

## **OPERATION MANUAL FOR STEPPER DRIVE E-2208**

### **Overview:**

Based on our present driver technology, Model E-2208 is a micro-step driver that has absorbed the advanced and high-speed electron technology.

### **Performance and features:**

- Low noise and high effective work capacity.
- With wide working voltage range.
- Flexible Setting.
- Perfect protection and Phase controlled circuit break functions

### **Applications:**

Suitable for a wide range of stepping motors of Nema17,Nema23,Nema34,Special for Nema43 .and usable for various kind of machine, Such as X-Y tables, labeling Machine ,laser cutters, engraving machines, and pick-place devices. Particularly useful in applications with extremely low noise and low vibration, high speed and high precision are desired.

### **Instructions:**

- **Interface port for input voltage:**  
AC supply, connect 110V ~ 220V

**Attention:** We recommend that use isolating power, if just connect the AC directly, the driver and motor need ground connection in a better condition.

### **Motor interface port:**

For 2-phase, 4-wire motor, connect with driver directly.

For 4-phase, 6-wire motor, do not connect the middle two wires, and connect the other four wires with driver

For 4-phase, 8-wire motor, winding and pair wise parallel connection. then connect with driver( chart2)

**Warning: Any faulty connection will cause the driver damaged.**

### Wiring diagram:

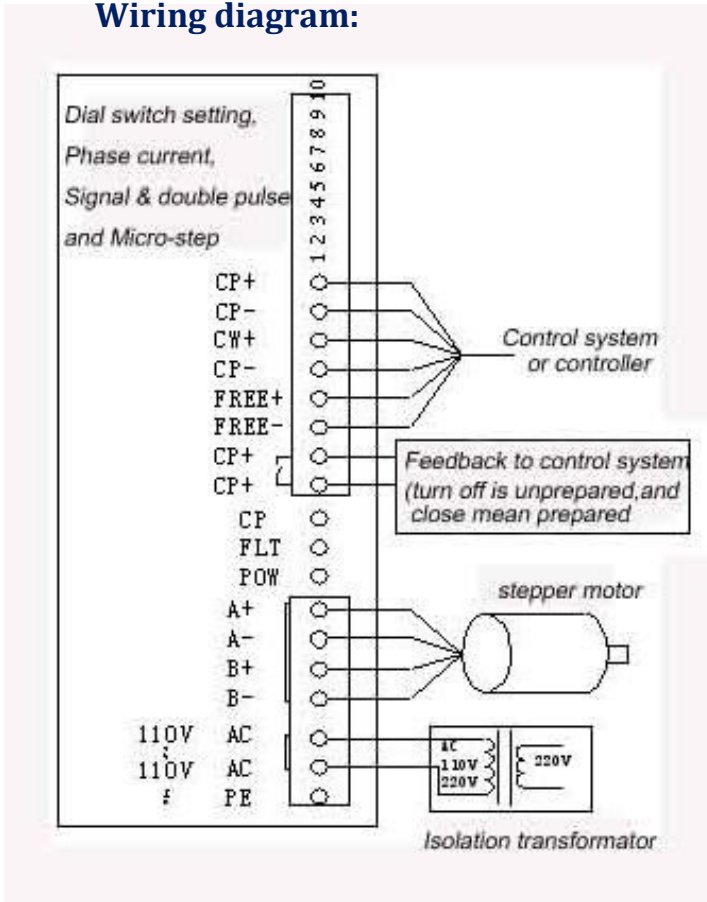


Chart 1

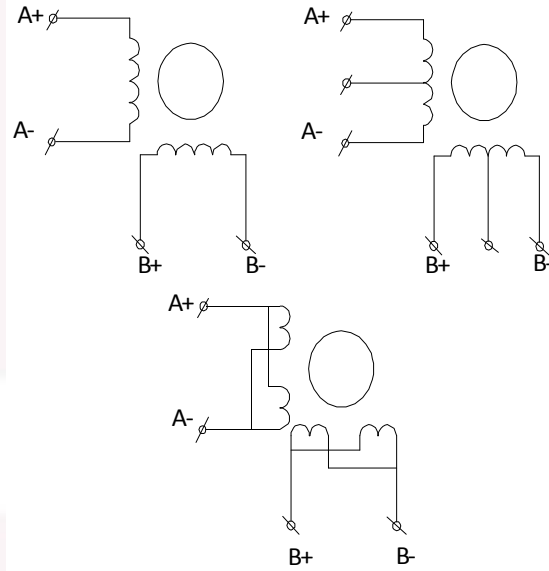


Chart 2

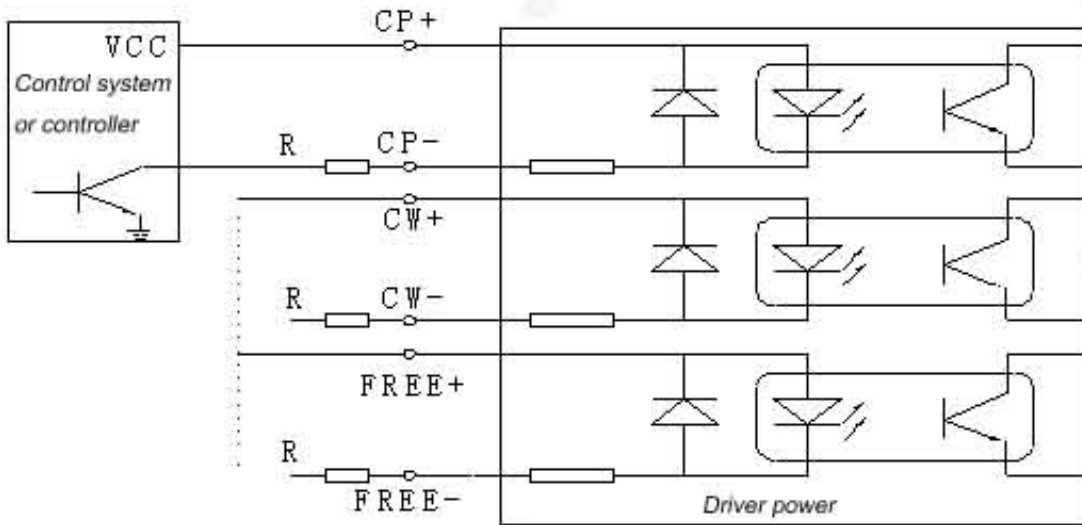


Chart -3

### Interface port for input signal:

Warning : Input signal must have enough current (generally, TTL, COMS signal can't driver directly), otherwise, the system cannot do reliable work. In the above picture, "R" is external current limiting resistor. Such as chart 3 is differential connection, and has a nice anti-jamming performance.

### Common-anode connection:

Connect CP+, CW+, FREE+ respectively, CP connect CP-, CW to CW-, Free to Free-.

### Common-cathode connection:

CP connect CP+, CW to CW+, FREE to FREE+.  
Connect CP+, CW+, FREE+ respectively.

### Signal light :

CP is pulse signal indication. FLT indicate the error report (flicker in regular frequency mean overcurrent, and in unregular frequency is blower fault, and RDY is open circuit at this time.

### External current limiting resistance:

Signal current in both the "+" "-" port are must between 8-16mA, the signal amplitude can't too big, and not too weak. it is necessary to connect current-limiting resistor in external if the signal amplitude are too Strength, refer to following table 1:

Signal amplitude	External Current Limiting Resistance R
5V	No connect
12V	680Ω
24V	1.8KΩ

**Table-1**

**CW** : Input end of direction level signal, high & low level control the motor running in Positive /reverse, the setting time of signal level is more than 0.5us.

**Free**: Off-line level(Low Level effective),at this time the input control port are low, field current in the motor is cut off ,and the motor in a off-line free state

**CP**: Stepper pulse signal input, falling edge effective, the highest response frequency reach to 1000Hz, the setting time of signal level not less than 0.5us.

### **Phase current and Micro-step setting:**

Model E-2208 micro step driver setting the phase current and micro-step by dial switch, and switch 5 is half-current (ON means Disable, and OFF is Enable),switch 6 is single/double pulse setting(ON means single pulse: CP DIR,OFF is double pulse: forward direction CP, reverse direction CW0).the specific setting refer to table-2 and table-3.After Mirco-step setting the driver, the stepping angle of motor are the same as full-step angle divided by micro-step.

#### **For example:**

Setting micro step to 18, and the driver 0.9°/1.8° two-phase motor, the micro steeping angle is  $1.8^{\circ}/18=0.1^{\circ}$

### Phase current setting for motor :

SWITCH : ON=0, OFF=1																	
1	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1
2	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	
3	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1	
4	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	
Current (A)	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	

### Micro-stepping Setting:

Switch : ON =0, OFF=1																
7	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
8	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1
9	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1
10	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1
micro	1	2	4	5	6	8	10	16	18	20	32	40	50	64	128	256

### Wiring instruction:

A+ : connect with motor A+ winding	RDY : Prepared signal port(output) Open circuit : unprepared Close circuit : Prepared
A- : connect with motor A- winding	
B+ : connect with motor B+ winding	CW+, CW- : Motor direction
B- : connect with motor B- winding	FREE+, FREE- : off-line port (Low level effective )
PE : Ground terminal of driver	
CP+ CP- : pulse terminal ( Low Level effective )	AC : Connect AC 10 ~ 220V

**Appearance and Dimension:**

