Cyclone EM-DC2

Lower-Cost DC Power Input 2 Phase Microstepping Driver

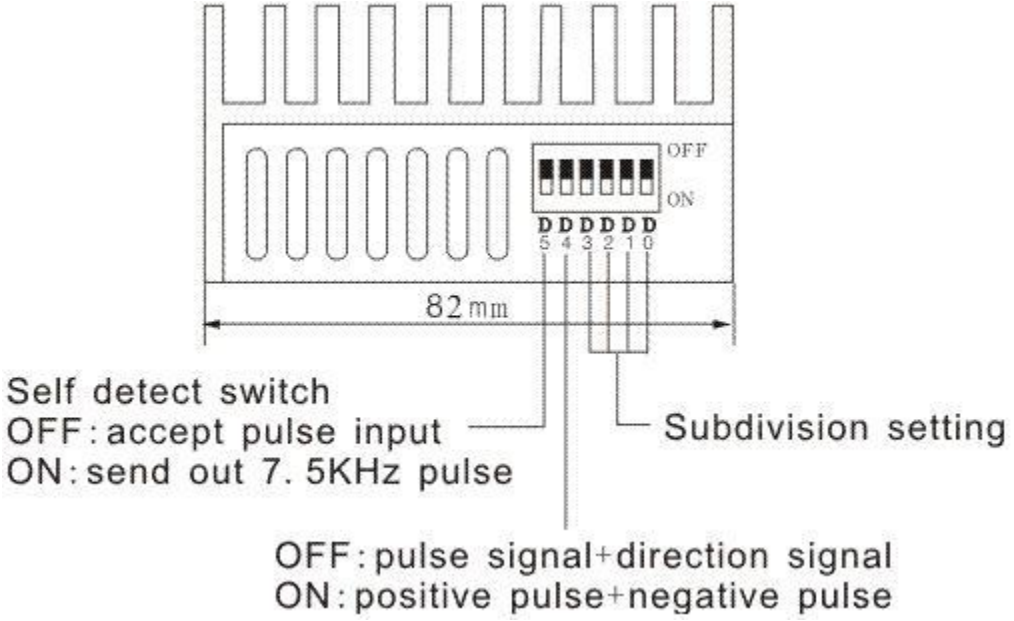
二相细分驱动器

EM-DC2 is a constant angle and constant torque stepper drive. The driven voltage range from DC24V to 80V. It can match4, 6 or 8 leads 2-phase hybrid stepper motor whose rated current under 6A shaft diameter range from 57mm to 86mm. It is widely used in small size of numerical control device with high resolution such as curving machine, laser labeling machine, inner laser curving machine and so on.

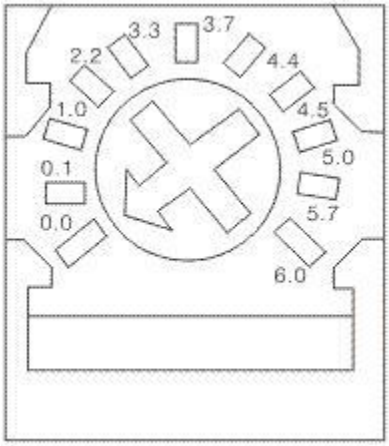
Features

- High performance, low price
- Special control circuit
- 12/8 channels constant angel and constant torque subdivision, highest subdivision: 200
- Highest response frequency: 200Kpps
- The motor phase current is reduced to approximately 50% of the set current value 100ms after receiving the last pulse edge
- Bipolar constant current chopping circuit
- Opto-isolated input/output
- Driven current is adjustable continuously from 0.5A/phase to 6A/phase
- Single power supply, voltage arrange from DC24V to 80V

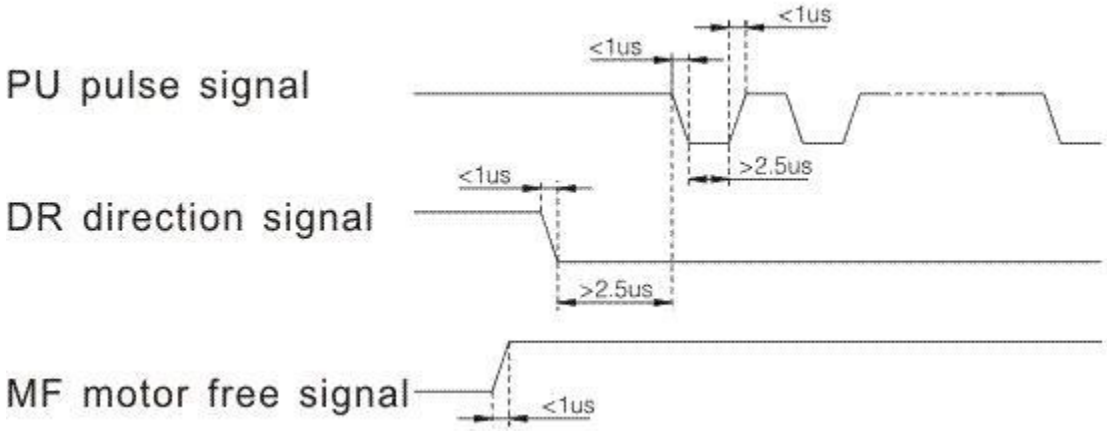
Parameter switches



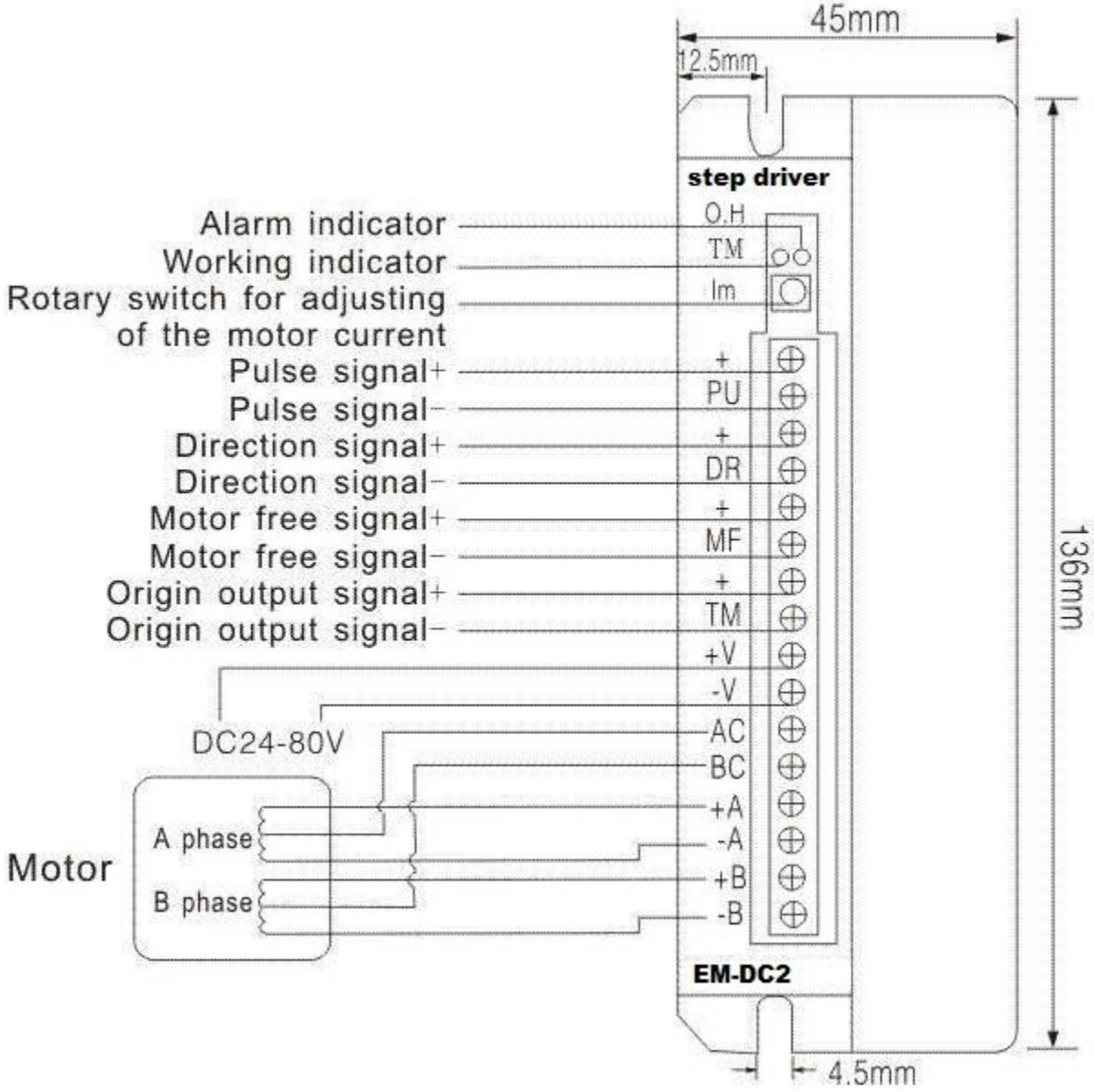
Rotary switch for adjustment of the motor current



Input signal oscillogram



Wiring example



Caution

1. Please don't reverse the power input, supply voltage shouldn't exceed DC80V.
2. Input control signal is 5V, current-limiting resistance should be connected when over 5V.
3. 6 or 8 leads motors have to be used because of the special control circuit in the drive.
4. Alarm indicator lights and the drive shuts off if the drive temperature is over 70℃. It doesn't work until the temperature falls to 50℃. The heat sink is needed when overheat occurs.
5. Alarm indicator lights when overcurrent (short of load) occurs. Please check the connection of motor or other shorts and turn the power supply on after removing the troubles.
6. Alarm indicator lights when undervoltage (the voltage is less than DC12V) occurs.

Subdivision setting for EM-DC2

Steps per revolution	1	2	4	5	8	10	20	25	40	50	100	200	200	200	200	200
D0	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF
D1	ON	ON	OFF	OFF	ON	ON	OFF	OFF	ON	ON	OFF	OFF	ON	ON	OFF	OFF
D2	ON	ON	ON	ON	OFF	OFF	OFF	OFF	ON	ON	ON	ON	OFF	OFF	OFF	OFF
D3	ON	ON	ON	ON	ON	ON	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
D4	ON, double pulse: PU is positive pulse signal, DR is negative pulse signal															
	OFF, single pulse: PU is pulse signal, DR is direction signal															
D5	Self detect switch (OFF: accept pulse input, ON: send out 7.5KHz pulse)															

Subdivision setting for EM-DC2

Steps per revolution	1	2	4	8	16	32	64	128
D0	ON	OFF	ON	OFF	ON	OFF	ON	OFF
D1	ON	ON	OFF	OFF	ON	ON	OFF	OFF
D2	ON	ON	ON	ON	OFF	OFF	OFF	OFF
D3	Inactive							
D4	ON, double pulse: PU is positive pulse signal, DR is negative pulse signal							
	OFF, single: PU is pulse signal, DR is direction signal							
D5	Self detect switch (OFF: accept pulse input, ON: send out 7.5KHz pulse)							

Terminal function

Mark	Function	Specification
O.H	Alarm indicator	The red indicator lits when overheat protection occurs.
TM	Working indicator	The green indicator lits when TM signal effects.
Im	Rotary switch for adjustment of the motor current	Adjust motor's phase current. Turning it in CCW will decrease the current and turning it in CW will increase the current.
+	Positive of opto-isolated	Connected to +5V power supply. Driven voltage range from +5V to +24V. Current-limiting resistance is needed when over 5V.
PU	D4=OFF, PU is pulse signal	With the falling 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.
	D4=ON, PU is positive pulse signal	
+	Positive of opto-isolated	Connected to +5V power supply. Driven voltage range from +5V to +24V. Current-limiting resistance is needed when over 5V.
DR	D4=OFF, DR is direction	Change the motor's direction of rotation. Input resistance is 220Ω. Low

	signal	voltage 0-0.5V, high voltage 4-5V, pulse width>2.5μS
	D4=ON，DR is negative pulse signal	
+	Positive of opto-isolated	Connected to +5V power supply. Driven voltage range from +5V to +24V. Current-limiting resistance is needed when over 5V.
MF	Motor free signal	The motor current will be cut off and the drive stops working when it effects.
+	Positive of opto-isolated	When the motor current is on, the motor is at the origin position. (B, -A is on current); opto-isolated outputs (high voltage).
TM	Negative of opto-isolated	Connected + to the current limiting resistance of output signal, and connect TM to ground. Maximum driven current is 50mA and highest driven voltage is 50V.
+V	Positive of power	DC24～80V
－V	Negative of power	
AC、BC	Connection	
+A、－A		
+B、－B		