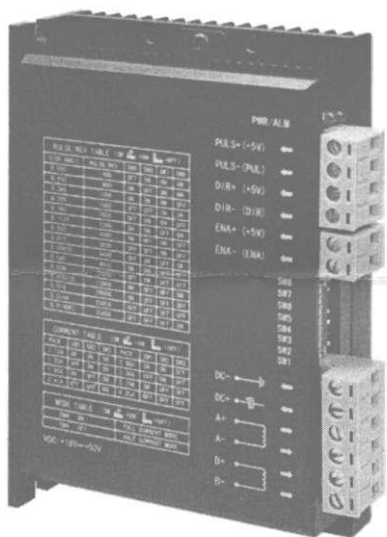


# Product Data Sheet

## 4.2A Stepper Motor Driver ( 160-020-00101 )



### Features:

- 18-50VDC
- 4.2A/Phase (Peak) Max
- 128 Microstep (25600 Steps/Rev) Max.
- Automatic Half Current Option
- All Logic Inputs Isolated
- Full Protection for:
  - Over Voltage
  - Over Current
  - Wrong Phase Wiring
- Low Noise, Low Heat Output
- Single/Dual Clock Option

### Specifications:

Motor Power Supply	18-50V DC	
Current	4.2A (Peak) Max., 8 settings selectable by dipswitch	
Current Control	Pulse width modulation for low ripple current	
Control Inputs	5v logic from current sinking (NPN) interface, 15mA typical	
Microstep	128 Microstep (25600 steps/rev.) Max. 15 settings selectable by dipswitch	
Max. Pulse Rate	300kHz	
Insulation Resistance	>500MOhm (at 20° C)	
Dialectric Strength	500V AC for 1 minute	
<b>Normal Operating Conditions</b>	Temperature	0° C - +50° C
	Humidity	40% - 80% RH
	Vibration	5.9m/s <sup>2</sup> Max.
Cooling	Heat Sink	
Dimensions	120x90x33mm	
Weight	275g	

### Current Dipswitch Settings:

Dipswitch	Current	1.13A	1.53A	1.93A	2.41A	2.86A	3.36A	3.79A	4.25A
SW1		ON	OFF	ON	OFF	ON	OFF	ON	OFF
SW2		ON	ON	OFF	OFF	ON	ON	OFF	OFF
SW3		ON	ON	ON	ON	OFF	OFF	OFF	OFF

### Microstep Dipswitch Settings (steps/rev.):

Steps/Rev Dipswitch	400	800	1000	1600	2000	3200	4000	5000	6400	8000	10000	12800	20000	25000	25600
SW5	OFF	ON	ON	OFF	OFF	ON	ON	OFF	OFF	ON	OFF	ON	ON	OFF	OFF
SW6	ON	OFF	ON	OFF	ON	ON	OFF	OFF	ON	ON	ON	OFF	OFF	OFF	OFF
SW7	ON	ON	ON	ON	ON	OFF	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF
SW8	ON	ON	OFF	ON	OFF	ON	OFF	OFF	ON	OFF	OFF	ON	OFF	OFF	ON

### Mode Dipswitch Settings:

SW4	Full Current Mode	ON
	Half Current Mode	OFF

### Internal Jumpers

J1	Closed (Default)	Falling Edge of motor pulse
	Open	Rising Edge of motor pulse
J2	Open (Default)	Step + Direction Mode (Single Clock Mode)
	Closed	Clockwise + Counter Clockwise Mode (Dual Clock Mode)

### Input Terminal Details:

PULS+(+5v)	Motor Step on falling edge of pulse (single clock mode (J2=Open)) CW rotation on falling edge of pulse (dual clock mode (J2-Closed)) Low level of pulse must stand for at least 500ns to ensure reliable response.
PULS-(PUL)	
DIR+ (+5v)	High/Low level on this terminal determines the rotation direction of the motor, (single clock mode (J2=Open)). Direction pulse must be ahead of Step pulse by at least 5 JS. CCW rotation on rising edge of pulse (dual clock mode (J2=Closed)).
DIR-(DIR)	
ENBL+ (+5v)	Input 5V on these 2 pins switches power off to the motor (e.g. to enable manual operation). Warning: If the controller is in Microstep mode, the motor drops back to the nearest FULL STEP. Leave disconnected if not required.
ENBL- (ENB)	
Note: Voltages greater than 5V may damage the driver	

### Supply Voltage:

18 - 50V DC - Note: The controller will not work below 18V and may be damaged above 50V. Power supply must be smoothed DC with low impedance output.

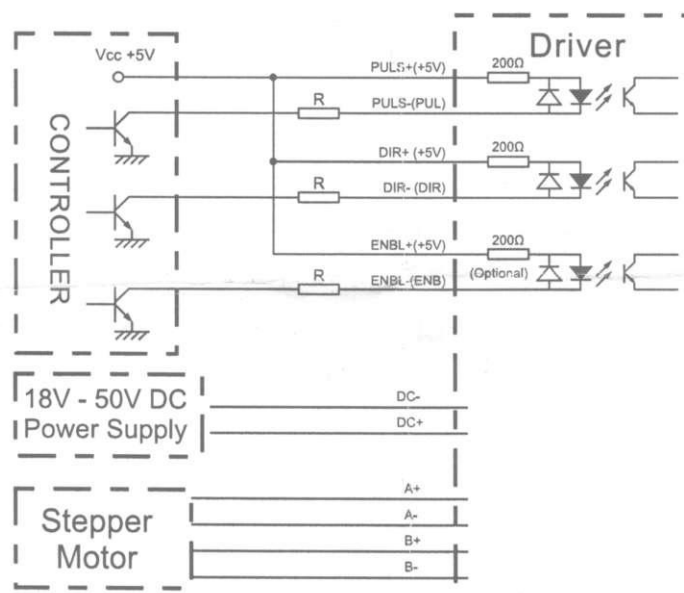
### Automatic Half Current Mode:

When the motor velocity falls below 1rpm, the phase current will drop to 50%. When the motor velocity rises above 1rpm, the phase current will increase to the rated value. To enable this mode, set SW4 to OFF.

### Wiring:

The inputs are totally isolated from the case (ground) and the logic input terminals and can be connected as Common Positive as shown in wiring diagram (or Common Negative if required).

### Typical Wiring Diagram



### Cooling:

The controller needs to be mounted in a well ventilated enclosure or in a heat conductive sealed enclosure.