MC425P-2

Functional characteristics

- Voltage input range: DC18V～36V
- Max. peak current: 2.5A
- Subdivision range: 400～6400ppr
- Switching value (IO) control type
- Pulse response frequency: 0～200KHz
- Motor parameter self-regulation
- Provided with overvoltage, overcurrent and tracking error and out-of-tolerance protection functions, etc.

Operating environment and parameters

- Storage temperature: -20℃～65℃
- Operating temperature: 0℃～50℃
- Operating humidity: 40～90%RH (without condensation)
- Vibration frequency: < 0.5G (4.9m/s2), 10~60 Hz (non-continuous operation).
- Places with dust, oil stain, corrosive gases, high humidity and vibration should be avoided. Combustible gases and conductive dust should be prohibited

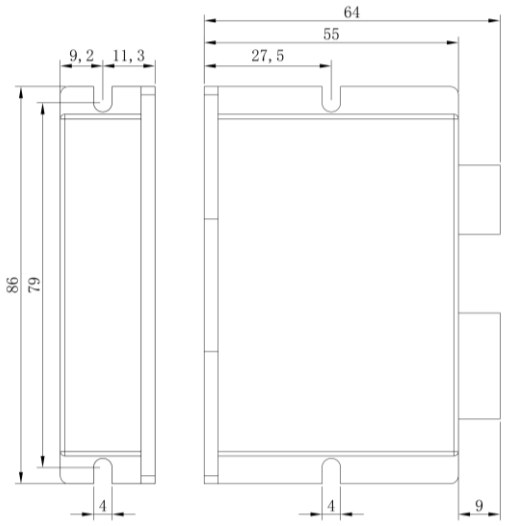
Main applications: Suitable for automatic equipment and instruments in various motion control fields, such as production lines requiring constant velocity running, as well as feeding and receiving stations;

Product Introduction

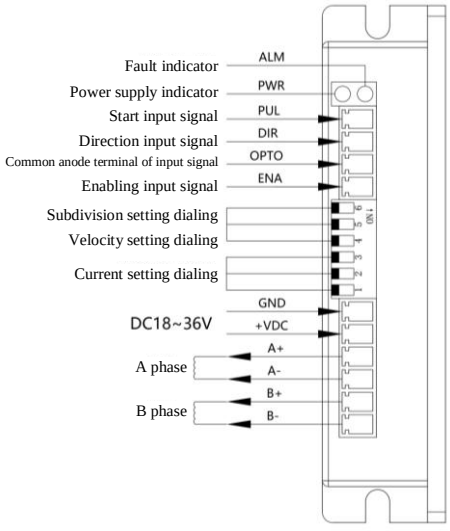
Based on the latest ARM chip technology scheme, the MC425P-2 digital low-voltage step motor drives are generally provided with two-phase 35, 39 and 42 step motor series for achieving excellent medium and low velocity performance. 8 velocity values within 60~600rpm and 8 current values within the rated current range can be set for the application in most small-sized equipment. The control method is simple, the running at a middle or low velocity is very stable, and the drive motor noise is very low.

Schematic diagram of product

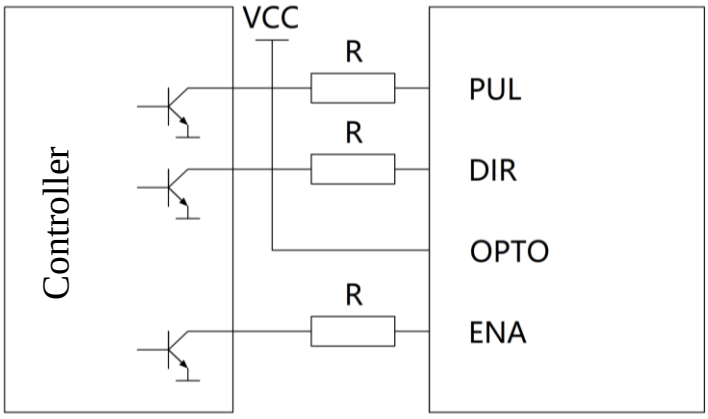
Mounting dimensions (unit: mm):



Drive wiring:



Control signal wiring



Note: OPTO is the common anode end of PUL/DIR/ENA. The value range of VCC is (5V, 24V). If VCC is higher than 5V, a current limiting resistor R should be connected. The 5V and 24V drives are universal and it is unnecessary to connect resistors.

Operating current setting

Output peak current (A)	SW1	SW2	SW3
0.5	ON	ON	ON
0.7	OFF	ON	ON
1.0	ON	OFF	ON
1.3	OFF	OFF	ON
1.6	ON	ON	OFF
1.9	OFF	ON	OFF
2.2	ON	OFF	OFF
2.5	OFF	OFF	OFF

Operating velocity setting

Revolution velocity (RPM)	SW4	SW5	SW6
60	ON	ON	ON
90	OFF	ON	ON
120	ON	OFF	ON
180	OFF	OFF	ON
240	ON	ON	OFF
300	OFF	ON	OFF
360	ON	OFF	OFF
480	OFF	OFF	OFF

Driver function definition description

Drive function	Functions	Definition
POW	Power supply indicator	The green light is the power supply indicator, which will be normally On when the drive is powered on
ALM	Fault indicator	The red light is the fault indicator, which will be normally On in case of undervoltage, overvoltage and overcurrent
PUL	Negative terminal of receiving **starting** control signal	For controlling motor start / stop. Effective at the low level. When the signal is effective, the motor can run at the dial-set velocity. Input resistance: 220Ω; Low level: 0~0.5V, pulse width: >2.5μs
DIR	Negative terminal of receiving **direction** control signal	For controlling motor rotation direction. Effective at the low level. Input resistance: 220Ω; Requirement: Low level: 0~0.5V, pulse width: >2.5μs
OPTO	**Common positive terminal** of PUL/DIR/ENA	Connect to a 5V power supply. It can be driven by a voltage withing +5V~24V. When the voltage is higher than 5V, current limiting resistors are needed; For +12V, a 1.2KΩ current limiting resistor is needed; For +24V, a 3KΩ current limiting resistor is needed.
ENA	Negative terminal of receiving **enabling** control signal	For switching off motor enabling after powering on (low level) to make motor axes be in a free state
GND	Negative pole of power supply	A DC power supply is used. Operating input voltage range: 18V~36VDC; Recommended operating voltage: 24VDC.
+VDC	Positive pole of power supply	
A+、A-	Motor power line	A+ and A - should be connected to the positive / negative terminals of the A-phase winding of the motor; B+ and B - should be connected to the positive / negative terminals of the B phase winding of the motor. When A- / B-phase windings are exchanged, the motor direction can be reversed.
B+、B-		

Common fault and troubleshooting

Phenomenon	Possible problem	Solution
Motor not running	Power indicator not On	Use the power supply normally
	Too low set current	Select the appropriate current gear according to the rated current of the motor
	Drive protected	Power on again after troubleshooting
	Low enabling signal level	Set a higher signal receiving level or disconnect the signal. If ENA is allowed by default after powering on, connection can be neglected.
	Control signal problem	Check the start signal for being normal
Incorrect motor rotation direction	Incorrect connection of motor power line	Exchange any two wires of the same phase of the motor (such as A+A_ connection position exchange)
	Open circuit of motor power line	Check the line for correct connection
Alarm indictor not On	Incorrect connection of motor power line	Check the wiring
	Too high voltage	Check the power supply voltage
	Motor or drive damaged	Replace the drive or motor
Motor stall	Heavy load or stall	Check for foreign matters or reduce the load
	Too low motor torque	Use a motor with higher torque
	Too low voltage or current	Set a higher voltage or current appropriately

Note: 1. Do not connect the power supply reversely;

2. The input signal should be 5V. If it is higher than 5V, a resistor for current limiting should be connected;

3. When the drive is powered on normally, the power indicator (green) PWR shall be On;

4. When the fault indicator (red light) ALM is On, disconnect the power supply for inspection, and then power on again after troubleshooting.