

细节造就品质 科技引领未来
THE DETAILS CREATE QUALITY THE TECHNOLOGY LEADS THE FUTURE

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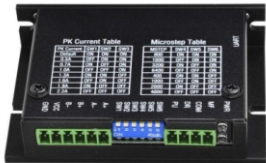
FMDD36D22NOM

驱动器

使用指南手册版本: V 1.0

FUYUTECHNOLOGYCO.,LTD

一．产品简介



FMDD36D22NOM是基于 DSP 控制的二相混合式步进电机驱动器,是新一代数字式步进电机驱动器。驱动电压为 DC12V-36V,适配电流在 2.2A 以下、外径 28-42mm 的各种型号的二相混合式步进电机。运行平稳,震动和噪音极小。定位精度最高可达 6400步/转。该产品广泛应用于激光加工设备、医疗设备、测量设备、电子加工设备等。

输出电流	0.3A-2.2A	细分档设置	8 档
输入电压	DC12V-36V	电流设置	8 档
最高分辨率	6400ppr	尺寸	86*21*56
响应频率	200kpps	重量	0.1KG
控制方式	方向+脉冲	适用电机	28mm~42mm 系列两相混合步进电机

特点

- 设有 8档等角度恒力矩细分,最高分辨率 6400 步/转
- 最高响应频率可达 200Kpps
- 自动半流用户可设,步进脉冲停止超过 1.5s 时,线圈电流自动减到设定电流的一半
- 光电隔离信号输入/输出
- 驱动电流 0.3A/相到 2.2A/相分 8 档可调
- 单电源输入,电压范围: DC12-36V

二．使用前的注意事项

1. 供电电源为 24v 直流电源且功率应不低于 50w。
2. Sw1—sw3 的拨码设置: 请务必按照电机的额定电流设置好电流 (30 模組电机额定电流为 1A) !!! 电流错误则会造成电机功率不足或者是故障甚至损坏 !!! Sw4—sw6 的拨码设置 按照自己想要的细分自行设置。 建议 (400~4000) 细分设置说明见下图

拨码设置 (选择峰值电流 1A 即可)

峰值电流(A)	Default	0.5	0.7	1	1.3	1.6	1.9	2.2
运行电流(A)		0.35	0.49	0.71	0.92	1.13	1.34	1.56
SW1	ON	OFF	ON	OFF	ON	OFF	ON	OFF
SW2	ON	ON	OFF	OFF	ON	ON	OFF	OFF
SW3	ON	ON	ON	ON	OFF	OFF	OFF	OFF

运行电流

细分数	800	1600	3200	6400	400	1000	2000	4000
SW4	ON	OFF	ON	OFF	ON	OFF	ON	OFF
SW5	ON	ON	OFF	OFF	ON	ON	OFF	OFF
SW6	ON	ON	ON	ON	OFF	OFF	OFF	OFF

细分数

3. 接线一定要正确。且在接线端接线时轻拧紧线头即可。

4. 启动加速度过快的话，电机可能会出现卡转的情况。（加速度过大请一定在程序上设置加减速时间）

5. 使用环境和参数

使用环境	使用场合	避免粉尘、油雾及腐蚀性气体
	温度	0℃——60℃
	湿度	30 - 75%RH
	震动	4.2m/s ² Max
保存温度	-20℃ - +80℃	

6. 其它注意事项

a) 输入电压不能超过 DC36V；

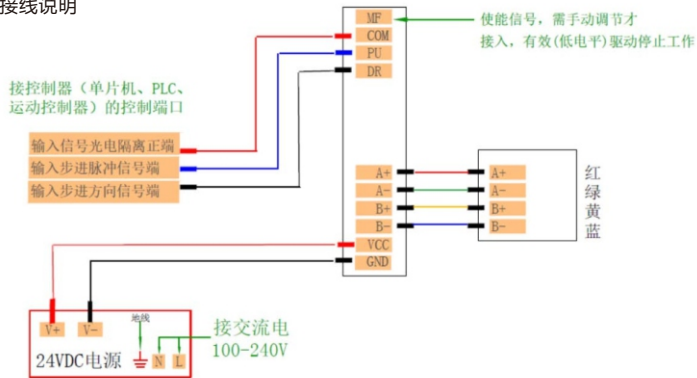
b) 输入控制信号电平为 +5V - +28V 范围，高于 +5V 时无需外接限流电阻；

c) 输入脉冲信号上升沿有效；

d) 驱动器温度超过 80 度时驱动器停止工作，故障指示灯 ALM 亮，直到驱动器温度降到 50 度时，驱动器需要重新上电才能恢复工作。出现过热保护请加装散热器；

- e) 过流（负载短路）故障指示灯 ALM 亮，请检查电机接线及其他短路故障，排除后需要
 f) 重新上电恢复；
 g) 无电机故障指示灯 ALM 亮，请检查电机接线，排除后需要重新上电恢复。

接线说明

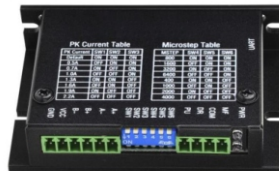
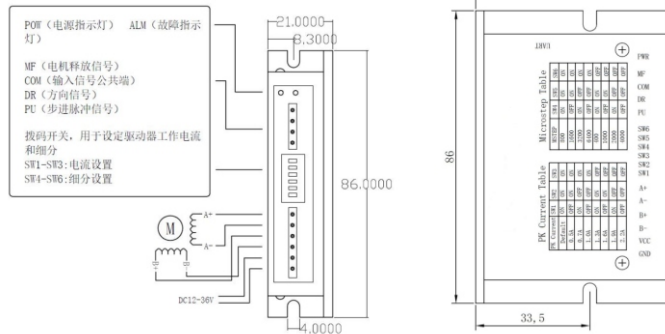


功能引脚定义

标记符号	功能	说明
PU	步进脉冲信号	上升沿有效，每当脉冲由高变低时电机走一步，输入电阻 220Ω，要求：低电平 0-0.5V，高电平大于 4V，脉冲宽度>2.5μS
DR	方向控制信号	用于改变电机转向。输入电阻 220Ω，要求：低电平 0-0.5V，高电平大于 4V，脉冲宽度>2.5μS
COM	输入信号公共端	接信号电源正端，幅度范围+5V-+28V 均可驱动，高于+5V 时无需外接限流电阻
MF	电机释放信号	有效（低电平）时关断电机接线电流，驱动器停止工作，电机处于自由状态
GND	电源负端	电源：DC12-36V
VCC	电源正端	

A+	电机接线	电源：DC12-36V
A-		
B+		
B-		

产品安装尺寸



The DV422 is full digital 2-phase stepper driver based on DSPcontrol , the drive voltage ranges from 12V to 36VDC. It is designed for use with the 2-phase hybrid stepper motor of all kinds with 28mm to 42mm outside diameter, regulated phase current under 2.2A. Due to the perfect use of the constant current chopping circuit, the motor enables to run smoothly .The highest micro step is 40000ppr.

Application

It is widely used in curving machine, processing equipment, packing machine, electronic machine , CNC and etc.

Feature

- 8 channels constant angle, constant torque micro steps, highest micro step: 6400ppr
- Highest response frequency: 200Kpps
- Current of winding will be reduced by approximately 50% when no step pulse command is received for 1.5 seconds

- Opto-isolated signal I/O
- Drive current is adjustable in 8 channels from 0.3A/phase to 2.2A/phase
- Single power supply from 12V to 36VDC
- Better to overcome the problem of low frequency vibration
- Dimension : 86×21×56mm 3 ; Net Weight : 0.1Kg

Current Setting

Stepper driver working current is set by DIP switches SW1 to SW3. Running current is the output.

Max current (A)	Default	0.5	0.7	1	1.3	1.6	1.9	2.2
Rated current (A)		0.35	0.49	0.71	0.92	1.13	1.34	1.56
SW1	ON	OFF	ON	OFF	ON	OFF	ON	OFF
SW2	ON	ON	OFF	OFF	ON	ON	OFF	OFF
SW3	ON	ON	ON	ON	OFF	OFF	OFF	OFF

Subdivision(micro step) Setting

The subdivision is set by DIP switches SW4 to SW6, 8 channels in total.

Subdivision	800	1600	3200	6400	400	1000	2000	4000
SW4	ON	OFF	ON	OFF	ON	OFF	ON	OFF
SW5	ON	ON	OFF	OFF	ON	ON	OFF	OFF
SW6	ON	ON	ON	ON	OFF	OFF	OFF	OFF

CAUTION

1. The supply voltage shouldn't exceed 36VDC.
2. Input control signal is 5V, and a current-limiting resistance is unnecessary when it is over 5V.
3. Input pulse signal is effective with the rising edge.
4. Alarm indicator ALM lights and the driver stops working when the driver temperature is over 80°C. It restarts working until the temperature falls to 50°C. The heat sink is needed when overheat occurs.
5. Alarm indicator ALM lights when overcurrent (short of load) occurs. Please check motor's connection and other shorts and turn the power supply on after removing the trouble.
6. Alarm indicator ALM lights when no motor connected or poor connection. Please check motor's connection and turn the power supply on after removing the trouble.

Dimension Diagram And Wiring Example

Front View

POW (Power indicator)

ALM (alarm indicator)

MF(motor free signal)

COM(input signal common terminal)

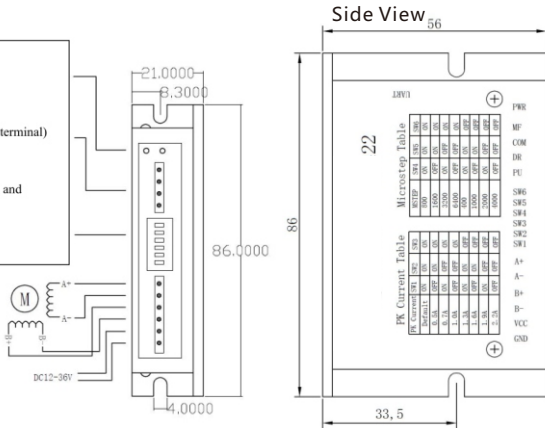
DR(direction signal)

PU(pulse signal)

DIP switches for subdivision and working current setting.

SW1~SW3: current setting

SW4~SW6: subdivision



Symbol	Functions	Definition
PU	Pulse Signal	With the rising edge of the signal PU, the motor executes an angular step. The input resistance is 220Ω. Low voltage 0-0.5V, high voltage 4-5V, pulse width > 2.5μs.
DR	Direction Signal	Change the motor's direction of rotation. Input resistance is 220Ω. Low voltage 0-0.5V, high voltage 4-5V, pulse width > 2.5μs.
COM	Input Signal Common Terminal	Connect to +5V power supply, drive voltage ranges from 5V to +28V. Current-limiting resistance is not needed when it is over 5V.
MF	Motor Free Signal	The motor current will be cut off and the driver stops working when it is effective.
GND	Negative Power Supply	DC12-36V
VCC	Positive Power Supply	

A+	Motor Connection	DC12-36V
A-		
B+		
B-		

Wiring instructions

