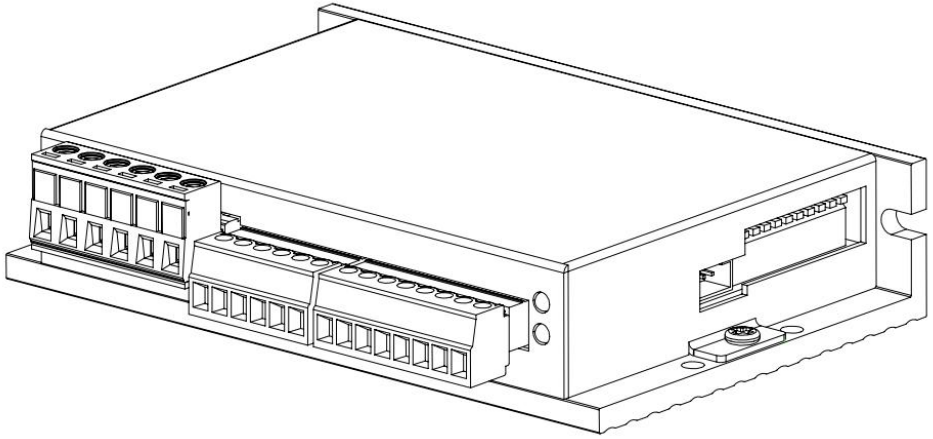
New Step Servo Driver:HM57D

Manual



Catalog

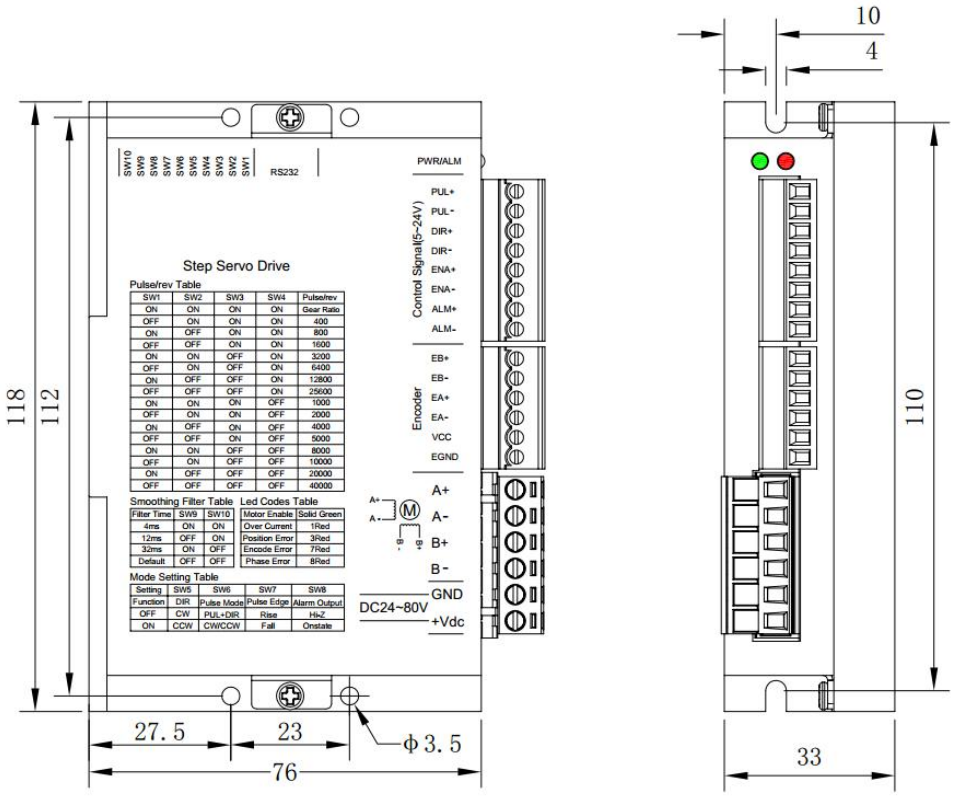
Ⅰ、Introduction

HM57D is a new digital step-servo driver, using a vector controlling technology. It can drive 57 series and 60series step-motors.

HM57D can fit various automation equipment and instruments with below technical features:

- Use of 32 bit motor control MCU
- Use of vector servo control technology
- Wide range of drive current drive current from 0.4 to 6.0A/phase
- Can drive 57 series and 60 series hybrid step-motors(Closed-Loop and Open-Loop)
- Opto-isolated signal input/output
- Highest response frequency: 200Kpps
- Provide 15 channels micro steps ,highest micro step: 51200 ppr
- Provide Electronic Gear Ratio
- Protection circuit： Over heat; Over current; Over voltage; Over-speed and position deviation
- Two control method:Position,Speed
- Net Weight:260g

Ⅱ、Dimensions(unit:mm)



Picture 1

Caution:

When the Driver temperature exceeds 40°C,the fan will start to work. When the Driver temperature exceeds 70°C, the current will be cut off automatically and the Driver will not work till the temperature drops to 40°C. In case this happens, please install ventilation equipment.

Ⅲ、Port definition and Drive connection

3.1 Port definition

A、 Step-motor and Power Definition

Terminal Number	Mark	Function	Motor Wire Colour
1	A＋	A phase＋	White
2	A－	A phase－	Green
3	B＋	B phase＋	Blue
4	B－	B phase－	Black
5	GND	Power input	DC24～80V
6	+Vdc	Power input	

B、 Encoder Definition

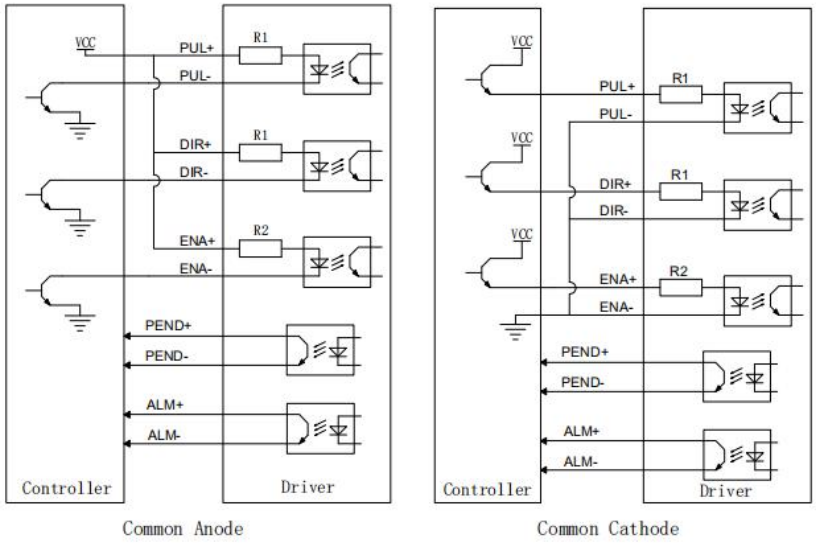
Terminal Assignment	Mark	Function	Wire Colour
1	EB＋	Encoder B phase +	Yellow
2	EB－	Encoder B phase -	Green
3	EA＋	Encoder A phase +	Black
4	EA－	Encoder A phase -	Blue
5	VCC	Encoder power +5V	Red
6	EGND	Encoder power GND	White

C、 Control Signal

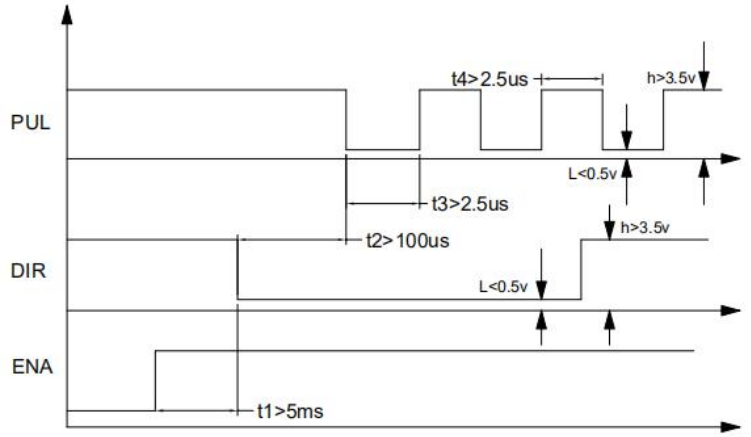
Terminal Assignment	Mark	Function	Instruction
1	PUL＋	Pulse signal positive side	Input voltage range from＋5 to +24V
2	PUL－	Pulse signal negative side	
3	DIR＋	Direction signal positive side	Input voltage range from＋5 to +24V
4	DIR－	Direction signal negative side	

5	ENA＋	Motor free signal positive side	When effects, the drive cut off motor current and set the motor free
6	ENA－	Motor free signal negative side	
7	ALM＋	Warning signal positive output	When drive break down ,it will output ALM signal to the PC
8	ALM－	Warning signal negative output	

3.2 Control Signal Circuit



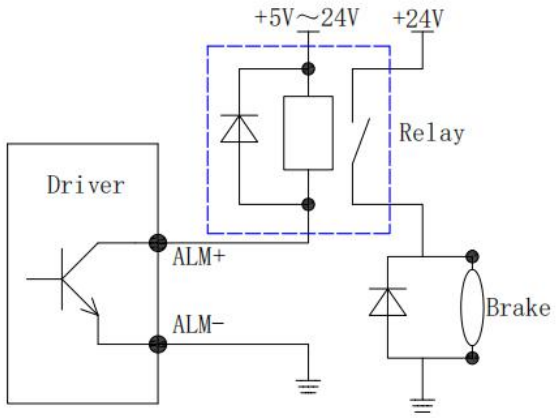
Picture 2 Control signal Interface Connection Diagram



Picture 3 Input Signal Oscillogram

3.3 Brake Control

When ALM port is using for BRK,the SW8 must set be ON.



Picture 4 Brake Control

Ⅳ、Parameter setting

4.1 Pulse/rev Table

SW1	SW2	SW3	SW4	Pulse/rev
ON	ON	ON	ON	Gear Ratio
OFF	ON	ON	ON	400
ON	OFF	ON	ON	800
OFF	OFF	ON	ON	1600
ON	ON	OFF	ON	3200
OFF	ON	OFF	ON	6400
ON	OFF	OFF	ON	12800
OFF	OFF	OFF	ON	25600
ON	ON	ON	OFF	1000
OFF	ON	ON	OFF	2000
ON	OFF	ON	OFF	4000
OFF	OFF	ON	OFF	5000
ON	ON	OFF	OFF	8000
OFF	ON	OFF	OFF	10000
ON	OFF	OFF	OFF	20000
OFF	OFF	OFF	OFF	40000

Caution: When the microstep setting is Gear Ratio,We must use a manual box to modify the value of Gear Ratio.

4.2 Mode setting Table

Setting	SW5	SW6	SW7	SW8
Function	Direction	Pulse Mode	Pulse edge	Alarm output
OFF	ClockWise(C.W.)	Pulse/Dir	Rise	Hi-Z
ON	Counter-ClockWise（C.C.W.）	CW/CCW	Fall	Onstate

4.3 Smoothing Filter Table

Smoothing Filter Time	SW9	SW10
4ms	ON	ON
12ms	OFF	ON
32ms	ON	OFF
Default	OFF	OFF

Ⅴ、Alarm code

When malfunction occurs,the Red LED will flash after fixed time

5.1 Alarm Code

Flash Times	Function	Instruction
1	Over current	When current exceeds rated value,the driver will stop running
2	Over-speed	The max speed is 3000r/min
3	Position deviation	When position deviation value exceeds rated value,the driver will stop running
4	Over heat	The max value is 80℃
5	Over DC voltage	When input voltage exceeds rated value,the driver will stop running,the voltage range from DC24~80V
6	EPROM happen error	Reading or writing EPROM happen error

Ⅵ、Warranty Terms

Our company will provide warranty of 18 Months from the delivery date and free maintenance under warranty.