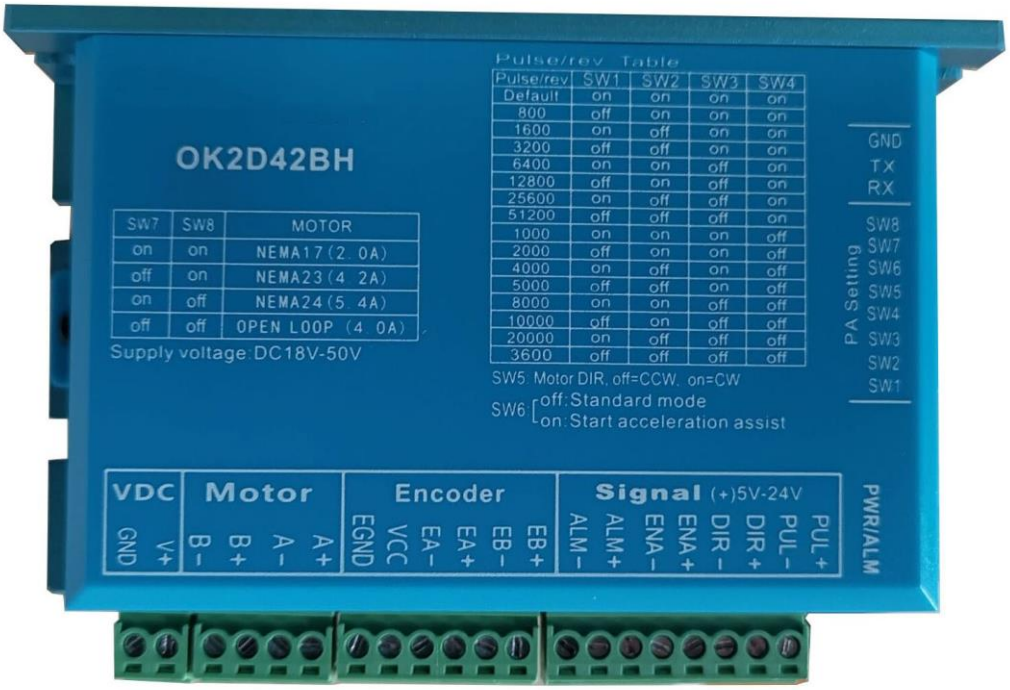
SKYSMotor

OK2D42BH Closed Loop Driver Instructions



Features:

It can drive NEMA 17, NEMA 23, NEMA 24 Closed Loop Stepper Motor closed-loop stepper motors without complex parameter adjustment. The motor will be automatically matched after power-on.

Voltage input range: 24-50VDC

Maximum peak current: 5.6A

Microstep (Steps/rev.) ：400~51200

Signal input: differential/single-ended, pulse/directional or dual pulse,

Optically isolated signal input, strong anti-interference ability;

Max. Pulse Input (KHZ)：200KHz

Closed-loop vector control ensures that the motor outputs high speed and high torque while ensuring that the motor does not lose steps.

Variable current control, automatically outputs matching current according to load and speed, greatly reducing motor heating.

Ultra-low vibration and noise;

With overvoltage, overcurrent, position following error and other protection functions;

二 · Electrical Specification

1. Specification

Parameters	OK2D42BH			
	Min	Typical	Max	Unit
Output Peak Current	-	-	5.6	A
Input Voltage	18	48	70	VDC
Logic Signal Current	7	10	16	MA
Pulse input frequency	-	200	-	KHZ
Isolation resistance	500			MΩ

2. Operating Environment and other Specifications

Cooling	Natural Cooling or Forced cooling	
Operating Environment	Environment	Avoid dust, oil fog and corrosive gases
	Storage Temperature	-20%~+80℃
	Ambient Temperature	0℃ - 70℃
	Humidity	<80%RH, No-condensing and No-frost
Vibration	-	5.9m/s²,Max
Weight	-	0.58kg

3. Power and Motor Connector

PIN	Name	Description	Instruction
1	A +	Motor Phase A+	If the initial direction of the motor is opposite to what is required, you can set SW5.
2	A -	Motor Phase A-	
3	B +	Motor Phase B+	
4	B -	Motor Phase B-	
5	VDC	Input AC power	18V~ 50VAC
6	GND	Negative terminal of	Negative pole of power supply

		power supply	

4. Encoder signal input port

Pin	Name	Description	Instruction
1	EB +	Encoder channel B+ input	
2	EB -	Encoder channel B- input	
3	EA +	Encoder channel A+ input	
4	EA -	Encoder channel A- input	
5	VCC	Encoder power supply	+5V internal output
6	EGND	Signal ground	0V internal output

5. Control Signal Port

Name	Instruction
PUL +	Pulse input signal:

PUL -	Pulse Signal: In single pulse (pulse/direction) mode, this input represents pulse signal, each rising or falling edge active (software configurable, see Closed-loop Stepper software manual for more detail); In double pulse mode (software configurable), this input represents clockwise (CW) pulse, active both at high level and low level. The width of PUL signal is at least 1.2μs. 5-24V when PUL-HIGH, 0-0.5V when PUL-LOW. In Double pulse mode：CW
DIR +	DIR signal: In single-pulse mode, this signal has low/high voltage levels, representing two directions of motor rotation; In CW/CCW mode, this signal is-counter-clock (CCW) pulse. For reliable motion response, DIR signal should be ahead of PUL signal by 5us at least. 5-24V when DIR-HIGH, 0-0.5V when DIR-LOW. Please note that rotation direction is also related to motor-driver wiring match. Exchanging the connection of two wires for a coil to the driver will reverse motion direction.
DIR -	
ENA +	Enablesignal: This signal is used for enabling/disabling the drive. High level (NPN control signal, PNP and differential control signals are on the contrary, namely low level for enabling.) For enabling the drive and low level for disabling the drive. Usually left UNCONNECTED
ENA -	
ALM +	The fault signal output is in the form of open collector.
ALM -	

Alarm in place output wiring diagram

6. DIP Switch Settings

The driver uses a six-digit DIP switch to set the subdivision and motor rotation direction. The detailed description is as follows:

6.Microstep Setting:

Steps/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:Motor DIR Initialize running direction，,off=CC clockwise（Positive direction）,on=CW Counterclockwise（Reverse direction）

SW6:off; Standard mode on; Start acceleration assist（Not applicable to arc interpolation signals）

SW7	SW8	Motor Frame Size(mm)
on	on	NEMA17 (42 x 42), 2A
off	on	NEMA23 (57 x57), 4.2A
on	off	NEMA24 (60 x60), 5.4A
off	off	NEMA 23 (57 x 57) open loop motor, current 4.0A

VDC:20V-50V (DC voltage)

8. Modify parameter description by software

Neme	Parameter (default)	Parameter (default)	Parameter (default)	Parameter (default)	Description
DIP Switch	SW7 ON SW8 ON	SW7 OFF SW8 ON	SW7 ON SW8 OFF	SW7 OFF SW8 OFF	
Number of pulses per revolution	3200	3200	3200	3200	
Closed loop current percentage	29	83	83	65	100%6（6A）
Standby current percentage	15	33	38	65	100%6（6A） Standby current Max 50%
Error alarm value	2000	2000	2000	2000	
Acceleration assist	1500	1500	1500	1500	
Open loop current percentage	0	65	65	65	100%6（6A）
When setting the current, you should written and saved.					

7. Mechanical Specifications: (unit: mm [1inch=25.4mm])

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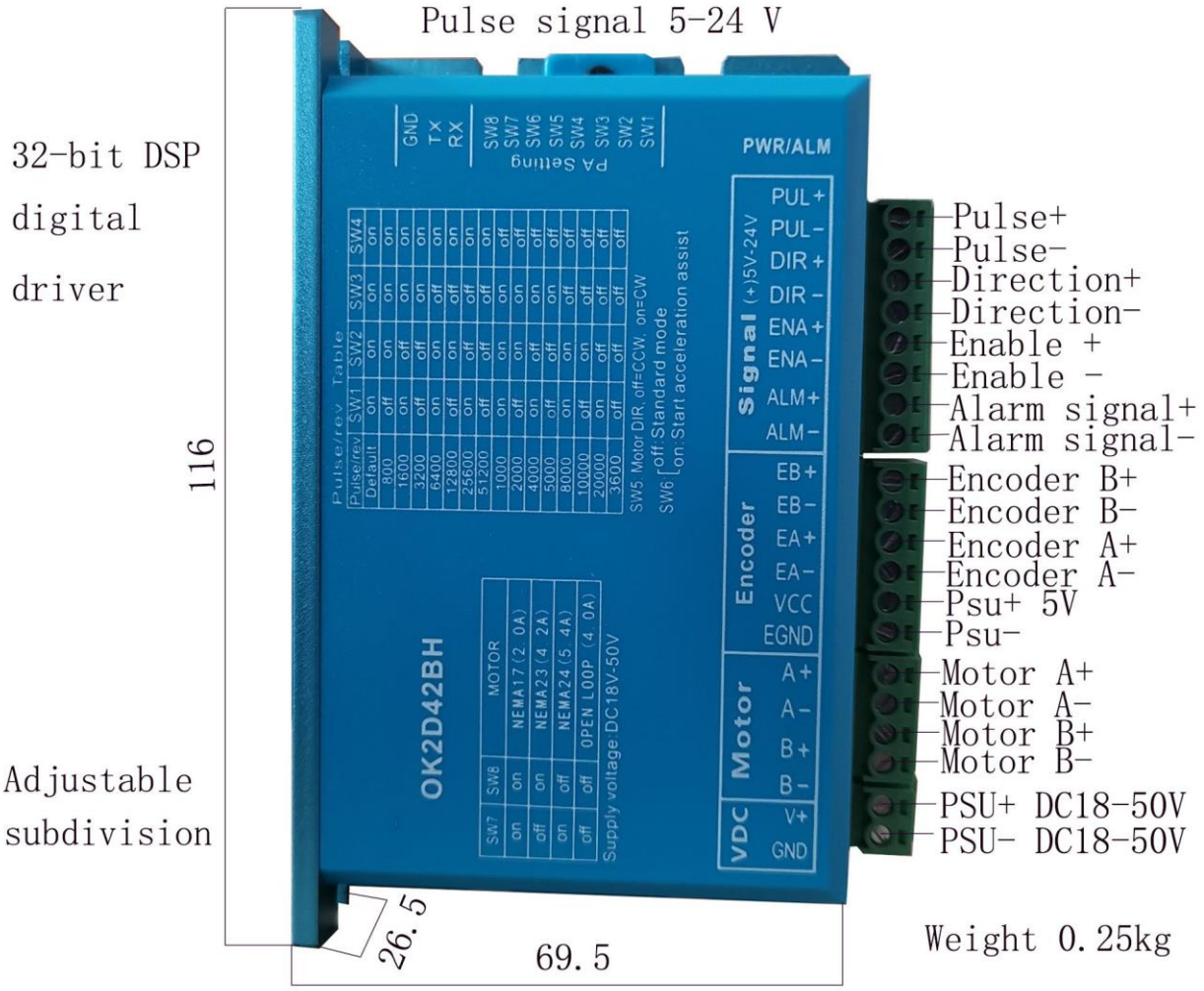
NEMA 17 NEMA 23 NEMA24 Encoder two phase stepping motor driver

Small calorific value and quick reaction



High performance low noise and high quality