ACT MOTOR GmbH

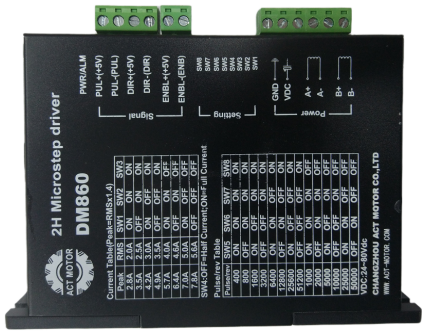
DM

Stepper Motor Driver

DM860

MicroSteps Setting:400~51200 DC:24~80V

Products Image



Overview

- Average current control, 2-phase sinusoidal output current drive
- 8 channels output phase current setting
- Offline command input terminal
- High start speed
- High hording torque under high speed
- High performance, low price
- Opto-isolated signal I/O
- Overvoltage, under voltage, overcorrect, phase short circuit protection
- 14 channels subdivision and automatic idle-current reduction
- Motor torque is related with speed, but not related with step/revolution

The connection between the driver and the two-phase hybrid stepping motor is four-wire. The motor windings are connected in parallel and in series, and the connection method is good. The high-speed performance is good, but the driver current is large (1.73 times the motor winding current). The drive current is equal to the motor winding current.

Features	
Input voltage	24~80VAC/24~110V
Output current	2.8A~7.8A
Input current	<6A
Humidity	Not condensation, no water droplets
Consumption	Consumption： 80W
Using environment	-10 ~ 45 ℃, avoid dust and corrosive gas
Storage environment	-40~+70℃

Control Signal	
Symbol	Name
PUL+	Pulse signal +
PUL-	Pulse signal -
DIR+	Direction signal+
DIR-	Direction signal-
ENBL+	Enable signal +
ENBL-	Enable signal -

Motor and power		
Symbol	Name	Remark
A+	Phase A+	
A-	Phase A-	
B+	Phase B+	
B-	Phase B-	
DC+	Input Power +	+24~80V
DC-	Input Power-	0V

Status light	
PWR	Green light, bright when working
PWR	Lights off, lights up when fault occurs, motor phase-to-phase short circuit, overvoltage protection and undervoltage protection.

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DIP switch setting				
In order to drive stepping motors with different torques, the user can set the output phase current (effective value) of the driver by the DIP switches SW1, SW2 and SW3 on the driver panel. The output current corresponding to each switch position, different models of drivers The corresponding output current values are different. See the table below for details.				
SW1	SW2	SW3	PEAK (A)	RMS (A)
ON	ON	ON	2,8	2
OFF	ON	ON	3,5	2,5
ON	OFF	ON	4,2	3
OFF	OFF	ON	4,9	3,5
ON	ON	OFF	5,7	4
OFF	ON	OFF	6,4	4,6
ON	OFF	OFF	7	5
OFF	OFF	OFF	7,8	5,6

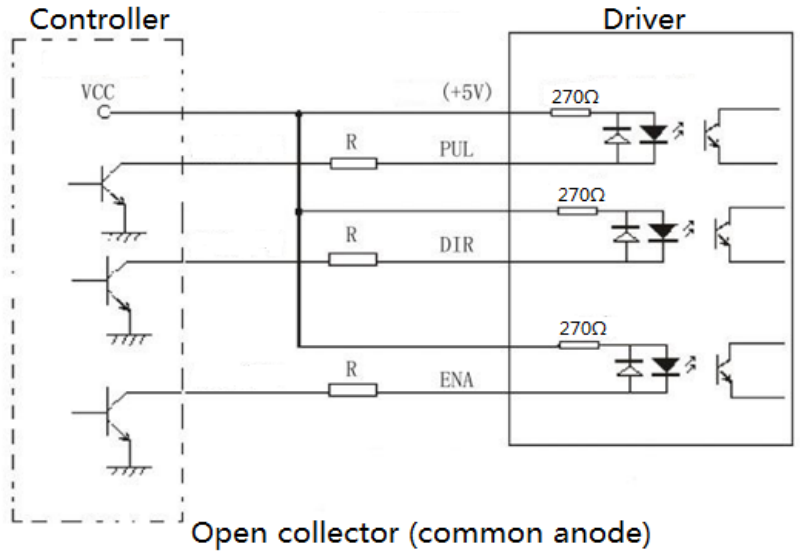
SW4:'OFF' has no semi-flow function; 'ON' has semi-flow function.

The semi-flow function means that after 500ms without stepping pulse, the output current of the driver is automatically reduced to 70% of the rated output current to prevent the motor from heating.

MicroSteps Setting							
RPM	400	800	1600	3200	6400	12800	25600
SW5	ON	OFF	ON	OFF	ON	ON	OFF
SW6	ON	ON	OFF	OFF	ON	OFF	ON
SW7	ON	ON	ON	ON	OFF	OFF	OFF
SW8	ON	ON	ON	ON	ON	ON	ON

RPM	51200	1000	2000	5000	10000	25000	50000
SW5	OFF	ON	OFF	ON	OFF	ON	OFF
SW6	OFF	ON	ON	OFF	OFF	ON	ON
SW7	OFF	ON	ON	ON	ON	OFF	OFF
SW8	ON	OFF	OFF	OFF	OFF	OFF	OFF

Control Signal Connection



Note:

When the VCC value is 5V, R is shorted;
When the VCC value is 12V, R is 1K, which is greater than 1/8W resistance;
When the VCC value is 24V, R is 2K, which is greater than 1/4W resistance;
R must be connected to the signal terminal of the controller.

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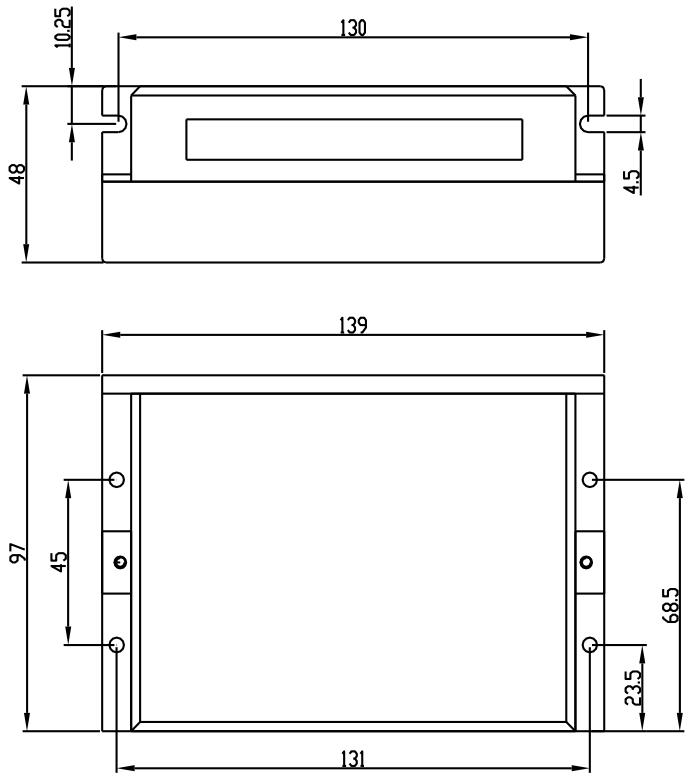
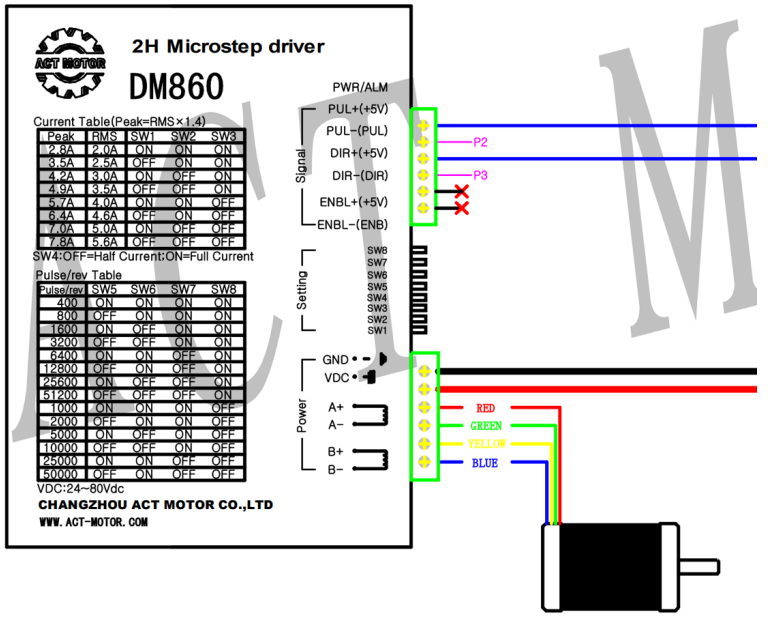
Drive Dimensional Chart(mm)



Regular wiring diagram



Attention:

There must be 20mm space around, can not be placed next to other heating equipment, to avoid dust, oil mist, corrosive gas, humidity and strong vibration.

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Adjustment of troubleshooting		
Alarm indicator	Reasons	Measures
LED off turn	Wrong connection for power	Check wiring of power
	Low-voltages for power	Enlarge voltage of power
Motor doesn't run, without holding torque	Wrong connection of stepper motor	Correct its wiring
	RESET signal is effective when offline	Make RESET ineffective
Motor doesn't run, but maintains holding torque	Without input pulse signal	Adjust PMW & signal level
Motor runs wrong direction	Wrong wires' connection	Change connection for any of 2 wires
	Wrong input direction signal	Change direction setting
Motor's holding torque is too small	Too small relative to current setting	Correct rated current setting
	Acceleration is too fast	Reduce the acceleration
	Motor stalls	Rule out mechanical failure
	Driver does not match with the motor	Change a suitable driver

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