PSR5055

2Phase

Stepper Motor Drive

● Introduction

Thank for choosing the PSR serial motor drive. The PSR5055 is a new digital stepping motor drive based on a 32-bit DSP with advanced control algorithm. It brings a unique level of system smoothness, providing optimum torque and nulls mid-range instability. Motor self-test and parameter auto-tunning technology offers optimum responses with different motors and easy-to-user. The Driven motors can run with much smaller noise, lower heating, smoother movement.
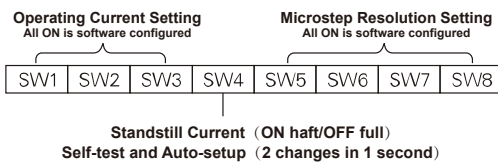
● Electrical Specifications

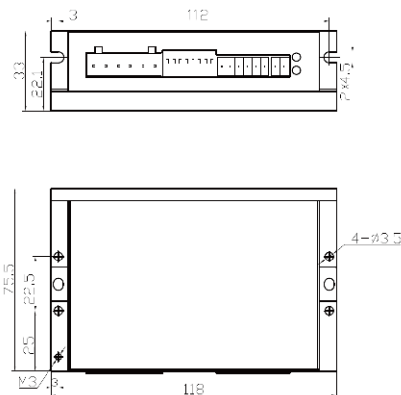| Parameters	Min	Typical	Max	Unit
Output current	1.5	-	5.5	A
Supply voltage	24	-	48	VDC
Input Signal Voltage	4.0	5.0	28.0	VDC
Step Frequency	2	-	1M	Hs
Pulse Width Hi and Low	250	-	-	Ns
Drive initialization time	-	-	2	S

● Function Description

Function	Description
Micro step Setting	Micro step resolution is programmable. When not in software configured mode, micro step resolution is set by SW5, 6, 7, 8 of the DIP switch. In order to avoid losing steps, do not change the micro step resolution on the fly.
Current Setting	Output current is programmable. When not in software configured mode, operating current is set by SW1,2,3 of the DIP switch, which is Up to 8.2A.
Automatic Standstill Current Reduction	SW4 is used for the automatic standstill current reduction, self-test and auto-setup function. When the former active, the current will be automatically reduced to 60% of the selected operating current 0.4 second after the last pulse. Theoretically, this will reduce motor heating to 36% (due to P=I2*R) of the original value.
Self-test and Auto-setup	If the user changes the status/position of SW4 twice in 1 second, the drive will self-test the driving motor and auto setup control parameters, offering optimum performance with different motors.
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 75VDC, 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 Setting
All ON is software configured

Microstep Resolution Setting
All ON is software configured

SW1	SW2	SW3	SW4	SW5	SW6	SW7	SW8

Standstill Current（ON haft/OFF full）
Self-test and Auto-setup（2 changes in 1 second）

▪ Mechanical Dimension

▪ Operating Current Settings

Peak Current	RMS Current	SW1	SW2	SW3
1.5A	1.1A	ON	ON	ON
1.8A	1.3A	OFF	ON	ON
2.2A	1.6A	ON	OFF	ON
2.8A	2.0A	OFF	OFF	ON
3.5A	2.5A	ON	ON	OFF
4.0A	2.9A	OFF	ON	OFF
4.8A	3.4A	ON	OFF	OFF
5.5A	4.0A	OFF	OFF	OFF

▪ Micro step Resolution Settings

Steps/Rev.	SW5	SW6	SW7	SW8
200	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

PRIMOPAL

2Phase Hybrid Stepper Motor

3Phase Hybrid Stepper Motor

5Phase Hybrid Stepper Motor

Hybrid Stepper Gear Motor

Lead Screw Linear Actuator

Ball Screw Linear Actuator

IP65 Stepper Motor

Hollow Shaft Stepper Motor

Stepper Motor With Brake

Pancake Stepper Motor

PM Stepper Motor

Can-Stack Stepper Linear Actuator

PM Stepper Gear Motor

Stepper Motor Drive