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by [Generic](#)

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4 answered questions

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- Launch tube current: If<20mA;
- Signal output: A, B two lines;

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Product Description

Wide voltage, high resolution, short response time, switch output; Can test motor's rotational speed w/ black encoder (measured spec. is related to the encoder, the inner diameter of D type encoder that provided is 4mm, can be used for motro output shaft w/ 4mm diameter, which is TT motor we matched, yellow shell and white axis. Working voltage: 4.5~5.5V; Launch tube pressure drop: Vf=1.6V; Launch tube current: If<20mA; Signal output: A, B two lines; TT power level; resolution: 0.01mm; Measurement frequency: 100KHz; Disc diameter: 24mm; Encoder resolution: 20 lines; Speed measuring sensor configuration: measure line 1 motor speed.

Product Information

Technical Details

Part Number	10020095
Item Weight	0.3 ounces
Product Dimensions	3.8 x 3 x 0.5 inches

Additional Information

ASIN	B00EERJDY4
Customer Reviews	8 customer reviews 4 out of 5 stars
Best Sellers Rank	#49,549 in Home Improvements (See top 100) #118 in Home Improvement > Safety & Security > Fire Safety > Smoke Detectors & Fire Alarms #319 in Home Improvement > Safety & Security > Household Sensors & Alarms


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Question: [How does this work? Do you put something on the spinning part or does it shine light at it? Can it work with propellers that are not a flat surface?](#)

Answer: The wheel is mounted on a shaft and spins between the two black box like things on the sensor board. It interrupts an IR beam and output of the board is either high or low depending on whether the sensor is blocked. Your software has to count these transitions to compute the speed. Your propeller isn't likely to f... [see more](#)
By w l zimmer on July 17, 2014

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Question: [What Arduino Shieid should I use with this sensor? I will want to sense four of these encoders.](#)

Answer: You don't need a shield, just conect each sensor to an input pin and count transitions from high to low to high. This is really dirt simple, you have to do all the calculations to go from transitions to speed, but then again it isn't rocket science.
By w l zimmer on December 19, 2014

[See more answers \(3\)](#)

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Question: [Any way to just buy the encoder disks ?](#)

Answer: Probably somewhere. Mine came with the 3 wheel bot platforms I purchased from an overseas distributor.
By Jeffrey D. Sheumaker on March 3, 2015

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Question: [I didn't get a user manual in my kit is there a pdf available to download somewhere?](#)

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Answer:

These are very easy to use. The pins are labeled "5V" "GND" and "OUT". Your supply goes to the 5V input, and OUT goes to an input on your micro controller (i.e. Arduino). The Output pin swings from 5V to 0V every time an opening on the encoder wheel goes by the optical sensor in the slot. One word of warning, these enc... [see more](#)
By DirtyValentine on January 22, 2015

[See more answers \(1\)](#)

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8

4.0 out of 5 stars



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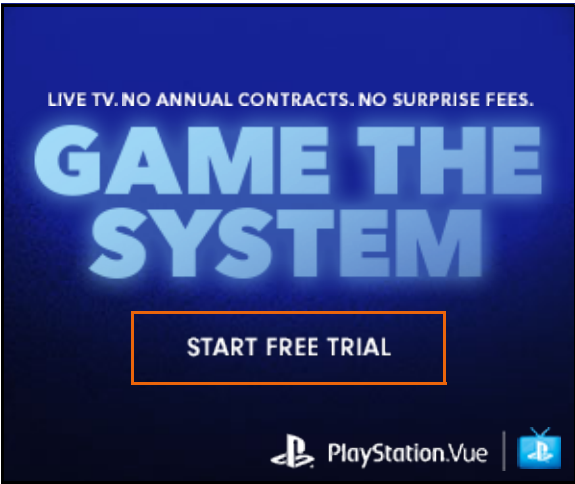
Circuit needs some mods to make it work well, but it's worth it!

By [JErV](#) on June 4, 2015

Verified Purchase

I give this four stars, but only after I fixed the design to make them work properly. The main benefit of this product is that it makes perfectly with one of the more popular low-cost robot chassis kits. You'll find this kit under product names here on Amazon like:

- Makerfire® Arduino 2WD Motor Robot Car Chassis Kit with Wheel Encoder Photoelectric Sensor
- SODIAL(R) WST Motor Smart Robot Car Chassis Kit Speed Encoder Battery Box
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perfect
Published 24 days ago by Bob

Five Stars

A great product, a great seller!! Thanks you very much!
Published 2 months ago by Alejandro

Smart Robot Car Chassis Kit Speed Encoder Battery Box For Arduino

All of these kits have a cut-out in the chassis to receive this module, but the module is not included in any of these kits.

Here is the detail of what needs to be fixed:

The module is a standard IR emitter/detector pair that shines IR light through the slots in the encoder wheel. As the wheel turns, the detector sees light pulses, which are turned into electrical pulses via a simple comparator circuit. Note that these are not quadrature encoders, so the tach pulses show speed, but not direction. The circuit problem is that the comparator circuit was designed without hysteresis, so the output oscillates at the transitions between light and dark. I was planning to use the output tach signal as an interrupt for my arduino project, and these oscillations were all being counted as separate tach pulses. This is electronics 101, and I was shocked to see such simple error. Anyway, soldering a 30K resistor from the comparator output back to the positive input pin solved the problem. I also needed a 30pF cap on the output to slow the edge down just a tad to create a clean signal with no reflections or reversals. [Read more >](#)

[Comment](#) 5 people found this helpful. Was this review helpful to you? [Report abuse](#)

Works but not without adding supply bypassing...

By [DirtyValentine](#) on January 24, 2015

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These devices basically worked, but there is no supply bypassing which basically causes the encoder edges to be very noisy. Without added supply bypassing my Arduino Uno would sometimes count multiple pulses per edge, or miss an edge all together. Luckily I have a oscilloscope so I could look at the sensor output and the edges looked horrendous. I added a small 0.1uF ceramic cap between the 5V and GND pins of the board and the edges cleaned up nicely. Now both encoders work perfectly with my Arduino. I gave 3 stars because the sensors are relatively cheep and work, but -2 stars for the headache of having to debug them and add supply bypassing. It would cost the manufacturer maybe 1 cent to add the bypass cap so shame on them. I'm so sick of cheep Chinese \$#!*.

[1 Comment](#) 7 people found this helpful. Was this review helpful to you? [Report abuse](#)

Four Stars

as advertised

Published 10 months ago by Timothy Nixon

Very cool encoder. Super straight-forward

Very cool encoder. Super straight-forward. I am using it to measure speed of little DC motors. OUT pin creates a nice little square wave with frequency proportional to speed based... [Read more](#)

Published 11 months ago by SP

Search Customer Reviews

Works great...once you fix the hardware bugsBy [Joshua M. Thompson](#) on September 18, 2015**Verified Purchase**

As a couple others have mentioned, these really only work well if you modify the circuit. As shipped the output is so noisy that it's almost useless because of the terrible signal bouncing at the transitions.. Adding a 33k resistor between the output and positive input of the comparator as suggested in another review cleaned this up into a nice square wave. However, it's not easy to hand solder a resistor to the tiny pins on the surface mount chip.

So TL;DR it's not bad for the price if you are good at fine detail soldering.

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Works but barely.By [Nom de Plume](#) on March 19, 2016**Verified Purchase**

Required modification to get it to work. The slots were too small for the sensor to pick up the light so I had to put tape over it and use a Dremel tool to expand some of the holes to the size of 3 holes. One of my sensors had a bad via which I had to repair with a solder bridge. The sensor doesn't produce a very clean signal. But after testing I determined that the sensor triggers twice every time it detects a gap pretty consistently so I was able to correct for it.

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