EM-AC2

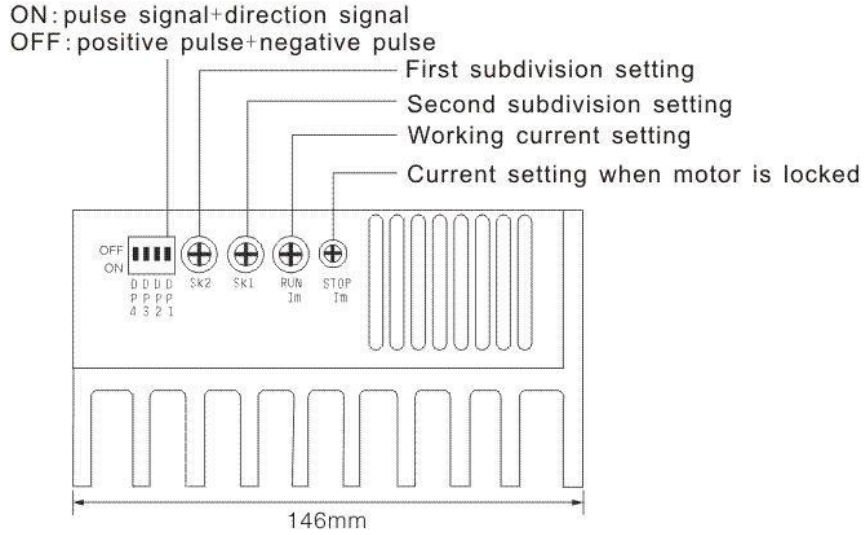
Low Cost, Small Package, AC Power Input 2 Phase Microstepping Drive

EM-AC2 is a constant angle and constant torque stepper drive. The driven voltage range from AC95V to AC132V. it can match 2-phase hybrid stepper motors whose rated current is under 8A and shaft diameter range from 86mm to 130mm. It is widely used in numerical device such as curving machine, middle-sized numerical machine and packing machine.

Features

- High performance, low price
- Two group 32 channels constant angel and constant torque subdivision. Highest subdivision: 200
- The motor phase current is reduced to set current value 100 ms after receiving the last pulse edge
- Bipolar constant current chopping circuit
- Optp-isolated input/output
- Driven current is adjustable continuously from 0.5A/phase to 8A/phase
- Single power supply, voltage arrange from AC95V to AC132V
- Highest response frequency: 200Kpps
- Overvoltage, overheat and overcurrent protection

Parameter switches



Current setting

1. STOP/Im is the rotary switch that can set output current of holding motor status as 20%-80% of normal output current (increase in CW, decrease in CCW).
2. RUN/Im is the rotary switch for adjustment of the motor current.

R-1	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
Im(A)	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0

Subdivision setting

EM-AC2 drive has two groups of subdivision, each group has 16 channels set by 16 switches (SK).

SK1	F	E	D	C	B	A	9	8	7	6	5	4	3	2	1	0
Step per revolution	1	2	4	5	8	10	16	20	25	32	40	50	64	80	100	200

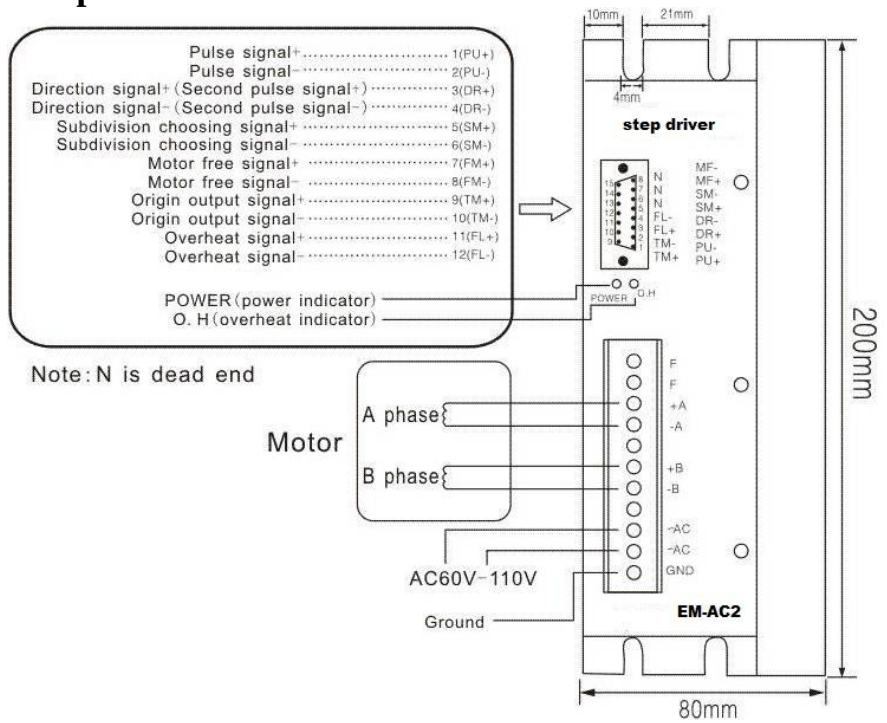
SK2	F	E	D	C	B	A	9	8	7	6	5	4	3	2	1	0
Step per revolution	1	2	4	5	8	10	16	20	25	32	40	50	64	80	100	200

Choose subdivision by SK1 when SM is low voltage and SK2 when high voltage.

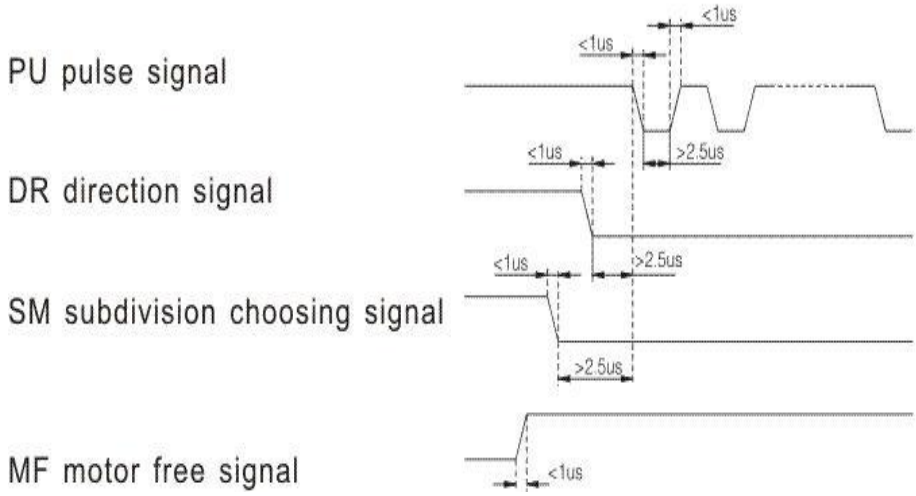
Parameter switch function

DP1	OFF, double pulse: PU is positive pulse signal, DR is negative pulse signal
	ON, single pulse: PU is pulse signal, DR is direction signal

Wiring example



Input signal oscillogram

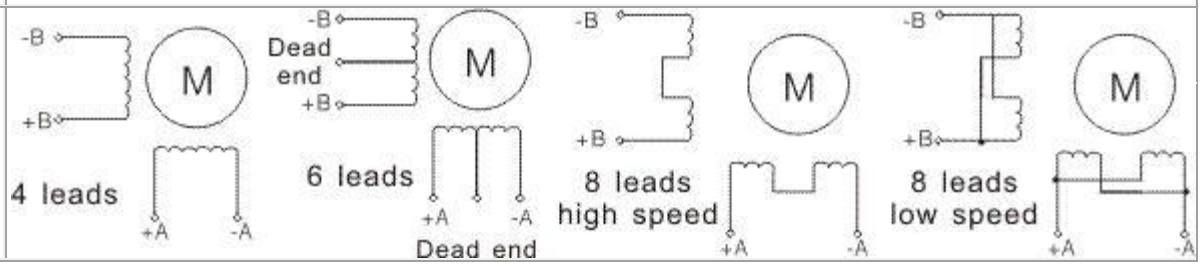


Caution

1. Supply voltage shouldn't exceed 132V.
2. Input control signal is 5V, current-limit resistance should be connected when over 5V.
3. O.H is overheat indicator. It 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.
4. POWER is indicator of power supply. It lights when the driver is power on.

Terminal function

Mark	Function	Specification
MF+	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 (low voltage).
SM+	Positive of opto-isolated	Connected to +5V power supply. Driven voltage range from +5V to +24V. Current-limiting resistance is needed when over 5V.
SM-	Subdivision choosing signal	Choose subdivision by SK1 when low voltage and SK2 when high voltage. Input resistance is 430Ω.
DR+	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-	DP1=ON, DR is direction signal DP1=OFF, DR is negative pulse signal	Change the motor's direction of rotation. Input resistance: 220Ω. Low voltage: 0-0.5V, high voltage: 4-5V, pulse width>2.5μS
PU+	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-	DP1=ON, PU is pulse signal DP1=OFF, PU is positive 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.
FL+	Positive of opto-	The motor current is cut off automatically and signal FL- is active (low voltage) when the temperature of the

	isolated overheat / low voltage protection	drive is over 70℃. The drive starts to work and the FL- is cleared when the temperature falls to 50℃.
FL-	Negative of opto-isolated overheat/ low voltage protection	Connect FL+ to current-limit resistance of output signal and FL- to ground. The maximum driven current is 50mA, the highest voltage is 50V.
TM+	Positive of opto-isolated origin output signal	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 origin output signal	Connect TM+ to current-limit resistance of output signal and TM- to ground. The maximum driven current is 50mA, highest voltage is 50V.
AC~	Power supply	AC60~110V
+A、-A +B、-B	Connection	

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