



G250 10 MICROSTEP DRIVE USERS MANUAL REV-7 JULY 26, 2008

GECKODRIVE INC.
14662 FRANKLIN AVE.
SUITE# E
TUSTIN, CALIFORNIA 92780
1-714-832-8874

POWER SUPPLY GROUND (PINS 1, 2, 3, 4): Connect the motor DC power supply GROUND (- terminal) to these 4 pins. Use all 4 pins to get a good low resistance connection to the power supply ground terminal.

POWER SUPPLY +VDC (PINS 5, 6, 7, 8): Connect the motor DC power supply +VDC (+ terminal) to these 4 pins. Use all 4 pins to get a good low resistance connection to the power supply terminal. The power supply voltage must be between +15VDC and +50VDC. An unregulated power supply can be used. Voltages higher than +60VDC or reversed power supply polarity will destroy the drive.

PHASE A (PINS 9, 10, 11, 12)

PHASE /A (PINS 13, 14, 15, 16): Connect one motor winding from PHASE A to PHASE /A. Use all 4 pins for both connections if the motors rated phase current is more than 1 Amp.

PHASE B (PINS 17, 18, 19, 20)

PHASE /B (PINS 21, 22, 23, 24): Connect the other motor winding from PHASE B to PHASE /B. Use all 4 pins for both connections if the motors rated phase current is more than 1 Amp. Be very careful to not short the phase outputs to each other or anything else. Be careful to wire the motor correctly per the motor manufacturers wiring diagram to the drive. Insure you have the correct series or parallel wiring connections if 8-wire motors are used, insure you have the 2 unused wires insulated and not touching anything if 6-wire motors are used. Failure to do so will destroy the drive.

I-SET (PIN 25): Connect the current set resistor from this pin to **SIGNAL GND (PIN 30)**. Select a 1/4W resistor value to match the motors rated phase current. The resistor value in Ohms is 1,000 times the motors rated phase current in Amps. Example: A 1.8A per phase motor requires a 1.8K resistor (1,800 Ohms). Always use a current set resistor even if 3.5A is selected (drive maximum current). If no current set resistor is used for 3.5A then automatic standby current will be 100% instead of the expected 71%.

DO NOT USE (PIN 26): Reserved.

DIRECTION (PIN 27): This is the DIRECTION input to the drive. It can be driven with 3.3V or 5V logic. The input current is -1mA for logic a '0' and zero for a logic '1' if 3.3V logic is used. It is -1mA and +0.67mA if 5V logic is used. The input is Schmitt triggered and low-pass filtered (1uS). Use **SIGNAL GND (PIN 30)** for the logic ground.

STEP (PIN 28): This is the STEP input to the drive. It can be driven with 3.3V or 5V logic. The input current is -1mA for a logic '0' and zero for a logic '1' if 3.3V logic is used. It is -1mA and +0.67mA if 5V logic is used. The input is Schmitt triggered and low-pass filtered (1uS). Use **SIGNAL GND (PIN 30)** for the logic ground.

DISABLE (PIN 29): This is the DISABLE input to the drive. It freewheels the step motor when it is taken to a logic '0'. The motor runs normally if it is left unconnected or taken to a logic '1'. It can be driven with 3.3V or 5V logic. The input current is -1mA for a logic '0' It is Schmitt triggered and low-pass filtered (1uS). Use **SIGNAL GND (PIN 30)** for the logic ground.

SIGNAL GND (PIN 30): This is the logic ground pin as well as the other end connection for the current set resistor.

POWER LED: This is the power indicator LED and it is always lit when there is power connected to the drive.

ADJUST TRIMPOT: This single turn trimpot adjusts the drive for maximum motor smoothness at low speeds. Set the motor speed to about half a revolution a second, then turn the ADJUST trimpot +/- quarter turn. Between these two limits will be a position where the motor turns with the least vibration. The default setting is at half scale of the trimpot CW/CCW limits. Use a very small screwdriver to adjust this trimpot.

OPTIONAL PLATE: This is optional hard-anodized 0.085" thick aluminum mounting plate used to facilitate mounting the drive to a control box chassis. The hard-anodizing provides the electrical insulation between the drives nine power MOSFETs and the mounting surface. Included are the two 2-56 Allen needed to mount the drive to the plate. Tighten the screws until the threaded ends of the screws are flush with the bottom of the mounting plate. Do not tighten them beyond that limit.

WARNING! Do not mount the drive to a metal heatsink surface without Silpad or mica insulation pads! The nine power MOSFET metal tabs on the bottom side of the drive are electrically "hot" and must not short to the mounting surface. The drive will be destroyed if it is not insulated from the heatsink. Use the OPTIONAL PLATE unless you have experience how to electrically insulate power transistors from a heatsink.



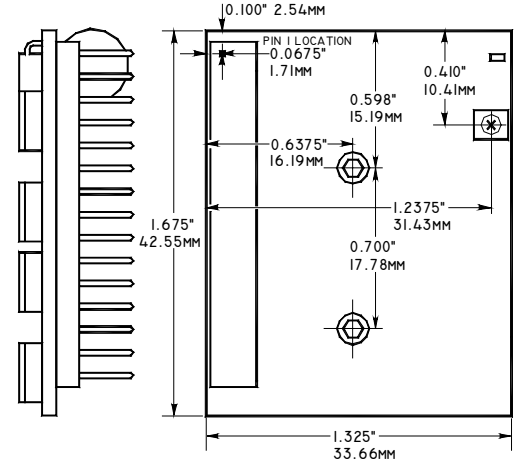
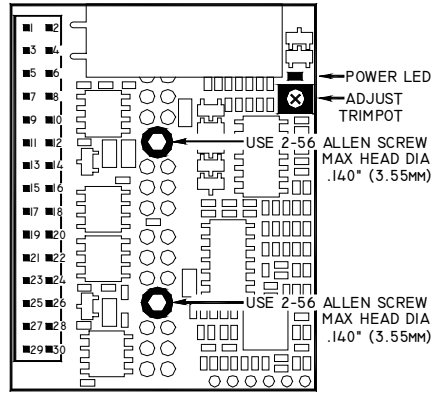
G250 10 MICROSTEP DRIVE

SPECIFICATIONS, PINOUT AND DIMENSIONS

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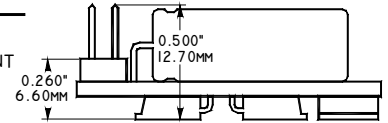
MAIN CONNECTOR:

1 GND	2 GND
3 GND	4 GND
5 +VDC	6 +VDC
7 +VDC	8 +VDC
9 PHASE A	10 PHASE A
11 PHASE A	12 PHASE A
13 PHASE /A	14 PHASE /A
15 PHASE /A	16 PHASE /A
17 PHASE B	18 PHASE B
19 PHASE B	20 PHASE B
21 PHASE /B	22 PHASE /B
23 PHASE /B	24 PHASE /B
25 I-SET	26 DO NOT USE
27 DIRECTION	28 STEP
29 DISABLE	30 SIGNAL GND



SPECIFICATIONS:

SUPPLY VOLTAGE	+15VDC MIN, +50VDC MAX	STEP PULSE WIDTH	1 MICROSECOND MIN
PHASE CURRENT	0A TO 3.5A	AUTO STANDBY	70% OF SET CURRENT
I-SET RESISTOR	1,000 OHMS PER AMP	MID-BAND RESONANCE COMPENSATION	
POWER DISSIPATION	3.3W AT 3.5A AND 50VDC	MICROSTEP TO FULL STEP MORPHING	
RESOLUTION	10 MICROSTEPS PER FULL STEP	I2A, 60V DISCRETE N-CHANNEL MOSFETS	
STEP/DIR INPUT	0V TO 3.3V MIN, 0V TO 5V MAX	1.675" X 1.325" X 0.500" SIZE	
STEP/DIR CURRENT	1mA	WEIGHT	0.45 OZ (12.5 GRAMS)
STEP PULSE RATE	0Hz TO 300kHz	TEMPERATURE	0C TO 75C



OPTIONAL MOUNTING PLATE

0.085" ALUMINUM, HARD ANODIZED

