

5V Stepper Motor + ULN2003 Driver Board Set



A stepper motor is an electromechanical device which converts electrical pulses into discrete mechanical movements. The shaft or spindle of a stepper motor rotates in discrete step increments when electrical command pulses are applied to it in the proper sequence. The motors rotation has several direct relationships to these applied input pulses. The sequence of the applied pulses is directly related to the direction of motor shafts rotation. The speed of the motor shafts rotation is directly related to the frequency of the input pulses and the length of rotation is directly related to the number of input pulses applied. One of the most significant advantages of a stepper motor is its ability to be accurately controlled in an open loop system. Open loop control means no feedback information about position is needed. This type of control eliminates the need for expensive sensing and feedback devices such as optical encoders. Your position is known simply by keeping track of the input step pulses.

FEATURES:

- The rotation angle of the motor is proportional to the input pulse.
- The motor has full torque at standstill(if the windings are energized)
- Precise positioning and repeatability of movement since good stepper motors have an accuracy of – 5% of a step and this error is non cumulative from one step to the next.
- Excellent response to starting/stopping/reversing. Very reliable since there are no contact brushes in the motor. Therefore the life of the motor is simply dependant on the life of the bearing.
- The motors response to digital input pulses provides open-loop control, making the motor simpler and less costly to control.
- It is possible to achieve very low speed synchronous rotation with a load that is directly coupled to the shaft.
- A wide range of rotational speeds can be realized as the speed is proportional to the frequency of the input pulses.



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SPECIFICATIONS:

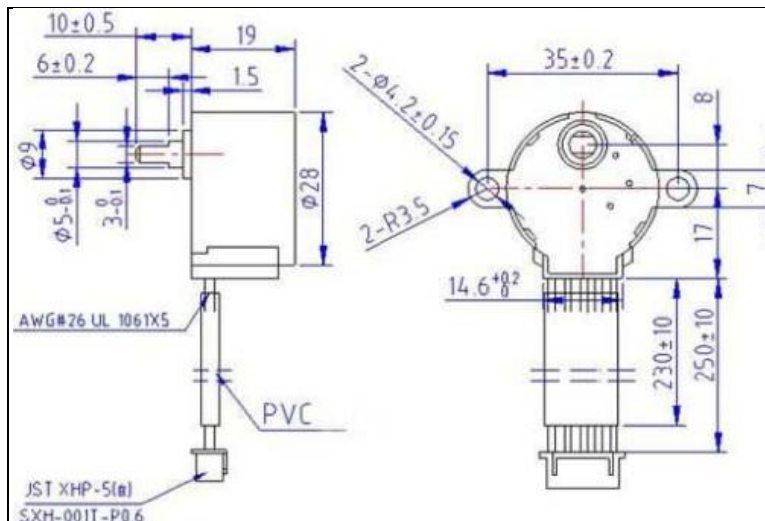
- High quality stepper motor with ULN2003 driver
- Voltage: DC 5V
- Diameter: 28mm
- Step Angle: 5.625 x 1/64
- Reduction Ratio: 1/64
- Dimensions: 1.38 in x 1.26 in x 0.39 in (3.5 cm x 3.2 cm x 1.0 cm)
- Weight: 1.48 oz (42 g)

APPLICATION:

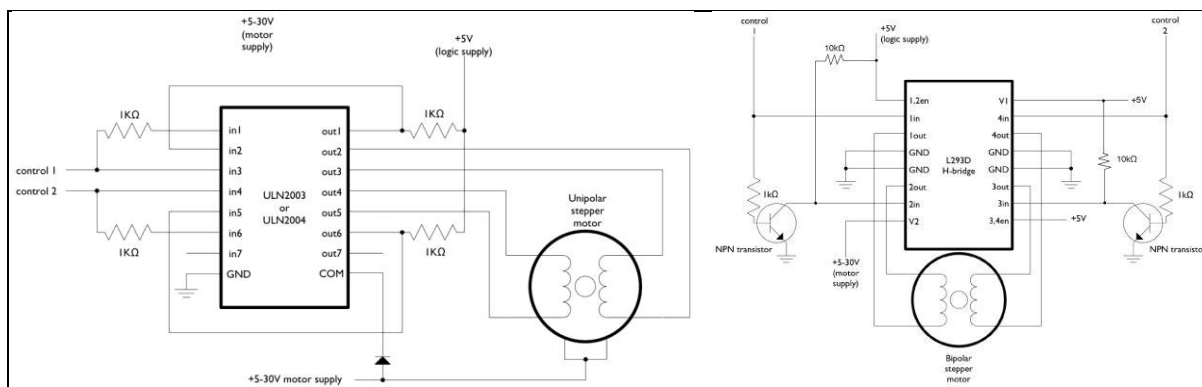
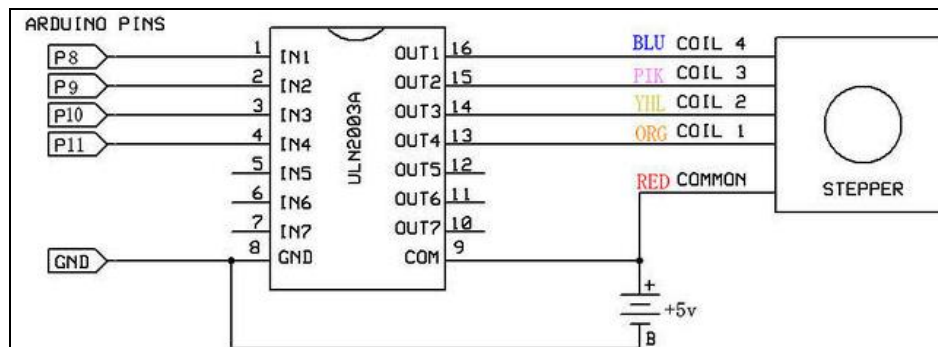
Stepper motors are used in a wide variety of applications in industry, including computer peripherals, business machines, motion control, and robotics, which are included in process control and machine tool applications.

- Consumer Electronics - Stepper motors as actuators for mobile phones camera modules.
- Office Equipment - Stepper motors are incorporated inside PC based scanning equipment, data storage tape drives, optical disk drive head driving mechanism, printers, bar-code printers, scanners.
- Chemical - Mixing and sampling devices utilizing stepper motor controllers and single/multi axis stepper motor controlled environmental testing equipment.
- Automotive and Aircraft - Stepper motors help enable cars, SUV's and RV's to receive telecommunication signals. Stepper motors are also used for cruise control, military antenna positioners, automated sensing devices, and automated cameras. In aircrafts, stepper motors are used in aircraft instruments, sensing devices, antennas, scanning equipment.
- Medical - Step motors are used inside medical scanners, multi-axis stepper motor microscopic or nanoscopic motion control of automated devices, dispensing pumps, samplers, and chromatograph auto-injectors. Also found inside digital dental photography, fluid pumps, respirators, and blood analysis machinery.
- Gaming industry - Stepper motors are used in the motors that power slot machines, wheel spinners and card shufflers.

DIMENSIONS (MM):



SCHEMATIC DIAGRAMS:



PINOUT

