

● Introduction

The stepper drive PST5042 is a versatility fully digital stepping drive based on a DSP with advanced control algorithm. It brings a unique level of system smoothness, providing optimum torque, nulls mid-range instability and good high speed performance. Motor auto-identification and parameter auto configuration technology offers optimum response with different motors. The driven motors can run with much lower noise, lower heating, smoother movement than most stepping drives on the market.

The stepper drive PST5042 is suitable for a wide range of stepping motors, from NEMA 14 to NEMA 24. It can be used in various kinds of machines, such as medical machines, laser cutters, laser markers, high precision X-Y tables, labeling machines, and so on. Its unique features make the PST5042 an ideal solution for applications that require low-speed smoothness and good high speed performance.



● Electrical Specifications

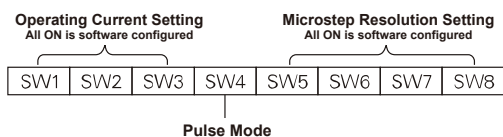
Parameters	Min	Typical	Max	Unit
Output current	0.5	-	4.2 (3.0 RMS)	A
Supply voltage	+20	+36	+50	VDC
Logic signal current	6	10	16	mA
Pulse input frequency	0	-	200	kHz
Isolation resistance	500			MΩ

● Function Description

Function	Description
Micro step Setting	16 selectable micro step resolutions up to 25,600 steps/rev. Set by SW5, 6, 7, 8 of the DIP switch.
Current Setting	Operating current is set by SW1,2,3 of the DIP switch, which is Up to 4.2A.
Automatic Standstill Current Reduction	The current will be automatically reduced to 50% of the selected operating current 0.4 second after the last pulse.
Control Signals	PUL+ and PUL- are for the pulse command signal. DIR+ and DIR- are for the direction control signal. ENA+ and ENA- are for the enable/disable control signal.
Motor Connector	A+, A- and B+, B- are for motor connections. Exchanging the connection of two wires for a coil to the drive will reverse default motion direction.
Power Connector	Recommended to use power supplies with output of +24 to 48VDC, leaving space for power fluctuation and back-EMF.
Indicators	There are two LED indicators on the drive for power and alarm signals. When the Green LED is on, the drive is powered up. When the Red LED is on, the drive is in fault status. When in fault status, the motor shaft will be free. Reset the drive by re-powering it to make it function properly after solving problem(s).

■ Parameter Settings

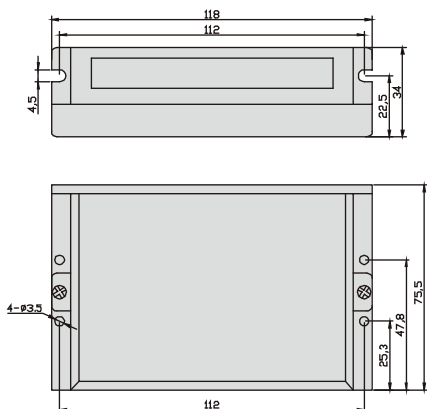
Micro step resolution and output current are programmable. When not in software configured mode, the drive uses a 8-bit DIP switch to set micro step resolution and motor operating current, as shown below:



■ Operating Current Settings

Peak Current	RMS Current	SW1	SW2	SW3
Default (1.0A,PK)		on	on	on
1.46A	1.04A	off	on	on
1.91A	1.36A	on	off	on
2.37A	1.69A	off	off	on
2.84A	2.03A	on	on	off
3.31A	2.36A	off	on	off
3.76A	2.69A	on	off	off
5.00A	3.50A	off	off	off

■ Mechanical Dimension



■ Micro step Resolution Settings

Micro step	SW5	SW6	SW7	SW8
Default	on	on	on	on
400	off	on	on	on
800	on	off	on	on
1600	off	off	on	on
3200	on	on	off	on
6400	off	on	off	on
12800	on	off	off	on
25600	off	off	off	on
1000	on	on	on	off
2000	off	on	on	off
4000	on	off	on	off
5000	off	off	on	off
8000	on	on	off	off
10000	off	on	off	off
20000	on	off	off	off
25000	off	off	off	off