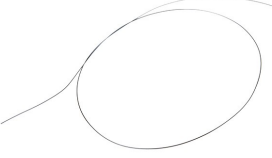


HOME / PRODUCT CATEGORIES / WIRE / FLEXINOL - 0.012" DIAMETER (1 FOOT)

## Flexinol - 0.012" Diameter (1 foot)

COM-12096 ROHS

**DESCRIPTION** FEATURES DOCUMENTS



This 0.012" Flexinol® Actuator Wires (aka shape memory **Nitinol**) is a one foot long piece of nickel-titanium alloy that can flex and contract when a specific amount of heat or current is applied to it and are made specifically for linear actuators to replace small motors or solenoids. If you are asking yourself "What sorcery is this?!" We assure you, this isn't magic, it's just simple science thanks to shape memory and a change between the wires weaker, low temperature form (martensitic) and its stronger, high temperature form (austenite).

When the Flexinol® is in its martensitic form, it can be formed and bent into different shapes. However, when an electrical current of ~200mA is applied to the wire, or is heated to ~100C it reverts to austenite form and recovers its previous shape with great force. Additionally, you can anneal at ~500C (use an industrial furnace or simply a lighter) it to whatever shape you would want, next once that current or heat is applied it will return to that new shape.

**Note:** These are the "HT" type wires.

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### Flexinol - 0.012" Diameter (1 foot) Product Help and Resources

**SKILLS NEEDED**

#### Core Skill: Electrical Prototyping

If it requires power, you need to know how much, what all the pins do, and how to hook it up. You may need to reference datasheets, schematics, and know the ins and outs of electronics.

**Skill Level: Noob** - You don't need to reference a datasheet, but you will need to know basic power requirements.  
See all skill levels

COMMENTS 7 REVIEWS 0

### Customer Comments

Log in or register to post comments.

**Member #457480** / about 3 years ago / ★ 1  
Can you trigger flexinol to follow a motion sensor

**AboutWout** / about 4 years ago / ★ 1  
How hot does the wire get when you apply current to it?  
I've seen a few videos on YouTube where they embedded flexinol inside a dress to make it move, so it should stay relatively cool, right?

**threadzless** / about 4 years ago / ★ 1  
My understanding is that it reaches about 100C However, this is a very thin wire, so it should cool almost immediately after power is taken away. You may have been looking at a different kind of wire

**ender323** / about 4 years ago / ★ 1  
Is it possible to set a new shape via current? What amperage would this occur at?

**Member #525887** / about 4 years ago \* / ★ 1  
I just now ran 3A and was able to train it. 3A was a guess, since about 600mA seems to initiate movement (when open to the air).

**lesto** / about 4 years ago / ★ 1  
yes this is possible, but i've used the flame from a candlestick (pay attention as it can burn the wire)

**pmarchesi** / about 4 years ago / ★ 1  
The "Current Required for Austenite Form:" is 200mA or 1.5A like https://www.sparkfun.com/products/11900? Thanks

**Member #525887** / about 4 years ago \* / ★ 1  
SparkFun updated the site within days of me emailing them regarding it being mislabeled. It is 1.5A. I've found that I see movement (in open air) around 600mA. 1A or a bit more is required for strong actuation.

**ender323** / about 4 years ago / ★ 1  
According to description, 200mA.

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In 2003, CU student Nate Seidle blew a power supply in his dorm room and, in lieu of a way to order easy replacements, decided to start his own company. Since then, SparkFun has been committed to sustainably helping our world achieve electronics literacy from our headquarters in Boulder, Colorado.

No matter your vision, SparkFun's products and resources are designed to make the world of electronics more accessible. In addition to over 2,000 open source components and widgets, SparkFun offers curriculum, training and online tutorials designed to help demystify the wonderful world of embedded electronics. We're here to help you start something.

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