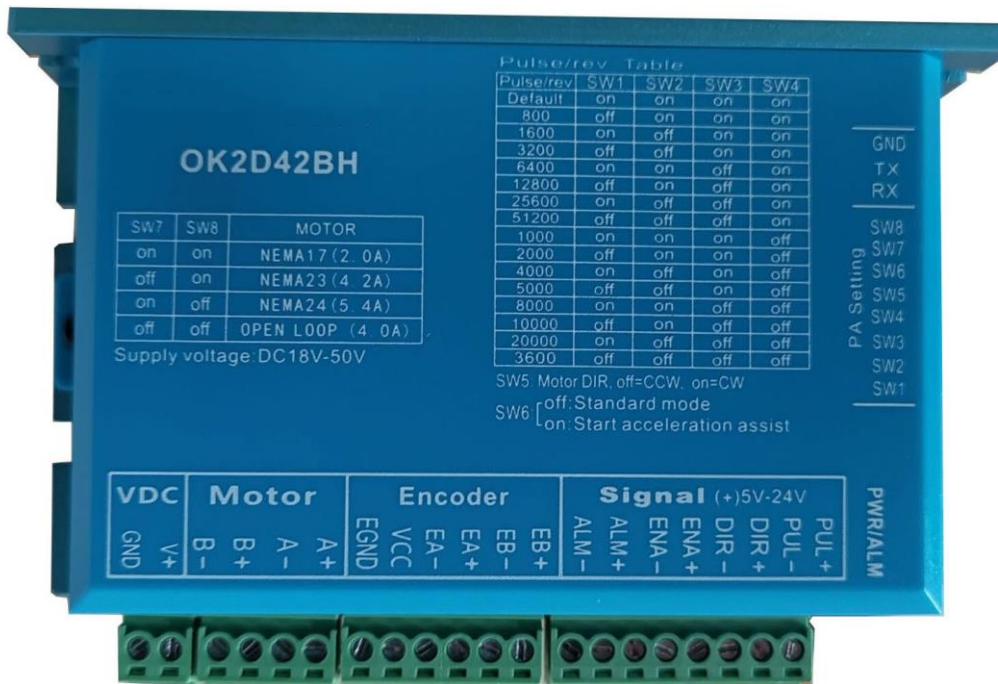


OK2D42BH Closed Loop Driver Instructions



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°C |
| | Ambient Temperature | 0°C - 70°C |
| | Humidity | <80%RH, No-condensing and No-frost |
| Vibration | - | 5.9m/s ² ,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 - | <p>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</p> |
| DIR + | <p>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.</p> |
| DIR - | |
| ENA + | <p>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.)</p> <p>For enabling the drive and low level for disabling the drive. Usually left UNCONNECTED</p> |
| ENA - | |
| ALM + | <p>The fault signal output is in the form of open collector.</p> |
| 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])

NEMA 17 NEMA 23 NEMA24 Encoder two phase stepping motor driver
Small calorific value and quick reaction

Pulse signal 5-24 V

32-bit DSP digital driver

Adjustable subdivision

116

26.5

69.5

Weight 0.25kg

| 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 |
| 8000 | off | off | on | off |
| 10000 | on | on | on | off |
| 20000 | off | on | on | off |
| 3600 | on | off | off | off |

| MOTOR | SW7 | SW8 |
|------------------|-----|-----|
| NEMA 17 (2.0A) | on | on |
| NEMA 23 (4.2A) | off | on |
| NEMA 24 (5.4A) | on | off |
| OPEN LOOP (4.0A) | off | off |

Supply voltage: DC18V-50V

SW5 Motor DIR, off=CCW, on=CW
SW6 Lon Start acceleration assist

Signal (+5V-24V)
PUL+ Pulse+
PUL- Pulse-
DIR+ Direction+
DIR- Direction-
ENA+ Enable +
ENA- Enable -
ALM+ Alarm signal+
ALM- Alarm signal-

Encoder
EB+ Encoder B+
EB- Encoder B-
EA+ Encoder A+
EA- Encoder A-
VCC Psu+ 5V
EGND Psu-

Motor
A+ Motor A+
A- Motor A-
B+ Motor B+
B- Motor B-

VDC
V+ PSU+ DC18-50V
GND PSU- DC18-50V

High performance low noise and high quality