Leadshine DM542 Digital Stepper Motor Driver

Electrical Specifications (Tj = 25oC/77oF):

Parameters	M542			
	Min.	Typical	Max.	Unit
Output Current	1.0	–	4.2(3.0RMS)	A
Supply Voltage	+20	+36	+50	VDC
Logic Signal Current	7	10	16	mA
Pulse Input Frequency	0	–	300	kHz
Isolation Resistance	500	–	–	Mohm

Connector P1 Configurations:

Pin	Details
PUL+ PUL-	Pulse signal: In single pulse (pulse/direction) mode, this input represents pulse signal, effective for each rising or falling edge (set by inside jumper J1); 4-5V when PUL-HIGH, 0-0.5V when PUL-LOW. In double pulse mode (pulse/pulse), this input represents clockwise (CW) pulse，effective for high level or low level (set by inside jumper J1). For the reliable response, pulse width should be longer than 1.5μs. Series connect resistors for current-limiting when +12V or +24V used.
DIR+ DIR-	DIR signal: In the single-pulse mode, this signal has low/high voltage levels, representing two directions of motor rotation; in double-pulse mode (set by inside jumper J3), this signal is counter-clockwise (CCW) pulse，effective for high level or low level (set by inside jumper J1). For reliable motion response, DIR signal should be ahead of PUL signal by 5μs at least. 4-5V when DIR-HIGH, 0-0.5V when DIR-LOW.
ENA+ ENA-	Enable signal: This signal is used for enabling/disabling the drive. High level (NPN control signal, PNP, and Differential control signals are, on the contrary, a namely Low level for enabling.) for enabling the drive and low level for disabling the drive. Usually left **UNCONNECTED (ENABLED)**.

Connector P2 Configurations:

Pin	Details
+V	Power supply, 20~50 VDC, Including voltage fluctuation and EMF voltage.
GND	Power Ground
A+, A-	Motor Phase A
B+, B-	Motor Phase B

Selecting Microstep Resolution and Drive Output Current:

This driver uses an 8-bit DIP switch to set micro step resolution, and motor operating current, as shown below:

Microstep	Steps/rev.(for 1.8°motor)	SW5	SW6	SW7	SW8
2	400	OFF	ON	ON	ON
4	800	ON	OFF	ON	ON
8	1600	OFF	OFF	ON	ON
16	3200	ON	ON	OFF	ON
32	6400	OFF	ON	OFF	ON
64	12800	ON	OFF	OFF	ON
128	25600	OFF	OFF	OFF	ON
5	1000	ON	ON	ON	OFF
10	2000	OFF	ON	ON	OFF
20	4000	ON	OFF	ON	OFF
25	5000	OFF	OFF	ON	OFF
40	8000	ON	ON	OFF	OFF
50	10000	OFF	ON	OFF	OFF
100	20000	ON	OFF	OFF	OFF
125	25000	OFF	OFF	OFF	OFF

Current Settings:

Peak Current	RMS Current	SW1	SW2	SW3
1.00A	0.71A	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
4.20A	3.00A	OFF	OFF	OFF

Notes: Due to motor inductance, the actual current in the coil may be smaller than the dynamic current setting, particularly under high speed condition.