

### General Introduction



Air conditioning system, MK10525 driver typical application for dc inverter air conditioning system.



Cooling/Refrigeration unit, MK10525 driver BLDC rotary or scroll compressors (dc inverter), be widely used in industrial cooling/refrigeration units, such as laser ,electron, chip component dehumidification equipments.

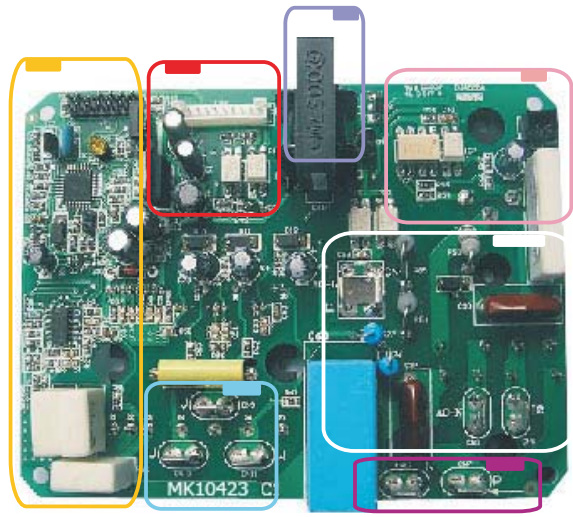
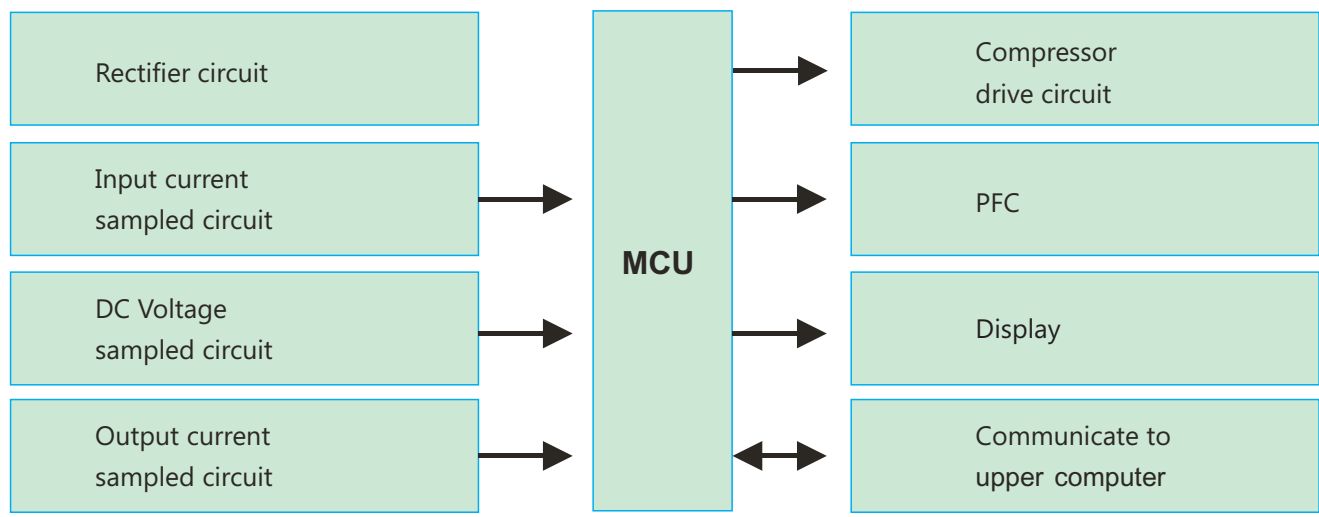


Heat pump, Either household or industrial heat pump system, MK10525 high efficiently driving compressor system.

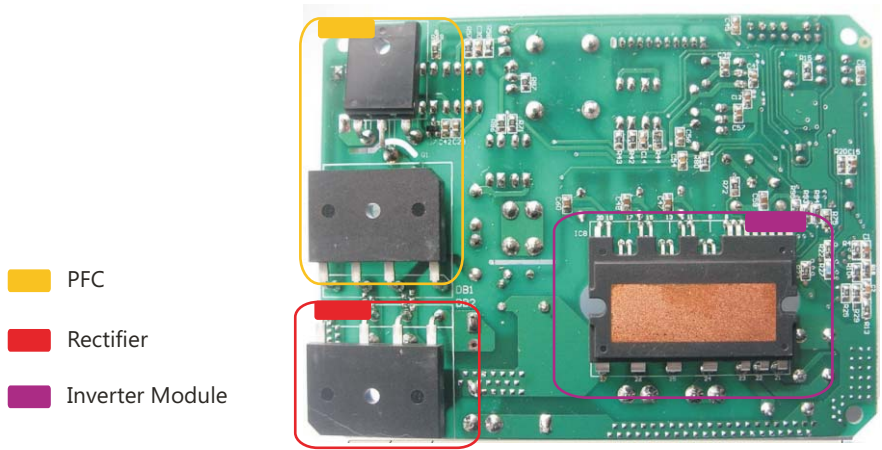
## Features

- ◆ Apply for up to 15kW capacity dc inverter compressor driving
- ◆ Vector frequency variable control
- ◆ PFC force control
- ◆ Heavy duty application
- ◆ High reliability
- ◆ Modbus -RS485 or Serial communication
- ◆ Economical applying for industrial or household equipments

## Driver Basic Fabric

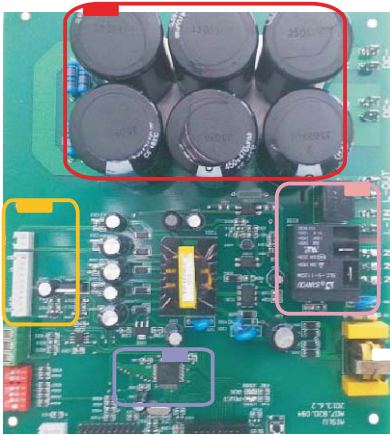


- Compressor controls
- Control power input and UART
- Input current transformer
- PFC
- UVW connect compressor
- AC220-240V/50Hz connect to reactor
- Connect to electrolytic capacitor



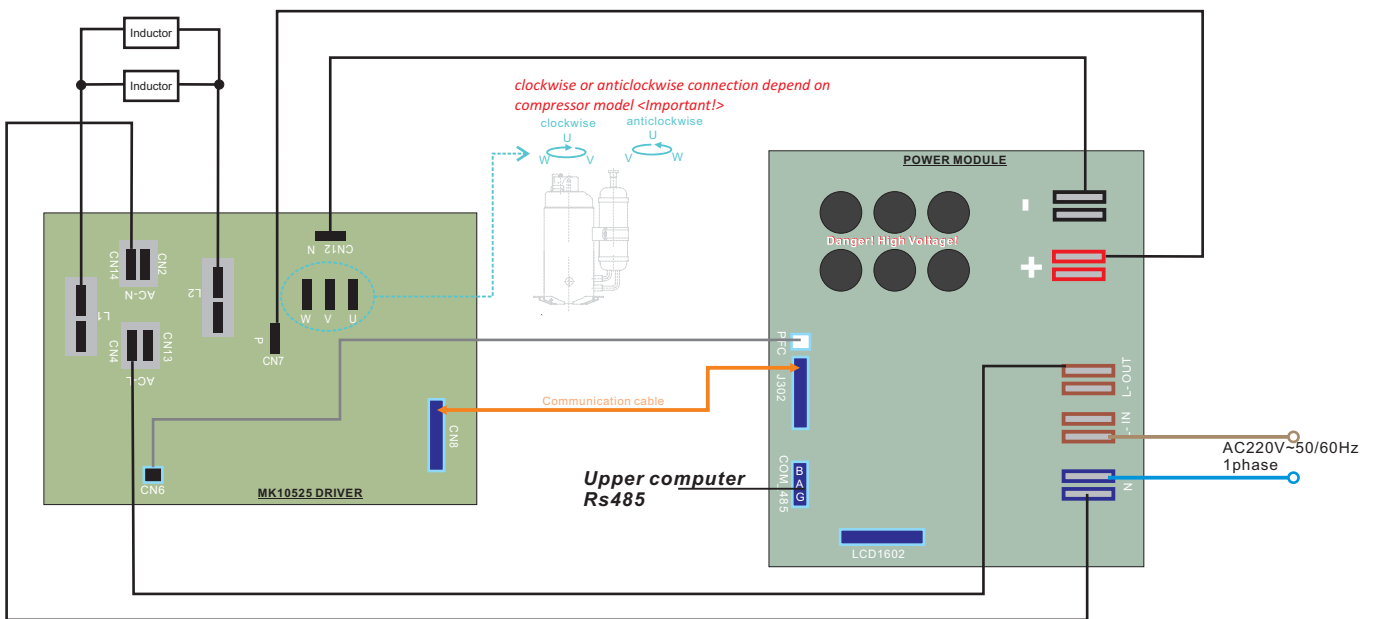
- PFC
- Rectifier
- Inverter Module

# AISLU



- UART
- Electrolytic capacitors
- Modbus / Curve selection
- Supply power current buffer

## Wiring Demo



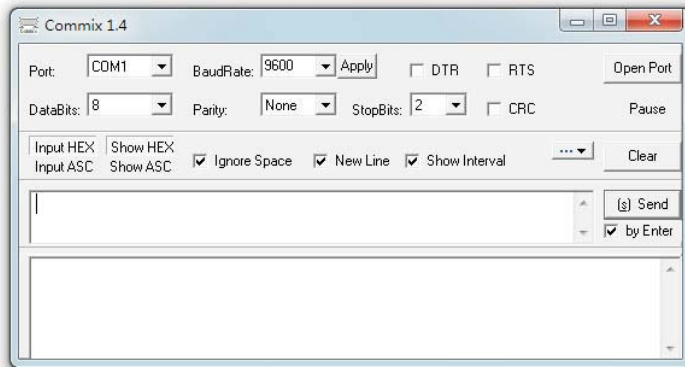
\*The wiring diagram show above is a standard connection demo. It may be in different connection in different version or developed driver.  
 \* Please make sure the wiring diagram with Aislu's technical support before power up driver.



This driver is used as equipment interior controller, always install or maintain by trained person, Wrong wiring connection could cause board burn or components damage.

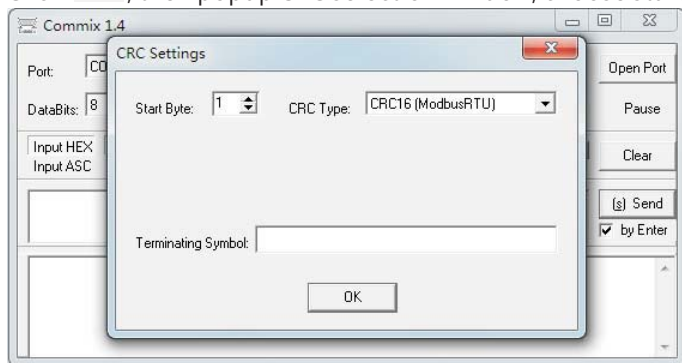
## Control By PC Demo

- 1) Confirm the wiring connection is correct (refer to wiring connection diagram)
- 2) Correct connect COM\_485 port to Computer COM port or USB  
(you may use a RS232-RS485 converter or USB-RS485 converter, connect power module COM-485 port to computer COM port or USB port)
- 3) On COM\_485 port of power module, there is marked B/A/G three pins, B is RX-, A is TX+ and G is grounding.
- 4) Use any Modbus communication test software, below use Commix modbus test software demo:



**Port:** Select the port which you used for connect computer port to power module;  
**Baud Rate:** 9600 ;  
**Data Bits:** 8;  
**Party:** None;

Click  CRC , then popup CRC selection window, choose start Byte: 1, CRC Type: CRC16(Modbus RTU)



Input command string to check compressor state or run compressor for target frequency(speed):



There are 3 types (Function code 1, 3, 10) of command string,

Function code 1, for monitor compressor protection state, command string:

01 01 00 00 00 07 CRC (CRC does not require to input, it automatically generate by test software)

Function code 3, for monitor compressor frequency is running, dc voltage, current, command string:

01 03 00 0A 00 03 CRC (CRC does not require to input, it automatically generate by test software)

Function code 10, input target compressor speed, Demo command string:

01 10 00 00 00 06 0C 00 3C 00 FF 00 FF 00 FF 00 00 00 FF CRC (CRC does not require to input, it automatically generate by test software)

Please refer to [Modbus protocol of Aislu power module](#)

## Heat Sink Suggestion

