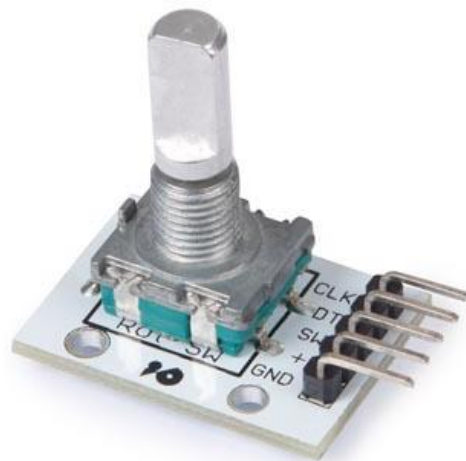


EN digital rotary encoder module

WPI435



Introduction



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.

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.

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 rotary encoder is an input device that indicates the rotating direction and how much the knob has been rotated. A rotary encoder is useful for stepper and servo motor control.

Specifications

- working voltage: 0-5 V
- type: incremental encoder
- material: PCB + brass
- cycles per revolution (CPR): 20
- dimensions: 26 x 19 mm
- weight: 10 g

Features

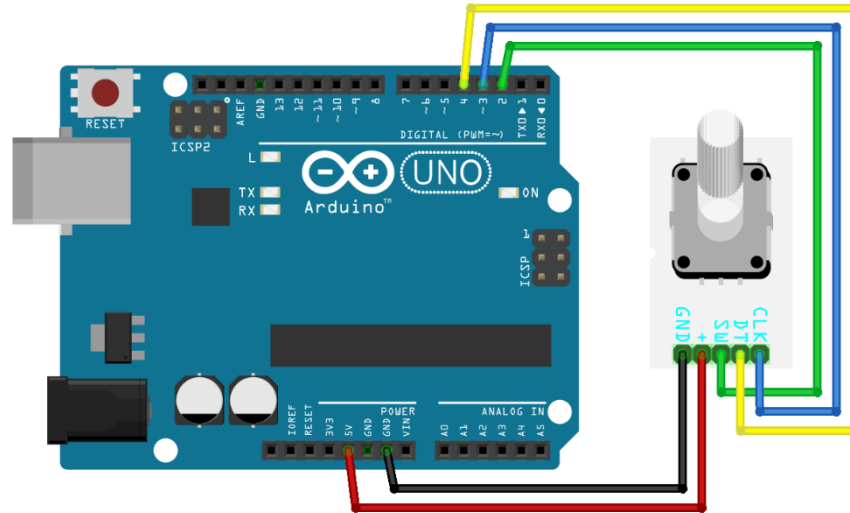
- flat top
- push-button capability
- unlimited rotations
- pins are right-angle to the knob, but you can connect them to a breadboard using male-female jumper wires
- standard pin spacing: 2.54 mm (0.1")

Pin Layout

CLK	encoder A
DT	encoder A
SW	switch (when pressing the encoder)
+	5 VDC power
Gnd	ground

Example

This is a simple sketch that shows how to count the encoder position and how to determine direction of rotation. It has no switch debounce, nor does it use interrupts. A fully developed application might need to incorporate these in order to make it robust.



```

int pinA = 3; // Connected to CLK
int pinB = 4; // Connected to DT
int SW = 2; // Connected to SW
int encoderPosCount = 0;
int pinALast;
int aVal;
boolean bCW;
void setup(){
  pinMode (pinA,INPUT);
  pinMode (pinB,INPUT);
  pinMode (SW, INPUT);
  /* Read Pin A
  Whatever state it's in will reflect the last position
  */
  pinALast = digitalRead(pinA);
  Serial.begin (9600);
}
void loop(){
  aVal = digitalRead(pinA);

  if(digitalRead(SW) == LOW){
    Serial.println("Pushed knob");
    while(digitalRead(SW) == LOW) delay(5);
  }
  if (aVal != pinALast){ // Means the knob is rotating
    // if the knob is rotating, we need to determine direction
    // We do that by reading pin B.
    if (digitalRead(pinB) != aVal){ // Means pin A Changed first - We're Rotating Clockwise

```

```
encoderPosCount ++;
bCW = true;
} else { // Otherwise B changed first and we're moving CCW
bCW = false;
encoderPosCount--;
}
Serial.print("Rotated: ");
if (bCW){
Serial.println("clockwise");
}else{
Serial.println("counterclockwise");
}
Serial.print("Encoder Position: ");
Serial.println(encoderPosCount);
}
pinALast = aVal;
}
```



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