## Chapter 4 Wiring

- 4-1 Wiring
- 4-2 System Wiring Diagram

## Chapter 4 Wiring | MH300

After removing the front cover, please check if the power and control terminals are clearly visible. Please read following precautions to avoid wiring mistakes.



- ☑ It is crucial to **cut off the AC motor drive power** before doing any wiring. A charge may still remain in the DC bus capacitors with hazardous voltages even after the power has been turned off a short time. Therefore it is suggested to measure the remaining voltage with a DC voltmeter on +1/DC+ and DC- before doing any wiring. For your personnel saftery, please do not start wiring before the voltage drops to a safe level < 25 Vdc. Wiring the installation with a remaning voltage condition may cause injuries, sparks and short circuits.
- ☑ Only qualified personnel familiar with AC motor drives is allowed to perform installation, wiring and commissioning. Make sure the power is turned off before wiring to prevent electric shocks.
- ☑ The terminals R/L1 · S/L2 · T/L3 are for mains power input. If mains power is wrongly connected to other terminals, it may result in damage to the equipment. The voltage and current should lie within the range as indicated on the nameplate (see Chapter 1-1).
- ☑ All units must be grounded directly to a common ground terminal to prevent electrical shocks or damage by lightning.
- ☑ Please make sure to tighten the screw of the main circuit terminals to prevent sparks due to the loosening of vibrations.



- ☑ When wiring, please choose the wires with specification that complies with local regulations for your personal safety.
- ☑ Check following items after finishing the wiring:
  - 1. Are all connections correct?
  - 2. Any loose wires?
  - 3. Any short-circuits between the terminals or to ground?

## 4-1 Wiring

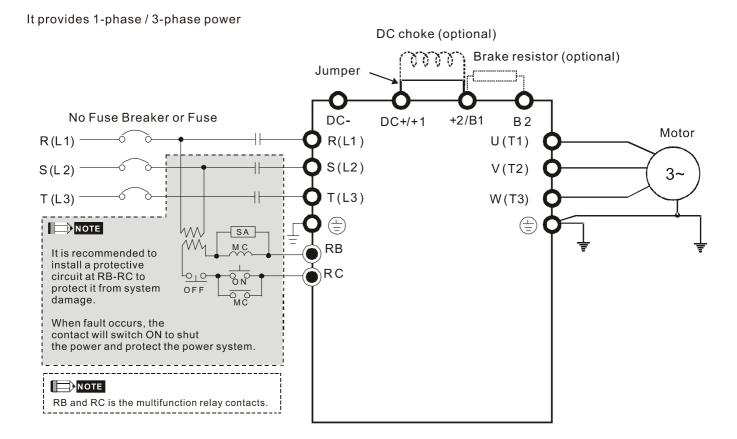


Figure 1

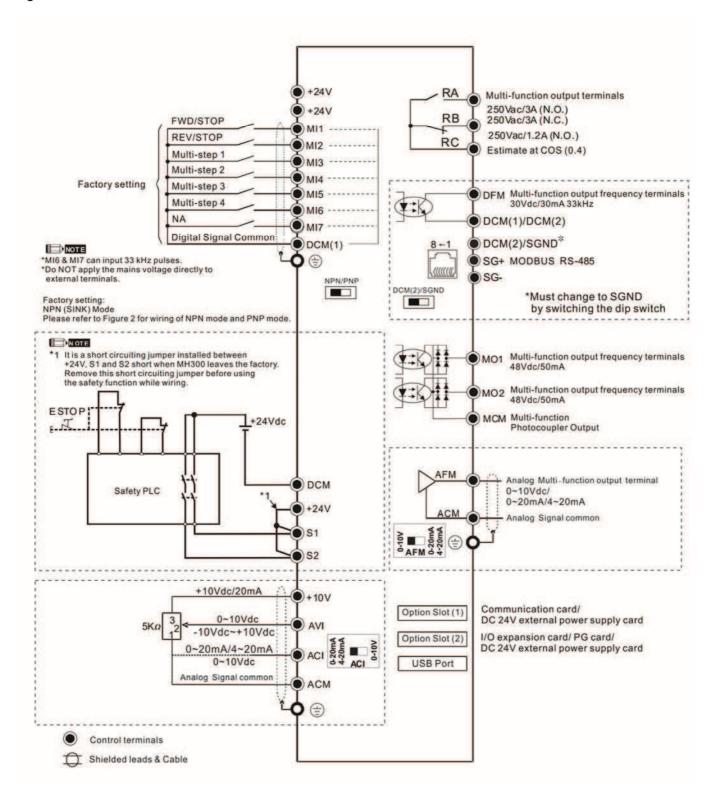
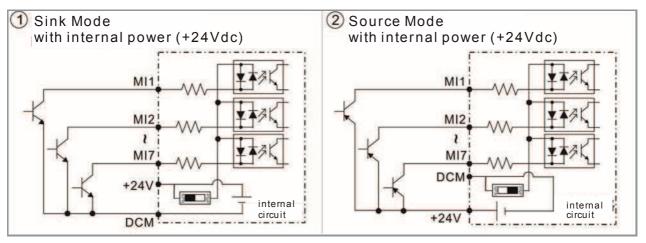


Figure 2 SINK (NPN) / SOURCE (PNP) Mode



## **4-2 System Wiring Diagram**

Power input terminal		· ·
	Power input terminal	Please refer to Chapter 9 Specification Table in user manual for detail
NFB or fuse	NFB or fuse	There may be a large inrush current during power on. Refer to 7-2 NFB to select a suitable NFB or 7-3 Fuse Specification Chart.
Electromagnetic contactor	Electromagnetic contactor	Switching the power ON/OFF before the magnetic contactor more than 1xper hour can cause damage to the drive.
AC reactor (input terminal)  Zero-phase reactor  EMC filter	AC reactor (input terminal)	When the mains power capacity is > 500kVA or when the drive is preceded by a capacitor bank, instantaneous peaks voltages and current may destroy the drive. In that case it is recommended to install an AC input reactor which will also improve the power factor and harmonics. The cable between reactor and drive should be < 10m. Please refer to Chapter 7-4.
R/L1 S/L2 T/L3 E + B1 B2 B2 B2	Zero-phase reactor	Used to reduce radiated emission, especially in environments with audio devices, and reduce input and output side interference.  The effective range is AM band to 10MHz. Please refer to Chapter 7-5.
U/T1 V/T2 W/T3 ⊕E	EMC filter	Can be used to reduce electromagnetic interference. Please refer to Chapter 7-6.
Zero-phase reactor	Brake module & Brake resistor(BR)	Used to shorten the deceleration time of the motor. Please refer to Chapter 7-1.
AC reactor (output terminal)	AC reactor (output terminal)	The motor cable length will affect switching current peaks. It is recommended to install an AC output reactor when the motor cable length exceeds the value in Chapter 7-4.