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WHADDA WPI401 Stepper Motor Controller 1 pc User Manual

Contents

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Introduction

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To all residents of the European Union

Important environmental information about this product

This symbol on the device or the package indicates that disposal of the device after its lifecycle could harm the environment. Do not dispose of the unit (or batteries) as unsorted municipal waste ; it should be taken to a specialized company for recycling. This device should be returned to your distributor or to a local recycling service. Respect the local environmental rules.

If in doubt, contact your local waste disposal authorities.

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Thank you for choosing Whadda! Please read the manual thoroughly before bringing this

device into service. If the device was damaged in transit, do not install or use it and contact your dealer.

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</table>

Safety Instructions

	Read and understand this manual and all safety signs before using this appliance.
	For indoor use only.
	· This device can be used by children aged from 8 years and above, and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning the use of the device in a safe way and understand the hazards involved. Children shall not play with the device. Cleaning and user maintenance shall not be made by children without supervision.

General Guidelines

· Refer to the Velleman® Service and Quality Warranty on the last pages of this manual.
· All modifications of the device are forbidden for safety reasons. Damage caused by user modifications to the device is not covered by the warranty.
· Only use the device for its intended purpose. Using the device in an unauthorized way will void the warranty.
· Damage caused by disregard of certain guidelines in this manual is not covered by the warranty and the dealer will not accept responsibility for any ensuing defects or problems.
· Nor Velleman Group nv nor its dealers can be held responsible for any damage (extraordinary, incidental or indirect) – of any nature (financial, physical…) arising from the possession, use or failure of this product.
· Keep this manual for future reference.

What is Arduino®

Arduino® is an open-source prototyping platform based on easy-to-use hardware and software. Arduino® boards are able to read inputs – light-on sensor, a finger on a button or a Twitter message – and turn it into an output – activating of a motor, turning on an LED, publishing something online. You can tell your board what to do by sending a set of instructions to the microcontroller on the board. To do so, you use the Arduino programming language (based on Wiring) and the Arduino® software IDE (based on Processing). Additional shields/modules/components are required for reading a twitter message or publishing online. Surf to **www.arduino.cc** for more information.

Product Overview

A small and versatile motor and driver set. This 5 VDC stepper motor controlled by the ULN2003 driver can be used with any Arduino® or compatible boards via jumper leads. Four-phase LED indicates the status of the stepper motor.

Specifications

·   operating voltage: 5 VDC
·   steps / revolution: 64
·   controller: ULN2003
·   motor diameter: 28 mm
·   reduction ratio: 1:64
·   number of phases: 4
·   dimensions: 35 x 32 x 10 mm

Feature

·	with LED step indicators
·	included: 5 V stepper motor
·	ULN2003 controller module
·	cable
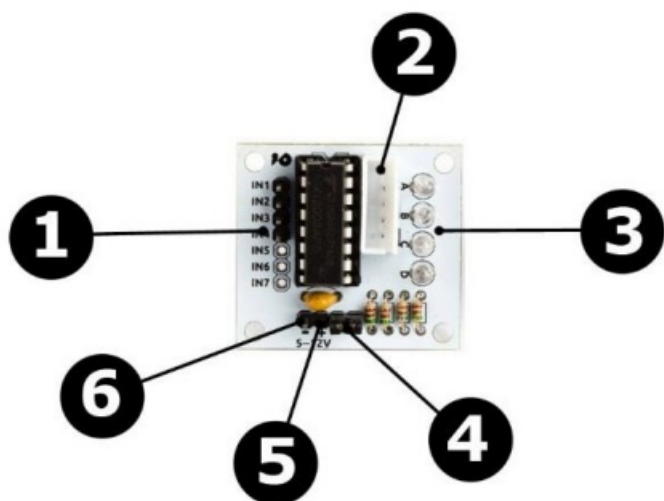
Connection

|				
1	microcontroller I/O port connection		4	motor power supply jumper (connects stepper motor power supply and logic level power supply for driver chip)
2	stepper motor interface		5	supply voltage driver chip (5-12 V)
3	4-phase work indicator		6	ground

Driver Board
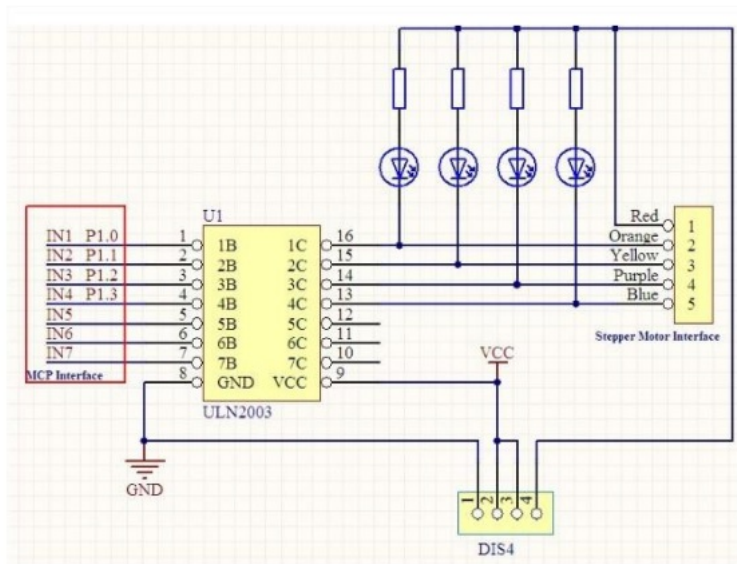
Stepper Motor Connection
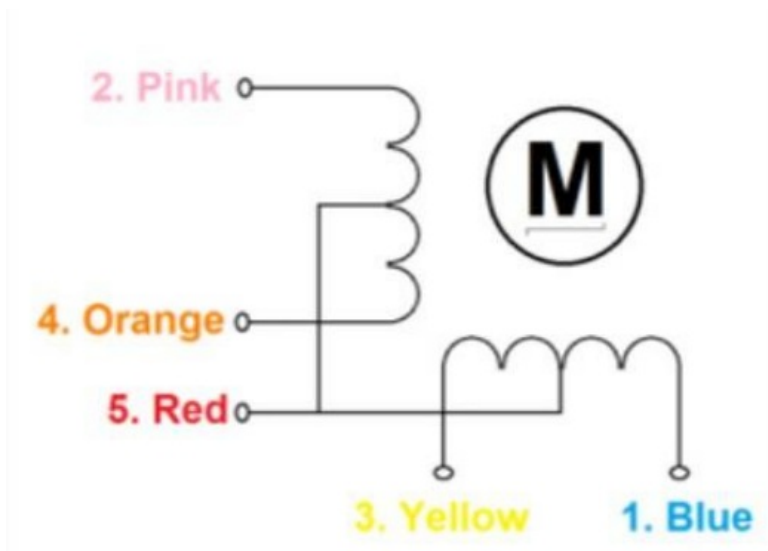
Example

This is an example of how to connect the WPI401 to the WPB100. An additional power supply is advised to power the motor.
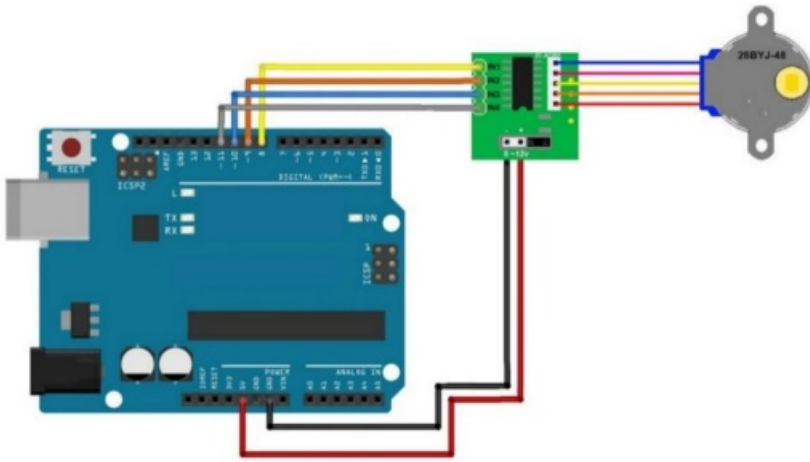
// This Arduino example demonstrates bidirectional operation of a

// 28BYJ-48, using a WPI401 – ULN2003 interface board to drive the stepper.

// The 28BYJ-48 motor is a 4-phase, 8-beat motor, geared down by

// a factor of 68. One bipolar winding is on motor pins 1 & 3 and

// the other on motor pins 2 & 4. The step angle is 5.625/64 and the

// operating Frequency is 100pps. Current draw is 92mA.

//

//declare variables for the motor pins

int motorPin1 = 8; // Blue – 28BYJ48 pin 1 int motorPin2 = 9; // Pink – 28BYJ48 pin 2 int motorPin3 = 10; // Yellow – 28BYJ48 pin 3

int motorPin4 = 11; // Orange – 28BYJ48 pin 4

// Red – 28BYJ48 pin 5 (VCC)

int motorSpeed = 1200; //variable to set stepper speed int count = 0;   // count of steps made

int countsperrev = 512; // number of steps per full revolution

int lookup[8] = {B01000, B01100, B00100, B00110, B00010, B00011, B00001, B01001};

/// void setup() {

//declare the motor pins as outputs pinMode(motorPin1, OUTPUT); pinMode(motorPin2, OUTPUT); pinMode(motorPin3, OUTPUT); pinMode(motorPin4, OUTPUT); Serial.begin(9600);

}

```
//////////////////////////////////////////////////////////////////// void loop(){

if(count < countsperrev ) clockwise();

else if (count == countsperrev * 2) count = 0;

else anticlockwise(); count++;

}

////////////////////////////////////////////////////////////////////

//set pins to ULN2003 high in sequence from 1 to 4

//delay "motorSpeed" between each pin setting (to determine speed) void anticlockwise()

{

for(int i = 0; i < 8; i++)

{

setOutput(i); delayMicroseconds(motorSpeed);

}

}void clockwise()

{

for(int i = 7; i >= 0; i–) setOutput(i); delayMicroseconds(motorSpeed);

}

}void setOutput(int out)

{digitalWrite(motorPin1, bitRead(lookup[out], 0));

digitalWrite(motorPin2, bitRead(lookup[out], 1));

digitalWrite(motorPin3, bitRead(lookup[out], 2));

digitalWrite(motorPin4, bitRead(lookup[out], 3));

}
```

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WPI401 Stepper Motor Controller 1 pc, WPI401, Stepper Motor Controller 1 pc, Motor Controller 1 pc, pc

References

- ⊞ [**Whadda - Exciting Electronics**](#)
- ∞ [**Arduino - Home**](#)
- ∞ [**Arduino - Home**](#)