

Q2HB110 is a kind of full / half step driver witch can be driven between AC60V-AC130V. It is designed for all kinds of 2-phase hybrid step motors that have maximum current 8A and outside diameter 86mm-130mm. It is widely used in numerical device such as curving machine, embroidery machine and packing machine.

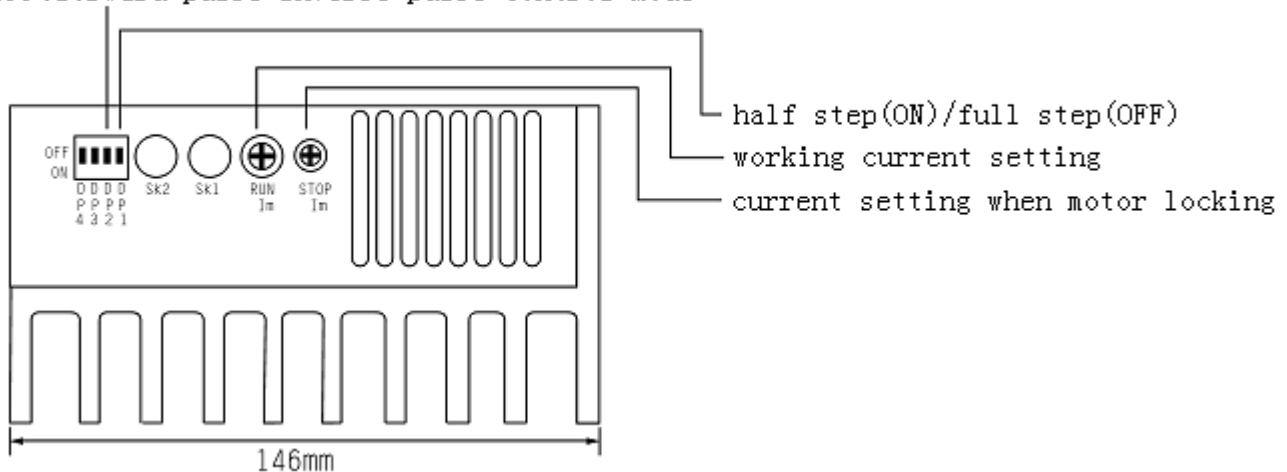


## FEATURES

- high performance, low price
- highest response frequency: 200Kpps
- the winding current is reduced to the set value when there is no step pulse received for 100ms
- double constant current chopping mode
- optically isolated signal I/O
- driven current is continuously adjustable between 0.5A/phase and 8A/phase
- single power supply, voltage arrange: AC60V-AC130V
- can work at double 4 step or 4 phase 8step
- overvoltage, overheat and overcurrent protection

## DIP Switches

ON: pulse signal+direction signal control mode  
 OFF:forward pulse+inverse pulse control mode



## Current setting

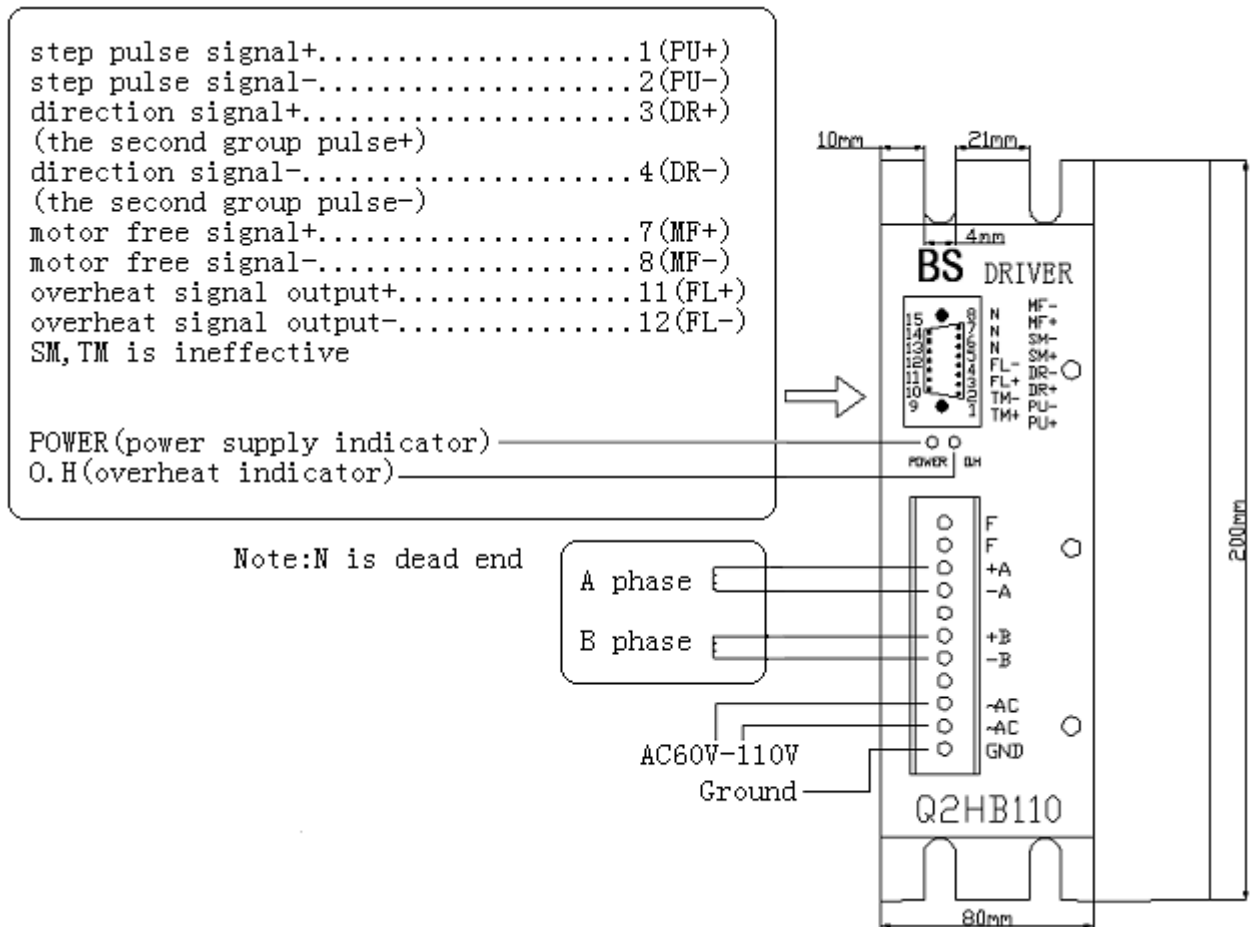
1. STOP/Im is potentiometer that can set output current of holding motor status as 20%-80% of normal output current (increase with clockwise rotation, decrease with anticlockwise rotation)
2. RUN/Im is the switch setting normal output current.

R-1	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
Im(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

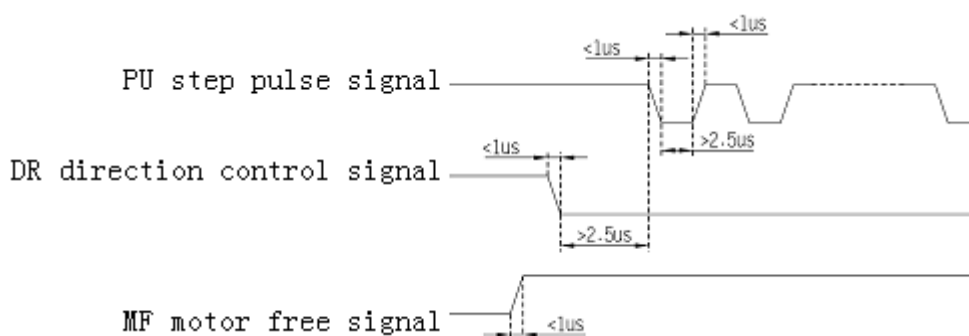
## DIP Switches

Micro step	1 (full step)	2 (half step)
DP1	OFF	ON
DP2	OFF, double pulse: PU is forward step pulse signal, DR is inverse step pulse signal	
	ON, single pulse: PU is step pulse signal, DR is direction control signal	

## Driver's diagram



### Input signal oscillogram



## Note

1. Input voltage shouldn't be over 130V.
2. The voltage level of input control signal is 5V, current limit resistance is needed when the voltage is over 5V.
3. O.H is overheat indicator. The driver stops working when the temperature is over 70 °C and restart to work when it falls to 50 °C. Please set radiating fin when overheat occurs.

4. POWER is indicator of power supply. It lits when the driver is power on.

## Specification of pins

Mark symbol	Function	Specification
MF+	Anode of optically isolated input signal	Connected to +5V power supply. Driven voltage range: +5V-+24V. Current limit resistance is necessary when the voltage is over +5V.
MF-	Motor free signal	Motor's winding current is cut off when MF- is effective (low voltage level),the driver stops working and motor is in a free status.
DR+	Anode of optically isolated input signal	Connected to +5V power supply. Driven voltage range: +5V-+24V. Current limit resistance is necessary when the voltage is over +5V.
DR-	DP2=ON, DR is direction control signal	Used to change direction of motor's rotation. Input resistance 220 . Require : low voltage level 0-0.5V, high voltage level 4-5V, pulse width >2.5 μ S
	DP2=OFF, DR is inverse step pulse signal	
PU+	Anode of optically isolated input signal	Connected to +5V power supply. Driven voltage range: +5V-+24V. Current limit resistance is necessary when the voltage is over +5V.
PU-	DP2=ON, PU is step pulse signal	Each negative edge triggers one motor step. Input resistance 220 . Require: low voltage level 0-0.5V, high voltage level 4-5V, pulse width >2.5 μ S.
	DP2=OFF, PU is forward step pulse signal	
FL+	Cathode of optically isolated overheat/ low voltage protection	The winding current is cut off and FL- signal is effective (low voltage level) when the temperature is over 70 or the voltage is low. The driver restarts to work and signal FL- is cleared when the temperature falls back to 50
FL-	Cathode of optically isolated overheat / low voltage protection output signal	Connect FL+ to current limit resistance of output signal and FL- to ground. The maximum driven current is 50mA, the highest voltage is 50V.
SM、 TM		Ineffective signal
N	Dead end	
AC ~	Power supply	AC60 ~ 130V
+A、 -A	Motor's connection	<p>four leads      six leads      eight leads (for low speed)      eight leads (for high speed)</p>
+B、 -B		

