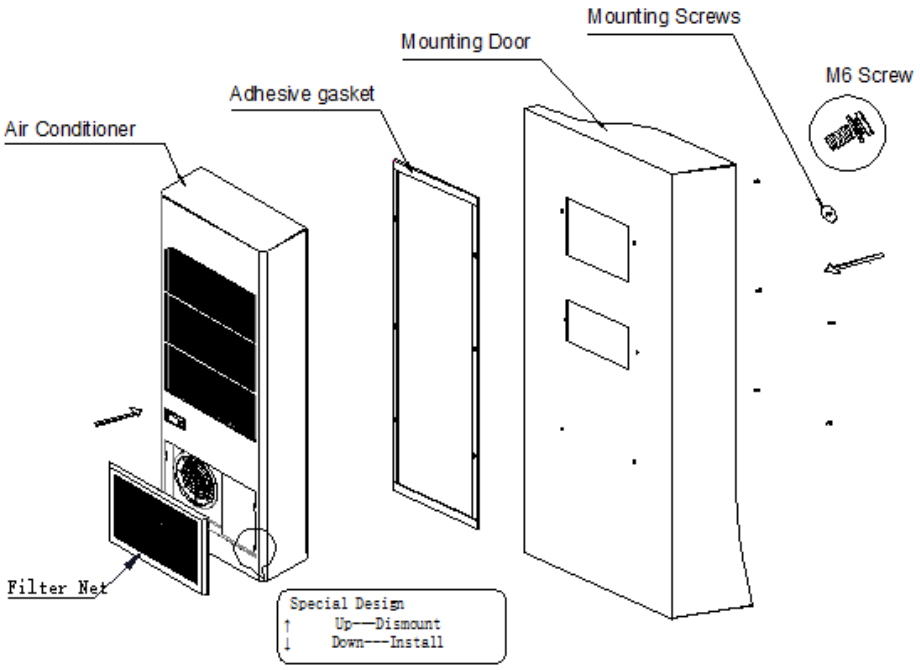
3.1 Before Installation

You have to prepare the following tools before installation: cross screwdriver, slot type screwdriver, sealing strip, vice.

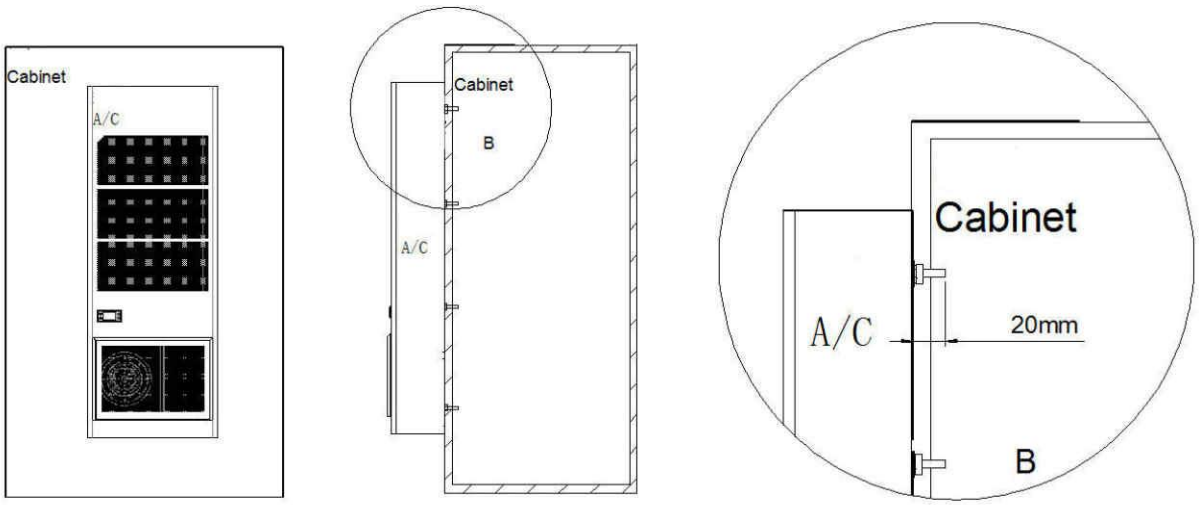
3.2 Air Conditioner Installation

- Installation steps:
  1. Draw a schematic diagram of the cabinet door opening on the installation surface and cut off the shaded area. Please refer to the corresponding specifications for the schematic diagram of cabinet door openings for different models of air conditioners;
  2. Install the air conditioner on the cabinet according to the diagram below; (This installation method is stud installation and requires the option of double headed studs)

Figure 2-Installation Instruction



3. The following figure shows the effect of the machine installation and the length of the double headed bolts protruding after installation inside the cabinet. Please refer to it;



- Installation steps:

1. Draw on the cabinet mounting cut-out map according to Figure, cut off the shadow part. Different models of air conditioner cabinet mounting cut-out maps refer to its specification.

2. According to the direction of the schematic of installation, installed the air conditioner on the cabinet.（This installation is installed in the stud mounting. It needs stub bolt）

3. The following picture shows the length of the post after the installation of the machine and after the installation of the cabinet. Please refer to it.

- Double check lists after Installation:

1. Don't apply this unit in high oil, burning gas, explosive gas, strong corrosively condition, the ambient air must be under 55℃, and the humidity not higher than 95%;

2. Make sure that the lean of the product no more than 3°;

3. Make sure that the cabinet should be sealed well to avoid the cooling losing and avoid ambient moisture penetrate into cabinet, this will avoid produce more condensate water;

4. Ensure that the product is up and running in upright 30 minutes.

3.3 Electrical Wiring

Does Electrical Wiring according to the manual before use the air conditioner; we suggested preferring to use cables in the attachments. You should call the After-sale Service Department, if you cannot sure the cable specification be made by your-self.

Figure 3-1 Schematic of power terminal

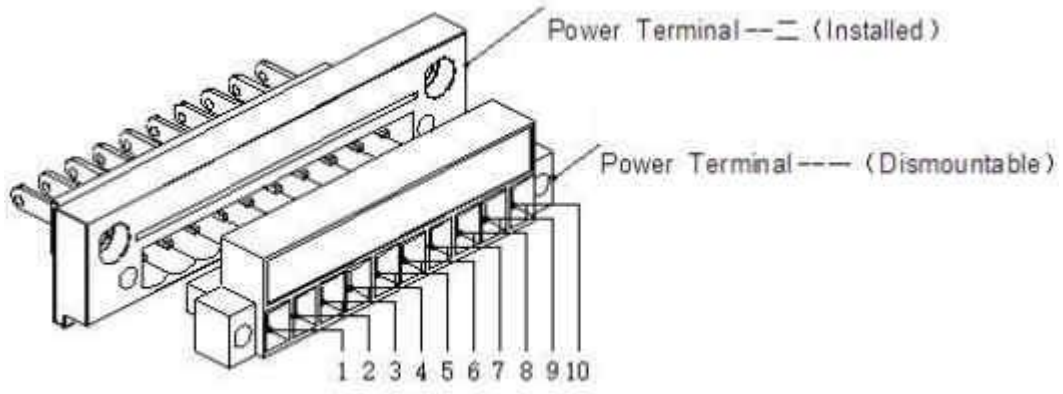


Table 3-1 Terminal instructions

Number	Symble	Definition	Description
1	L	Live line of AC power	/
2	N	Neutral line of AC power	/
3	PE	Ground wire of AC power	/
4	TR/+	Positive pole of 485 communication	/
5	TR/-	Negative pole of 485 communication	/
6	NO	Normal open port of dry contract alarm output	Dry contact alarm: Pin 6&7: Normal open Pin 7&8 :Normal closed
7	COM	Common port of dry contract alarm output	
8	NC	Normal closed port of dry contract alarm output	
9	I/O	Hydrogen discharging port or external signal input port	Hydrogen discharging or external signal input port both can only choose one: As hydrogen port: Can connect external hydrogen exhaust fan(AC&DC). Current of hydrogen exhaust fan should be less than 1 A As external singal input port: Accept external control signal to control the air conditioner.
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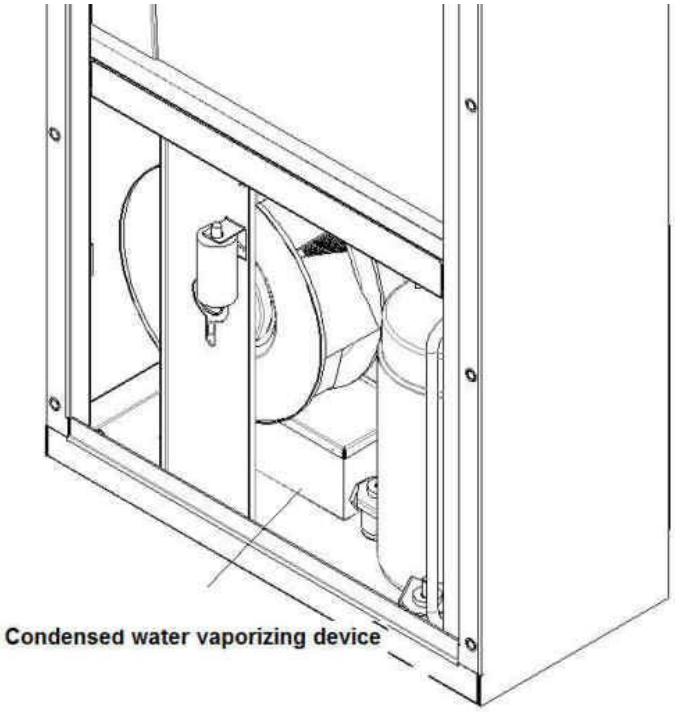
3.4 Condensed water vaporizing device（optional）

This series of optional built-in air conditioning condensate vaporizing device, this device will have a direct evaporation condensation water into air conditioning, water vapor emissions into the atmosphere, effectively solve workshop and other places are not suitable for to take over the discharge of condensed water scene. Special attention to this device does not guarantee that there is no condensation in all the environment, and when humidity exceeds 50%, there will also be condensed water dripping from the drainpipe.



Condensed water vaporizing device

4. Operation Logic

4.1 Running

Completed and confirmed the wiring correct, then you can connect to the AC power to air conditioner for the first time to run on electricity.

After power on air conditioner, first of all it will be self-checking: internal fan, temperature sensor, heater, external fan, and compressor.


Warning

When the air conditioner is running, if there is abnormal noise, vibration, please cut off power immediately and notify the professionals to inspect.

4.2 Control Logic

Operational mode: standby, cooling, heating, and alarming.

- Standby mode

If the return air temperature is lower than the default set point of Compressor start temperature (35℃), the air conditioner is in a standby mode. At this time, the internal fan is running only, the monitor displays the current return air temperature.

- Cooling mode

If the return air temperature is greater than or equal to the default set point of compressor start temperature (35℃), the air conditioner enters the cooling mode. The external fan is running, the monitor display symbol. The compressor is running after external fan 60 seconds, the symbol is bright. If the compressor is running, the minimum running time is less than the set time (default time is 5 minutes).

If the return air temperature is less than or equal to the default set point of compressor start temperature (35℃) subtracts compressor stop hysteresis temperature (5℃), and the compressor running time is more than or equal to the minimum set time(the default time is 5 minutes),then the compressor stopped. The symbol is extinguished. The external fan stopped after a while, and the symbol extinguished.

- Heating mode

If return air temperature is less than or equal to heater start temperature (0℃) subtracts heater stop hysteresis temperature (5℃), the heater runs to heat the system and the ☼ symbol bright.

If the return air temperature is greater than or equal to heater start temperature (0℃) plus heater stop hysteresis temperature (5℃), the heater is stopped and the ☼ symbol extinguished.

Attention: The heating function is only applicable to models with heater.

4.3 Instructions of Display Panel

The display panel shows cabinet temperature under normal circumstance, and shows alarm code when there is a malfunction.

In the bottom is the status bar, different lamp represents different status.

You can check and set various parameters of air conditioner by the display panel (User Parameters).

Figure 4-1 the display panel diagram

Table 4-1 the meanings of lamps on the display panel

lamps	Description
	Flashing when self diagnose or temperature setting mode
	Lamp on when cooling
	Lamp on when heating
	Lamp on when external fan is running
	Flashing when alarm

- The evaporator temperature query:

Under the return air temperature interface, press“▲”once will show evaporator temperature, press again or press ”M”, the monitor will return the main interface.

- The Condenser temperature query:

Under the return air temperature interface, press“▼”once will show condenser temperature, press again or press ”M”, the monitor will return the main interface.

Attention: Air conditioner has been setting parameters, the default parameters refer to table 5-2；

Part of the parameters need to password, please contact our customer service.

- Parameter setting:

Long press "M" key for 5 seconds, enter the parameter setting mode, then display the code of parameters, with "▲ ▼" key to select the code of parameters, select a code and press "Set" button will display corresponding parameter values of the code, then re-use "▲ ▼" button can set the parameters, after finished the setting, press "Set "button, back to display states. During the setting mode, Press "M" key to exit the parameter setting mode, in the process of the parameter values setting by pressing "M" button that give up, quit, but does not change the parameter value.

Table 4-2 Setting Code

Code	Parameter name	Default Value	Range	Remarks
F01	Compressor start temperature	35	20～50℃	
F02	Compressor stop hysteresis temperature	5	2～8℃	
F03	Heater start temperature	0	-15～15℃	This function is only applicable to the models with heater.
F04	Heater stop hysteresis temperature	5	1～15℃	
F05	High temperature alarm	55	35～70℃	
F06	Low temperature alarm	-40	-42～15℃	
F07	Communication address	1	1～255	

4.4 Alarm and Fault

The monitor displays return air temperature at normal, If the alarms, temperature and alarm codes are displayed alternately, the alarm code as follows:

Table 4-3 Alarm Code

Code	Code Name	Principle	Process Method
E01	Return air temperature sensor fault	Return air temperature sensor is short circuit or open circuit	1、Use the multimeter to check whether the return air temperature sensor is short circuit or open circuit. 2、Check whether the return air temperature sensor is loosening.
E02	Evaporator temperature sensor alarm	Evaporator temperature sensor is short circuit or open circuit	Check whether the evaporator temperature sensor is short circuit or open circuit.
E03	Condenser temperature sensor alarm	Condenser temperature sensor is short circuit or open circuit	Check whether the condenser temperature sensor is short circuit or open circuit.
E04	Internal fan alarm	1、The internal fan is not working properly. 2、The evaporator temperature has been below zero in 15 minutes.	1、Check Whether the internal fan line is loosening. 2、Check whether the system leakage.

E05	External fan alarm	1、The external fan is not working properly 2、The condenser temperature has been above 77 degrees in 3 minutes.	1、Check Whether the external fan line is loosening. 2、Check whether the system leakage.
E06	Refrigerant leakage alarm	1、Lack of refrigerant 2、The evaporator temperature sensor is loosening	1、Check whether the system leakage. 2、Check whether the evaporator temperature sensor is loosening..
E07	Low temperature alarm	The cabinet temperature is higher than the set point	The heater is running until the alarm elimination.
E08	High temperature alarm	The cabinet temperature is higher than the set point.	Open the cabinet door until the alarm stop.

4.5 Other fault analysis and processing

Fault state	Analysis of the reasons	Solutions
Power on the switch, the cabinet temperature is too high but the air conditioner is not working.	1、Power failure or no power. 2、The cooling set temperature is higher than the cabinet temperature. 3、System fault.	1、Check the power supply and the electric circuit. 2、Setting cooling temperature according to the needs. 3、Please contact professional maintenance.
The air conditioner is running but the cooling effect is not good.	1 、 The cooling capacity of the air conditioner is not match with the load. 2、The ambience temperature is too high. 3、Other system fault.	1、To add or choose another air conditioner according to the load. 2、Ensure the machine is used in the correct range. 3、Please contact professional maintenance.
The machine is stopping suddenly, and the electric system is normal.	1、The cabinet temperature greater than or equal to the cooling set temperature. 2、Other system fault.	1、Setting cooling temperature according to the needs. 2、Please contact professional maintenance.

5. Maintenance

- Prepare tools

Table 5 -1 Malignance Tools

No.	Tools
1	Multimeter
2	Phillips screwdriver
3	Slotted screwdriver

- Routine maintenance

Table 5 -2 Routine maintenance

No.	Check items	Check methods	Solution
1	Power line firm	1、Turn off the supply power 2、Pulled the power line，watch whether the line is loosening 3、Screw the screws on the power cord terminals with a screwdriver, watch whether the screw is loosening	If there is a power line to loose or loosening, You should be used to tie tight power line; use a screwdriver to loose screw.
2	Voltage Stability	Use the multimeter to measure air conditioner input voltage to watch whether the voltage is within normal range.	If the voltage is not within the normal range, Please turn off the power supply immediately. Power on the air conditioner until the supply voltage within normal range.
3	Screw firmly	Use screwdriver to screw the screws and watch whether the screw is loosening	If the screw is loosening, please tighten it.

6. Warranty

- **Warranty Period**

The product guarantee period is **12 months** from product up-running time or Max. **18 month** from product delivery date, or depends on agreement with the company.

- **Warranty Coverage**

During the warranty period, all belong to the product itself quality problems caused by fault, the company will be free for you to repair; Household repair is required to provide the product label. But by any of the following causes the failure does not belong to our warranty.

1) Out of the Warranty period

2) Cannot provide the product label(the product label is on the nameplate);

3) Because of the abnormal condition or environment ,or the instructions specified in the inappropriate installation, maintenance or operation causes the fault;

4) Not caused by equipment failure, caused by user's other equipment or software.

5) User changed or disassembles by their-selves, or maintained by the person without authorization.

6) Caused by force majored such as fires, earthquakes, floods and other damage to the fault.

- **Disclaim**

The warranty is for the delivered products.
Irresponsible is for any loss that may be caused by equipment failure.

7. Reclaim

At the end of the unit working life, the produce must not be disposed of as urban waste; it must be taken to a special local authority differentiated waste collection centre or to a dealer providing this service.