

# Quick start guide

## *XLA micro actuator - open loop & hybrid*

### **Before you start:**

Do **not** lubricate! Please see FAQ.

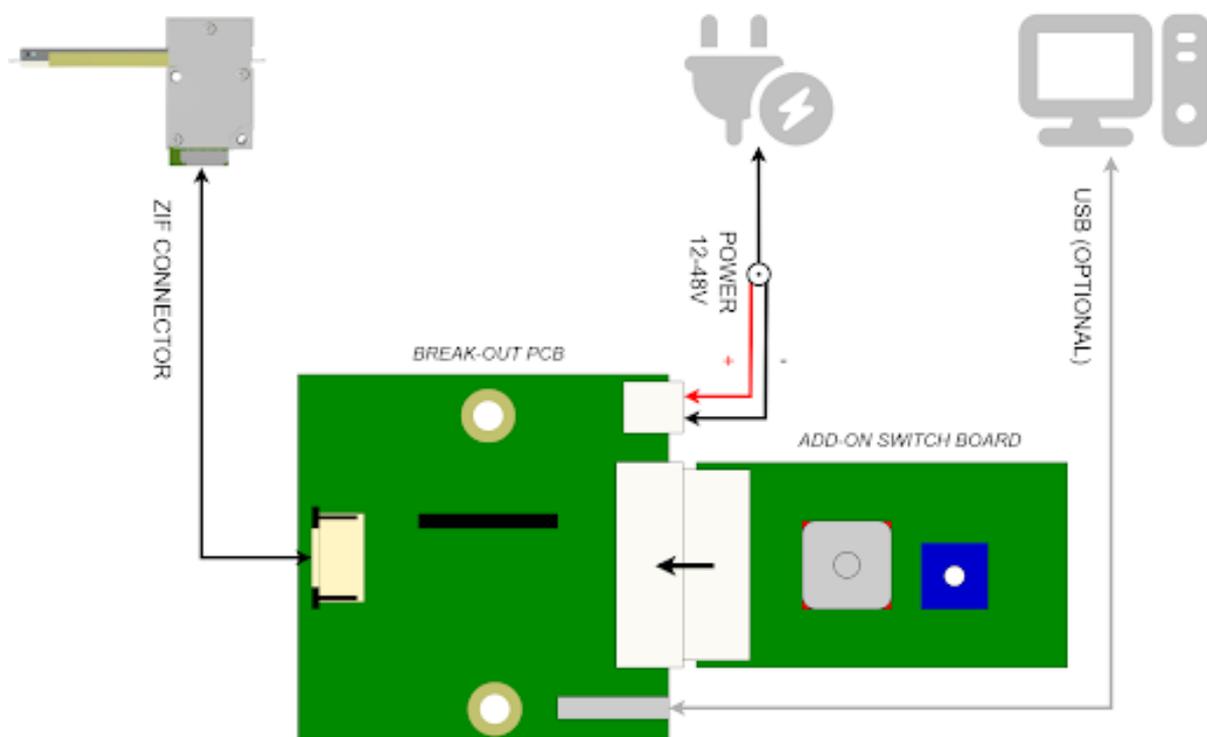
Do **not** insert ZIF cable while powered! Damage may ensue.

Do **not** touch white ceramic strip with your fingers! If touched, clean with IPA alcohol.

### **Follow the steps below to get started:**

#### **Instructions (see schematic overview)**

1. Connect ZIF cable (see photos on page 2 for orientation) to the actuator and break-out PCB.
2. Plug the add-on switch board into the break-out PCB.
3. Plug the power cable into the break-out PCB.
4. Plug the DC adapter into a power source.
5. The actuator is now ready to move.
6. Use the red switch to control direction and the blue potentiometer to control speed.



*Schematic overview of connections*

# Frequently asked questions

## *XLA micro actuator - open loop & hybrid*

**Q: What am I looking at?**

**A:** *You're looking at a Xeryon micro actuator driven by an ultrasonic resonant piezo motor.*

**Q: How does it work?**

**A:** *The motor uses vibration to move a ceramic tip in an elliptical pattern at a very high frequency (80 kHz - 180 kHz). Spring-loaded against a ceramic strip on the actuator rail, it generates very small but rapid movements, resulting in high-speed motion and silent operation with a long lifetime.*

**Q: How does it differ from electromagnetic linear actuators?**

**A:** *Xeryon's micro actuators offer a unique combination of high speed, precision, long stroke, and durability in an ultra-compact design, overcoming the limitations of traditional linear actuators where trade-offs have to be made (e.g. stroke length in voice coils and size factor in linear motors). Xeryon's actuators are gearless, self-locking, energy-efficient and operate at low voltages. They don't produce a magnetic field, are back-driveable, and free from drift or play.*

**Q: How does it differ from other piezo linear actuators like stick-slip or walking piezo?**

**A:** *Xeryon's ultrasonic piezo actuators are much faster, have a much larger stroke, a much (much!) longer lifetime, operate noiselessly, consume less power, and operate at a much lower voltage at the piezo element.*

**Q: What voltage should we use?**

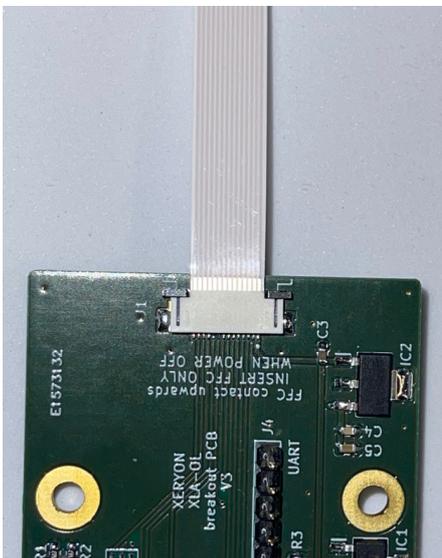
**A:** 12 - 48 VDC.

**Q: Why does the rail / rod not move freely?**

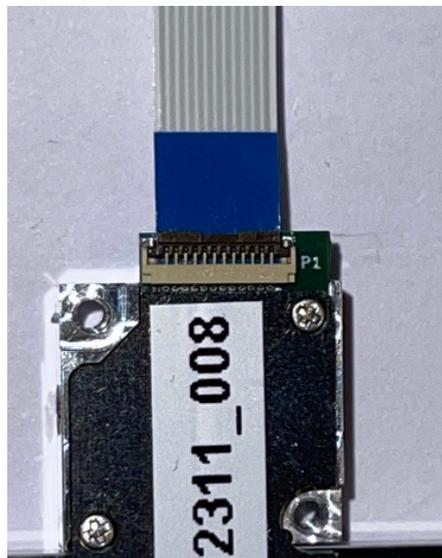
**A:** *When you manually move the rod, you might sense a 'grinding' feeling. This is normal. The motor is spring-loaded against the actuator rod and is friction-based. The actuator's holding force is equal to the driving force.*

**Q: How do I orient the ZIF cable?**

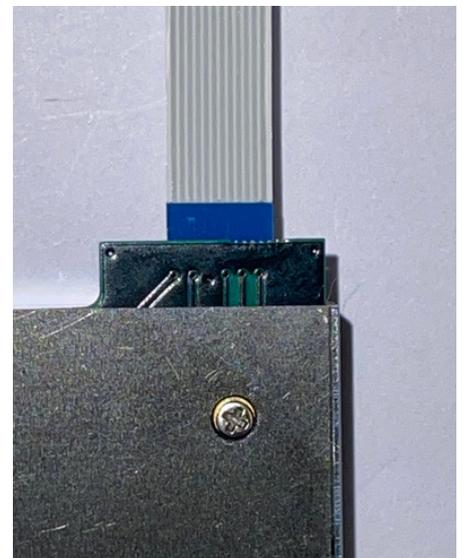
**A:** *Please see these pictures below.*



Break-out PCB



XLA-1



XLA-3, XLA-5 and XLA-10