

DM422C 2-Phase Digital Stepping Driver

USER'S MANUAL



Abstract:

DM422C is a high-performance digital stepper driver based on a new generation of 32-bit DSP technology. It supports the power supply with voltage DC18-48V. It is suitable for the NEMA8, NEMA11, NEMA14, NEMA16 and NEMA17 stepper motors with current less than 1.6 Amp. With similar control design as the servo system, unique circuit design and excellent HTP Technique in software, it makes the motor with wonderful performance even under low subdivision conditions, it can make the motor run smoothly at low speed with almost no vibration and low noise; smooth and accurate current control.

Main Features.

- ◆ With a new 32-bit DSP control technology.
- ◆ Better performance in stationarity with better noise and vibration control.
- ◆ More accurate and smooth in current control with less heat;
- ◆ Impulse response frequency up to 200KHZ;
- ◆ The output current will be half if impulse stop more than 200ms.
- ◆ Excellent stable performance in low frequency subdivision,
- ◆ Optically isolated differential signal input, strong anti-interference ability
- ◆ Adjustable driving current RMS value below 1.6A
- ◆ Voltage range DC18-48V DC power supply
- ◆ With over-voltage, under-voltage, over-current protection and other error protection functions

Performance Specification

Working temperature parameter

Cooling Method	Natural cooling	
USE ENVIRONMENT	Field	Try to avoid dust, oil mist and corrosive gas
	Temperature	0 °C ~ + 50 °C
	Humidity	< 80% RH, no condensation, no frost
	Vibration	5.9m / s ² Max
Storage Temperature		-20 °C ~ + 65 °C
Weight		About 0.13Kg

Caution: Due to the drastic changes in the temperature of the storage and transportation environment, condensation or frost is easy to occur.

Do not turn on the power until the temperature is consistent with the ambient temperature.

Driver interface and wiring instructions

1, The instruction of the connectors

A, Motor and Power supply input connectors (Voltage show in driver)

No.	Mark	Instruction	Remark
1	A+	A phase motor winding +	When the winding of B+ and B- exchanged, the motor will run reserve.
2	A-	A phase motor winding -	
3	B+	B phase motor winding +	
4	B-	B phase motor winding -	
5	V+	Input power connector	18V-48 DC, power rate higher than 75W
6	V-	Input power connector	

B, signal input port

No.	Mark	Instruction	Remark
1	MF-	Motor release signal negative	
2	MF+	Motor release signal positive	
3	DR-	Motor direction control signal negative	
4	DR+	Motor direction control signal positive	
5	PU-	Step Impulse signal negative	
6	PU+	Step Impulse signal positive	

C, Lights

Mark	Function	Instruction
PWR	Power & Signal	Light on when power on (Lighting with impulse, blink without impulse)
ALARM	Failure Indication	Continuously blink for 1 time: Over voltage Continuously blink for 2 times: Lack of voltage Continuously blink for 3 times: Over current or short trouble between phases

When the drive fails, it will stop, and the user needs to power off and re-power on before the fault can be cleared.

Segment settings

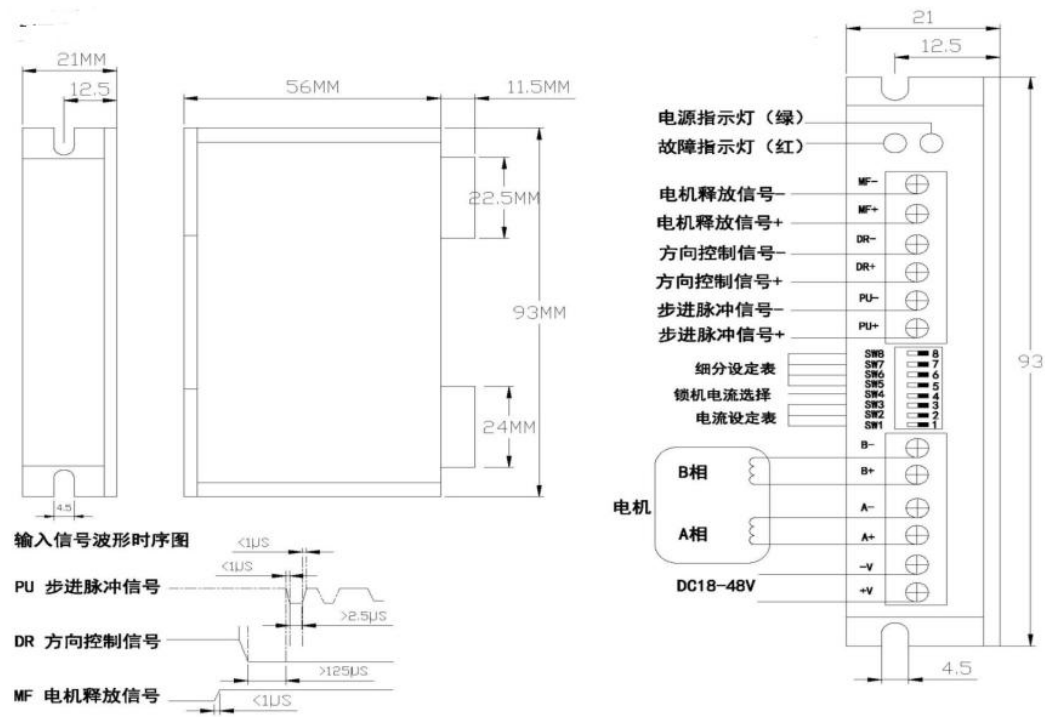
Segment setting list						
PU/Rev	Segment No.	SW8	SW7	SW6	SW5	SW4
200	1	ON	ON	ON	ON	OFF means half current, On means full current
400	2	ON	ON	ON	OFF	
800	4	ON	ON	OFF	ON	
1600	8	ON	ON	OFF	OFF	
3200	16	ON	OFF	ON	ON	If turn the SW4 button for 2 times continuously in 2 seconds, the self test function will be on, the motor will run 360 degree with 60RPM
6400	32	ON	OFF	ON	OFF	
12800	64	ON	OFF	OFF	ON	
25600	128	ON	OFF	OFF	OFF	
1000	5	OFF	ON	ON	ON	
2000	10	OFF	ON	ON	OFF	
4000	20	OFF	ON	OFF	ON	
5000	25	OFF	ON	OFF	OFF	
8000	40	OFF	OFF	ON	ON	
10000	50	OFF	OFF	ON	OFF	
20000	100	OFF	OFF	OFF	ON	
7200	36	OFF	OFF	OFF	OFF	

Current Setting

Current List								
Current RMS	0.2	0.3	0.5	0.7	1.0	1.2	1.4	1.6
Current Peak	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

RMS means the effective value.

Mechanical installation dimensions



Unit: mm