

Changzhou ACT Motor Co., Ltd

DM

Step motor Driver

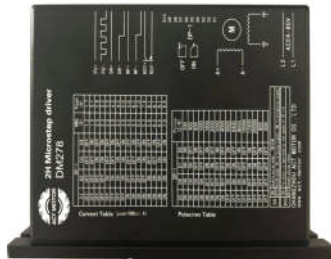
DM278

MicroSteps Setting:200~20000

DC : 40~100V

AC:24~80V

Products Image



Overview

- DSP controlled two-phase stepper motor drive
- Power-down phase memory function
- The vibration is small and the low speed operation is good.
- The impulse response frequency can be up to 100KHz.
- The optocoupler isolates the differential signal input
- Subdivision settings (within 200~20000).

Features

Input voltage	40~100VDC/24~80VAC
Pulse frequency	0~100KHz
MicroSteps	16 MicroSteps
Using environment	0 ~ 70 °C, avoid dust and corrosive gas
Storage environment	-20~+80°C , avoid direct sunlight
The drive power supply AC and DC power supply is universal, AC power supply range is 24~80VAC, DC power supply range is 40~100VDC	

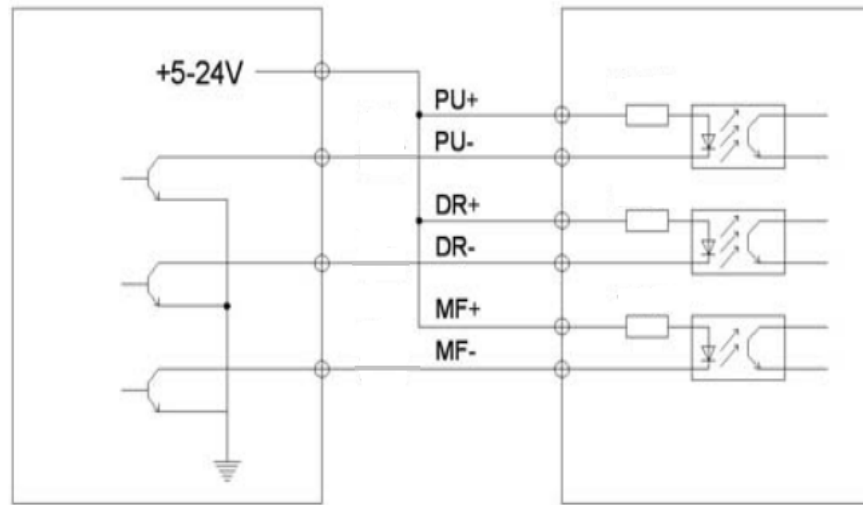
Motor and power

Symbol	Name	
A+	Phase A+	
A-	Phase A-	
B+	Phase B+	
B-	Phase B-	
L2	power supply	Power supply: DC 40 ~ 100V AC 24-80V
L1		

Control Signal

	Name	Remark
PUL+	Input signal photoelectric isolation positive terminal	+5V~24V can be driven
PUL-	D5=OFF, PU is a step pulse signal D5=ON, PU is a positive phase stepping pulse signal	The falling edge is valid. When the pulse changes from high to low, the motor takes one step. The requirement is: pulse width >2.5 μS
DIR+	Input signal photoelectric isolation positive terminal	+5V~24V can be driven
DIR-	D5=OFF, DR is the direction control signal D5=ON, DR is the reverse stepping pulse signal	Used to change the motor steering. Requirements:Pulse width >2.5μS
MF+	Input signal photoelectric isolation positive terminal	+5V~24V can be driven
MF-	Motor release signal	When the level is low, the drive stops working and the motor is in a free state.
RDY+	Driver ready output signal photoelectric isolation positive end	The drive is in a normal state and is active when the controller signal is ready to accept (low)
RDY-	Driver ready output signal photoelectric isolation negative terminal	

Control Signal Connection



Controller

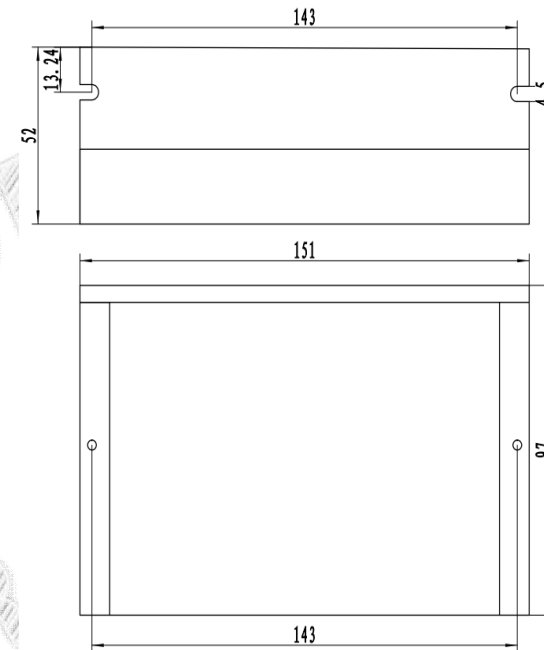
Driver

Input signal common anode connection

Precautions

- 1, the input voltage can not exceed DC 110V, AC 85V;
2. The falling edge of the input pulse signal is valid, and the rising edge control needs to set the internal parameters of the driver;
3. When the drive temperature exceeds 75 degrees, the drive stops working, and the fault indicator ALM lights up. When the drive temperature drops to 50 degrees, the drive needs to be powered on again to resume operation. If there is overheat protection, please install a radiator;
4. Over-current (load short-circuit) fault indicator ALM is on, please check motor wiring and other short-circuit faults, and need to be restored after power-on;
- 5, no motor fault indicator ALM is bright, please check the motor wiring, you need to re-power on after the recovery.

Drive dimensional chart(mm)



Note: It is recommended to use side mounting for better heat dissipation. When designing the mounting dimensions, pay attention to the terminal size and wiring!

Current Setting																
RMS (A)	1.2	1.5	2	2.3	2.5	3	3.2	3.6	4	4.5	5	5.3	5.8	6.2	6.5	7
PEAK (A)	1.7	2.1	2.8	3.2	3.5	4.2	4.5	5	5.6	6.3	7	7.4	8.1	8.7	9.1	9.8
D1	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON	ON	ON	ON	ON	ON	ON
D2	OFF	OFF	OFF	OFF	ON	ON	ON	ON	OFF	OFF	OFF	OFF	ON	ON	ON	ON
D3	OFF	OFF	ON	ON	OFF	OFF	ON	ON	OFF	OFF	ON	ON	OFF	OFF	ON	ON
D4	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON

Microsteps setting				
Step NO.	D5	D6	D7	D8
200	ON	ON	ON	ON
400	ON	ON	ON	OFF
800	ON	ON	OFF	ON
1000	ON	ON	OFF	OFF
1600	ON	OFF	ON	ON
2000	ON	OFF	ON	OFF
3200	ON	OFF	OFF	ON
4000	ON	OFF	OFF	OFF
5000	OFF	ON	ON	ON
6400	OFF	ON	ON	OFF
8000	OFF	ON	OFF	ON
10000	OFF	ON	OFF	OFF
12800	OFF	OFF	ON	ON
20000	OFF	OFF	ON	OFF
600	OFF	OFF	OFF	ON
500	OFF	OFF	OFF	OFF
D9	ON, double pulse : PU is positive step pulse signal, DR is negative step pulse signal			
	OFF, single pulse : PU is step pulse signal , DR is direction control signal			
D10	Self-test switch (OFF: receives output pulse ;ON: the driver runs as speed 30rev/min)			

Frequently questions and troubleshooting
The motor does not run:
■ Check if there is a problem with the power supply line
■ Check if the drive is overcurrent, overheated, missing motor
■ Check if the external control signal causes the motor shaft to lock and not operate.
■ Check if the MF signal is valid
Motor stall:
■ Because the maximum speed is set, it can be removed by lowering the maximum speed
■ Lengthen the acceleration time or increase the drive pulse filter constant
The location is wrong:
■ Select the correct number of subdivisions
■ Replace the motor or increase the drive operating current appropriately
"leakage" phenomenon:
■ Reliably ground the drive and motor
The drive and motor are severely heated:
■ Properly reduce the drive current or increase the ventilation of the drive and motor