

# STEPPING DRIVER ADT - 80

## Features:

- 1: High performance, cost-effective
- 2: 32 bit digital signal processing technology
- 3: Extremely low motor noise
- 4: Both driver and motor are low heating
- 5: Especially in high speed, it can keep high torque
- 6: Supply voltage up to DC:80V
- 7: Output current up to 8.0A
- 8: Pulse input frequency up to 300 KHz
- 9: TTL compatible and optically isolated input
- 10: Automatic idle-current reduction
- 11: 15 selectable resolutions, up to 10000 steps/rev
- 12: Suitable for 2-phase and 4-phase motors
- 13: Support PUL/DIR and CW/CCW modes
- 14: Over-voltage, over-current and over temperature protection
- 15: 151\*107\*48(mm)

## Introduction:

The ADT-80 is a high performance microstepping driver based on digital signal processing control technology. Owing to this advanced technology, the driven motor can run with smaller noise, lower heating, smoother movement and have better performance at higher speed than most of the drivers in the markets. It is suitable for driving 2-phase and 4-phase hybrid stepping motors.

## Applications

Suitable for a wide range of stepping motors, from NEMA size 17 to 43. It can be used in various kinds of machines, such as X-Y tables, labeling machines, laser cutters, engraving machines, pick-place devices, and so on. Particularly adapt to the applications desired with low noise, low heating, high speed and high precision.

## Electronic Specifications (Tj=25°C) :

parameters	ADT-80			
	Min	Typical	Max	Unit
Output current	2.0	-	8.0	A
Supply voltage	+24	+48-+55	80	DC
	24		60	AC
Logical signal current	7	10	16	mA
Pulse input frequency	0	-	300	KHz
Isolation resistance	500			MΩ

## Control Signal Connector P1 pins

Pin functions	Details
PUL+	<p><b>Pulse signal:</b> In single pulse(pulse/direction) mode, this input represents pulse signal, effective for each rising or falling edge(set by inside jumperJ1);4-5V when PUL-HIGH,0-0.5V When PUL-LOW. In double pulse mode(pulse/pulse) , this input represents clockwise (CW) pulse, active at high level or low level. For reliable response, pulse width should be longer than 1.5 μs. Series connect resistors for current-limiting when +12v or +24v used.</p>
PUL-	
DIR+	<p><b>DIR signal:</b> In single-pulse mode, this signal has low/high voltage level, representing two directions of motor rotation; in double-pulse mode , this signal is counter-clock (CCW) pulse, active for high level or low level For reliable motion response, DIR signal should be ahead of PUL signal PUL signal by 5 μs. at least.4-5V when DIR-HIGH,0-0.5V when DIR-LOW. Please note that motion direction is also related to motor-driver wiring match. Exchanging the connection of two wires for a coil to the driver will reverse motion direction.</p>
DIR-	
ENA+	<p><b>Enable signal:</b> This signal is used for enable/disabling the driver. High level(NPN control signal, PNP and Different control signals are on the contrary, namely</p>

<b>ENA-</b>	Low level for enabling.) for enabling the driver and low level for disabling the driver. Usually left UNCONNECTED(ENABLED)
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## Power connector P2 pins

Pin function	Details
<b>DC</b>	Power supply, DC: 24-80V, AC: 24V-60V, Including voltage fluctuation and EMF voltage
<b>AC</b>	
<b>A+,A-</b>	Motor Phase A
<b>B+,B-</b>	Motor Phase B

## Current Setting

RMS (A)	Peak current (A)	SW1	SW2	SW3
<b>2.00</b>	<b>2.80</b>	<b>on</b>	<b>on</b>	<b>on</b>
<b>2.57</b>	<b>3.51</b>	<b>off</b>	<b>on</b>	<b>on</b>
<b>3.14</b>	<b>4.31</b>	<b>on</b>	<b>off</b>	<b>on</b>
<b>3.80</b>	<b>5.32</b>	<b>off</b>	<b>off</b>	<b>on</b>
<b>4.30</b>	<b>6.10</b>	<b>on</b>	<b>on</b>	<b>off</b>
<b>4.80</b>	<b>6.72</b>	<b>off</b>	<b>on</b>	<b>off</b>
<b>5.30</b>	<b>7.32</b>	<b>on</b>	<b>off</b>	<b>pff</b>
<b>5.70</b>	<b>8.00</b>	<b>off</b>	<b>off</b>	<b>off</b>

**Notes:** Due to motor inductance, the actual current in the coil may be smaller

than the dynamic current setting, particularly under high speed condition.

**SW4:** off=90% current, on=half current

**SW5:** off=PUL+DIR, on=CW/CCW

**SW10:** Self test, off=Disable, on=Enable

### ***Microstep Resolution Selection***

Steps/rev. (for 1.8° motor)	SW6	SW7	SW8	SW9
<b>200</b>	<b>ON</b>	<b>ON</b>	<b>ON</b>	<b>ON</b>
<b>400</b>	<b>OFF</b>	<b>ON</b>	<b>ON</b>	<b>ON</b>
<b>800</b>	<b>ON</b>	<b>OFF</b>	<b>ON</b>	<b>ON</b>
<b>1600</b>	<b>OFF</b>	<b>OFF</b>	<b>ON</b>	<b>ON</b>
<b>3200</b>	<b>ON</b>	<b>ON</b>	<b>OFF</b>	<b>ON</b>
<b>6400</b>	<b>OFF</b>	<b>ON</b>	<b>OFF</b>	<b>ON</b>
<b>12800</b>	<b>ON</b>	<b>OFF</b>	<b>OFF</b>	<b>ON</b>
<b>25600</b>	<b>OFF</b>	<b>OFF</b>	<b>OFF</b>	<b>ON</b>
<b>1000</b>	<b>ON</b>	<b>ON</b>	<b>ON</b>	<b>OFF</b>
<b>2000</b>	<b>OFF</b>	<b>ON</b>	<b>ON</b>	<b>OFF</b>
<b>4000</b>	<b>ON</b>	<b>OFF</b>	<b>ON</b>	<b>OFF</b>
<b>5000</b>	<b>OFF</b>	<b>OFF</b>	<b>ON</b>	<b>OFF</b>
<b>8000</b>	<b>ON</b>	<b>ON</b>	<b>OFF</b>	<b>OFF</b>
<b>10000</b>	<b>OFF</b>	<b>ON</b>	<b>OFF</b>	<b>OFF</b>
<b>20000</b>	<b>ON</b>	<b>OFF</b>	<b>OFF</b>	<b>OFF</b>
<b>25000</b>	<b>OFF</b>	<b>OFF</b>	<b>OFF</b>	<b>OFF</b>