



LiCHUAN TSS57 Nema23 Omtegrated Closed Loop Stepper Motor User Manual

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TSS57 Nema23 Integrated
closed-loop stepper motor
User Manual



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Installation

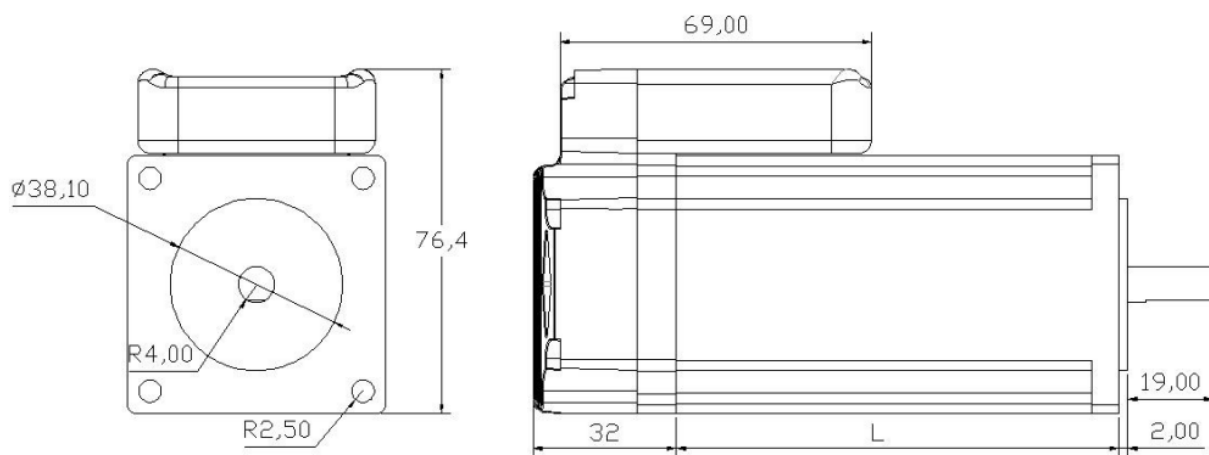
1 Electrical indicators

- Voltage input range: DC: 20V~40V (usually connected to 36V)
- Maximum output current: 5A
- Pulse type: pulse + direction
- Logic input current: 7~20mA
- Echo response frequency: 0~200kHz
- Insulation resistance: 500M

2 Environmental indicators

- Storage temperature: -20 ° C ~ 80 ° C
- Operating temperature: 0 ° C ~ 55 ° C
- Use humidity: 90% RH (non-condensing)
- Vibration frequency: less than 0.5G (4.9m / s²) 10Hz ~ 60Hz (non-continuous operation)

3 Installation dimension drawing (unit: mm)

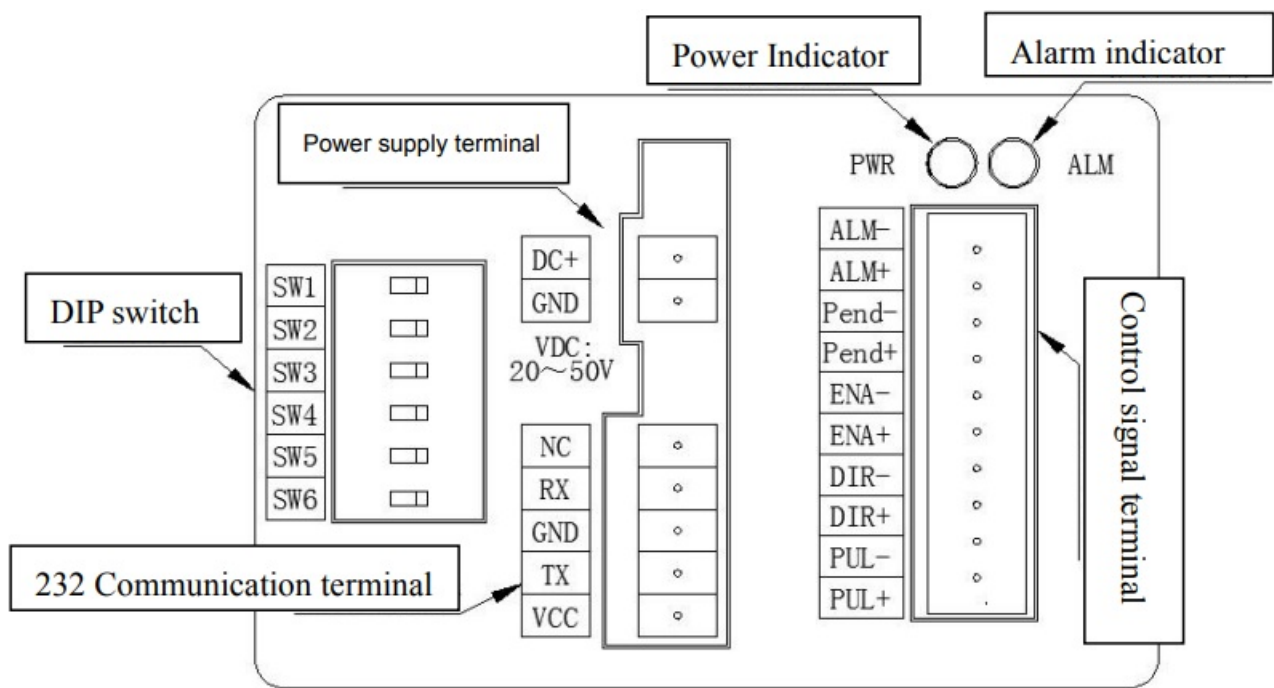


1/ Motor installation dimension drawing

Note: Motor length L can refer to the Lichuan Catalog

Wiring

1. Driver terminal description



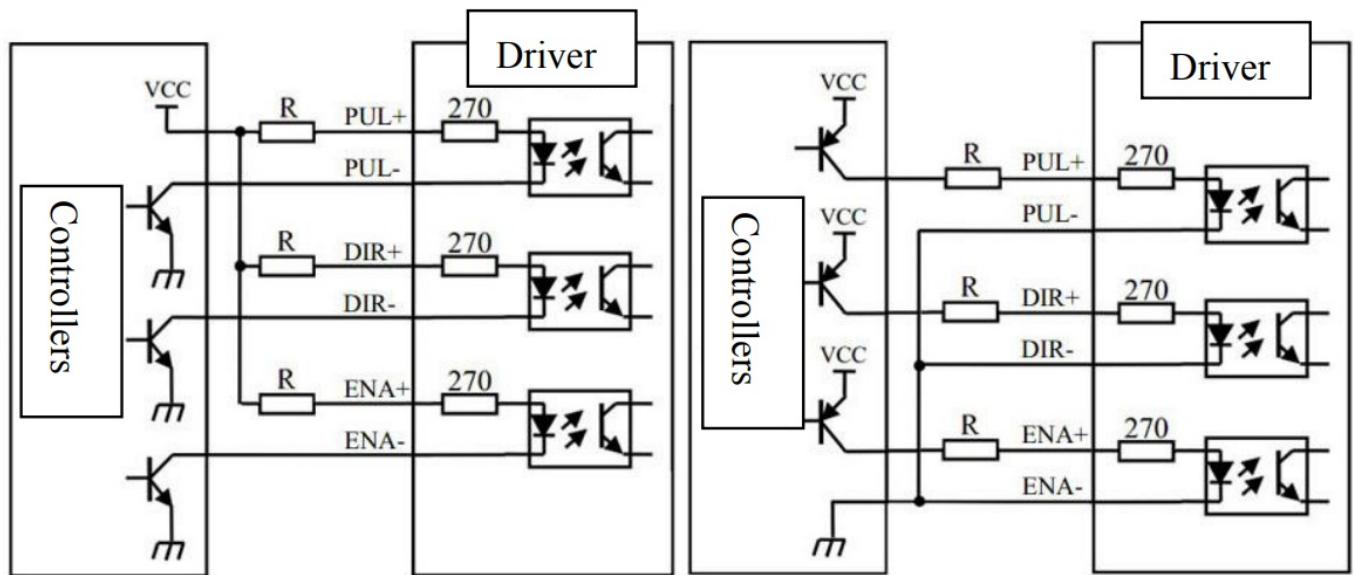
1 Power supply terminal definition

No.	Symbol	Function definition
1	DC+	External DC20 50V
2	GND	

2 Control signal terminal definition

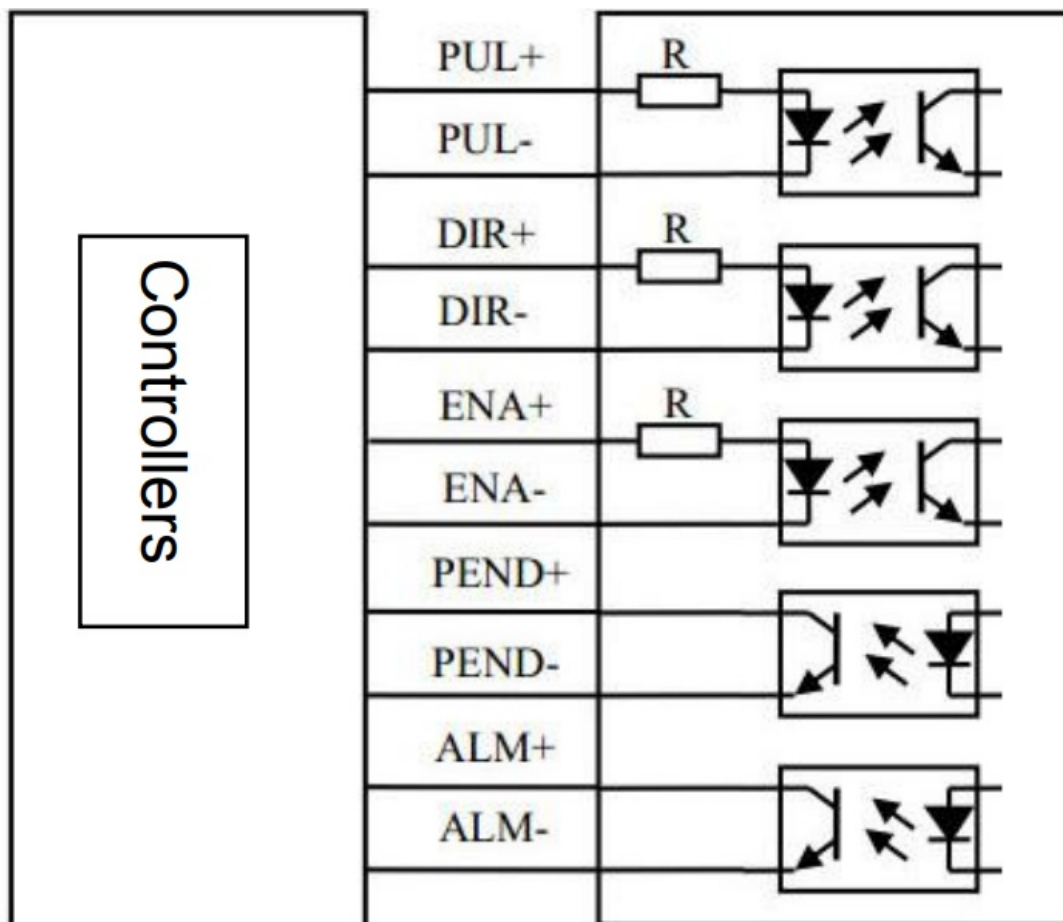
Pin	Symbol	Definition	Pin	Symbol	Definition
1	ALM-	Alarm output negative	8	ENA+	Enable input positive
2	ALM+	Alarm output is positive	9	DIR-	Direction input negative
3	Pend-	Positioning completed output negative	10	DIR+	Direction input positive
4	Pend+	Positioning completion output is positive	11	PUL-	Pulse input negative
5	ENA-	Enable input negative	12	PUL+	Pulse input positive

2 Control port wiring



2/ Common anode connection

3/ Common cathode connection



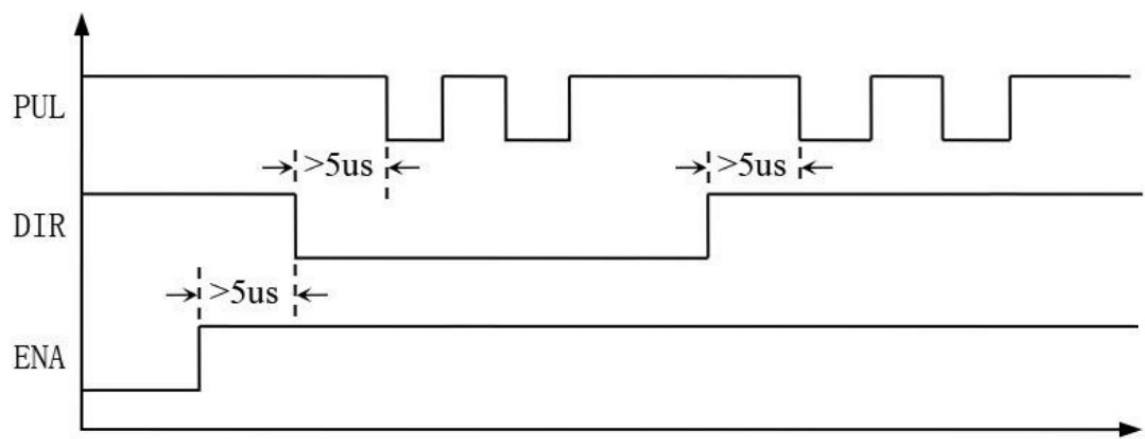
4/ Differential signal input and output signal connection

Note:

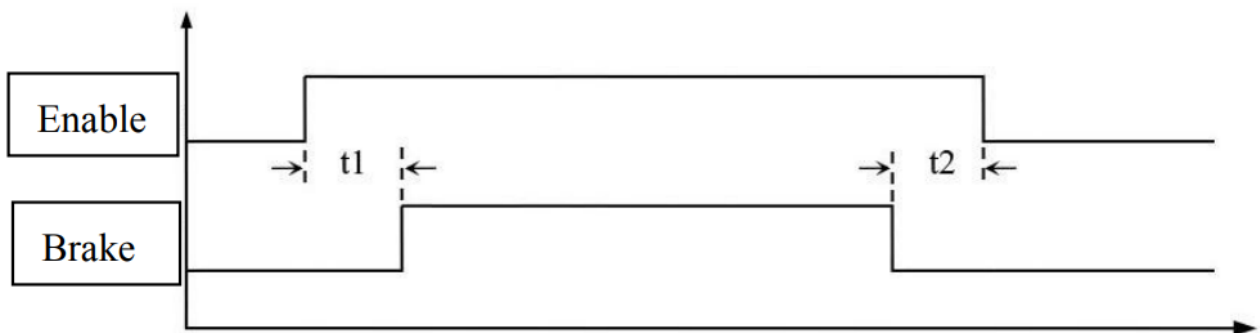
When the control signal voltage $VCC = 24V$, the current limiting resistor $R = 3K$;

When the control signal voltage $VCC = 5V$, the current limiting resistor $R = 0$;

3 Control signal timing diagram



5/ Control signal timing diagram



6/ Motor brake signal control timing diagram

Note: T1: Brake delay start time

T2: Brake delay off time

Parameter settings

This series of drivers can be directly subdivided by the DIP switch, or the drive related parameters can be modified by the PC software.

1 DIP switch setting instructions

Pulse/rev	SW1	SW2	SW3	SW4
Default	on	on	on	on
800	off	on	on	on
1600	on	off	on	on
3200	off	off	on	on
6400	on	on	off	on
12800	off	on	off	on
25600	on	off	off	on
51200	off	off	off	on
1000	on	on	on	off
2000	off	on	on	off
4000	on	off	on	off
5000	off	off	on	off
8000	on	on	off	off
10000	off	on	off	off
20000	on	off	off	off
40000	off	off	off	off

SW5 off = Pulse rising edge trigger on = Pulse falling edge trigger

SW6 off = Forward CW = Reverse

2 Upper unite software debugging parameters description

No.	Defination	Defaut	Range	Remark
0	Current loop proportional coefficient	2000	200~8000	
1	Current loop integral coefficient	200	60~2000	
2	Position loop low speed ratio	3300	100~10000	
3	Position loop high speed ratio	3900	100~10000	
4	Speed loop low speed ratio	160	10~2000	
5	Speed loop high speed ratio	330	10~2000	
6	Default file segmentation settings	400	200~51200	
7	Encoder pulse number per revolution	4000	4000~65535	
8	Position error alarm threshold	4000	1~65535	
9	Acceleration feed forward coefficient	70	0~4096	
10	Motor back EMF coefficient	21	1~1000	
11	Maximum weak magnetic ratio	50	20~100	
12	Speed feedforward	70	0~100	
13	Maximum output current percentage	100	1~100	
14	Speed loop integral coefficient	100	0~5000	
15	Input pulse filter selection	1	0~1	
16	Input pulse filtering time	6400	50~25600	
17	Enable active level setting	0	0~1	
18	Output port 1 resistance setting	1	0~1	
19	Output port function setting	1	1~2	
20	Self-contained selection	1	0~1	
21	Self-scaling setting	80	30~100	
22	Power-on anti-blocking option	0	0~1	
23	Open-closed control mode selection	1	0~1	
24	Current filtering frequency	600	100~5000	
25	Speed loop filter frequency	600	100~5000	
26	Speed sampling filter frequency	100	10~1000	
27	Position loop filter frequency	100	10~1000	

No.	Defination	Defaut	Range	Remark
28	Gravity compensation coefficient	100	40~160	
29	Open loop current percentage	60	0~100	
30	Debounce delay	40	0~65535	
31	Static parameter attenuation coefficient	150	1~500	
32	Speed integral limit percentage	50	1~100	
33	Internal start and stop control		0/1	
34	Internal running acceleration		1~2000	
35	Internal running speed		0~5000	
36	Internal running distance		1~65535	
37	Internal running times		1~65535	
38	Internal running initial direction		0/1	
39	Multiple internal running intervals		0~5000	
40	Internal operation mode selection		0/1	



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Documents / Resources

	LiCHUAN TSS57 Nema23 Omtegrated Closed Loop Stepper Motor [pdf] User Manual TSS57 Nema23 Omtegrated Closed Loop Stepper Motor, TSS57, Nema23 Omtegrated Closed Loop Stepper Motor, Nema23, Omtegrated Closed Loop Stepper Motor, Loop Stepper Motor, Loop Motor, Stepper Motor, Motor
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References

- [Shenzhen Xinli Chuan Electric Co., Ltd.](#)