

35080

3-phase Microstepping Driver

Features

- High performance, low cost, low noise
- Low driver and motor heating
- Supply voltage DC18V – DC50V
- Output peak current high to 8.4A (RMS6.0A)
- Input signal TTL compatible
- Automatic idle-current reduction
- Suitable for 3 lead and 6 lead 3- phase stepping motor
- Optically isolated differential input signals, pulse frequency up to 200 KHz
- 8 selectable resolutions
- small size for easy mounting
- DIP switch current setting with 16 different values
- Over-voltage, short-voltage, over-current, short-circuit and over-heating protection
- Phase memory (turn off power supply 5 seconds after motor stops, the position of motor keeps unchanged)

1. Introduction

35080 is a new 3 phase high resolution stepping driver designed by precision current control technology, it is suitable for driving NEMA 17, NEMA 23 and NEMA34 3-phase hybrid stepping motors. With the advanced pure-sinusoidal current control, both the noise and vibration can be greatly reduced, which makes the stepping motor's performance servo-like. Furthermore, compared with most of the microstepping driver in the market, both of the driver and motor's heat is less by 15-30%.

2. Applications

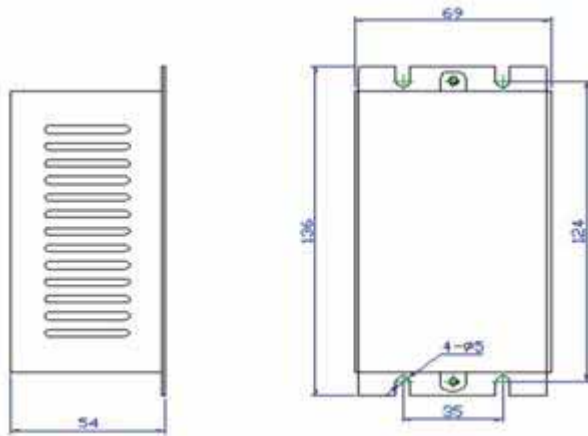
Suitable for a wide range of 3-phase stepping motors of Nema 17, 23 and 34, and usable for various kinds of machines, such as X-Y tables, labeling machines, laser cutters, engraving machines, and pick-place devices. Particularly useful in applications with extremely low noise and low vibration, high speed and high precision are desired.

3. Electrical and Mechanical Specifications

3.1 Electric Specifications ($T_j = 25$)

Parameters	35080			
	Min	Typical	Max	Unit
Output Current	1.5	-	6.0	Amps
Supply voltage	18	36	50	VDC
Logic signal current	7	10	16	mA
Pulse input frequency	0	-	200	Khz
Isolation resistance	500			MΩ

3.2 Mechanical Dimensions (unit = mm, 1 inch = 25.4 mm)



4. Connection Configuration

4.1 Connector P1 configuration

Signal	Functions
PUL+ (+5V)	<u>Pulse signal</u> : in PUL/DIR mode, it represents pulse signal, effective for each upward – rising edge.
PUL- (PUL)	
DIR+ (+5V)	<u>Direction signal</u> : in PUL/DIR mode, it represents HIGH/LOW level signal. For reliable response, DIR must be ahead of PUL by 5μs at least, the initial motor direction is related with motor wiring, exchange any set of coil can reverse motor initial direction.
DIR- (DIR)	

ENA+ (+5V)	Enable signal: this signal is used for enable/disable, high level for enabling driver and low level for disabling driver.
ENA- (ENA)	

4.2 Connector P2 configuration

Signal	Functions
Gnd	DC power negative
VDC	DC power positive, +18VDC - +50VDC, recommended 36 V approx.
Phase U	Motor phase U
Phase V	Motor phase V
Phase W	Motor phase W

5. Setting Driver Output Current and Microstep Resolution

5.1 Current Setting

The first four bits (SW1, 2, 3, 4) of the DIP switch are used to set the current during motion (dynamic current). Select a setting closest to your motor's required current.

● **DIP Setting for current during motion:**

Peak current (A)	RMS (A)	SW1	SW2	SW3	SW4
2.1	1.5	OFF	OFF	OFF	OFF
2.5	1,8	ON	OFF	OFF	OFF
2.9	2.1	OFF	ON	OFF	OFF
3.2	2.3	ON	ON	OFF	OFF
3.6	2.6	OFF	OFF	ON	OFF
4.0	2.9	ON	OFF	ON	OFF
4.5	3.2	OFF	ON	ON	OFF
4.9	3.5	ON	ON	ON	OFF
5.3	3.8	OFF	OFF	OFF	ON
5.7	4.1	ON	OFF	OFF	ON
6.2	4.4	OFF	ON	OFF	ON
6.4	4.6	ON	ON	OFF	ON
6.9	4.9	OFF	OFF	ON	ON
7.3	5.2	ON	OFF	ON	ON

7.7	5.5	OFF	ON	ON	ON
8.4	6.0	ON	ON	ON	ON

Remarks:

Due to motor inductance the actual current in the coil may be smaller than the dynamic current settings, particularly at higher speeds.

5.2 Microstep Resolution Selection

Microstep resolution is set by SW6, 7, 8 of the DIP switch as shown in the following table:

Step/rev.	SW6	SW7	SW8
200	On	On	On
400	Off	On	On
500	On	Off	On
1000	Off	Off	On
2000	On	On	Off
4000	Off	On	Off
5000	On	Off	Off
10000	Off	Off	Off

6. Typical Wiring Diagram

