

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.

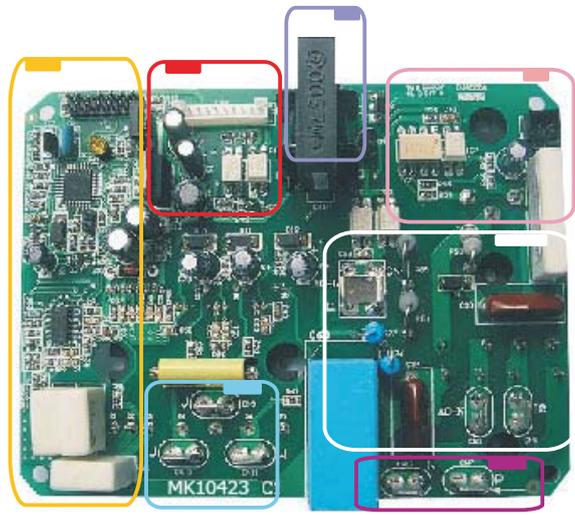
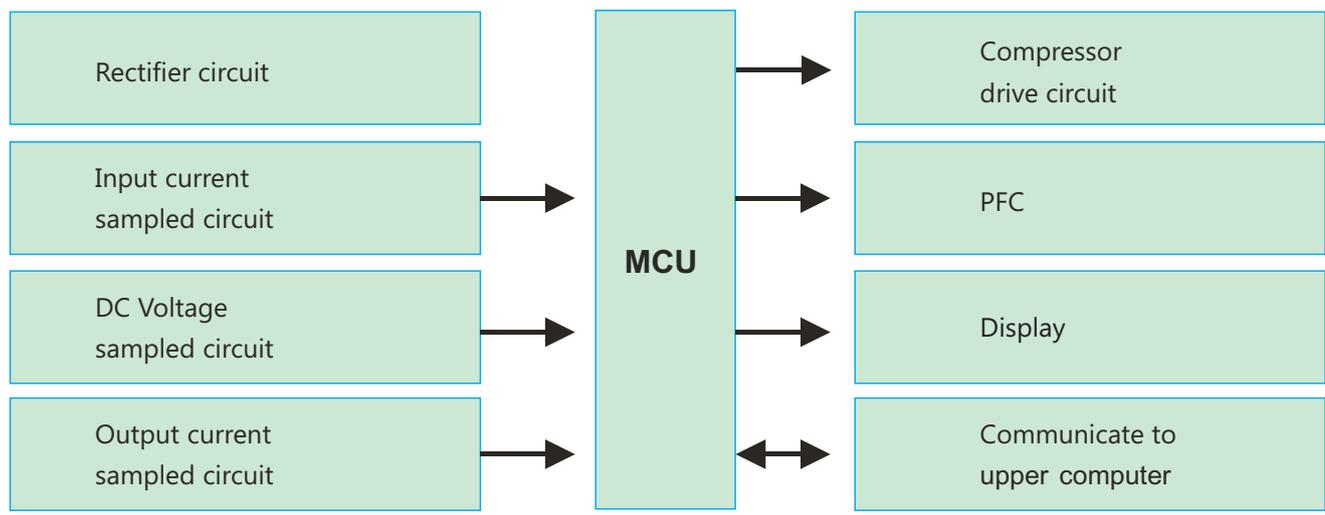


Heat pump, Either household or industrial heat pump system, MK10525 high efficiently driving compressor system.

Features

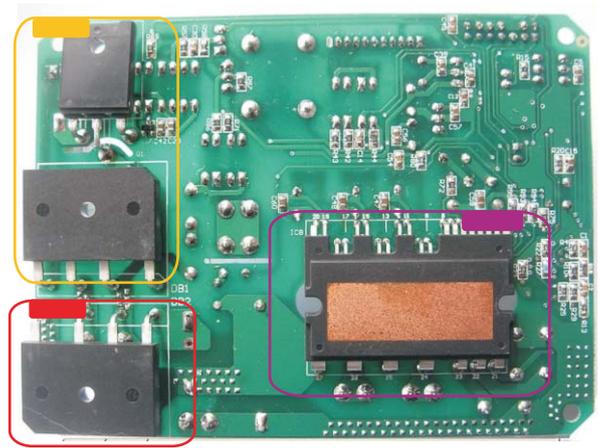
- ◆ Apply for up to 15kW capacity dc inverter compressor driving
- ◆ Vector frequency variable control
- ◆ PFC force control
- ◆ Heavy duty application
- ◆ High reliability
- ◆ Modbus -RS485 or Serial communication
- ◆ Economical applying for industrial or household equipments

Driver Basic Fabric

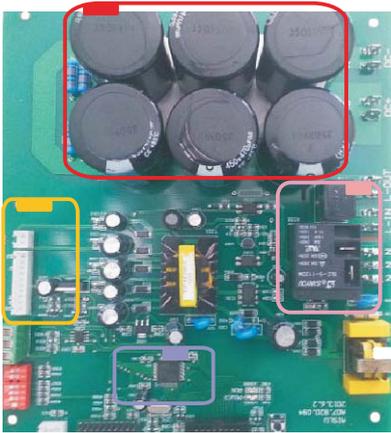


- Compressor controls
- Control power input and UART
- Input current transformer
- PFC
- UVW connect compressor
- AC220-240V/50Hz connect to reactor
- Connect to electrolytic capacitor

- PFC
- Rectifier
- Inverter Module

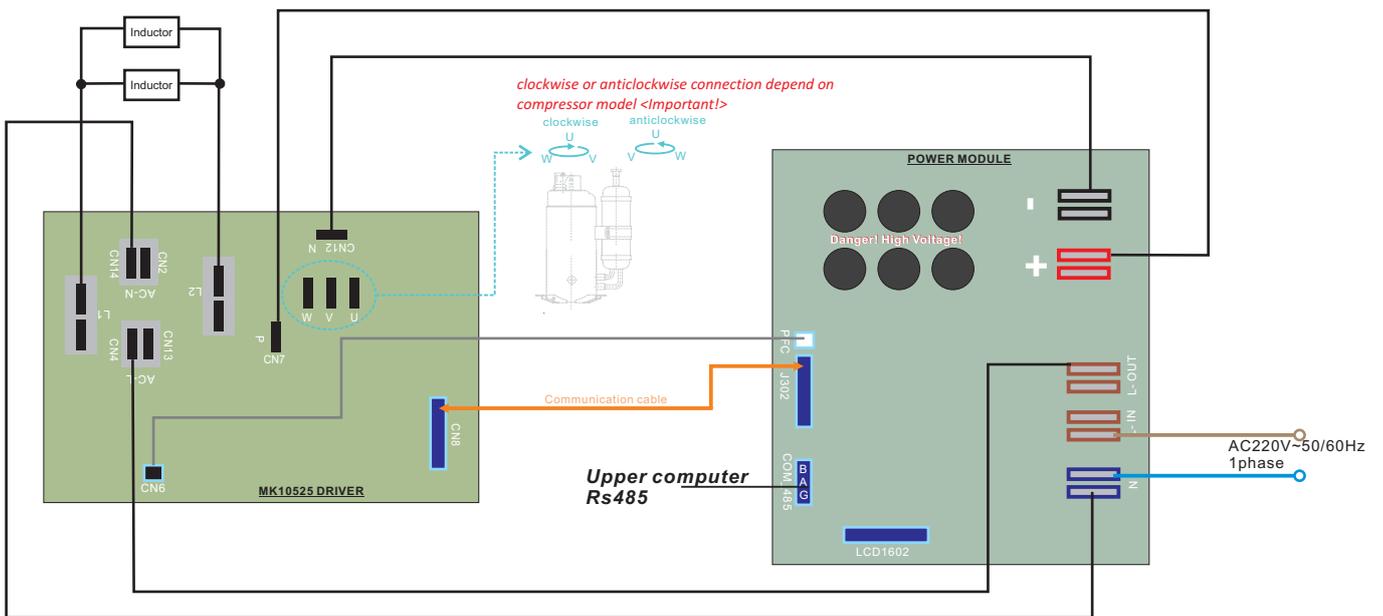


AISLU



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

Wiring Demo



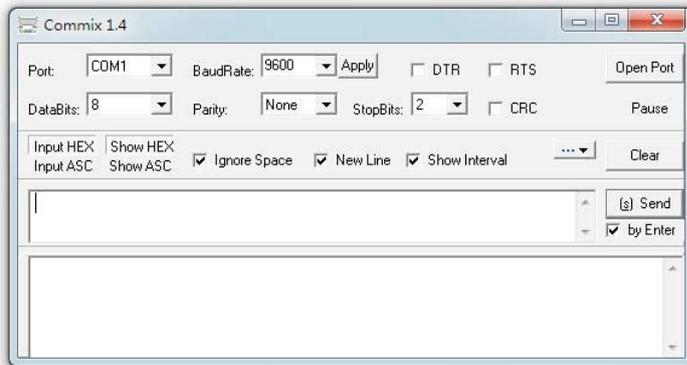
**The wiring diagram show above is a standard connection demo. It may be in different connection in different version or developed driver.
 * Please make sure the wiring diagram with Aislu's technical support before power up driver.*



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.

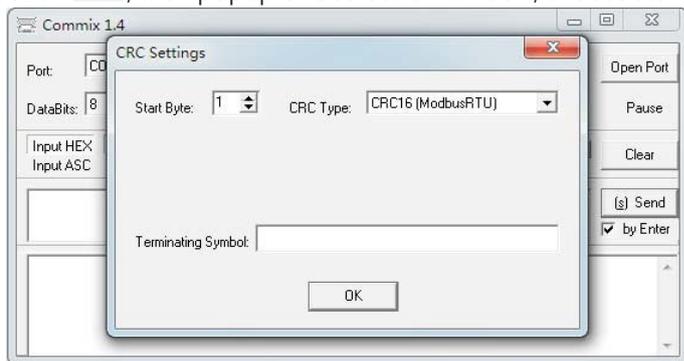
Control By PC Demo

- 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](#)

