Company Introduction

YAKO Automation Technology Co., Ltd. has developed into a main Chinese motion control solution and product provider after more than ten years of technology accumulation, product update and market cultivation.

YAKO aims to help customers effectively improve performance and lower design cost of the key components for motion control.

More than 3 million sets of motors and drives are stably running on various types of high-precision grasping, conveying, feeding and other automation equipment or production lines around the world.

We continuously integrates the most advanced precision control algorithms, multi-axis cooperative communication technology, pulse signal optimization technology, and reliability design method into our products.

In 2015, YAKO formally become a member of TopBand group (stock code 002139), symbolizing a greater public and social responsibility. YAKO is willing to work together with customers to design and manufacture more efficient and smarter equipments!

- Company Culture -

Company Vision

Be the best industrial control product supplier in the world

Company Philosophy

Building the future with quality, creating brilliant with integrity

Business Philosophy

Customer-centered, integrity as core and quality as cornerstone

YAKO Team

Healthy, happy, successful team

Headquarters

R&D Center

Shanghai Branch

Content

Servo-Stepper Motor

EtherCAT Bus Series

2 Phase Bus Type Stepper Drive

Integrated Stepper Motor

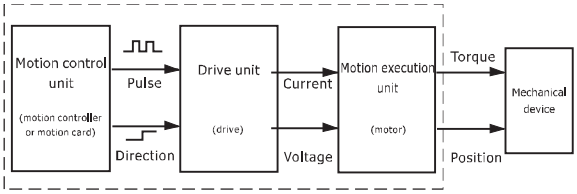
2 Phase Open-Loop Stepper Motor

3 Phase Open-Loop Stepper Motor

Summary of Motion Control Theory

Motion Control System Introduction

Motion control is a technique for how to precisely control the position and speed of an object. The typical motion control system consists of three parts: control part; drive part and execution part. As shown below:



The motion execution component is usually a stepper motor or a servo motor. A stepper motor is an actuator that converts electrical pulses into angular displacement. It is characterized by no accumulation error and is therefore widely used in various open loop control. When the stepper drive receives a pulse signal, it drives the stepper motor to rotate a fixed angle in the set direction, and its rotation is step by step at a fixed angle.

The angular displacement can be controlled by controlling the number of pulses to achieve the purpose of precise positioning. At the same time, the speed and acceleration of the motor rotation can be controlled by controlling the pulse frequency, thereby achieving the purpose of speed regulation.

The operation of the stepper motor is driven by an electronic device, which is a stepper motor drive that amplifies the pulse signal from the control system to drive the stepper motor. The speed of the stepper motor is proportional to the frequency of the pulse signal. The frequency of the stepping pulse signal can be controlled to accurately adjust the speed of the motor. The number of stepping pulses can be controlled to accurately position the motor. Therefore, the typical stepper motor drive control system is mainly composed of three parts:

1. Step controller: Human machine interface, motion planning, I/O control.
2. Drive: Pulse distribution, current amplification.
3. Stepper motor: Drive the load.

Common Terms

Step angle: The angle at which each electrical pulse signal is rotated is called the step angle. Its size can directly affect the running accuracy of the motor.

Full step: The basic driving mode, each pulse drives the motor to move a basic step angle. For example, a standard two-phase motor has a total of 200 step angles in one revolution, and each pulse makes the motor move 1.8° in the full step driving mode.

Half step: In single-phase excitation, the motor shaft stops at the full step position. After the driver receives the next pulse, if the other phase is excited and the original phase continues to be in the excited state, the motor shaft will move half a basic step angle, stopped in the middle of two adjacent full step position. In this cycle, the two-phase coil is single-phase and then two-phase excited, and the stepper motor will move at a half-step angle per pulse.

Microstep: It means that the actual step angle when the motor is running is a fraction of the basic step angle. That is to say: when the drive works in the full step state without microstep, the control system sends a step pulse every time, and the motor rotates by 1.8°; Microstep is entirely generated by the phase current of the motor of the drive's precise control, independent of the motor.

Holding torque: Refers to the torque that the stator locks the rotor when the stepper motor is energized but does not rotate. Usually the torque of the stepper motor at low speed approaches the holding torque. Since the output torque of the stepper motor is continuously attenuated as the speed increases, the output power also changes with the increase of the speed, so the holding torque becomes one of the most important parameters for measuring the stepper motor. For example, when people say that a 2N.m stepper motor, unless otherwise specified, is a stepper motor with holding torque of 2N.m.

Braking torque: Refers to the torque that the stator locks the rotor when the stepper motor is not energized.

Starting torque characteristic: In the case of a given drive, when the moment of inertia of the load is constant, the relationship between the starting frequency and the load torque becomes the starting torque characteristic, also called the pulling characteristic.

Running torque frequency characteristics: When the load moment of inertia is constant, the relationship between the operating frequency and the load torque is called the running torque frequency characteristic, also called the pull-out characteristic.

No-load start frequency: refers to the highest pulse frequency that the stepper motor can start without losing step.

Stepper Drive Main Control Signal

Input Signal

All signals are optically isolated to ensure reliable conduction of the built-in high-speed optocoupler. The current drive capability of the control signal is required to be at least 15mA. The optocoupler current limiting resistor is serially connected to the drive. When the input signal voltage is higher than 5V, the external string resistor R can be used to limit the current.

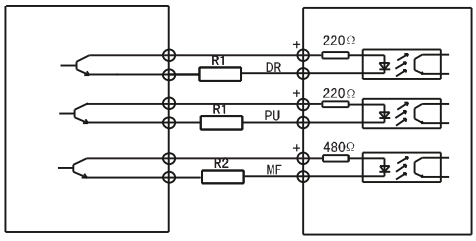
The resistance of the current limiting resistor R is selected:

When the controller/actuator signal output level is

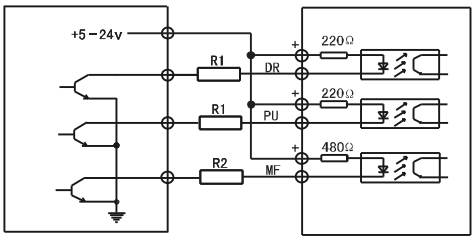
At +5V: R1=0, R2=0

At +12V: R1=510Ω, R2=820Ω

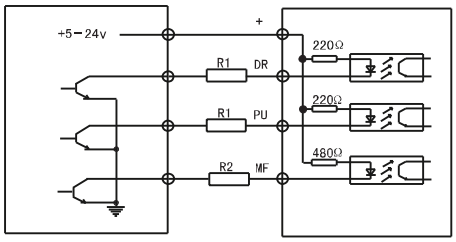
At +24V: R1=1.2KΩ, R2=1.8KΩ



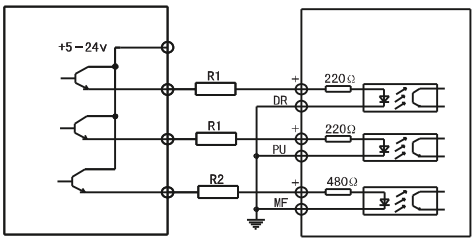
Differential connection



Independent common anode connection



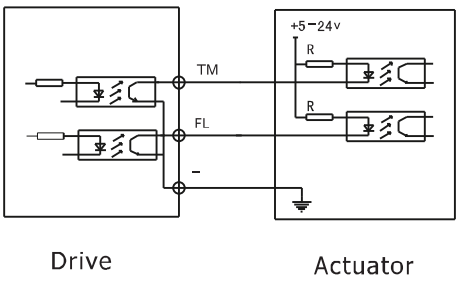
Common anode connection



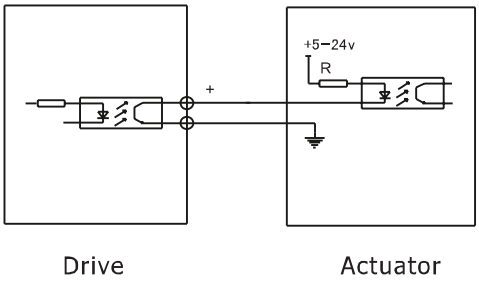
Independent common cathode connection

Output Signal

The drive output signal is isolated by an optocoupler with a drive current of 50mA.

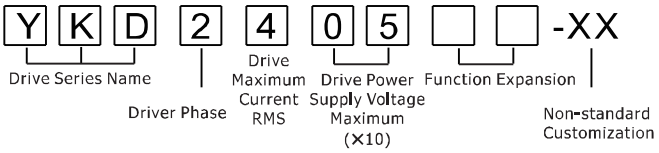


Common cathode connection



Independent termination connection

Naming Rules



The example on the left is:
YKD series, two phase, effective peak phase current is 4A, peak voltage is 40V.

Selection Principle

Drive current: Current is the basis for judging the driving capability of the drive. It's one of the important indicators for selecting drives. Generally, the maximum rated current of the drive cannot be greater than that of the motor. Usually the drive has 2.0A, 3.5A, 6.0A, 8.0A etc specifications.

Drive supply voltage: Supply voltage is a sign to judge the speed-up capability of the drive. The conventional voltage is 24VDC, 40VDC, 60VDC, 80VDC, 110VAC, 220VAC, etc.

Drive segments: It is a sign of control accuracy, which can be improved by increasing the segments. Stepper motors (especially reactive stepper motors) have low frequency oscillation characteristics. If your motor needs to work in such region, the segment-drive is a good choice.

Open-Loop Stepper Drive Selection List

Control mode	Phase	Model	Current (A)	Voltage (V)	Microstep	Suitable for open-loop stepper motors	Dimensions	Signal control
Digital	2 Phase	YKD2204M	0.2~1.6	DC(18~36)	1~32	42mm/57mm	86*55*21	Common anode
		YKD2304M	0.7~2.3	DC(18~40)	1~128	42mm/57mm	116*69.5*28	Common anode / common cathode / differential
		YKD2305M	0.7~3.0	DC(20~50)	1~200	42mm/57mm/60mm	76*118*33	
		YKD2405M	1.2~4.0	DC(20~50)	1~200	42mm/57mm/60mm	118*76*33	
		YKD2408M	1.2~4.0	DC(20~80)	1~200	57mm/60mm/86mm	118*76*33	
		YKD2405MC	0.8~4.5	DC(20~50)	1~200	57mm/60mm	136*82*25	
		YKD2608MC	1.0~6.0	DC(20~80)	1~200	57mm/60mm/86mm	136*82*45	
		YKD2204PA	0.5~1.6	DC(18~36)	1~32	42mm/57mm	86*55*21	Common anode
		YKD2405PA	0.8~4.5	DC(20~50)	1~200	57mm/60mm	136*82*25	Common anode / common cathode / differential
		YKD2608□	2.0~6.0	AC(18~80)	1~200	86mm	151*94*54	
		YKD2608MH	2.0~6.0	AC(18~80)	1~256	57mm/60mm/86mm	151*94*54	
		YKD2608MG	1.7~4.8	DC(24~80)	1~200	86mm	82*136*45	
		YKD2811M	1.0~8.0	AC(80~110)	1~128	86mm/110mm/130mm	200*148*71.5	
		YKD2822M	1.0~8.0	AC(110~265)	1~128	86mm/110mm/130mm	200*148*71.5	
	3 Phase	YKD3505M	1.8~5.7	DC(20~50)	200~10000	57mm	76*118*33	Common anode / common cathode / differential
		YKD3506M	1.6~5.5	DC(20~50)	200~40000	57mm	76*118*33	
		YKD3606M	2.3~5.9	DC(20~60)	400~60000	57mm	82*136*25	
		YKD3608MH	2.0~6.0	AC(18~80)	400~60000	86mm	94.3*151.2*138.7	
		YKD3422M	0.6~4.2	AC(110~220)	400~60000	86mm/110mm	108*178*67.2	
		YKD3522M	1.0~5.0	AC(110~220)	400~60000	86mm/110mm	125*200*70	
		YKD3722M	0.7~7.0	AC(110~220)	400~60000	110mm/130mm	146*200*80	

Close-Loop Stepper Drive Selection List

Control mode	Phase	Model	Current (A)	Voltage (V)	Microstep	Suitable for close-loop stepper motors	Dimensions	Signal control
	2 Phase	SSD2505M	2.3~5.8	DC(24~50)	400~51200	42mm/57mm/60mm	118*76*33	Common anode / common cathode / differential
		SSD2505M-Plus	2.3~5.0	DC(24~50)	200~51200	42mm/57mm/60mm	118*76*33	
		SSD2608H	6	DC(30~110)/ AC(20~80)	400~51200	86mm	151.2*94.3*54	
		MS-Mini3	5	DC(24~50)	200~60000	42mm/57mm/60mm	90*30*110.4	
		MS-S3	6	AC(30~80)	200~60000	60mm/86mm	157*57*116.2	
		MS-M3	6	AC(30~110)	200~60000	86mm	180*76*139.2	
	3 Phase	MS-L3	6	AC(50~240)	200~60000	85mm	180*76*139.2	

Close-Loop Stepper Motor Selection List

Control mode	Flange	Model	Step angle (°)	Motor length (mm)	Holding torque (N.m)	Rated current (A)	Phase resistance (Ω)	Phase inductance (mH)	Rotor inertia (g.cm²)	Weight (kg)	Wires	Matchable drive
Close-loop 2 Phase	42mm	YK242EC51E1	1.8	79	0.5	1.85	1.0	1.9	77	0.53	4	SSD2205M MS-Mini3E
		YK242EC67E1	1.8	95	0.77	2.3	1.45	2.8	115	0.6	4	
	57mm	YK257EC56E1	1.8	78	1.2	4.0	0.44	1.4	280	0.72	4	SSD2505M MS-Mini3E
		YK257EC76E1	1.8	98	2.0	5.0	0.4	1.7	480	1.06	4	
		YK257EC80E1	1.8	103	2.2	5.0	0.43	1.8	520	1.15	4	
		YK257EH76E1	3.0	103	1.7	5.0	0.4	1.6	520	1.15	4	SSD2505M-C531
	60mm	YK260EC65E1	1.8	87	2.0	5.0	0.30	1.2	490	1.0	4	SSD2505M-C231 MS-Mini3E
		YK260EC86E1	1.8	108	3.0	5.0	0.40	2.0	690	1.3	4	
		YK260EC65E1-KZ01	1.8	87	2.0	5.0	0.30	1.2	490	1.0	4	
		YK260EC86E1-KZ01	1.8	108	3.0	5.0	0.40	2.0	690	1.3	4	
	86mm	YK286EC80A1	1.8	97	4.2	6.0	0.34	2.7	1800	2.1	4	MS-S3E MS-S3 SSD2608H
		YK286EC118A1	1.8	140	8.2	6.0	0.52	4.7	3200	3.6	4	
		YK286EC156A1	1.8	174	12	6.0	0.7	9.2	5400	5.0	4	
		YK286EC118M1	1.8	140	6.0	4.8	0.40	2.9	3200	3.6	4	MS-M3
		YK286EC156M1	1.8	178	12.0	6.0	1.25	6.0	5400	5.0	4	
Close-loop 3 Phase	85mm	YK385EC127A1	1.2	147	7.5	4.5	2.6	17	3960	4.26	3	MS-L3
		YK385EC156A1	1.2	176	12	3.0	2.34	18.33	4500	6.5	3	
	110mm	YK3110EC140C1	1.2	156	12	4.2	1.2	13	9320	6.5	3	MS-L3
		YK3110EC220C1	1.2	238	20	4.2	1.88	18	12510	10.4	3	

Bus Type Stepper Drive Selection List

Control mode	Type	Model	Current (A)	Voltage (V)	Microstep	Suitable for stepper motors	Dimensions	Communication
Bus	RS485	YKD2405PR	4.2	DC(24~50)	200~40000	57mm/60mm	82*136*25	RS-485
		YKD2608PR	4.2	DC(24~80)	200~40000	57mm/60mm/86mm	82*136*45	RS-485
		SSD2505PR	2.5~5.0	DC(24~50)	400~51200	42mm/57mm/60mm	76*118*33	RS-485
	CANopen	YKD2405PC	4.2	DC(24~50)	200~40000	57mm/60mm	82*136*25	CANopen
		YKD2608PC	4.2	DC(24~80)	200~40000	57mm/60mm/86mm	82*136*45	CANopen
		SSD2505PC	2.5~5.0	DC(24~50)	400~51200	42mm/57mm/60mm	76*118*33	CANopen

Integrated Stepper Motor Selection List

Control mode	Type	Model	Current (A)	Voltage (V)	Microstep	Signal control	Holding torque (N.m)	Phase inductance (mH)	Phase resistance (Ω)	Rotor inertia (g.cm²)
Integrated	Pulse	YSM57-P	1.4~3.5	DC(24~50)	400~51200	Common anode / common cathode / differential				
	Pulse	YSS57-P11	1.8~4.0	DC(24~50)	400~51200		1.2	1.4	0.44	280
		YSS57-P21	1.8~4.0	DC(24~50)	400~51200		2.2	1.8	0.43	520
		YSS57-P31	1.8~4.0	DC(24~50)	400~51200		3.0	2.2	0.48	720
		YSS60-P11	1.8~4.0	DC(24~50)	400~51200		2.0	1.2	0.30	490
		YSS60-P21	1.8~4.0	DC(24~50)	400~51200		3.0	2.0	0.40	690
	RS485	YSS57-R11	1.8~4.0	DC(24~50)	400~51200	RS-485	1.2	1.4	0.44	280
		YSS57-R21	1.8~4.0	DC(24~50)	400~51200	RS-485	2.2	1.8	0.43	520
		YSS57-R31	1.8~4.0	DC(24~50)	400~51200	RS-485	3.0	2.2	0.48	720
		YSS60-R11	1.8~4.0	DC(24~50)	400~51200	RS-485	2.0	1.2	0.30	490
		YSS60-R21	1.8~4.0	DC(24~50)	400~51200	RS-485	3.0	2.0	0.40	690
	CANopen	YSS57-C11	1.8~4.0	DC(24~50)	400~51200	CANopen	1.2	1.4	0.44	280
		YSS57-C21	1.8~4.0	DC(24~50)	400~51200	CANopen	2.2	1.8	0.43	520
		YSS57-C31	1.8~4.0	DC(24~50)	400~51200	CANopen	3.0	2.2	0.48	720
		YSS60-C11	1.8~4.0	DC(24~50)	400~51200	CANopen	2.0	1.2	0.30	490
		YSS60-C21	1.8~4.0	DC(24~50)	400~51200	CANopen	3.0	2.0	0.40	690

Open-Loop Stepper Motor Selection List

Control mode	Flange	Model	Step angle (°)	Motor length (mm)	Holding torque (N.m)	Rated current (A)	Phase resistance (Ω)	Phase inductance (mH)	Rotor inertia (g.cm²)	Weight (kg)	Wires	Matchable drive
Open-loop 2 Phase	42mm	YK42HB38-02A	1.8	40	0.4	2.0	1.06	2.0	54	0.3	4	YKD2204M YKD2304M YKD2305M MS-Mini3E
		YK42HB47-02A	1.8	48	0.48	2.0	1.35	2.9	77	0.32	4	
		YK42HB60-02A	1.8	60	0.72	2.0	1.8	3.7	110	0.5	4	
	57mm	YK57HB56-03A	1.8	56	0.9	3.0	0.75	1.1	300	0.68	6	YKD2405MC
		YK57HB76-03A	1.8	76	1.35	3.0	1.0	1.6	480	1.03	6	
		YK57HB56-04A	1.8	56	1.20	3.0	0.74	2.4	280	0.7	4	YKD2305M YKD2405M MS-Mini3E
		YK57HB76-04A	1.8	76	2.0	5.0	0.40	1.7	480	1.06	4	
		YK57HB80-04A	1.8	81	2.2	5.0	0.43	1.8	520	1.15	4	
		YK57HB100-04A	1.8	101	3.0	5.0	0.48	2.2	720	1.6	4	
	60mm	YK60HB65-03A	1.8	67	1.5	2.0	2.4	4.6	570	1.2	6	YKD2405MC
		YK60HB86-04A	1.8	88	2.5	2.0	3.0	6.8	840	1.4	6	
		YK60HB65-05A	1.8	65	2.0	5.0	0.3	2.0	490	1.0	4	YKD2405M MS-Mini3E
		YK60HB86-05A	1.8	86	3.0	5.0	0.4	1.2	690	1.3	4	
	86mm	YK86HB65-04A	1.8	65	3.2	4.0	0.65	3.9	1000	1.7	8	YKD2608MC YKD2608MH MS-S3E
		YK86HB80-04A	1.8	80	4.5	6.0	0.4	3.5	1400	2.3	8	
		YK86HB118-06A	1.8	118	8.5	6.0	0.6	6.5	2700	3.8	8	
		YK86HB156-06A	1.8	156	12.0	6.2	0.7	9.0	4000	5.3	8	
	110mm	YK110HB115-06A	1.8	115	12	6.0	0.44	4.9	7200	6.0	4	For AC220V, choose YKD2822M
		YK110HB150-06A	1.8	150	18	6.0	0.8	9.4	10900	8.4	4	
		YK110HB201-08A	1.8	201	27	8.0	0.6	11	16200	11	4	For AC110V, choose YKD2811M
	130mm	YK130HB225-06A	1.8	226	27	6.0	0.86	12.5	35000	17.3	Five-pin socket	
		YK130HB280-07A	1.8	282	37	7.0	0.66	9	45500	21.8		
Open-loop 3 Phase	57mm	YK364A	1.2	42	0.3	5.2	0.25	0.4	110	0.45	3	YKD3506M YKD3606M
		YK366A	1.2	56	0.9	5.6	0.48	1.62	300	0.75	3	
		YK368A	1.2	79	1.5	5.8	0.7	2.4	480	1.1	3	
		YK3610A	1.2	102	2.0	5.8	0.376	0.5	530	1.57	3	
	86mm	YK397A-H	1.2	67	2.26	1.75	5.6	21	1120	1.65	3	YKD3522M YKD3608MH
		YK397A	1.2	67	2.26	5.8	0.5	1.88	1100	1.65	3	
		YK3910A-H	1.2	97	4.0	2.0	4.0	23	2200	2.7	3	
		YK3910A	1.2	97	4.0	5.8	0.97	3.2	2320	2.7	3	
		YK3913A-H	1.2	127	6.78	2.25	6.85	39	3300	3.8	3	
		YK3913A	1.2	127	6.78	5.8	1.24	6.37	3300	3.8	3	
	110mm	YK31112A	1.2	132	8.0	4.3	0.81	8.62	6000	5.0	Four-pin socket	YKD3722M
		YK31115A	1.2	162	12	6.0	0.56	8.79	9720	6.4		
		YK31118A	1.2	185	16	6.5	0.64	9.47	13560	9.0		
		YK31122A	1.2	220	20	7.0	0.733	9.48	17400	11.1		
	130mm	YK31317A	1.2	170	23	5.0	0.95	9.5	25000	13.2	Seven-pin socket	YKD3722M
		YK31320A	1.2	199	30	5.0	1.1	11.3	30000	16		
		YK31323A	1.2	226	36	5.0	1.3	13.1	35000	18.35		
		YK31328A	1.2	282	50	5.0	1.7	18	45500	22.8		

YKD2204M 2 Phase DSP Stepper Drive

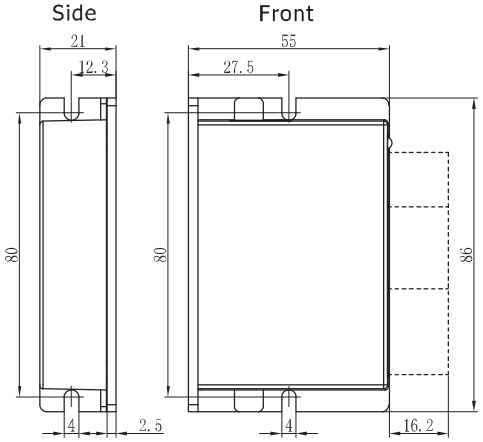
Features

- 32-bit DSP control, good stability and superior vibration performance
- 4 constant torque microstep setting, up to 32 microsteps
- Smooth and accurate current control, effectively reduce motor heating
- The highest pulse response frequency is 100KHz
- When the pulse stops over 200ms, the motor current is halved
- Excellent smoothness in low-speed and low frequency microsteps
- Optically isolated differential signal input, strong anti-interference ability
- Drive current is adjustable below 2.2A
- Voltage input range: DC18~36V
- With over voltage, under voltage etc. fault protection
- Small size, volume 86*55*21 (mm³), weight 0.12kg
- Suitable for 42mm(NEMA17) 2 phase open-loop stepper motors.

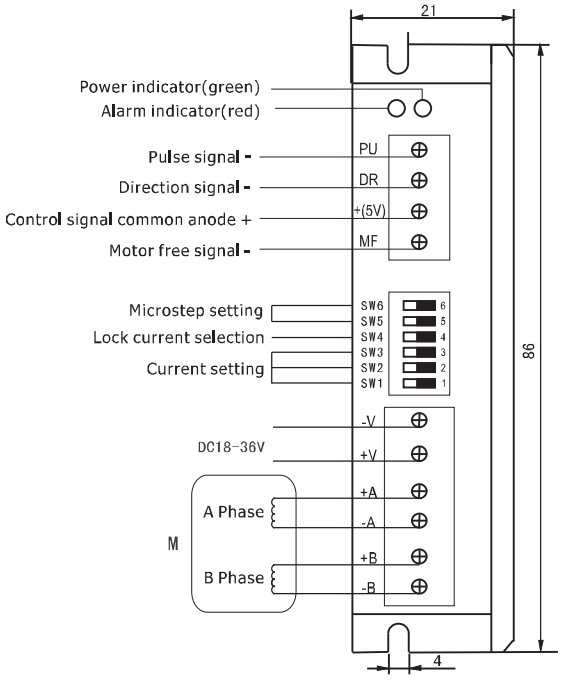
Application: Mainly used in medical equipment, dispensing, engraving machines, laser, labeling machines, electronic, advertising equipment etc. automation equipments.

Dimensions

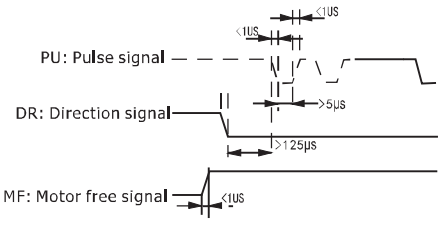
Dimensions (mm)



Drive Wiring Diagram



Input Signal Timing Diagram



YKD2204M Microstep Setting

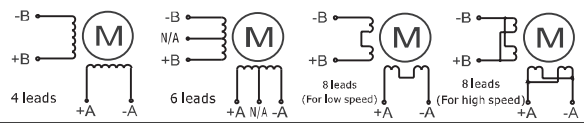
Microstep	1	8	16	32
PU/Rev	Default (200)	1600	3200	6400
SW6	ON	ON	OFF	OFF
SW5	ON	OFF	ON	OFF

SW4: OFF= Half Current
ON= Full Current

YKD2204M Current Setting

Current RMS	Default (0.2)	0.4	0.5	0.7	0.9	1.1	1.4	1.6
Current Peak	Default (0.3)	0.5	0.7	1.0	1.3	1.6	1.9	2.2
SW3	ON	ON	ON	ON	OFF	OFF	OFF	OFF
SW2	ON	ON	OFF	OFF	ON	ON	OFF	OFF
SW1	ON	OFF	ON	OFF	ON	OFF	ON	OFF

Terminal Introduction

Symbol	Function	Specification
PWR	Power indicator	When power on, the green indicator lights up.
ALARM	Fault indicator	When over current, under voltage or over voltage, the red indicator lights up.
PU	Pulse signal photoelectric isolation -	Effects on falling edge, the motor moves a step when the pulse goes from high to low. Built-in input resistance 384Ω, requirements: low level 0-0.5V, high level is the same as common anode, pulse width >5us
DR	Direction signal photoelectric isolation -	Used to change motor direction. Built-in input resistance 384Ω, requirements: low level 0-0.5V, high level is the same as common anode, pulse width >5us
+(5V)	Control signal common anode +	3.3V-24V can drive, the current limiting resistor must be added when voltage > 5V. Need to connect with resistor of 2KΩ when voltage is 24V, and connect with 820Ω when it's 12V
MF	Motor free signal optical isolation-	When effective (low level), the motor coil current is turned off and the motor is free. Built-in input resistance 384Ω, requirements: low level 0-0.5V, high level is the same as common anode, pulse width >5us
-V	Power supply -	DC18-36V, DC input, power supply > 100W
+V	Power supply +	
+A,-A	Motor connection	
+B,-B		

Notice

1. Do not reverse the power supply, input voltage should not exceed DC36V.
2. The input control signal level is 5V. The current limiting resistor needs to be connected when > 5V. (Please refer to page 4 for connection)
3. When the ALARM light is on, please check after power off:
   (1) The power supply voltage < DC18V or > DC36V
   (2) Restart the power supply after eliminating motor connection and other short-circuit faults.
4. The green PWR indicator lights up when the drive is powered on.

YKD2304M 2 Phase DSP Stepper Drive

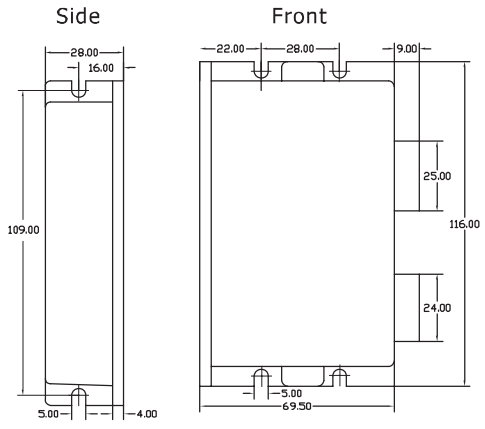
Features

- 32-bit DSP control, good stability and superior vibration performance
- 16 constant torque microstep setting, up to 128 microsteps
- Smooth and accurate current control, effectively reduce motor heating
- The highest pulse response frequency is 200Kpps
- When the pulse stops over 200ms, the motor current is halved
- Excellent smoothness in low frequency microsteps
- Optically isolated differential signal input, strong anti-interference ability
- Drive current is adjustable below 3.2A
- Voltage input range: DC18~40V
- With over voltage, under voltage etc. fault protection
- Small size, volume 116*69.5*28 (mm³), weight 0.25kg
- Suitable for 42~57mm(NEMA17~23) 2 phase open-loop stepper motors.

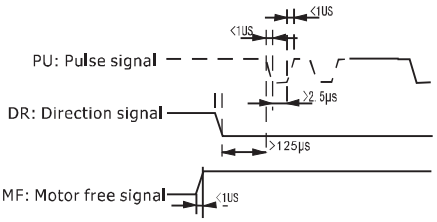
Application: Mainly used in medical equipment, dispensing, engraving machines, laser, labeling machines, electronic, advertising equipment etc. automation equipments.

Dimensions

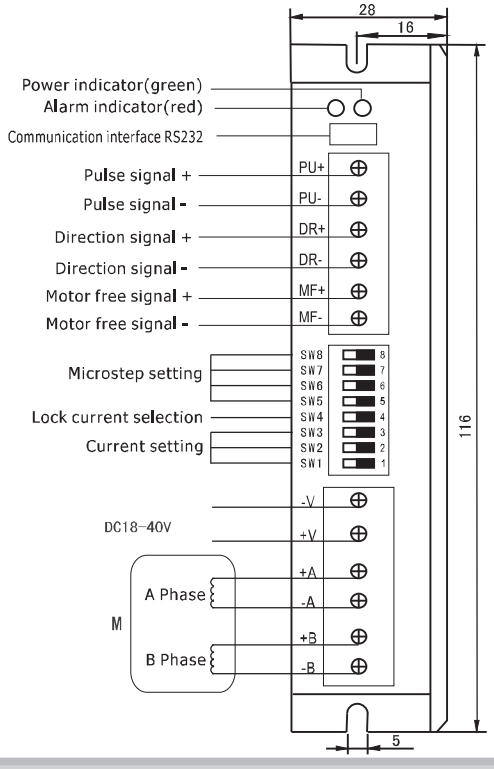
Dimensions (mm)



Input Signal Timing Diagram



Drive Wiring Diagram



YKD2304M Microstep Setting

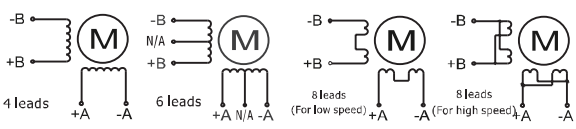
Microstep	1	2	4	8	16	32	64	128	5	10	20	25	40	50	100	125
PU/Rev	Default (200)	400	800	1600	3200	6400	12800	25600	1000	2000	4000	5000	8000	10000	20000	25000
SW8	ON	ON	ON	ON	ON	ON	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
SW7	ON	ON	ON	ON	OFF	OFF	OFF	OFF	ON	ON	ON	ON	OFF	OFF	OFF	OFF
SW6	ON	ON	OFF	OFF	ON	ON	OFF	OFF	ON	ON	OFF	OFF	ON	ON	OFF	OFF
SW5	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF

SW4 : OFF=Half Current
ON=Full Current

YKD2304M Current Setting

Current RMS	Default (0.7)	0.9	1.2	1.4	1.6	1.8	2.1	2.3
Current Peak	Default (1.0)	1.3	1.6	1.9	2.2	2.5	2.9	3.2
SW3	ON	ON	ON	ON	OFF	OFF	OFF	OFF
SW2	ON	ON	OFF	OFF	ON	ON	OFF	OFF
SW1	ON	OFF	ON	OFF	ON	OFF	ON	OFF

Terminal Introduction

Symbol	Function	Specification
PWR	Power indicator	When power on, the green indicator lights up.
ALARM	Fault indicator	When over current, under voltage or over voltage, the red indicator lights up.
RS232	Communication Interface	For software upgrade debugging and online applications
PU+	Pulse signal +	Connect with the signal power supply, 5V~24V can drive, need to connect a current limiting resistor with PU- when >5V
PU-	Pulse signal -	Used to change motor direction. Input resistance 220Ω, requirements: low level 0~0.5V, high level 4~5V, pulse width >2.5us
DR+	Direction signal +	Connect with the signal power supply, 5V~24V can drive, need to connect a current limiting resistor with DR- when >5V
DR-	Direction signal -	Used to change motor direction. Input resistance 220Ω, requirements: low level 0~0.5V, high level 4~5V, pulse width >2.5us
MF+	Motor free signal +	Connect to 5V power supply, 5V~24V can drive, need to connect a current limiting resistor when volatge>5V
MF-	Motor free signal -	When effective (low level), the motor coil current is turned off, the driver stops working and the motor is free.
-V	Power supply -	DC18-40V
+V	Power supply +	
+A,-A	Motor connection	
+B,-B		

Notice

1. Do not reverse the power supply, input voltage should not exceed DC40V.
2. The input control signal level is 5V. The current limiting resistor needs to be connected when > 5V. (Please refer to page 4 for connection)
3. When the ALARM light is on, please check after power off:
   (1) The power supply voltage < DC18V or > DC40V
   (2) Restart the power supply after eliminating motor connection and other short-circuit faults.
4. The green PWR indicator lights up when the drive is powered on.

YKD2305M 2 Phase DSP Stepper Drive

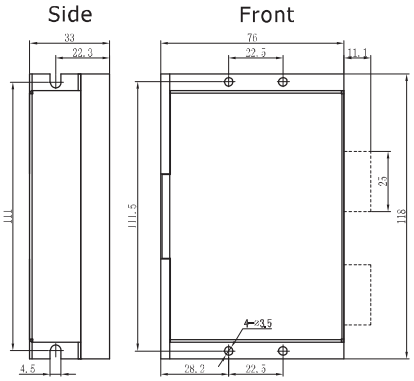
Features

- 32-bit DSP control, low noise and superior vibration performance
- 16 constant torque microstep setting, up to 200 microsteps
- Smooth and accurate current control, effectively reduce motor heating
- The highest pulse response frequency is 200KHZ
- When the pulse stops over 200ms, the motor current is halved
- Excellent smoothness in low frequency microsteps
- Optically isolated differential signal input, strong anti-interference ability
- Drive current is adjustable below 3.0A
- Voltage input range: DC20~50V
- With over voltage, under voltage etc. fault protection
- Small size, volume 118*76*33 (mm³), weight 0.3kg
- Suitable for 42~60mm(NEMA17~24) 2 phase open-loop stepper motors.

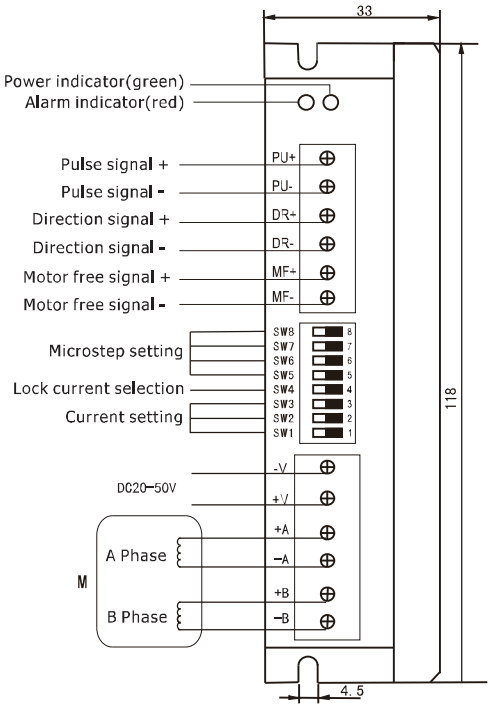
Application: Mainly used in laser cutting machine, laser welding machine, laser marking machine, lock screw machine, medical equipment, robot, dispenser, electronic equipment and engraving machine

Dimensions

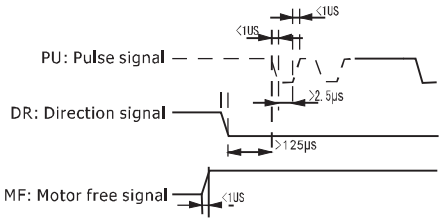
Dimensions (mm)



Drive Wiring Diagram



Input Signal Timing Diagram



YKD2305M Microstep Setting

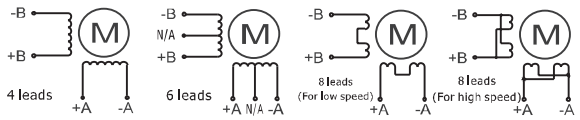
PU/Rev	400	800	1600	3200	6400	12800	25600	1000	2000	4000	5000	8000	10000	20000	40000
SW8	ON	ON	ON	ON	ON	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
SW7	ON	ON	ON	OFF	OFF	OFF	OFF	ON	ON	ON	ON	OFF	OFF	OFF	OFF
SW6	ON	OFF	OFF	ON	ON	OFF	OFF	ON	ON	OFF	OFF	ON	ON	OFF	OFF
SW5	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF

SW4 : OFF=Half Current
ON=Full Current

YKD2305M Current Setting

RMS	0.71A	1.04A	1.36A	1.69A	2.03A	2.36A	2.69A	3.00A
Peak	1.00A	1.46A	1.91A	2. 37A	2. 84A	3. 31A	3. 76A	4. 20A
SW3	ON	ON	ON	ON	OFF	OFF	OFF	OFF
SW2	ON	ON	OFF	OFF	ON	ON	OFF	OFF
SW1	ON	OFF	ON	OFF	ON	OFF	ON	OFF

Terminal Introduction

Symbol	Function	Specification
PWR	Power indicator	When power on, the green indicator lights up.
ALARM	Fault indicator	When over current, under voltage or over voltage, the red indicator lights up.
PU+	Pulse signal +	Connect with the signal power supply, 5V~24V can drive, need to connect a current limiting resistor with PU- when >5V
PU-	Pulse signal -	Effects on falling edge, the motor moves a step when the pulse goes from high to low. The input resistance is 220Ω. It requires: low level 0~0.5V, high level 4~5V, pulse width>2.5us.
DR+	Direction signal +	Connect with the signal power supply, 5V~24V can drive, need to connect a current limiting resistor with DR- when >5V
DR-	Direction signal -	Used to change motor direction. Input resistance 220Ω, requirements: low level 0~0.5V, high level 4~5V, pulse width >2.5us
MF+	Motor free signal +	Connect with the signal power supply, 5V~24V can drive, need to connect a current limiting resistor with MF- when >5V
MF-	Motor free signal -	When effective (low level), the motor coil current is turned off, the driver stops working and the motor is free.
-V	Power supply -	DC20-50V
+V	Power supply +	
A+	Motor connection	
A-		
B+		
B-		

Notice

1. Do not reverse the power supply, input voltage should not exceed DC50V.
2. The input control signal level is 5V. The current limiting resistor needs to be connected when > 5V. (Please refer to page 4 for connection)
3. When the ALARM light is on, please check after power off:
   (1) The power supply voltage < DC20V or > DC50V
   (2) Restart the power supply after eliminating motor connection and other short-circuit faults.
4. The green PWR indicator lights up when the drive is powered on.

YKD2405M/YKD2408M 2 Phase DSP Stepper Drive

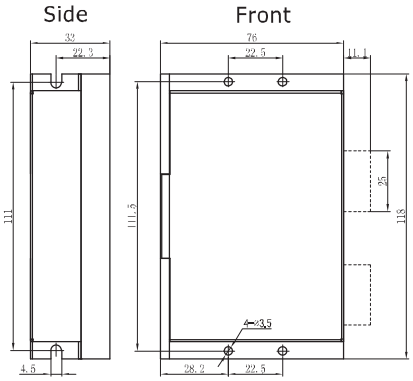
Features

- 32-bit DSP control, low noise and superior vibration performance
- 16 constant torque microstep setting, up to 200 microsteps
- Smooth and accurate current control, effectively reduce motor heating
- The highest pulse response frequency is 200Kpps
- When the pulse stops over 200ms, the motor current is halved
- Excellent smoothness in low frequency microsteps
- Optically isolated differential signal input, strong anti-interference ability
- Drive current is adjustable below 4.0A
- Voltage input range: DC20~50V(YKD2405M)/DC20~80(YKD2408M)
- With over voltage, under voltage etc. fault protection
- Small size, volume 118*76*33 (mm^3), weight 0.3kg
- Suitable for 42/57/86mm(NEMA17/23/34) 2 phase open-loop stepper motors.

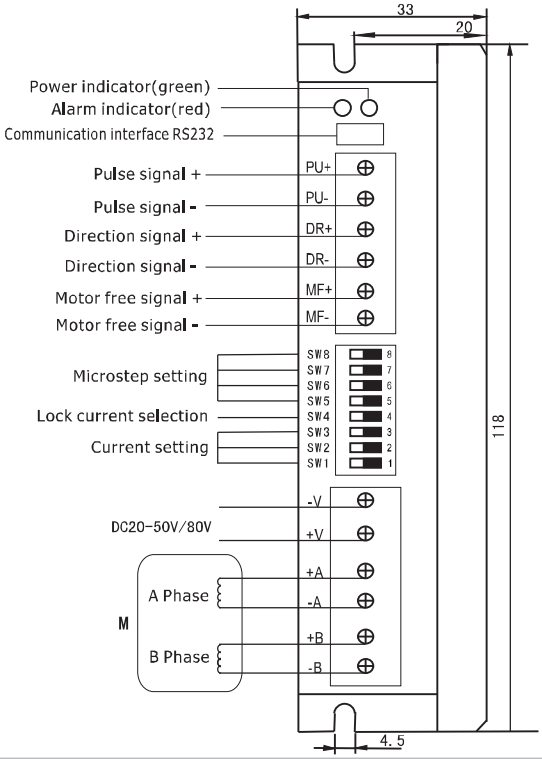
Application: Mainly used in laser cutting machine, laser welding machine, laser marking machine, lock screw machine, medical equipment, robot, dispenser, electronic equipment and engraving machine

Dimensions

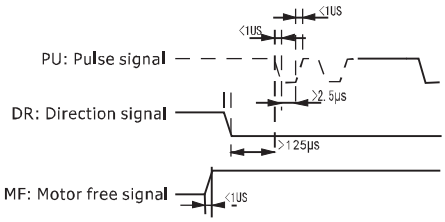
Dimensions (mm)



Drive Wiring Diagram



Input Signal Timing Diagram



YKD2405M/YKD2408M Microstep Setting

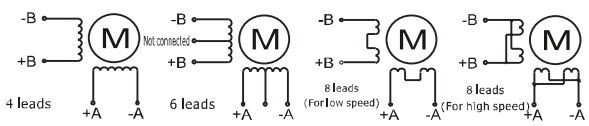
Microstep	1	2	4	8	16	32	64	128	5	10	20	25	40	50	100	200
PU/Rev	Default (200)	400	800	1600	3200	6400	12800	25600	1000	2000	4000	5000	8000	10000	20000	40000
SW8	ON	ON	ON	ON	ON	ON	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
SW7	ON	ON	ON	ON	OFF	OFF	OFF	OFF	ON	ON	ON	ON	OFF	OFF	OFF	OFF
SW6	ON	ON	OFF	OFF	ON	ON	OFF	OFF	ON	ON	OFF	OFF	ON	ON	OFF	OFF
SW5	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF

SW4 : OFF=Half Current
ON=Full Current

YKD2405M /YKD2408M Current Setting

Current RMS	Default (1.2)	1.5	1.9	2.3	2.7	3.1	3.5	4.0
Current Peak	Default (1.7)	2.1	2.7	3.2	3.8	4.3	4.9	5.6
SW3	OFF	OFF	OFF	OFF	ON	ON	ON	ON
SW2	OFF	OFF	ON	ON	OFF	OFF	ON	ON
SW1	OFF	ON	OFF	ON	OFF	ON	OFF	ON

Terminal Introduction

Symbol	Function	Specification
PWR	Power indicator	When power on, the green indicator lights up.
ALARM	Fault indicator	When over current, under voltage or over voltage, the red indicator lights up.
RS232	Communication Interface	For software upgrade debugging and online applications
PU+	Pulse signal +	Connect with the signal power supply, 5V~24V can drive, need to connect a current limiting resistor with PU- when >5V
PU-	Pulse signal -	Used to change motor direction. Input resistance 220Ω, requirements: low level 0~0.5V, high level 4~5V, pulse width >2.5us
DR+	Direction signal +	Connect with the signal power supply, 5V~24V can drive, need to connect a current limiting resistor with DR- when >5V
DR-	Direction signal -	Used to change motor direction. Input resistance 220Ω, requirements: low level 0~0.5V, high level 4~5V, pulse width >2.5us
MF+	Motor free signal +	Connect to 5V power supply, 5V~24V can drive, need to connect a current limiting resistor when volatge>5V
MF-	Motor free signal -	When effective (low level), the motor coil current is turned off, the driver stops working and the motor is free.
-V	Power supply -	DC20-50V/DC20-80V
+V	Power supply +	
+A,-A	Motor connection	
+B,-B		

Notice

1. Do not reverse the power supply, input voltage should not exceed DC50V/DC80V.
2. The input control signal level is 5V. The current limiting resistor needs to be connected when > 5V. (Please refer to page 4 for connection)
3. When the ALARM light is on, please check after power off:
   (1) The power supply voltage < DC20V or > DC50V/DC80V
   (2) Restart the power supply after eliminating motor connection and other short-circuit faults.
4. The green PWR indicator lights up when the drive is powered on.

YKD2405MC 2 Phase DSP Stepper Drive

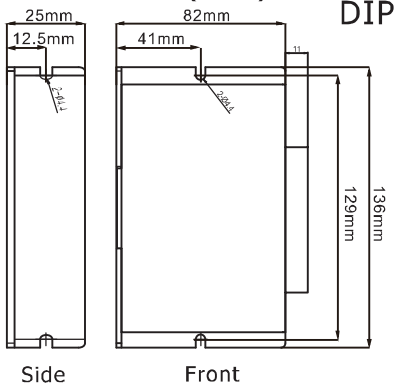
Features

- 32-bit DSP control, low noise and superior vibration performance
- 16 constant torque microstep setting, up to 200 microsteps
- Smooth and accurate current control, effectively reduce motor heating
- The highest pulse response frequency is 400Kpps
- When the pulse stops over 300ms, the motor current is halved
- Excellent smoothness in low frequency microsteps
- Optically isolated differential signal input, strong anti-interference ability
- Drive current is adjustable below 4.5A
- Voltage input range: DC20~50V
- With over voltage, under voltage etc. fault protection
- Small size, volume 136*82*25 (mm³), weight 0.35kg
- Suitable for 42~86mm(NEMA17~34) 2 phase open-loop stepper motors.

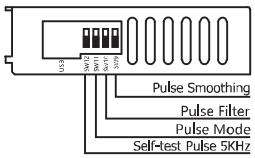
Application: Mainly used in CNC machine tools, engraving machines, packaging equipment, hydraulic machinery, laser cutting machines, textile equipment, ceramic equipment, electronic equipment constant speed applications

Dimensions

Dimensions (mm)

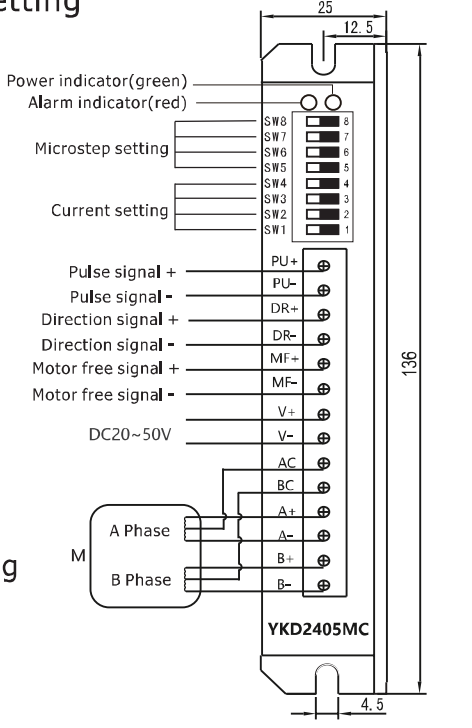


DIP switch function setting

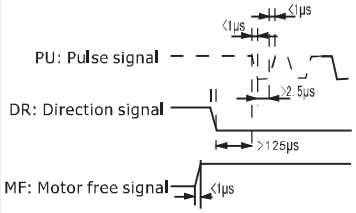


SW9	Pulse Smoothing	
	ON	Enable
	OFF	Forbid
SW10	Pulse Filter	
	ON	400k
	OFF	100k
SW11	Pulse Mode	
	ON	CW/CCW Pulse
	OFF	Pulse/Direction
SW12	Self-test Pulse 5KHz	
	ON	Enable
	OFF	Forbid

Drive Wiring Diagram



Input Signal Timing Diagram



Alarm Indicator Setting

Overcurrent	1 flashes/3 seconds
Overvoltage	2 flashes/3 seconds
Undervoltage	3 flashes/3 seconds

YKD2405MC Microstep Setting

PU/Rev	200	400	800	1000	1600	2000	3200	4000	5000	6400	8000	10000	12800	16000	20000	40000
SW8	ON	ON	ON	ON	ON	ON	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
SW7	ON	ON	ON	ON	OFF	OFF	OFF	OFF	ON	ON	ON	ON	OFF	OFF	OFF	OFF
SW6	ON	ON	OFF	OFF	ON	ON	OFF	OFF	ON	ON	OFF	OFF	ON	ON	OFF	OFF
SW5	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF

YKD2405MC Current Setting

Current RMS	0.8	1.0	1.2	1.5	1.8	2.0	2.3	2.5	2.8	3.0	3.2	3.5	3.8	4.0	4.2	4.5
SW4	ON	ON	ON	ON	ON	ON	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
SW3	ON	ON	ON	ON	OFF	OFF	OFF	OFF	ON	ON	ON	ON	OFF	OFF	OFF	OFF
SW2	ON	ON	OFF	OFF	ON	ON	OFF	OFF	ON	ON	OFF	OFF	ON	ON	OFF	OFF
SW1	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF

Terminal Introduction

Symbol	Function	Specification
PWR	Power indicator	When power on, the green indicator lights up.
ALARM	Fault indicator	When over current, under voltage or over voltage, the red indicator lights up.
USB	Communication Interface	For software upgrade debugging and online applications
PU+	Pulse signal +	Connect with the signal power supply, 5V~24V can drive, need to connect a current limiting resistor with PU- when >5V
PU-	SW11=OFF, it's pulse signal	Used to change motor direction. Input resistance 220Ω, requirements: low level 0~0.5V, high level 4~5V, pulse width >2.5us
	SW11=ON, it's CW pulse signal	
DR+	Direction signal +	Connect with the signal power supply, 5V~24V can drive, need to connect a current limiting resistor with DR- when >5V
DR-	SW11=OFF, it's direction control signal	Used to change motor direction. Input resistance 220Ω, requirements: low level 0~0.5V, high level 4~5V
	SW11=ON, it's CCW pulse signal	Effects on falling edge, the motor moves a step when the pulse goes from high to low. The input resistance is 220Ω. It requires: low level 0~0.5V, high level 4~5V, pulse width>2.5us.
MF+	Motor free signal +	Connect to 5V power supply, 5V~24V can drive, need to connect a current limiting resistor when volatge>5V
MF-	Motor free signal -	When effective (low level), the motor coil current is turned off, the driver stops working and the motor is free.
+V	Power supply +	DC20-50V
-V	Power supply -	
AC,BC	Motor connection	
+A,-A		
+B,-B		

Notice

1. Do not reverse the power supply, input voltage should not exceed DC50V.
2. The input control signal level is 5V. The current limiting resistor needs to be connected when > 5V. (Please refer to page 4 for connection)
3. When the ALARM light is on, please check after power off:
   (1) The power supply voltage < DC20V or > DC50V
   (2) Restart the power supply after eliminating motor connection and other short-circuit faults.
4. The green PWR indicator lights up when the drive is powered on.

YKD2608MC 2 Phase DSP Stepper Drive

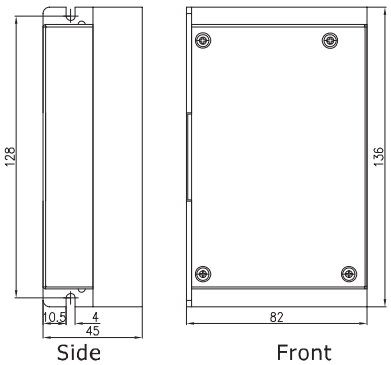
Features

- 32-bit DSP control, low noise and superior vibration performance
- 16 constant torque microstep setting, up to 200 microsteps
- Smooth and accurate current control, effectively reduce motor heating
- The highest pulse response frequency is 400Kpps
- When the pulse stops over 300ms, the motor current is halved
- Excellent smoothness in low frequency microsteps
- Optically isolated differential signal input, strong anti-interference ability
- Drive current is adjustable below 6.0A
- Voltage input range: DC20~80V
- With over voltage, under voltage etc. fault protection
- Small size, volume 136*82*45 (mm^3), weight 0.65kg
- Suitable for 57-86mm(NEMA23-34) 2 phase open-loop stepper motors.

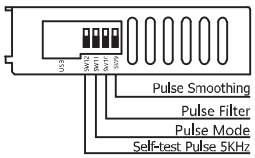
Application: Mainly used in CNC machine tools, engraving machines, packaging equipment, hydraulic machinery, laser cutting machines, textile equipment, ceramic equipment, electronic equipment constant speed applications

Dimensions

Dimensions (mm)

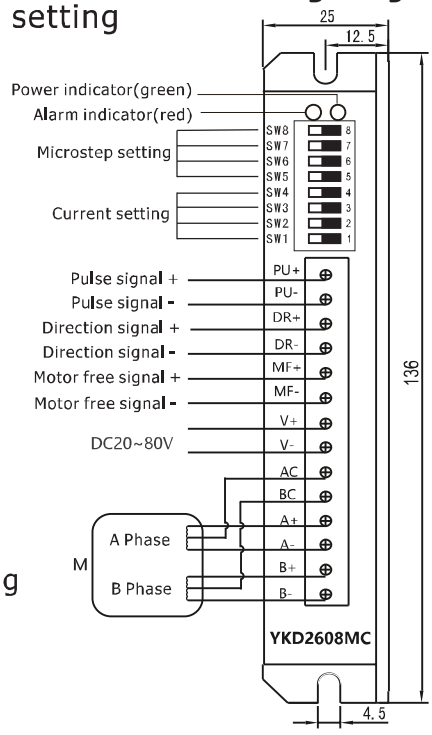


DIP switch function setting

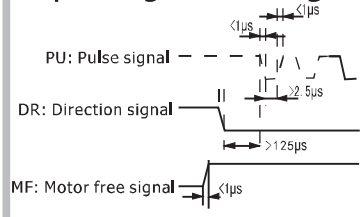


SW9	Pulse Smoothing	
	ON	Enable
	OFF	Forbid
SW10	Pulse Filter	
	ON	400k
	OFF	100k
SW11	Pulse Mode	
	ON	CW/CCW Pulse
	OFF	Pulse/Direction
SW12	Self-test Pulse 5KHz	
	ON	Enable
	OFF	Forbid

Drive Wiring Diagram



Input Signal Timing Diagram



Alarm Indicator Setting

Overcurrent	1 Flashes/3 seconds
Overvoltage	2 Flashes/3 seconds
Undervoltage	3 Flashes/3 seconds

YKD2608MC Microstep Setting

PU/Rev	200	400	800	1600	3200	6400	12800	25600	1000	2000	4000	5000	8000	10000	20000	40000
SW8	ON	ON	ON	ON	ON	ON	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
SW7	ON	ON	ON	ON	OFF	OFF	OFF	OFF	ON	ON	ON	ON	OFF	OFF	OFF	OFF
SW6	ON	ON	OFF	OFF	ON	ON	OFF	OFF	ON	ON	OFF	OFF	ON	ON	OFF	OFF
SW5	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF

YKD2608MC Current Setting

Current RMS	1.0	1.3	1.6	2.0	2.4	2.7	3.0	3.3	3.7	4.0	4.3	4.6	5.0	5.3	5.6	6.0
SW4	ON	ON	ON	ON	ON	ON	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
SW3	ON	ON	ON	ON	OFF	OFF	OFF	OFF	ON	ON	ON	ON	OFF	OFF	OFF	OFF
SW2	ON	ON	OFF	OFF	ON	ON	OFF	OFF	ON	ON	OFF	OFF	ON	ON	OFF	OFF
SW1	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF

Terminal Introduction

Symbol	Function	Specification
PWR	Power indicator	When power on, the green indicator lights up.
ALARM	Fault indicator	When over current, under voltage or over voltage, the red indicator lights up.
USB	Communication Interface	For software upgrade debugging and online applications
PU+	Pulse signal +	Connect with the signal power supply, 5V~24V can drive, need to connect a current limiting resistor with PU- when >5V
PU-	SW11=OFF, it's pulse signal	Used to change motor direction. Input resistance 220Ω, requirements: low level 0~0.5V, high level 4~5V, pulse width >2.5us
	SW11=ON, it's CW pulse signal	
DR+	Direction signal +	Connect with the signal power supply, 5V~24V can drive, need to connect a current limiting resistor with DR- when >5V
DR-	SW11=OFF, it's direction control signal	Used to change motor direction. Input resistance 220Ω, requirements: low level 0~0.5V, high level 4~5V
	SW11=ON, it's CCW pulse signal	Effects on falling edge, the motor moves a step when the pulse goes from high to low. The input resistance is 220Ω. It requires: low level 0~0.5V, high level 4~5V, pulse width>2.5us.
MF+	Motor free signal +	Connect to 5V power supply, 5V~24V can drive, need to connect a current limiting resistor when volatge>5V
MF-	Motor free signal -	When effective (low level), the motor coil current is turned off, the driver stops working and the motor is free.
+V	Power supply +	DC20~80V
-V	Power supply -	
AC,BC	Motor connection	
+A,-A		
+B,-B		

Notice

1. Do not reverse the power supply, input voltage should not exceed DC80V.
2. The input control signal level is 5V. The current limiting resistor needs to be connected when > 5V. (Please refer to page 4 for connection)
3. When the ALARM light is on, please check after power off:
   (1) The power supply voltage < DC20V or > DC80V
   (2) Restart the power supply after eliminating motor connection and other short-circuit faults.
4. The green PWR indicator lights up when the drive is powered on.

YKD2204PA 2 Phase Spontaneous Pulsed Drive

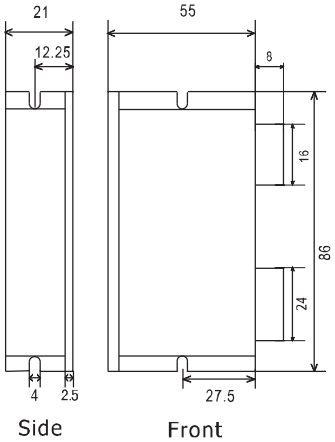
Features

- 32-bit DSP control, good stability and superior vibration performance
- 4 constant torque microstep setting, up to 32 microsteps
- Smooth and accurate current control, effectively reduce motor heating
- When the pulse stops over 200ms, the motor current is halved
- Excellent smoothness in low frequency microsteps
- Optically isolated differential signal input, strong anti-interference ability
- Drive current is adjustable below 2.3A
- Voltage input range: DC18~36V
- With over voltage, under voltage etc. fault protection
- Small size, volume 86*55*21 (mm^3), weight 0.12kg
- Suitable for 42mm(NEMA17) 2 phase open-loop stepper motors.

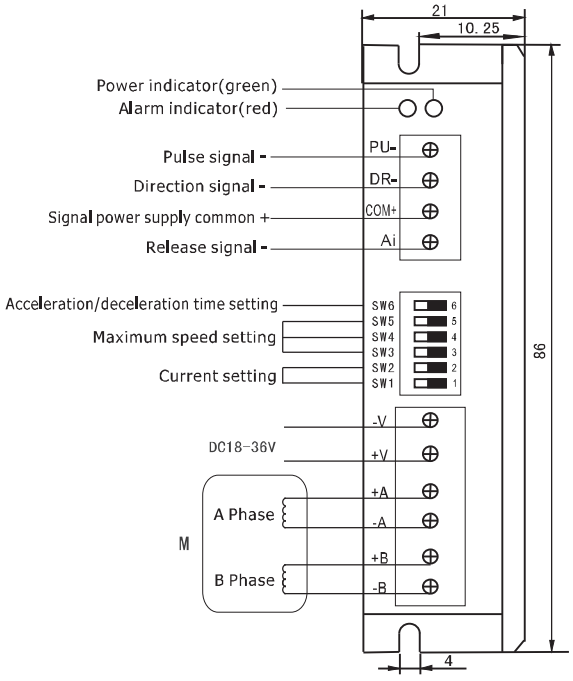
Application: Mainly used in medical equipment, dispensing machines, engraving machines, laser equipment, labeling machines, electronic equipment, advertising equipment and other automation equipment.

Dimensions

Dimensions (mm)



Drive Wiring Diagram



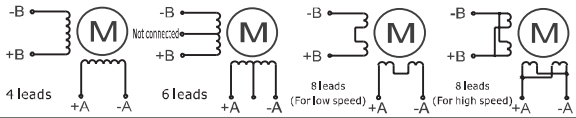
YKD2204PA Microstep Setting

Current RMS	1.6	1.2	0.9	0.5
Current Peak	2.3	1.7	1.3	0.7
SW2	OFF	OFF	ON	ON
SW1	OFF	ON	OFF	ON

YKD2204PA Maximum Speed Setting

Maximum speed	480	420	360	300	240	180	180	60
SW5	OFF	OFF	OFF	OFF	ON	ON	ON	ON
SW4	OFF	OFF	ON	ON	OFF	OFF	ON	ON
SW3	OFF	ON	OFF	ON	OFF	ON	OFF	ON

Terminal Introduction

Symbol	Function	Specification
PWR	Power indicator	When power on, the green indicator lights up.
ALARM	Fault indicator	When over current, under voltage or over voltage, the red indicator lights up.
PU-	Pulse control signal -	The motor starts running whenever the level changes from high to low. Requirements: Low level: 0-0.5V, high level: 20-24V
DR-	Direction signal -	Used to change motor direction, requirements: low level 0~0.5V, high level 20~24V
COM+	Pulse/direction control signal +	Connect with power supply, 24V can drive, need to connect a current limiting resistor with PU-/DR- when >24V
Ai	Analog voltage input +	Input range: DC 0-10V, voltage determines the speed, 0-10V corresponds to 0-max speed
-V	Power supply-/Analog voltage input-	DC 18-36V
+V	Power supply +	
+A,-A	Motor connection	
+B,-B		

Notice

1. Do not reverse the power supply, input voltage should not exceed DC50V.
2. The input control signal level is 5V. The current limiting resistor needs to be connected when > 5V. (Please refer to page 4 for connection)
3. When the ALARM light is on, please check after power off:
   (1) The power supply voltage < DC18V or > DC36V
   (2) Restart the power supply after eliminating motor connection and other short-circuit faults.
4. The green PWR indicator lights up when the drive is powered on.

YKD2405PA 2 Phase Spontaneous Pulsed Drive

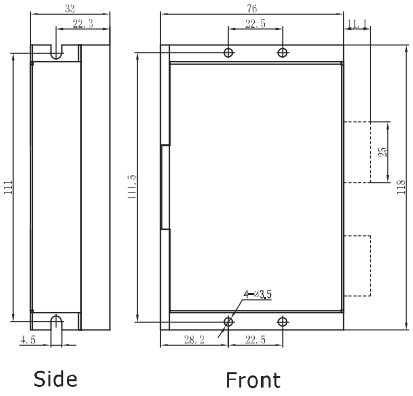
Features

- 32-bit DSP control, good stability and superior vibration performance
- 16-speed current is available
- Smooth and accurate current control, effectively reduce motor heating
- Optically isolated differential signal input, strong anti-interference ability
- Drive current is adjustable below 4.8A
- Voltage input range: DC20~50V
- With over voltage, under voltage etc. fault protection
- Small size, volume 118*76*33 (mm³), weight 0.3kg
- Suitable for 42/57/86mm(NEMA17/23/34) 2 phase open-loop stepper motors.

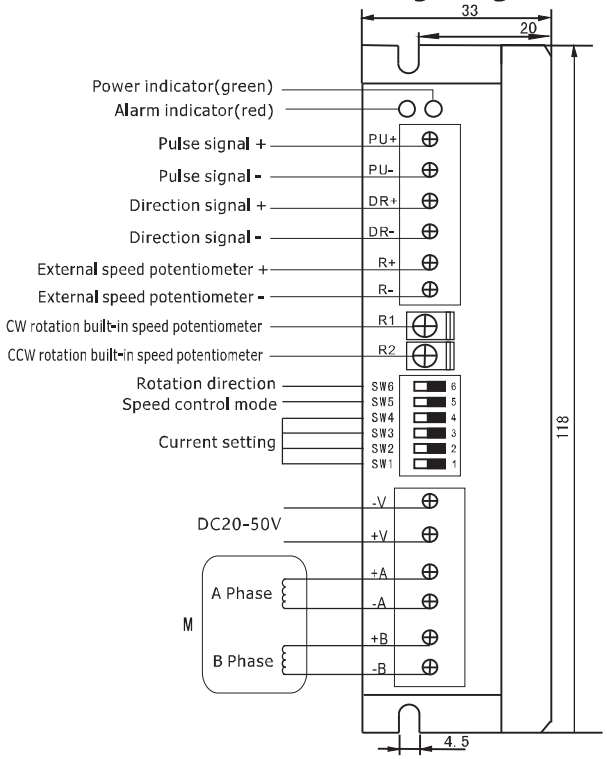
Application: Mainly used in SMT auxiliary equipment: palletizer, docking station; touch screen related equipment: laminating and attaching machine; pharmacy automation equipment; automatic medicine grabbing machine.

Dimensions

Dimensions (mm)



Drive Wiring Diagram



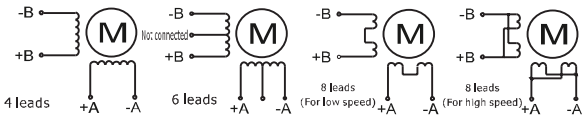
YKD2405PA Current Setting

Current RMS	4.8	4.5	4.2	4.0	3.7	3.5	3.3	3.0	2.7	2.3	2.0	1.7	1.3	1.0	0.8	0.5
SW4	ON	ON	ON	ON	ON	ON	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
SW3	ON	ON	ON	ON	OFF	OFF	OFF	OFF	ON	ON	ON	ON	OFF	OFF	OFF	OFF
SW2	ON	ON	OFF	OFF	ON	ON	OFF	OFF	ON	ON	OFF	OFF	ON	ON	OFF	OFF
SW1	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF

SW5: OFF: Built-in speed control ON: External speed control

SW6: OFF: CW ON: CCW

Terminal Introduction

Symbol	Function	Specification
PWR	Power indicator	When power on, the green indicator lights up.
ALARM	Fault indicator	When over current, under voltage or over voltage, the red indicator lights up.
PU+	Pulse control signal +	Connect with power supply, 24V can drive, need to connect a current limiting resistor with PU- when >24V
PU-	Pulse control signal -	The motor starts running whenever the level changes from high to low. Requirements: Low level: 0-0.5V, high level: 20-24V
DR+	Direction signal +	Connect with power supply, 24V can drive, need to connect a current limiting resistor with DR- when >24V
DR-	Direction signal -	Used to change motor direction. Input resistance 220Ω, requirements: low level 0~0.5V, high level 20~24V
R+	External speed potentiometer	Speed adjustment range 0~5r/s, 10KΩ external potentiometer resistance is recommended
R-	External speed potentiometer	Speed adjustment range 0~5r/s
R1	CW rotation built-in speed potentiometer	Speed adjustment range 0~5r/s
R2	CCW rotation built-in speed potentiometer	Speed adjustment range 0~5r/s
-V	Power supply -	DC20-50V
+V	Power supply +	
+A,-A	Motor connection	
+B,-B		

Notice

1. Do not reverse the power supply, input voltage should not exceed DC50V.
2. The input control signal level is 24V. The current limiting resistor needs to be connected when > 24V. (Please refer to page 4 for connection)
3. When the ALARM light is on, please check after power off:
   (1) The power supply voltage < DC20V or > DC50V
   (2) Restart the power supply after eliminating motor connection and other short-circuit faults.
4. The green PWR indicator lights up when the drive is powered on.

YKD2608E 2 Phase DSP Stepper Drive

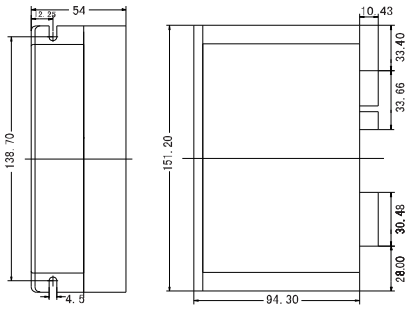
Features

- 32-bit DSP control, low noise and superior vibration performance
- 16 constant torque microstep setting, up to 256 microsteps
- Smooth and accurate current control, effectively reduce motor heating
- The highest pulse response frequency is 400KHz
- When the pulse stops over 200ms, the motor current is halved
- Excellent smoothness in low frequency microsteps
- Optically isolated differential signal input, strong anti-interference ability
- Drive current is adjustable below 6.0A
- Voltage input range: AC18~80V
- With over voltage, under voltage etc. fault protection
- Small size, volume 151*94*54 (mm^3), weight 0.65kg
- Suitable for 57-86mm(NEMA23-34) 2 phase open-loop stepper motors.
- Compared with the standard version, enhanced version adds the following 6 functions: Pulse smoothing, MF function selection, pulse filter, polarity selection, pulse mode, self-test pulse 5HKz

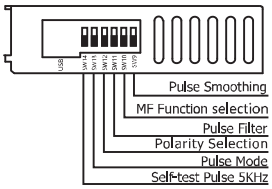
Application: Mainly used in engraving machines, laser equipment, labeling machines, electronic equipment, advertising equipment, packaging equipment

Dimensions

Dimensions (mm)

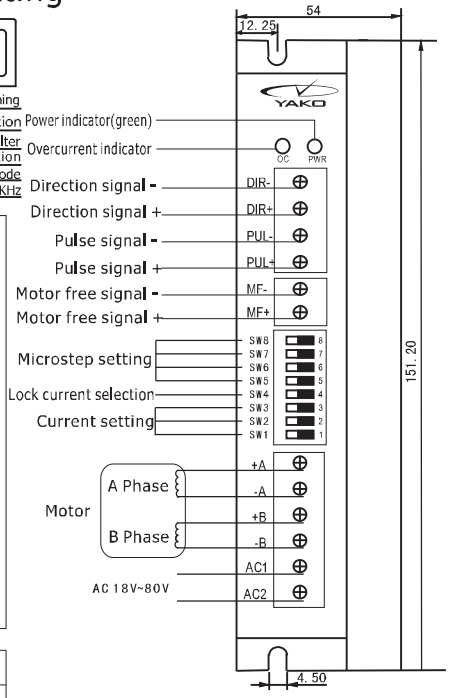


DIP switch function setting

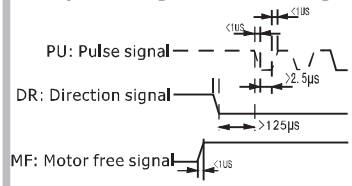


SW9	Pulse Smoothing	
	ON	Enable
	OFF	Forbid
SW10	MF Function Selection	
	ON	Off Pulse
	OFF	Off Current
SW11	Pulse Filter	
	ON	400k
	OFF	100k
SW12	Polarity Selection	
	ON	Falling Edge
	OFF	Rising Edge
SW13	Pulse Mode	
	ON	CW/CCW Pulse
	OFF	Pulse/Direction
SW14	Self-test Pulse 5KHz	
	ON	Enable
	OFF	Forbid

Drive Wiring Diagram



Input Signal Timing Diagram



Alarm Indicator Setting

Motor free	Green light always on	Overvoltage	3 Flashes/3 seconds
Motor enable	Green light flashes	Overcurrent	4 Flashes/3 seconds
Undervoltage	2 Flashes/3 seconds		

YKD2608Ⓔ Microstep Setting

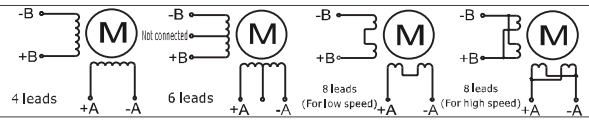
Microstep	2	4	8	16	32	64	128	256	5	10	20	25	40	50	100	200
PU/REV	400	800	1600	3200	6400	12800	25600	51200	1000	2000	4000	5000	8000	10000	20000	40000
SW5	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF
SW6	ON	ON	OFF	OFF	ON	ON	OFF	OFF	ON	ON	OFF	OFF	ON	ON	OFF	OFF
SW7	ON	ON	ON	ON	OFF	OFF	OFF	OFF	ON	ON	ON	ON	OFF	OFF	OFF	OFF
SW8	ON	ON	ON	ON	ON	ON	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF

YKD2608Ⓔ Current Setting

Current RMS	2.00	2.57	3.14	3.71	4.28	4.86	5.43	6.00
Current Peak	2.40	3.08	3.77	4.45	5.14	5.83	6.52	7.20
SW3	ON	ON	ON	ON	OFF	OFF	OFF	OFF
SW2	ON	ON	OFF	OFF	ON	ON	OFF	OFF
SW1	ON	OFF	ON	OFF	ON	OFF	ON	OFF

SW4:OFF=Half Current
ON=Full Current

Terminal Introduction

Symbol	Function	Specification
PWR	Power indicator	When power on, the green indicator lights up.
O.C	Fault indicator	When over current, under voltage or over voltage, the red indicator lights up.
DR-	SW13=OFF, it's direction control signal	Used to change motor direction. Input resistance 220Ω, requirements: low level 0~0.5V, high level 4~5V,
	SW13=ON, it's CCW pulse signal	Effects on falling edge, the motor moves a step when the pulse goes from high to low. The input resistance is 220Ω. It requires: low level 0~0.5V, high level 4~5V, pulse width>2.5us.
DR+	Input signal +	Connect with power supply, 5V~24V can drive, need to connect a current limiting resistor with DR- when >5V
PU-	SW13=OFF, it's pulse signal	Effects on falling edge, the motor moves a step when the pulse goes from high to low. The input resistance is 220Ω. It requires: low level 0~0.5V, high level 4~5V, pulse width>2.5us.
	SW13=ON, it's CW pulse signal	
PU+	Input signal +	Connect with power supply, 5V~24V can drive, need to connect a current limiting resistor with PUL- when >5V
MF-	Motor free signal -	When effective (low level), the motor coil current is turned off, the driver stops working and the motor is free.
MF+	Motor free signal +	Connect with 5V power supply, 5V~24V can drive, need to connect a current limiting resistor when >5V
+V	Power supply +	AC18~80/DC24~110V
-V	Power supply -	
+A,-A	Motor connection	
+B,-B		

Notice

1. Do not reverse the power supply, input voltage should not exceed AC48V.
2. The input control signal level is 5V. The current limiting resistor needs to be connected when > 5V. (Please refer to page 4 for connection)
3. When overcurrent, overvoltage or undervoltage, the O.C light flashes, please restart the power supply after eliminating motor connection and other short-circuit faults.
4. The green PWR indicator lights up when the drive is powered on.

YKD2608MH 2 Phase DSP Stepper Drive

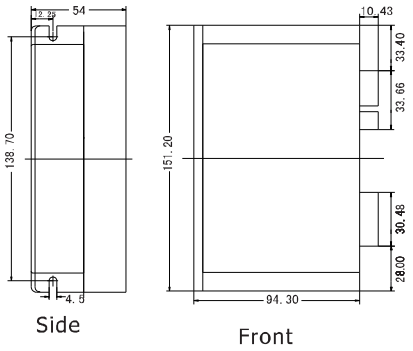
Features

- 32-bit DSP control, low noise and superior vibration performance
- 16 constant torque microstep setting, up to 256 microsteps
- Smooth and accurate current control, effectively reduce motor heating
- The highest pulse response frequency is 200KHz
- When the pulse stops over 200ms, the motor current is halved
- Excellent smoothness in low frequency microsteps
- Optically isolated differential signal input, strong anti-interference ability
- Drive current is adjustable below 6.0A
- Voltage input range: AC18~80V
- With over voltage, under voltage etc. fault protection
- Small size, volume 151*94*54 (mm³), weight 0.65kg
- Suitable for 57-86mm(NEMA23-34) 2 phase open-loop stepper motors.

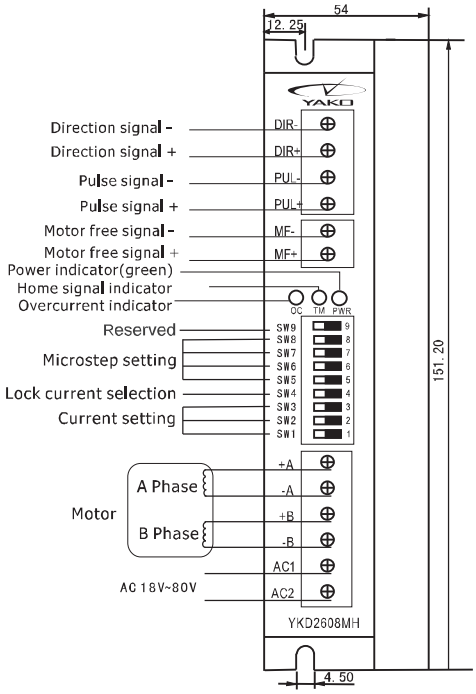
Application: Mainly used in engraving machines, laser equipment, labeling machines, electronic equipment, advertising equipment, packaging equipment

Dimensions

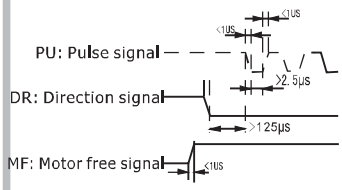
Dimensions (mm)



Drive Wiring Diagram



Input Signal Timing Diagram



YKD2608MH Microstep Setting

Microstep	2	4	8	16	32	64	128	256	5	10	20	25	40	50	100	200
PU/REV	400	800	1600	3200	6400	12800	25600	51200	1000	2000	4000	5000	8000	10000	20000	40000
SW5	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF
SW6	ON	ON	OFF	OFF	ON	ON	OFF	OFF	ON	ON	OFF	OFF	ON	ON	OFF	OFF
SW7	ON	ON	ON	ON	OFF	OFF	OFF	OFF	ON	ON	ON	ON	OFF	OFF	OFF	OFF
SW8	ON	ON	ON	ON	ON	ON	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF

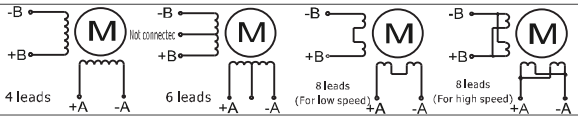
SW9 : Reserved

YKD2608MH Current Setting

Current RMS	2.00	2.57	3.14	3.71	4.28	4.86	5.43	6.00
Current Peak	2.40	3.08	3.77	4.45	5.14	5.83	6.52	7.20
SW3	ON	ON	ON	ON	OFF	OFF	OFF	OFF
SW2	ON	ON	OFF	OFF	ON	ON	OFF	OFF
SW1	ON	OFF	ON	OFF	ON	OFF	ON	OFF

SW4:OFF=Half Current
ON=Full Current

Terminal Introduction

Symbol	Function	Specification
PWR	Power indicator	When power on, the green indicator lights up.
TM	Work indicator	Pulse signal indicator, when there is continuous pulse input, the green indicator light flashes, otherwise the green indicator light is always on.
O.C	Fault indicator	When over current or under voltage, the red indicator lights up.
DIR-	Direction signal -	Effects on falling edge, the motor moves a step when the pulse goes from high to low. The input resistance is 220Ω. It requires: low level 0~0.5V, high level 4~5V, pulse width>2.5us.
DIR+	Direction signal +	Connect with 5V power supply, 5V~24V can drive, need to connect a current limiting resistor with DIR- when >5V
PUL-	Pulse signal -	Effects on falling edge, the motor moves a step when the pulse goes from high to low. The input resistance is 220Ω. It requires: low level 0~0.5V, high level 4~5V, pulse width>2.5us.
PUL+	Pulse signal +	Connect with 5V power supply, 5V~24V can drive, need to connect a current limiting resistor with PUL- when >5V
MF-	Motor free signal -	When effective (low level), the motor coil current is turned off, the driver stops working and the motor is free.
MF+	Motor free signal +	Connect with 5V power supply, 5V~24V can drive, need to connect a current limiting resistor with DIR- when >5V
+V	Power supply +	AC18~80/DC24~110V
-V	Power supply -	
+A,-A	Motor connection	
+B,-B		

Notice

1. Do not reverse the power supply, input voltage should not exceed AC48V.
2. The input control signal level is 5V. The current limiting resistor needs to be connected when > 5V. (Please refer to page 4 for connection)
3. When overcurrent, overvoltage or undervoltage, the O.C light flashes, please restart the power supply after eliminating motor connection and other short-circuit faults.
4. The green PWR indicator lights up when the drive is powered on.
5. When there is pulse input, TM indicator flashes; otherwise, TM indicator is always on.

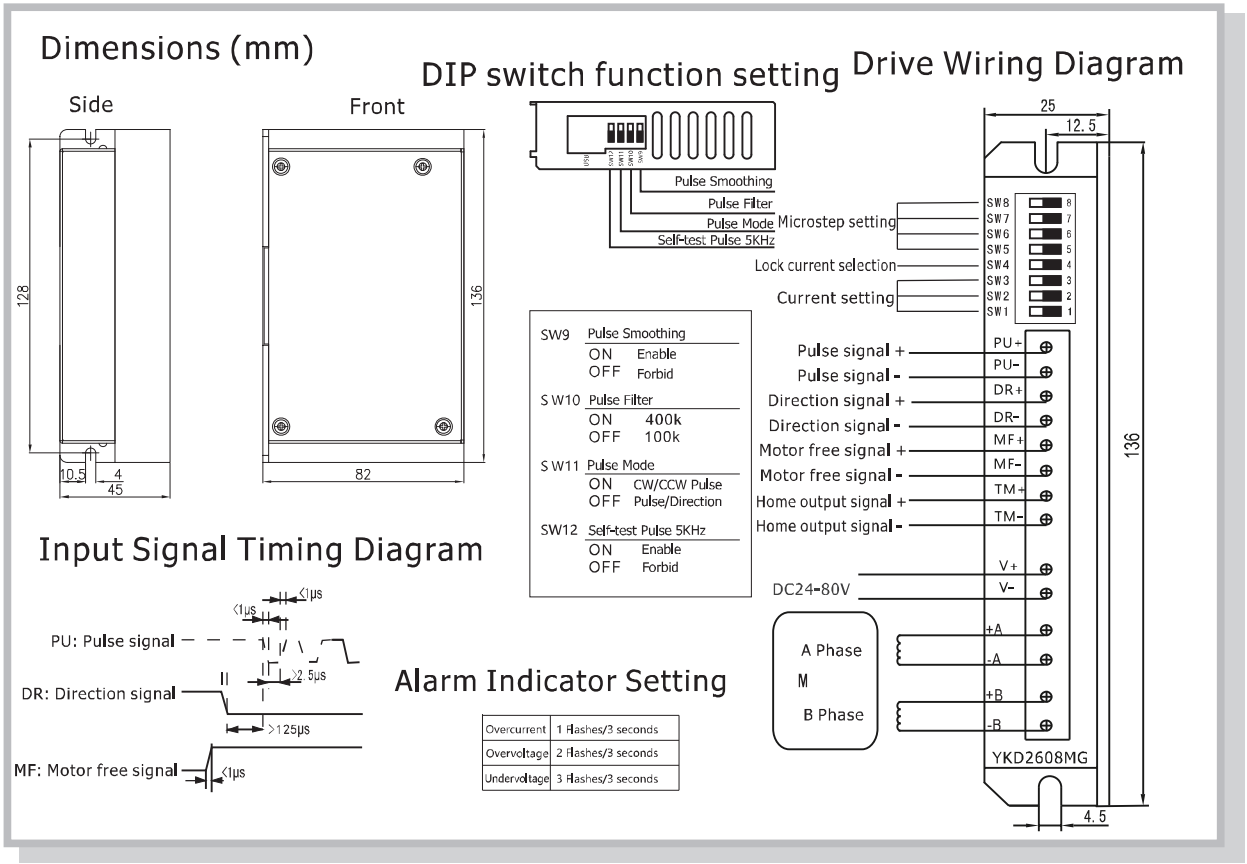
YKD2608MG 2 Phase DSP Stepper Drive

Features

- 32-bit DSP control, low noise and superior vibration performance
- 16 constant torque microstep setting, up to 200 microsteps
- Smooth and accurate current control, effectively reduce motor heating
- The highest pulse response frequency is 400KHz
- When the pulse stops over 200ms, the motor current is halved
- Excellent smoothness in low frequency microsteps
- Optically isolated differential signal input, strong anti-interference ability
- Drive current is adjustable below 4.8A
- Voltage input range: DC24~80V
- With over voltage, under voltage etc. fault protection
- Small size, volume 136*82*45 (mm³), weight 0.65kg
- Suitable for 57-86mm(NEMA23-34) 2 phase open-loop stepper motors.

Application: Mainly used in medical equipment, dispensing machines, engraving machines, laser equipment, labeling machines, electronic equipment, advertising equipment and other automation equipment.

Dimensions



YKD2608MG Microstep Setting

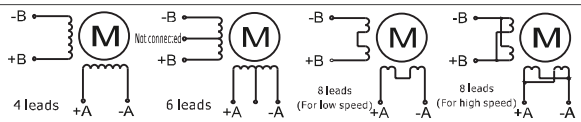
PU/Rev	Default	400	800	1600	3200	6400	12800	25600	1000	2000	4000	5000	8000	10000	20000	40000
SW8	ON	ON	ON	ON	ON	ON	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
SW7	ON	ON	ON	ON	OFF	OFF	OFF	OFF	ON	ON	ON	ON	OFF	OFF	OFF	OFF
SW6	ON	ON	OFF	OFF	ON	ON	OFF	OFF	ON	ON	OFF	OFF	ON	ON	OFF	OFF
SW5	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF

SW4 :OFF=Half Current
ON =Full Current

YKD2608MG Current Setting

Current RMS	1.7	2.3	2.6	2.9	3.2	3.8	4.2	4.8
Current Peak	2.4	3.2	3.6	4.0	4.5	5.3	5.9	6.7
SW3	ON	ON	ON	ON	OFF	OFF	OFF	OFF
SW2	ON	ON	OFF	OFF	ON	ON	OFF	OFF
SW1	ON	OFF	ON	OFF	ON	OFF	ON	OFF

Terminal Introduction

Symbol	Function	Specification
PWR	Power indicator	When power on, the green indicator lights up.
ALM	Fault indicator	When over current, under voltage or over voltage, the red indicator lights up.
PU+	Pulse signal +	Connect with the signal power supply, 5V~24V can drive, need to connect a current limiting resistor with PU- when >5V
PU-	SW11=OFF, it's pulse signal	Effects on falling edge, the motor moves a step when the pulse goes from high to low. The input resistance is 220Ω. It requires: low level 0~0.5V, high level 4~5V, pulse width>2.5us.
	SW11=ON, it's CW pulse signal	
DR+	Input signal +	Connect with the signal power supply, 5V~24V can drive, need to connect a current limiting resistor with DR- when >5V
DR-	SW11=OFF, it's direction control signal	Used to change motor direction. Input resistance 220Ω, requirements: low level 0~0.5V, high level 4~5V
	SW11=ON, it's CCW pulse signal	Effects on falling edge, the motor moves a step when the pulse goes from high to low. The input resistance is 220Ω. It requires: low level 0~0.5V, high level 4~5V, pulse width>2.5us.
MF+	Input signal +	Connect with 5V signal power supply, 5V~24V can drive, need to connect a current limiting resistor when >5V
MF-	Motor free signal	When effective (low level), the motor coil current is turned off, the driver stops working and the motor is free.
TM+	Home output signal +	The motor coil is energized at the origin to be active; opto-isolated output (high level)
TM-	Home output signal -	+ terminal is connected to the output signal resistor, TM connect with output ground. Maximum drive current 50mA, maximum voltage 50V
+V	Power supply +	DC24-80V
-V	Power supply -	
+A,-A	Motor connection	
+B,-B		

Notice

1. Do not reverse the power supply, input voltage should not exceed DC80V.
2. The input control signal level is 5V. The current limiting resistor needs to be connected when > 5V. (Please refer to page 4 for connection)
3. When overcurrent, overvoltage or undervoltage, the O.C light flashes, please restart the power supply after eliminating motor connection and other short-circuit faults.
4. The green PWR indicator lights up when the drive is powered on.

YKD2811M 2 Phase DSP Stepper Drive

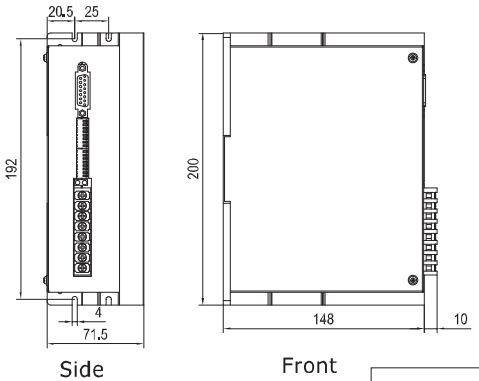
Features

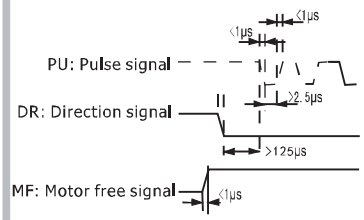
- 32-bit DSP control, low noise and superior vibration performance
- Excellent smoothness in low frequency microsteps
- 16 constant torque microstep setting, up to 125 microsteps
- Parameters can be set according to the motor model
- With pulse microstep function, the motor runs more smoothly
- Pulse filter frequency can be selected according to speed and microstep
- Flexible matching of the pulse control side of the host computer
- Motor lock current is adjustable in 4 grades. When the pulse stops over 500ms, the current is reduced to the lock current
- The highest pulse response frequency is 400KHz
- With over voltage, under voltage etc. fault protection
- Voltage input range: AC18~110V, maximum effective current 8A
- Volume 200*148*71.5 (mm³), weight 0.8kg
- Suitable for 86-130mm(NEMA34-57) 2 phase open-loop stepper motors

Application: Mainly used in CNC machine tools, engraving machines, packaging equipment, woodworking machinery, laser cutting machines, textile equipment, ceramic equipment, electronic equipment constant speed applications

Dimensions

Dimensions (mm)





Lock current setting

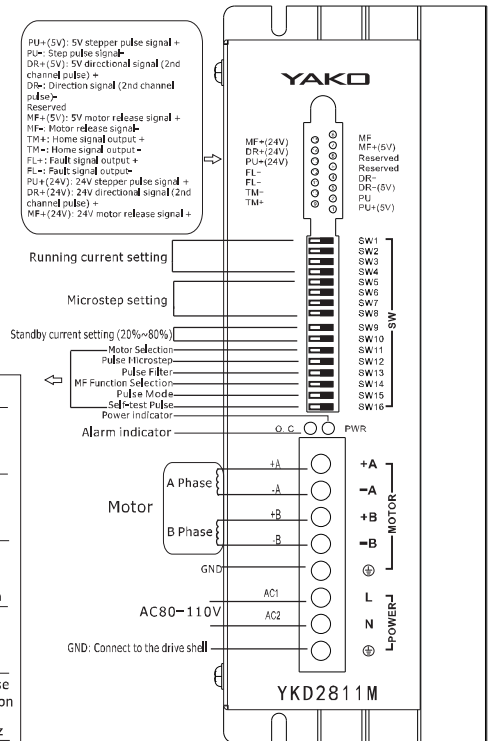
Idle	SW9	SW10
20%	ON	ON
40%	OFF	ON
60%	ON	OFF
80%	OFF	OFF

Alarm Indicator Setting

Motor free	Green light always on
Motor enable	Green light flashes
Undervoltage	2 flashes/3 seconds
Overvoltage	3 flashes/3 seconds
Overcurrent	4 flashes/3 seconds

SW11	Motor Selection	
	ON	86mm
	OFF	110/130mm
SW12	Pulse Microstep	
	ON	Forbid
	OFF	Enable
SW13	Pulse Filter	
	ON	400k
	OFF	100k
SW14	MF Function Selection	
	ON	Off pulse
	OFF	Off current
SW15	Pulse Mode	
	ON	CW/CCW Pulse
	OFF	Pulse/Direction
SW16	Self-test Pulse 4.5KHz	
	ON	Enable
	OFF	Forbid

Drive Wiring Diagram



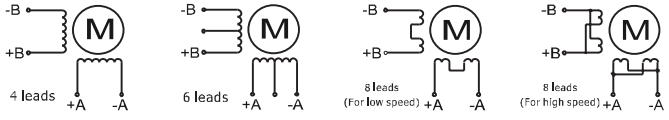
YKD2811M Microstep Setting

Microstep	1	2	4	8	16	32	64	128	5	10	20	25	40	50	100	125
PU/Rev	Default (200)	400	800	1600	3200	6400	12800	25600	1000	2000	4000	5000	8000	10000	20000	25000
SW8	ON	ON	ON	ON	ON	ON	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
SW7	ON	ON	ON	ON	OFF	OFF	OFF	OFF	ON	ON	ON	ON	OFF	OFF	OFF	OFF
SW6	ON	ON	OFF	OFF	ON	ON	OFF	OFF	ON	ON	OFF	OFF	ON	ON	OFF	OFF
SW5	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF

YKD2811M Current Setting

Current RMS	1.0	1.5	2.0	2.5	3.0	3.3	3.6	4.0	4.3	4.6	5.0	5.3	5.6	6.0	7.0	8.0
Current Peak	1.4	2.1	2.8	3.5	4.2	4.6	5.0	5.6	6.0	6.4	7.0	7.4	7.8	8.4	9.8	11.2
SW4	ON	ON	ON	ON	ON	ON	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
SW3	ON	ON	ON	ON	OFF	OFF	OFF	OFF	ON	ON	ON	ON	OFF	OFF	OFF	OFF
SW2	ON	ON	OFF	OFF	ON	ON	OFF	OFF	ON	ON	OFF	OFF	ON	ON	OFF	OFF
SW1	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF

Terminal Introduction

Symbol	Function	Specification
PWR	Power indicator	When power on, the green indicator lights up. When there is a pulse input, the light flashes.
O. C	Fault indicator	When over current, under voltage or over voltage, the red indicator lights up.
PU+24V/5V	Pulse signal +(24V/5V)	Connect to 24V/5V power supply
PU−	SW15=OFF, it's pulse signal	Effects on falling edge, the motor moves a step when pulse goes from high to low. It requires: When connect with 5V PU+, low level 0~0.5V, high level 4~5V; when connect with 24V PU+, low level 0~0.5V, high level 20~24V. Pulse width >2.5us, effective edge can be selected by DP14 in pulse/direction control mode
	SW15=ON, it's CW pulse signal	
DR+24V/5V	Pulse signal +(24V/5V)	Connect to 24V/5V power supply
DR−	SW15=OFF, it's direction control signal	Effects on falling edge, the motor moves a step when pulse goes from high to low. It requires: When connect with 5V PU+, low level 0~0.5V, high level 4~5V; when connect with 24V PU+, low level 0~0.5V, high level 20~24V. Pulse width >2.5us.
	SW15=ON, it's CCW pulse signal	Used to change motor direction. It requires: When connect with 5V PU+, low level 0~0.5V, high level 4~5V; when connect with 24V PU+, low level 0~0.5V, high level 20~24V.
MF+24V/5V	Pulse signal +(24V/5V)	Connect to 24V/5V power supply
MF−	Motor free signal	When effective (low level), the motor coil current is turned off and motor free.
FL+	Fault output signal +	FL+ connect to the output current limiting resistor
FL−	Fault output signal -	FL- connect to the output GND, maximum drive current 50mA, and maximum voltage 50V.
TM+/TM−	Home output signal +/-	TM+ connect with the resistor, TM- connect to output GND. Maximum drive current 50mA, and maximum voltage 50V.
AC	Power supply	AC80~110V
+A, −A	Motor connection	
+B, −B		

Notice

1. Input voltage should not exceed AC110V.
2. When overcurrent, overvoltage or undervoltage, the O.C light flashes, please restart the power supply after eliminating motor connection and other short-circuit faults.
3. The green PWR indicator lights up when the drive is powered on.
4. When there is a pulse input, the PWR indicator flashes; when there is no pulse input, the PWR indicator is always on.

YKD2822M 2 Phase DSP Stepper Drive

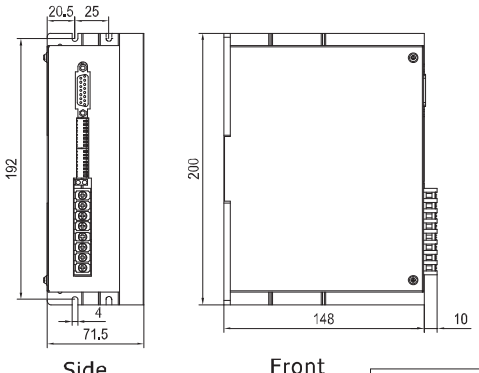
Features

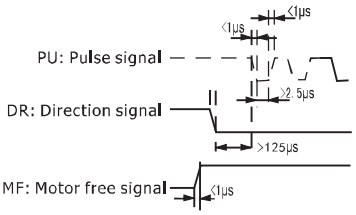
- 32-bit DSP control, low noise and superior vibration performance
- Excellent smoothness in low frequency microsteps
- 16 constant torque microstep setting, up to 125 microsteps
- Parameters can be set according to the motor model
- With pulse microstep function, the motor runs more smoothly
- Pulse filter frequency can be selected according to speed and microstep
- Flexible matching of the pulse control side of the host computer
- Motor lock current is adjustable in 4 grades. When the pulse stops over 500ms, the current is reduced to the lock current.
- The highest pulse response frequency is 400KHz
- With over voltage, under voltage etc. fault protection
- Voltage input range: AC110~220V, maximum effective current 8A
- Volume 200*148*71.5 (mm³), weight 0.8kg
- Suitable for 86-130mm(NEMA34-57) 2 phase open-loop stepper motors.

Application: Mainly used in CNC machine tools, engraving machines, packaging equipment, woodworking machinery, laser cutting machines, textile equipment, ceramic equipment, electronic equipment constant speed applications

Dimensions

Dimensions (mm)





Lock current setting

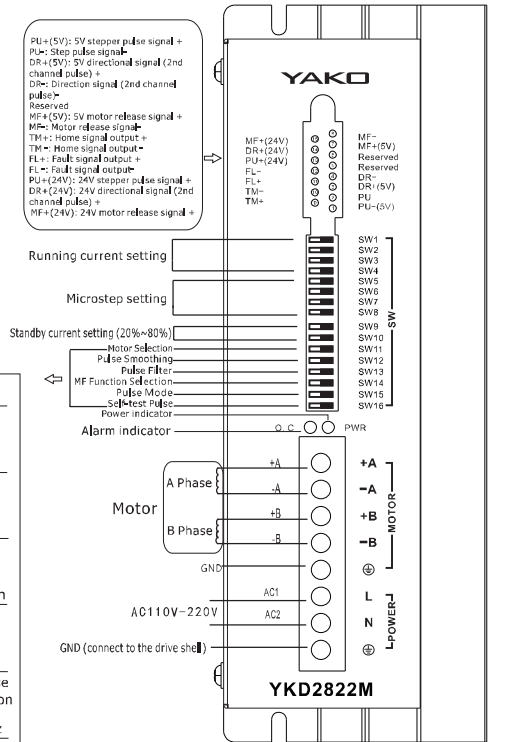
Idle	SW9	SW10
20%	ON	ON
40%	OFF	ON
60%	ON	OFF
80%	OFF	OFF

Alarm Indicator Setting

Motor free	Green light always on
Motor enable	Green light flashes
Undervoltage	2 Flashes/3 seconds
Overvoltage	3 Flashes/3 seconds
Overcurrent	4 Flashes/3 seconds

SW11	Motor Selection	
	ON	86mm
	OFF	110/130mm
SW12	Pulse Smoothing	
	ON	Forbid
	OFF	Enable
SW13	Pulse Filter	
	ON	400k
	OFF	100k
SW14	MF Function Selection	
	ON	Off pulse
	OFF	Off current
SW15	Pulse Mode	
	ON	CW/CCW Pulse
	OFF	Pulse/Direction
SW16	Self-test Pulse 4.5KHz	
	ON	Enable
	OFF	Forbid

Drive Wiring Diagram



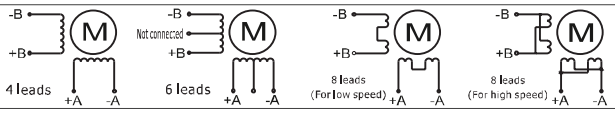
YKD2822M Microstep Setting

Microstep	1	2	4	8	16	32	64	128	5	10	20	25	40	50	100	125
PU/Rev	Default (200)	400	800	1600	3200	6400	12800	25600	1000	2000	4000	5000	8000	10000	20000	25000
SW8	ON	ON	ON	ON	ON	ON	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
SW7	ON	ON	ON	ON	OFF	OFF	OFF	OFF	ON	ON	ON	ON	OFF	OFF	OFF	OFF
SW6	ON	ON	OFF	OFF	ON	ON	OFF	OFF	ON	ON	OFF	OFF	ON	ON	OFF	OFF
SW5	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF

YKD2822M Current Setting

Current RMS	1.0	1.5	2.0	2.5	3.0	3.3	3.6	4.0	4.3	4.6	5.0	5.3	5.6	6.0	7.0	8.0
Current Peak	1.4	2.1	2.8	3.5	4.2	4.6	5.0	5.6	6.0	6.4	7.0	7.4	7.8	8.4	9.8	11.2
SW4	ON	ON	ON	ON	ON	ON	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
SW3	ON	ON	ON	ON	OFF	OFF	OFF	OFF	ON	ON	ON	ON	OFF	OFF	OFF	OFF
SW2	ON	ON	OFF	OFF	ON	ON	OFF	OFF	ON	ON	OFF	OFF	ON	ON	OFF	OFF
SW1	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF

Terminal Introduction

Symbol	Function	Specification
PWR	Power indicator	When power on, the green indicator lights up. When there is a pulse input, the green indicator light flashes.
O. C	Fault indicator	When over current, under voltage or over voltage, the red indicator lights up.
PU+24V/5V	Input signal + (24V/5V)	Connect to 24V/5V power supply
PU−	SW15=ON, it's CW pulse signal	Effects on falling edge, the motor moves a step when pulse goes from high to low. It requires: When connect with 5V PU+, low level 0~0.5V, high level 4~5V; when connect with 24V PU+, low level 0~0.5V, high level 20~24V. Pulse width >2.5us, effective edge can be selected by DP14 in pulse/direction control mode
	SW15=OFF, it's pulse signal	
DR+24V/5V	Input signal + (24V/5V)	Connect to 24V/5V power supply
DR−	SW15=ON, it's CCW pulse signal	Effects on falling edge, the motor moves a step when pulse goes from high to low. It requires: When connect with 5V PU+, low level 0~0.5V, high level 4~5V; when connect with 24V PU+, low level 0~0.5V, high level 20~24V. Pulse width >2.5us.
	SW15=OFF, it's direction control signal	Used to change motor direction. It requires: When connect with 5V PU+, low level 0~0.5V, high level 4~5V; when connect with 24V PU+, low level 0~0.5V, high level 20~24V.
MF+24V/5V	Input signal + (24V/5V)	Connect to 24V/5V power supply
MF−	Motor free signal -	When effective (low level), the motor coil current is turned off and motor free.
FL+	Fault output signal +	FL+ connect to the output current limiting resistor
FL−	Fault output signal -	FL- connect to the output GND, maximum drive current 50mA, and maximum voltage 50V.
TM+/TM−	Home output signal +/-	TM+ connect with the resistor, TM- connect to output GND. Maximum drive current 50mA, and maximum voltage 50V.
AC	Power supply	AC110−220V
+A, −A	Motor connection	
+B, −B		

Notice

1. Input voltage should not exceed AC220V.
2. When overcurrent, overvoltage or undervoltage, the O.C light flashes, please restart the power supply after eliminating motor connection and other short-circuit faults.
3. The green PWR indicator lights up when the drive is powered on.
4. When there is a pulse input, the PWR indicator flashes; when there is no pulse input, the PWR indicator is always on.

YKD3505M 3 Phase DSP Stepper Drive

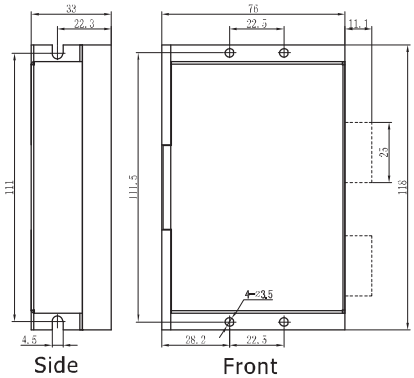
Features

- 32-bit DSP control, low noise and superior vibration performance
- 8 constant torque microstep setting, up to 50 microsteps
- Smooth and accurate current control, effectively reduce motor heating
- The highest pulse response frequency is 200KHz
- When the pulse stops over 400ms, the motor current is halved
- Excellent smoothness in low frequency microsteps
- Optically isolated differential signal input, strong anti-interference ability
- Drive current is adjustable below 5.7A
- Voltage input range: DC20~50V
- With over voltage, under voltage etc. fault protection
- Small size, volume 151*94*54 (mm³), weight 0.65kg
- Suitable for 42-86mm(NEMA17-34) 3 phase open-loop stepper motors.

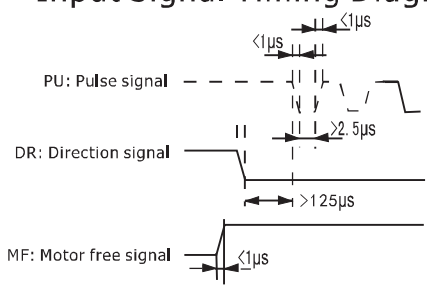
Application: Mainly used in laser cutting machine, laser welding machine, laser marking machine, locking screw machine, medical equipment, robot, dispensing machine, electronic equipment, engraving machine

Dimensions

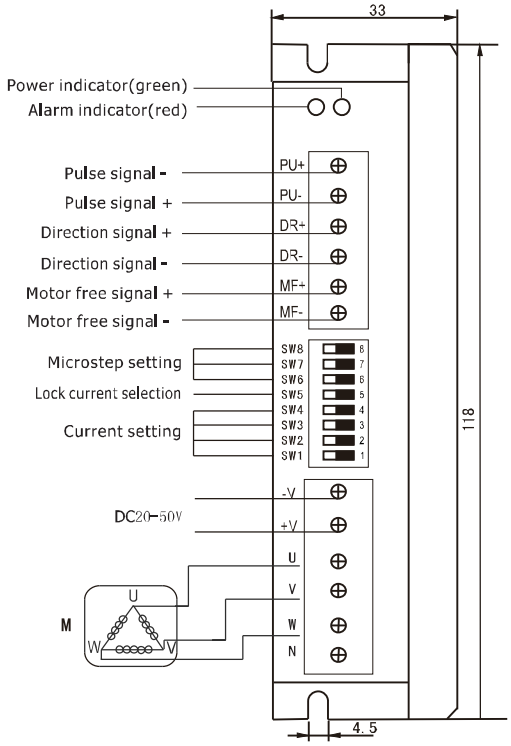
Dimensions (mm)



Input Signal Timing Diagram



Drive Wiring Diagram



YKD3505M Microstep Setting

PU/Rev	Default	6400	500	1000	2000	4000	5000	10000
SW8	ON	ON	ON	ON	OFF	OFF	OFF	OFF
SW7	ON	ON	OFF	OFF	ON	ON	OFF	OFF
SW6	ON	OFF	ON	OFF	ON	OFF	ON	OFF

SW5:OFF=Half Current
ON=Full Current

YKD3505M Current Setting

Current RMS	Default	1.8	2.1	2.3	2.6	2.9	3.2	3.5	3.8	4.1	4.4	4.6	4.9	5.2	5.5	5.7
Current Peak	Default	2.5	2.9	3.2	3.6	4.0	4.5	4.9	5.3	5.7	6.2	6.4	6.9	7.3	7.7	8.0
SW4	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON	ON	ON	ON	ON	ON	ON
SW3	OFF	OFF	OFF	OFF	ON	ON	ON	ON	OFF	OFF	OFF	OFF	ON	ON	ON	ON
SW2	OFF	OFF	ON	ON	OFF	OFF	ON	ON	OFF	OFF	ON	ON	OFF	OFF	ON	ON
SW1	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON

Terminal Introduction

Symbol	Function	Specification
PWR	Power indicator	When power on, the green indicator lights up.
ALARM	Fault indicator	When over current, under voltage or over voltage, the red indicator lights up.
PU+	Pulse signal +	Connect with the signal power supply, 5V~24V can drive, need to connect a current limiting resistor with PU- when >5V
PU-	Pulse signal -	Effects on falling edge, the motor moves a step when the pulse goes from high to low. The input resistance is 220Ω. It requires: low level 0~0.5V, high level 4~5V, pulse width>2.5us.
DR+	Direction signal +	Connect with the signal power supply, 5V~24V can drive, need to connect a current limiting resistor with DR- when >5V
DR-	Direction signal -	Used to change motor direction, requirements: low level 0~0.5V, high level 4~5V, pulse width>2.5us.
MF+	Motor free signal +	Connect with the signal power supply, 5V~24V can drive, need to connect a current limiting resistor with MF- when >5V
MF-	Motor free signal -	When effective (low level), the motor coil current is turned off and motor free.
-V	Power supply -	DC20-50V
+V	Power supply +	
U	Motor connection	
V		
W		
Reserved	N	Reserved

Notice

1. Do not reverse the power supply, input voltage should not exceed DC50V.
2. The input control signal level is 5V. The current limiting resistor needs to be connected when > 5V. (Please refer to page 4 for connection)
3. When the ALARM light is on, please check after power off:
   (1) The power supply voltage < DC20V or > DC50V
   (2) Restart the power supply after eliminating motor connection and other short-circuit faults.
4. The green PWR indicator lights up when the drive is powered on.

YKD3506M 3 Phase DSP Stepper Drive

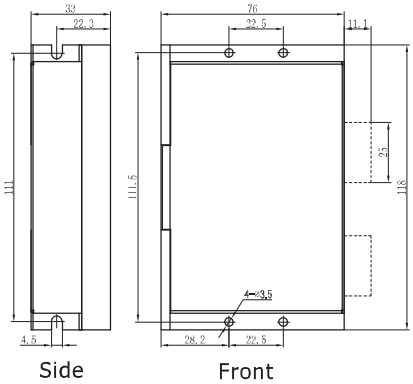
Features

- 32-bit DSP control, low noise and superior vibration performance
- 16 constant torque microstep setting, up to 200 microsteps
- Smooth and accurate current control, effectively reduce motor heating
- The highest pulse response frequency is 200KHz
- When the pulse stops over 200ms, the motor current is halved
- Excellent smoothness in low frequency microsteps
- Optically isolated differential signal input, strong anti-interference ability
- Drive current is adjustable below 5.5A
- Voltage input range: DC20~50V
- With over voltage, under voltage etc. fault protection
- Small size, volume 118*76*33 (mm³), weight 0.6kg
- Suitable for 42-86mm(NEMA17-34) 3 phase open-loop stepper motors

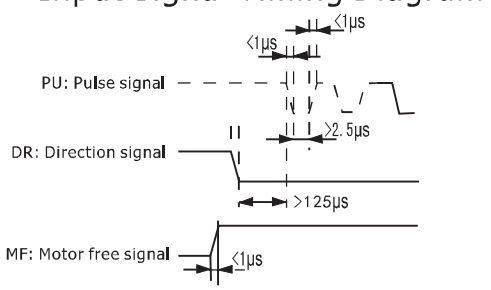
Application: Mainly used in laser cutting machine, laser welding machine, laser marking machine, locking screw machine, medical equipment, robot, dispensing machine, electronic equipment, engraving machine

Dimensions

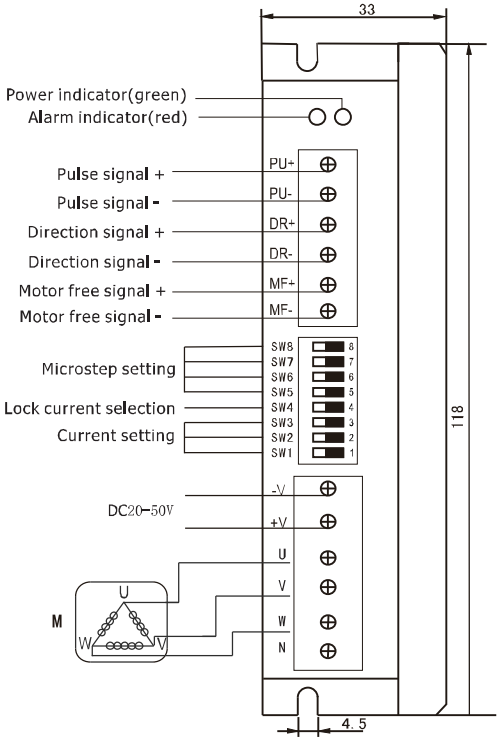
Dimensions (mm)



Input Signal Timing Diagram



Drive Wiring Diagram



YKD3506M Microstep Setting

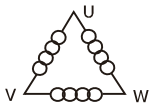
PU/Rev	Default	400	800	1600	3200	6400	12800	25600	1000	2000	4000	5000	8000	10000	20000	40000
SW8	ON	ON	ON	ON	ON	ON	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
SW7	ON	ON	ON	ON	OFF	OFF	OFF	OFF	ON	ON	ON	ON	OFF	OFF	OFF	OFF
SW6	ON	ON	OFF	OFF	ON	ON	OFF	OFF	ON	ON	OFF	OFF	ON	ON	OFF	OFF
SW5	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF

SW4 :OFF=Half Current
ON=Full Current

YKD3506M Current Setting

Current RMS	1.6	2.3	2.6	3.2	3.9	4.5	4.9	5.5
Current Peak	2.3	3.2	3.6	4.5	5.5	6.4	6.8	7.7
SW3	ON	ON	ON	ON	OFF	OFF	OFF	OFF
SW2	ON	ON	OFF	OFF	ON	ON	OFF	OFF
SW1	ON	OFF	ON	OFF	ON	OFF	ON	OFF

Terminal Introduction

Symbol	Function	Specification
PWR	Power indicator	When power on, the green indicator lights up.
ALARM	Fault indicator	When over current, under voltage or over voltage, the red indicator lights up.
PU+	Pulse signal +	Connect with the signal power supply, 5V~24V can drive, need to connect a current limiting resistor with PU- when >5V
PU-	Pulse signal -	Effects on falling edge, the motor moves a step when the pulse goes from high to low. The input resistance is 220Ω. It requires: low level 0~0.5V, high level 4~5V, pulse width>2.5us.
DR+	Direction signal +	Connect with the signal power supply, 5V~24V can drive, need to connect a current limiting resistor with DR- when >5V
DR-	Direction signal -	Used to change motor direction, requirements: low level 0~0.5V, high level 4~5V, pulse width>2.5us.
MF+	Motor free signal +	Connect with the signal power supply, 5V~24V can drive, need to connect a current limiting resistor with MF- when >5V
MF-	Motor free signal -	When effective (low level), the motor coil current is turned off and motor free.
-V	Power supply -	DC20-50V
+V	Power supply +	
U	Motor connection	
V		
W		
N	Reserved	

Notice

1. Do not reverse the power supply, input voltage should not exceed DC50V.
2. The input control signal level is 5V. The current limiting resistor needs to be connected when > 5V. (Please refer to page 4 for connection)
3. When the ALARM light is on, please check after power off:
   (1) The power supply voltage < DC20V or > DC50V
   (2) Restart the power supply after eliminating motor connection and other short-circuit faults.
4. The green PWR indicator lights up when the drive is powered on.

YKD3606M 3 Phase DSP Stepper Drive

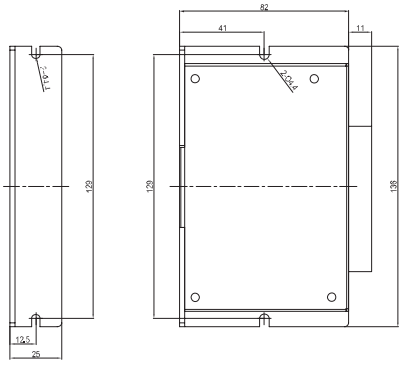
Features

- 32-bit DSP control, low noise and superior vibration performance
- 16 constant torque microstep setting, up to 200 microsteps
- Smooth and accurate current control, effectively reduce motor heating
- The highest pulse response frequency is 200Kpps
- When the pulse stops over 400ms, the motor current is halved
- Excellent smoothness in low frequency microsteps
- Optically isolated differential signal input, strong anti-interference ability
- Drive current is adjustable below 5.9A
- Voltage input range: DC20~60V
- With over voltage, under voltage etc. fault protection
- Small size, volume 136*82*65 (mm³), weight 0.65kg
- Suitable for 42-86mm(NEMA17-34) 3 phase open-loop stepper motors.

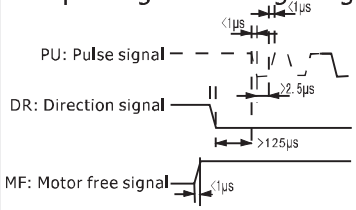
Application: Mainly used in CNC machine tools, engraving machines, packaging equipment, woodworking machinery, laser cutting machines, textile equipment, ceramic equipment, electronic equipment constant speed applications

Dimensions

Dimensions (mm)



Input Signal Timing Diagram

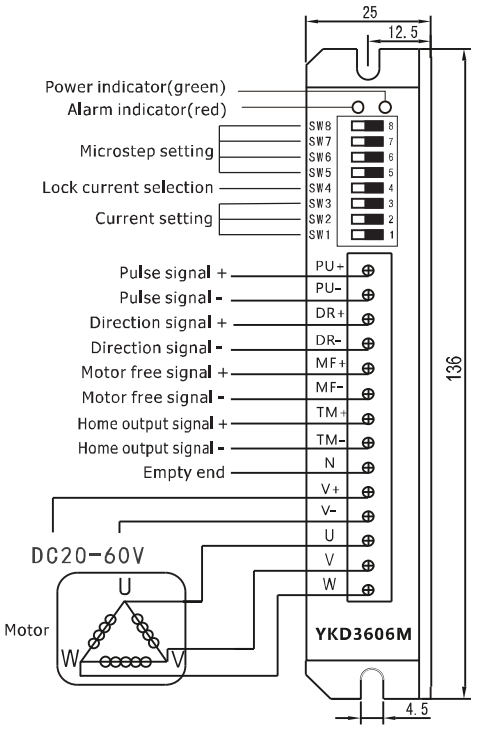


Alarm Indicator Setting

Overcurrent	1 Flashes/3 seconds
Overvoltage	2 Flashes/3 seconds
Undervoltage	3 Flashes/3 seconds

SW9	Motor Selection	
	ON	86mm
	OFF	57mm
S W10	Pulse Smoothing	
	ON	Enable
	OFF	Forbid
S W11	Pulse Filter	
	ON	400k
	OFF	100k
SW12	Pulse Mode	
	ON	CW/CCW Pulse
	OFF	Pulse/Direction

Drive Wiring Diagram



YKD3606M Microstep Setting

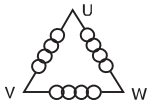
PU/Rev	400	500	600	800	1000	1200	2000	3000	4000	5000	6000	10000	12000	20000	30000	60000
SW8	ON	ON	ON	ON	ON	ON	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
SW7	ON	ON	ON	ON	OFF	OFF	OFF	OFF	ON	ON	ON	ON	OFF	OFF	OFF	OFF
SW6	ON	ON	OFF	OFF	ON	ON	OFF	OFF	ON	ON	OFF	OFF	ON	ON	OFF	OFF
SW5	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF

SW4 :OFF=Half Current
ON=Full Current

YKD3606M Current Setting

Current RMS	Default	2.3A	2.9A	3.5A	4.1A	4.6A	5.2A	5.9A
Current Peak	Default	3.2A	4.0A	4.9A	5.7A	6.4A	7.3A	8.3A
SW3	ON	ON	ON	ON	OFF	OFF	OFF	OFF
SW2	ON	ON	OFF	OFF	ON	ON	OFF	OFF
SW1	ON	OFF	ON	OFF	ON	OFF	ON	OFF

Terminal Introduction

Symbol	Function	Specification
PWR	Power indicator	When power on, the green indicator lights up.
ALM	Fault indicator	When over current, under voltage or over voltage, the red indicator lights up.
PU+	Pulse signal +	Connect with the signal power supply, 5V~24V can drive, need to connect a current limiting resistor with PU- when >5V
PU-	SW12=OFF, it's pulse signal	Effects on falling edge, the motor moves a step when the pulse goes from high to low. The input resistance is 220Ω. It requires: low level 0~0.5V, high level 4~5V, pulse width>2.5us.
	SW12=ON, it's CW pulse signal	
DR+	Input signal +	Connect with the signal power supply, 5V~24V can drive, need to connect a current limiting resistor with DR- when >5V
DR-	SW12=OFF, it's direction control signal	Used to change motor direction, requirements: low level 0~0.5V, high level 4~5V
	SW12=ON, it's CCW pulse signal	Effects on falling edge, the motor moves a step when the pulse goes from high to low. The input resistance is 220Ω. It requires: low level 0~0.5V, high level 4~5V, pulse width>2.5us.
MF+	Input signal +	Connect with the signal power supply, 5V~24V can drive, need to connect a current limiting resistor with MF- when >5V
MF-	Motor free signal	When effective (low level), the motor coil current is turned off and motor free.
TM+	Home output signal +	The motor coil is energized at the origin to be active; opto-isolated output (high level)
TM-	Home output signal -	TM+ connect with the resistor, TM- connect to output GND. Maximum drive current 50mA, and maximum voltage 50V.
+V	Power supply +	DC20-60V
-V	Power supply -	
U	Motor connection	
V		
W		

Notice

1. Do not reverse the power supply, input voltage should not exceed DC60V.
2. The input control signal level is 5V. The current limiting resistor needs to be connected when > 5V. (Please refer to page 4 for connection)
3. When overcurrent, overvoltage or undervoltage, the O.C light flashes, please restart the power supply after eliminating motor connection and other short-circuit faults.
4. The green PWR indicator lights up when the drive is powered on.

YKD3608MH 3 Phase DSP Stepper Drive

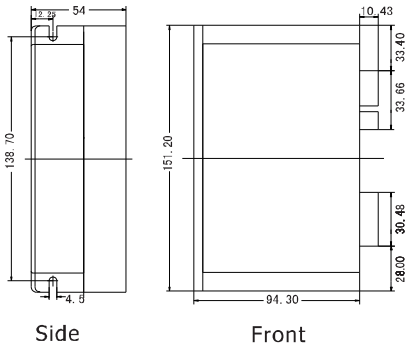
Features

- 32-bit DSP control, low noise and superior vibration performance
- 16 constant torque microstep, the highest resolution is 60000 steps/rev.
- Smooth and accurate current control, effectively reduce motor heating
- The highest pulse response frequency is 350Kpps
- When the pulse stops over 200ms, the motor current is halved
- Excellent smoothness in low frequency microsteps
- Optically isolated differential signal input, strong anti-interference ability
- Drive current is adjustable below 5.9A
- Voltage input range: AC18~80V
- With over voltage, under voltage etc. fault protection
- Small size, volume 151*94*54 (mm³), weight 0.65kg
- Suitable for 57-86mm(NEMA23-34) 3 phase open-loop stepper motors.

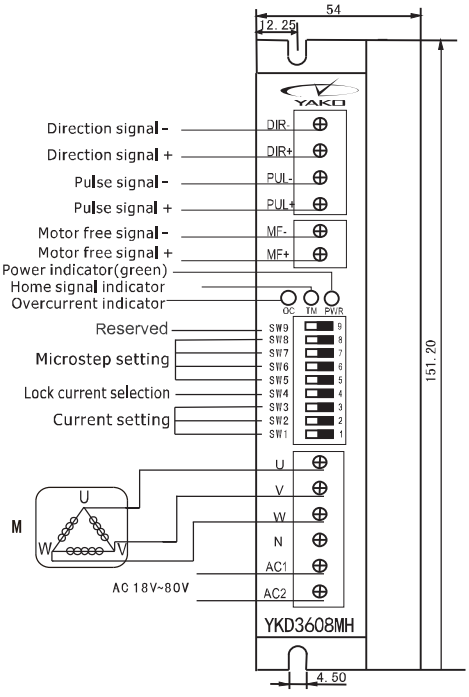
Application: Mainly used in engraving machines, laser equipment, labeling machines, electronic equipment, advertising equipment, packaging equipment

Dimensions

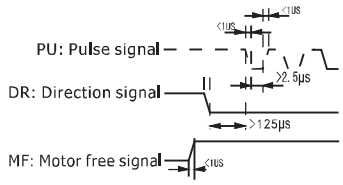
Dimensions (mm)



Drive Wiring Diagram



Input Signal Timing Diagram



YKD3608MH Microstep Setting

PU/REV	400	500	600	800	1000	1200	2000	3000	4000	5000	6000	10000	12000	20000	30000	60000
SW5	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF
SW6	ON	ON	OFF	OFF	ON	ON	OFF	OFF	ON	ON	OFF	OFF	ON	ON	OFF	OFF
SW7	ON	ON	ON	ON	OFF	OFF	OFF	OFF	ON	ON	ON	ON	OFF	OFF	OFF	OFF
SW8	ON	ON	ON	ON	ON	ON	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF

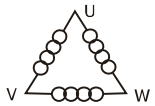
SW9 : Reserved

YKD3608MH Current Setting

Current RMS	Default	2.3	2.9	3.5	4.1	4.6	5.2	5.9
Current Peak	Default	3.2	4.0	4.9	5.7	6.4	7.3	8.3
SW3	ON	ON	ON	ON	OFF	OFF	OFF	OFF
SW2	ON	ON	OFF	OFF	ON	ON	OFF	OFF
SW1	ON	OFF	ON	OFF	ON	OFF	ON	OFF

SW4:OFF=Half Current
ON=Full Current

Terminal Introduction

Symbol	Function	Specification
PWR	Power indicator	When power on, the green indicator lights up.
TM	Work indicator	Pulse signal indicator, when there is continuous pulse input, the green indicator light flashes; when there is no pulse input, it is always on
O.C	Fault indicator	When over current or under voltage, the red indicator lights up.
DIR-	Direction signal +	Effects on falling edge, the motor moves a step when pulse goes from high to low. The input resistance is 220Ω. It requires: low level 0~0.5V, high level 4~5V, pulse width>2.5us.
DIR+	Direction signal -	Connect with the signal power supply, 5V~24V can drive, need to connect a current limiting resistor with DR- when >5V
PUL-	Pulse signal -	Effects on falling edge, the motor moves a step when pulse goes from high to low. The input resistance is 220Ω. It requires: low level 0~0.5V, high level 4~5V, pulse width>2.5us.
PUL+	Pulse signal +	Connect with power supply, 5V~24V can drive, need to connect a current limiting resistor with PUL- when >5V
MF-	Motor free signal -	When effective (low level), the motor coil current is turned off and motor free.
MF+	Motor free signal +	Connect with power supply, 5V~24V can drive, need to connect a current limiting resistor when >5V
+V	Power supply +	AC18-80V
-V	Power supply -	
U	Motor connection	
V		
W		

Notice

1. Do not reverse the power supply, input voltage should not exceed AC80V.
2. The input control signal level is 5V. The current limiting resistor needs to be connected when > 5V. (Please refer to page 4 for connection)
3. When overcurrent, overvoltage or undervoltage, the O.C light flashes, please restart the power supply after eliminating motor connection and other short-circuit faults.
4. The green PWR indicator lights up when the drive is powered on.
5. When there is a pulse input, the TM indicator flashes; when there is no pulse input, the TM indicator is always on.

YKD3422M 3 Phase DSP Stepper Drive

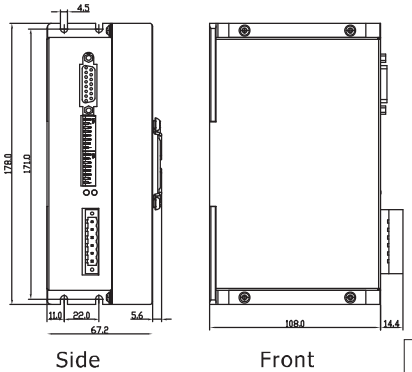
Features

- 32-bit DSP control, low noise and superior vibration performance
- Excellent smoothness in low frequency microsteps
- 16 constant torque microstep, positioning accuracy up to 60000 steps/rev.
- Parameters can be set according to the motor model
- With pulse microstep function, the motor runs more smoothly
- Pulse filter frequency can be selected according to speed and microstep
- Flexible matching of the pulse control side of the host computer
- Motor lock current is adjustable in 4 grades. When the pulse stops over 400ms, the current is reduced to the lock current.
- The highest pulse response frequency is 400KHz
- With over voltage, under voltage etc. fault protection
- Voltage input range: AC110~220V, maximum effective current 4.2A
- Volume 200*148*71.5 (mm³), weight 1.5kg
- Suitable for 86-110mm(NEMA34-42) 3 phase open-loop stepper motors.

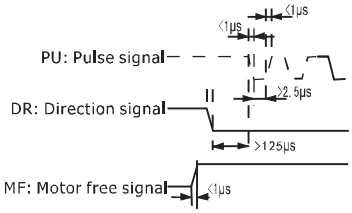
Application: Mainly used in CNC machine tools, engraving machines, packaging equipment, woodworking machinery, laser cutting, textile equipment, ceramic equipment, electronic equipment constant speed applications

Dimensions

Dimensions (mm)



Side Front



Lock current setting

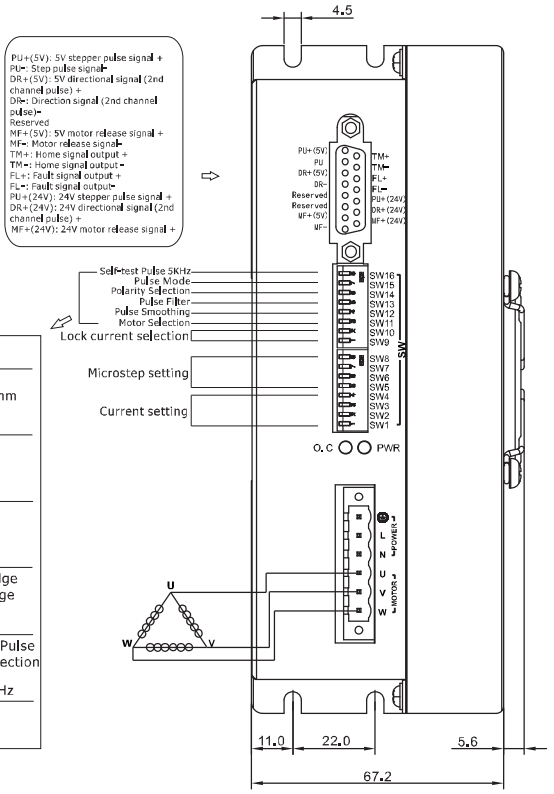
Idle	SW9	SW10
20%	ON	ON
40%	OFF	ON
60%	ON	OFF
80%	OFF	OFF

Alarm Indicator Setting

Motor free	Green light always on
Motor enable	Green light flashes
Undervoltage	3 Flashes/3 seconds
Overvoltage	2 Flashes/3 seconds
Overcurrent	1 Flashes/3 seconds

SW11	Motor Selection	
	ON	86mm
	OFF	110/130mm
SW12	Pulse Smoothing	
	ON	Forbid
	OFF	Enable
SW13	Pulse Filter	
	ON	400k
	OFF	100k
SW14	Polarity Selection	
	ON	Falling Edge
	OFF	Rising Edge
SW15	Pulse Mode	
	ON	CW/CCW Pulse
	OFF	Pulse/Direction
SW16	Self-test Pulse 5KHz	
	ON	Enable
	OFF	Forbid

Drive Wiring Diagram



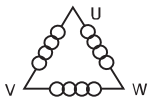
YKD3422M Microstep Setting

PU/Rev	400	500	600	800	1000	1200	2000	3000	4000	5000	6000	10000	12000	20000	30000	60000
SW8	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON	ON	ON	ON	ON	ON	ON
SW7	OFF	OFF	OFF	OFF	ON	ON	ON	ON	OFF	OFF	OFF	OFF	ON	ON	ON	ON
SW6	OFF	OFF	ON	ON	OFF	OFF	ON	ON	OFF	OFF	ON	ON	OFF	OFF	ON	ON
SW5	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON

YKD3422M Current Setting

Current RMS	0.6	0.8	1.1	1.4	1.6	1.9	2.1	2.3	2.6	2.8	3.0	3.2	3.5	3.7	4.0	4.2
SW4	ON	ON	ON	ON	ON	ON	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
SW3	ON	ON	ON	ON	OFF	OFF	OFF	OFF	ON	ON	ON	ON	OFF	OFF	OFF	OFF
SW2	ON	ON	OFF	OFF	ON	ON	OFF	OFF	ON	ON	OFF	OFF	ON	ON	OFF	OFF
SW1	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF

Terminal Introduction

Symbol	Function	Specification
PWR	Power indicator	When power on, the green indicator lights up.
O. C	Fault indicator	When over current, under voltage or over voltage, the red indicator lights up.
PU+24V/5V	Input signal + (24V/5V)	Connect to 24V/5V power supply
PU−	SW15=ON, it's CW pulse signal	Effects on falling edge, the motor moves a step when pulse goes from high to low. It requires: When connect with 5V PU+, low level 0~0.5V, high level 4~5V; when connect with 24V PU+, low level 0~0.5V, high level 20~24V. Pulse width >2.5us, effective edge can be selected by DP14 in pulse/direction control mode
	SW15=OFF, it's pulse signal	
DR+24V/5V	Input signal + (24V/5V)	Connect to 24V/5V power supply
DR−	SW15=ON, it's CCW pulse signal	Effects on falling edge, the motor moves a step when pulse goes from high to low. It requires: When connect with 5V PU+, low level 0~0.5V, high level 4~5V; when connect with 24V PU+, low level 0~0.5V, high level 20~24V. Pulse width >2.5us.
	SW15=OFF, it's direction control signal	Used to change motor direction. It requires: When connect with 5V PU+, low level 0~0.5V, high level 4~5V; when connect with 24V PU+, low level 0~0.5V, high level 20~24V.
MF+24V/5V	Input signal + (24V/5V)	Connect to 24V/5V signal power supply
MF−	Motor free signal	When effective (low level), the motor coil current is turned off and motor free.
FL+	Fault output signal +	FL+ connect to the output current limiting resistor
FL−	Fault output signal -	FL- connect to the output GND, maximum drive current 50mA, and maximum voltage 50V.
TM+/TM−	Home output signal +/-	TM+ connect with the resistor, TM- connect to output GND. Maximum drive current 50mA, and maximum voltage 50V.
AC	Power supply -	AC110-220V
U	Motor connection	
V		
W		

Notice

1. Input voltage should not exceed AC220V.
2. When overcurrent, overvoltage or undervoltage, the O.C light flashes, please restart the power supply after eliminating motor connection and other short-circuit faults.

YKD3522M 3 Phase DSP Stepper Drive

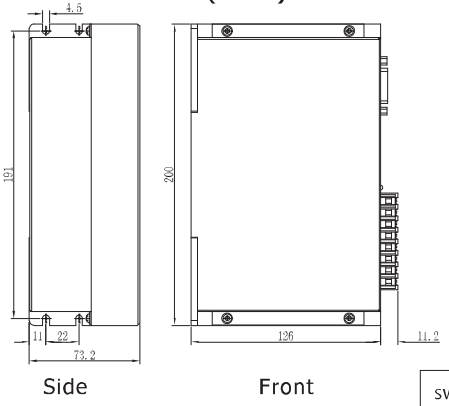
Features

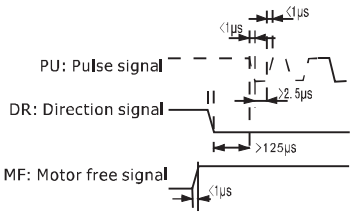
- 32-bit DSP control, low noise and superior vibration performance
- Excellent smoothness in low frequency microsteps
- 16 constant torque microstep, positioning accuracy up to 60000 steps/rev.
- Parameters can be set according to the motor model
- With pulse microstep function, the motor runs more smoothly
- Pulse filter frequency can be selected according to speed and microstep
- Flexible matching of the pulse control side of the host computer
- Motor lock current is adjustable in 4 grades. When the pulse stops over 400ms, the current is reduced to the lock current.
- The highest pulse response frequency is 400KHz
- With over voltage, under voltage etc. fault protection
- Voltage input range: AC110~220V, maximum effective current 5.0A
- Volume 200*126*73.2 (mm³), weight 1.8kg
- Suitable for 86-130mm(NEMA34-57) 3 phase open-loop stepper motors

Application: Mainly used in CNC machine tools, engraving machines, packaging equipment, woodworking machinery, laser cutting, textile equipment, ceramic equipment, electronic equipment constant speed applications

Dimensions

Dimensions (mm)





Lock current setting

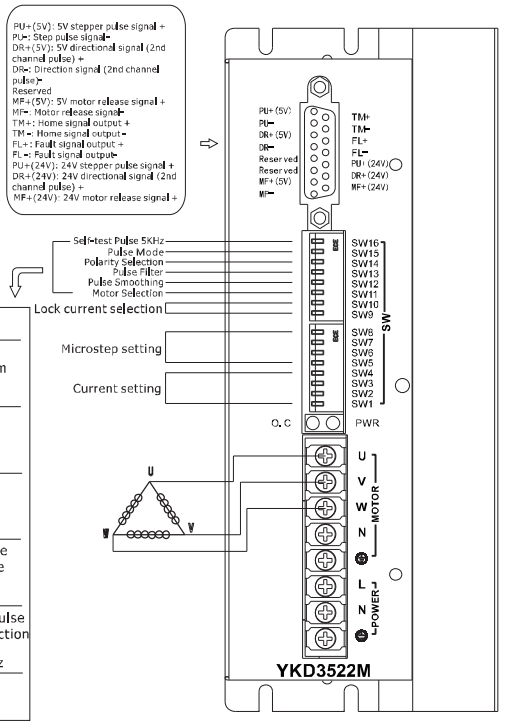
Idle	SW9	SW10
20%	ON	ON
40%	OFF	ON
60%	ON	OFF
80%	OFF	OFF

Alarm Indicator Setting

Motor free	Green light always on
Motor enable	Green light flashes
Undervoltage	3 Flashes/3 seconds
Overvoltage	2 Flashes/3 seconds
Overcurrent	1 Flashes/3 seconds

SW11	Motor Selection	
	ON	86mm
	OFF	110/130mm
SW12	Pulse Smoothing	
	ON	Forbid
	OFF	Enable
SW13	Pulse Filter	
	ON	400k
	OFF	100k
SW14	Polarity Selection	
	ON	Falling Edge
	OFF	Rising Edge
SW15	Pulse Mode	
	ON	CW/CCW Pulse
	OFF	Pulse/Direction
SW16	Self-test Pulse 5KHz	
	ON	Enable
	OFF	Forbid

Drive Wiring Diagram



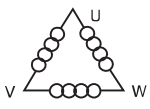
YKD3522M Microstep Setting

PU/Rev	400	500	600	800	1000	1200	2000	3000	4000	5000	6000	10000	12000	20000	30000	60000
SW8	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON	ON	ON	ON	ON	ON	ON
SW7	OFF	OFF	OFF	OFF	ON	ON	ON	ON	OFF	OFF	OFF	OFF	ON	ON	ON	ON
SW6	OFF	OFF	ON	ON	OFF	OFF	ON	ON	OFF	OFF	ON	ON	OFF	OFF	ON	ON
SW5	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON

YKD3522M Current Setting

Current RMS	1.0	1.3	1.6	2.0	2.3	2.5	2.8	3.0	3.2	3.5	3.8	4.0	4.2	4.5	4.8	5.0
SW4	ON	ON	ON	ON	ON	ON	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
SW3	ON	ON	ON	ON	OFF	OFF	OFF	OFF	ON	ON	ON	ON	OFF	OFF	OFF	OFF
SW2	ON	ON	OFF	OFF	ON	ON	OFF	OFF	ON	ON	OFF	OFF	ON	ON	OFF	OFF
SW1	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF

Terminal Introduction

Symbol	Function	Specification
PWR	Power indicator	When power on, the green indicator lights up.
O. C	Fault indicator	When over current, under voltage or over voltage, the red indicator lights up.
PU+24V/5V	Input signal + (24V/5V)	Connect to 24V/5V power supply
PU−	SW15=ON, it's CW pulse signal	Effects on falling edge, the motor moves a step when pulse goes from high to low. It requires: When connect with 5V PU+, low level 0~0.5V, high level 4~5V; when connect with 24V PU+, low level 0~0.5V, high level 20~24V. Pulse width >2.5us, effective edge can be selected by DP14 in pulse/direction control mode
	SW15=OFF, it's pulse signal	
DR+24V/5V	Input signal + (24V/5V)	Connect to 24V/5V power supply
DR−	SW15=ON, it's CCW pulse signal	Effects on falling edge, the motor moves a step when pulse goes from high to low. It requires: When connect with 5V PU+, low level 0~0.5V, high level 4~5V; when connect with 24V PU+, low level 0~0.5V, high level 20~24V. Pulse width >2.5us.
	SW15=OFF, it's direction control signal	Used to change motor direction. It requires: When connect with 5V PU+, low level 0~0.5V, high level 4~5V; when connect with 24V PU+, low level 0~0.5V, high level 20~24V.
MF+24V/5V	Input signal + (24V/5V)	Connect to 24V/5V signal power supply
MF−	Motor free signal	When effective (low level), the motor coil current is turned off and motor free.
FL+	Fault output signal +	FL+ connect to the output current limiting resistor
FL−	Fault output signal -	FL- connect to the output GND, maximum drive current 50mA, and maximum voltage 50V.
TM+/TM−	Home output signal +/-	TM+ connect with the resistor, TM- connect to output GND. Maximum drive current 50mA, and maximum voltage 50V.
AC	Power supply -	AC110-220V
U	Motor connection	
V		
W		

Notice

1. Input voltage should not exceed AC220V.
2. When overcurrent, overvoltage or undervoltage, the O.C light flashes, please restart the power supply after eliminating motor connection and other short-circuit faults.

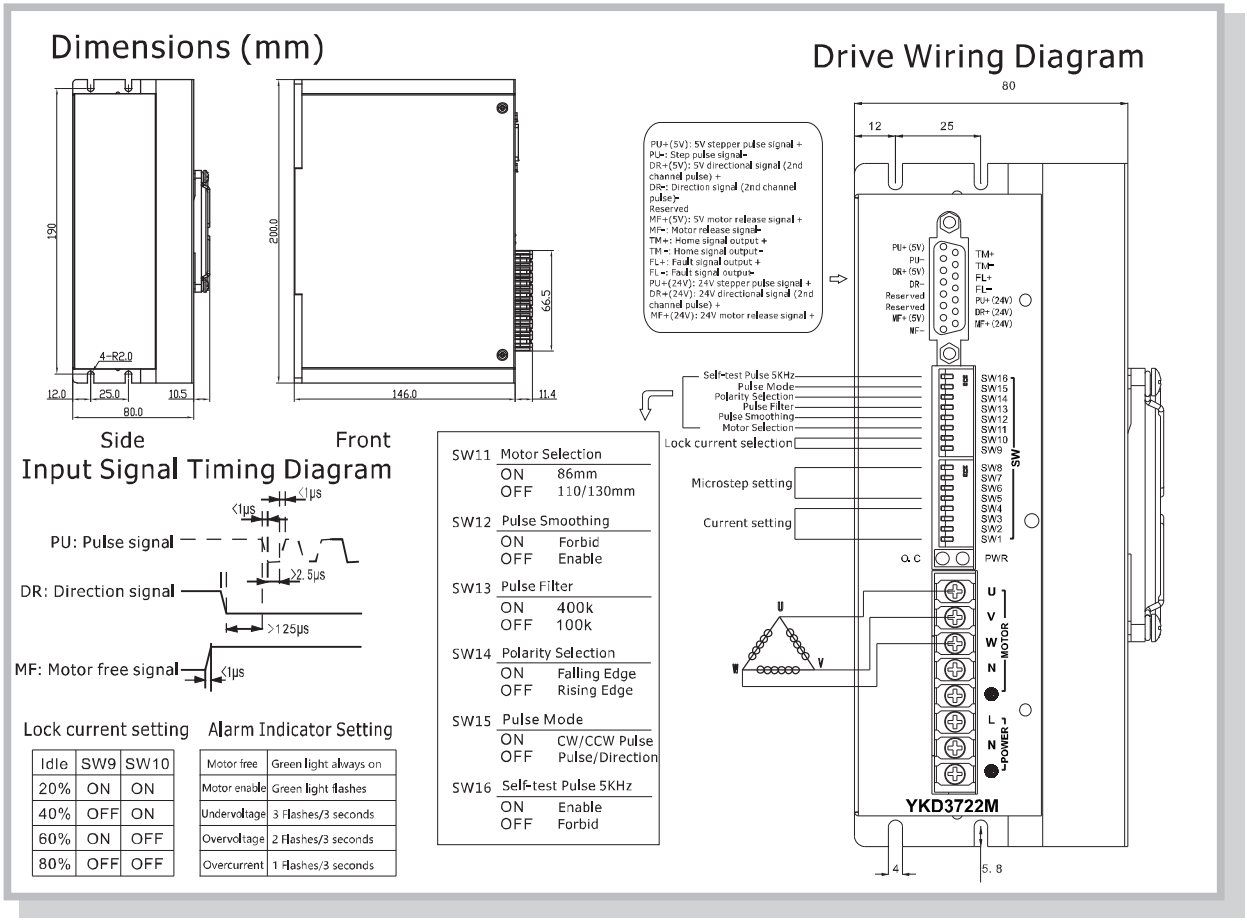
YKD3722M 3 Phase DSP Stepper Drive

Features

- 32-bit DSP control, low noise and superior vibration performance
- Excellent smoothness in low frequency microsteps
- 16 constant torque microstep, positioning accuracy up to 60000 steps/rev.
- Parameters can be set according to the motor model
- With pulse microstep function, the motor runs more smoothly
- Pulse filter frequency can be selected according to speed and microstep
- Flexible matching of the pulse control side of the host computer
- Motor lock current is adjustable in 4 grades. When the pulse stops over 400ms, the current is reduced to the lock current.
- The highest pulse response frequency is 400KHz
- With over voltage, under voltage etc. fault protection
- Voltage input range: AC110~220V, maximum effective current 7.0A
- Volume 200*146*80 (mm³), weight 2.3kg
- Suitable for 86-130mm(NEMA34-57) 3 phase open-loop stepper motors.

Application: Mainly used in CNC machine tools, engraving machines, packaging equipment, woodworking machinery, laser cutting, textile equipment, ceramic equipment, electronic equipment constant speed applications

Dimensions



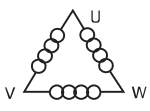
YKD3722M Microstep Setting

PU/Rev	400	500	600	800	1000	1200	2000	3000	4000	5000	6000	10000	12000	20000	30000	60000
SW8	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON	ON	ON	ON	ON	ON	ON
SW7	OFF	OFF	OFF	OFF	ON	ON	ON	ON	OFF	OFF	OFF	OFF	ON	ON	ON	ON
SW6	OFF	OFF	ON	ON	OFF	OFF	ON	ON	OFF	OFF	ON	ON	OFF	OFF	ON	ON
SW5	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON

YKD3722M Current Setting

Current RMS	0.7	1.1	1.6	2.0	2.4	2.8	3.2	3.6	4.0	4.5	5.0	5.4	5.8	6.2	6.6	7.0
SW4	ON	ON	ON	ON	ON	ON	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
SW3	ON	ON	ON	ON	OFF	OFF	OFF	OFF	ON	ON	ON	ON	OFF	OFF	OFF	OFF
SW2	ON	ON	OFF	OFF	ON	ON	OFF	OFF	ON	ON	OFF	OFF	ON	ON	OFF	OFF
SW1	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF

Terminal Introduction

Symbol	Function	Specification
PWR	Power indicator	When power on, the green indicator lights up.
O.C	Fault indicator	When over current, under voltage or over voltage, the red indicator lights up.
PU+24V/5V	Input signal + (24V/5V)	Connect to 24V/5V power supply
PU−	SW15=ON, it's CW pulse signal	Effects on falling edge, the motor moves a step when pulse goes from high to low. It requires: When connect with 5V PU+, low level 0~0.5V, high level 4~5V; when connect with 24V PU+, low level 0~0.5V, high level 20~24V. Pulse width >2.5us, effective edge can be selected by DP14 in pulse/direction control mode
	SW15=OFF, it's pulse signal	
DR+24V/5V	Input signal + (24V/5V)	Connect to 24V/5V power supply
DR−	SW15=ON, it's CCW pulse signal	Effects on falling edge, the motor moves a step when pulse goes from high to low. It requires: When connect with 5V DR+, low level 0~0.5V, high level 4~5V; when connect with 24V DR+, low level 0~0.5V, high level 20~24V. Pulse width >2.5us.
	SW15=OFF, it's direction control signal	Used to change motor direction. It requires: When connect with 5V DR+, low level 0~0.5V, high level 4~5V; when connect with 24V DR+, low level 0~0.5V, high level 20~24V.
MF+24V/5V	Input signal + (24V/5V)	Connect to 24V/5V signal power supply
MF−	Motor free signal	When effective (low level), the motor coil current is turned off and motor free.
FL+	Fault output signal +	FL+ connect to the output current limiting resistor
FL−	Fault output signal -	FL- connect to the output GND, maximum drive current 50mA, and maximum voltage 50V.
TM+/TM−	Home output signal +/-	TM+ connect with the resistor, TM- connect to output GND. Maximum drive current 50mA, and maximum voltage 50V.
AC	Power supply	AC110−220V
U	Motor connection	
V		
W		

Notice

1. Input voltage should not exceed AC220V.
2. When overcurrent, overvoltage or undervoltage, the O.C light flashes, please restart the power supply after eliminating motor connection and other short-circuit faults.

SSD2505M 2 Phase Close-Loop Stepper Drive

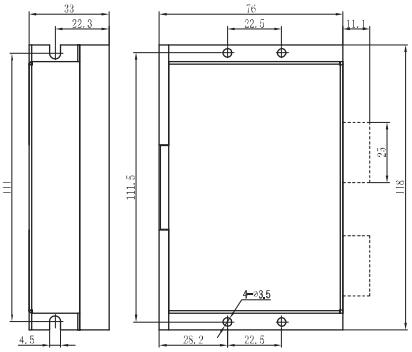
Features

- 32-bit motor control dedicated DSP chip
- Voltage range: DC24-50V, 16 grades microstep setting
- The highest pulse response frequency is 200KHz
- Low torque attenuation, speed up to 3000rpm
- Built-in in position and alarm output for easy monitoring and control
- Current intelligent adjustment, reduce vibration, noise and heat, and increase efficiency by 35%
- With single and double pulse selection function, default setting: pulse + direction control
- Excellent high-speed performance and rigidity, perfect combination of servo and stepper advantages
- Small size, volume 118*76*33 (mm^3), weight 0.3kg
- Suitable for 42-60mm(NEMA17-24) 2 phase close-loop stepper motors.

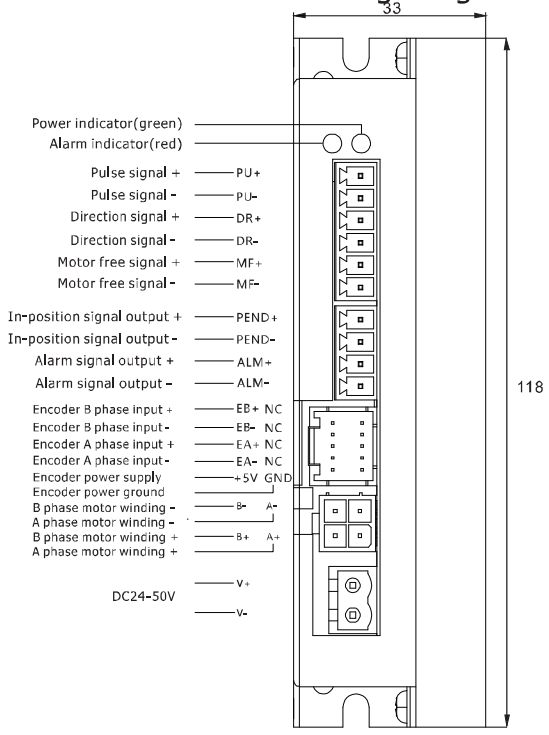
Application: Mainly used in engraving machines, special industrial sewing machines, wire stripping machines, marking machines, cutting machines, laser phototypesetting, plotters, CNC machine tools and other automation equipment and instruments.

Dimensions

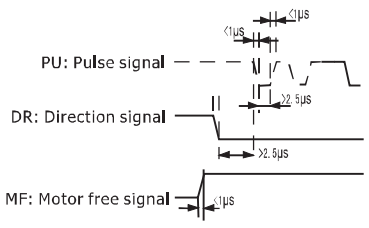
Dimensions (mm)



Drive Wiring Diagram



Input Signal Timing Diagram



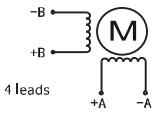
SSD2505M Microstep Setting

Microstep	2	4	8	16	32	64	128	256	5	10	20	25	40	50	100	200
PU/Rev	Default (400)	800	1600	3200	6400	12800	25600	51200	1000	2000	4000	5000	8000	10000	20000	40000
SW8	ON	ON	ON	ON	ON	ON	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
SW7	ON	ON	ON	ON	OFF	OFF	OFF	OFF	ON	ON	ON	ON	OFF	OFF	OFF	OFF
SW6	ON	ON	OFF	OFF	ON	ON	OFF	OFF	ON	ON	OFF	OFF	ON	ON	OFF	OFF
SW5	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF
SW4	Alarm polarity: OFF=ALM signal normal open, ON=ALM signal normal close															
SW3	Position tolerance alarm threshold, OFF = 90°, ON = 360°															
SW2	Motor rotation direction OFF=CW, ON=CCW															
SW1	Single and double pulse OFF=PU&DR, ON=CW&CCW															

SSD2505M Motor Selection

Model	Voltage	Maximum current	Suitable motor model	
SSD2505M-C011	DC(24-50V)	2.3A	YK242EC51E1	YK242EC67E1
SSD2505M-T11		5A	YK257EC56E1	YK257EC76E1
SSD2505M-C231		5.8A	YK260EC65E1	YK260EC86E1

Terminal Introduction

Symbol	Function	Specification
PWR	Power indicator	When power on, the green indicator lights up.
ALM	Fault indicator	Number of continuous flashes: 1 time: overcurrent or interphase short circuit; 2 times: overvoltage; 3 times: undervoltage; 5 times: tracking error tolerance
PU+	Pulse signal +	Connect with signal power supply, 5V~24V can drive, need to connect a resistor with PU- when >5V
PU-	SW1=OFF, it's pulse signal	Effects on falling edge, the motor moves a step when the pulse goes from high to low. The input resistance is 220Ω. It requires: low level 0~0.5V, high level 4~5V, pulse width>2.5us.
	SW1=ON, it's CW pulse signal	
DR+	Input signal +	Connect with signal power supply, 5V~24V can drive, need to connect a resistor with DR- when >5V
DR-	SW1=OFF, it's direction control signal	Used to change motor direction, requirements: low level 0~0.5V, high level 4~5V
	SW1=ON, it's CCW pulse signal	Effects on falling edge, the motor moves a step when the pulse goes from high to low. The input resistance is 220Ω. It requires: low level 0~0.5V, high level 4~5V, pulse width>2.5us.
MF+	Input signal +	Connect with 5V power supply, 5V~24V can drive, need to connect a resistor when >5V. When effective (low level), motor coil current is turned off, motor free and alarm signal cleared.
MF-	Motor free/ Alarm clear signal	
Pend+	In-position signal output +	When the drive finishes a given pulse, the in-position signal is valid (output optocoupler is on). Pend+ is connected to the pull-up resistor to the output power supply positive terminal, and Pend- is connected to the output power supply negative terminal. The maximum drive current is 50mA.
Pend-	In-position signal output -	
ALM+	Alarm output signal +	The alarm signal is valid when overcurrent, overvoltage, undervoltage or out of tolerance alarms. ALM+ is connected to the pull-up resistor to the positive terminal of the output power supply, and the ALM- is connected to the negative terminal of the output power supply. The maximum drive current is 50mA.
ALM-	Alarm output signal -	
EB+/EB-	Encoder B phase input +/-	Encoder B channel positive input / negative input
EA+/EA-	Encoder A phase input +/-	Encoder A channel positive input / negative input
VCC	Encoder power supply	Encoder 5V power supply
EGND	Encoder power supply GND	Encoder power supply GND
+A,-A	Motor connection	
+B,-B		

Notice

1. Please ensure that the motor and encoder are wired correctly, otherwise the motor will be out of tolerance after receiving the pulse.
2. The input control signal level is 5V. The current limiting resistor needs to be connected when > 5V.
3. When installing the motor, it is strictly forbidden to strike the back cover of the motor to avoid damage to the encoder.