

KONTEX CONNECTIVITY SOLUTION

Unrestricted High Fidelity Electrophysiology



KonteX offers both passive and motorized commutator designs to support diverse electrophysiological paradigms. Engineered for minimal breakaway torque and seamless multi-modal integration, our commutators deliver high performance and usability while providing exceptional value for advanced neuroscience research.



COMMUTATOR PRO

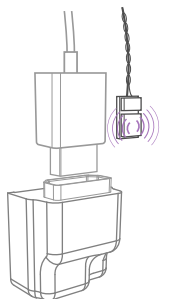
The Commutator PRO is our most advanced and highly customizable model, featuring a built-in low-noise motor and two flexible torque sensing options: an animal-side gyroscope or an integrated Hall sensor. Its onboard microprocessor continuously and instantaneously detects and compensates for cable torque generated by animal movement, ensuring stable recordings and naturalistic behavior.

Flexible Torque Sensing

1. Gyro Sensor

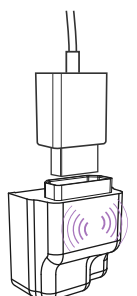
Integrated Sensor Cable

The sensor cable is lightweight (<1 g) and highly flexible, featuring a 34 AWG wire bundle. It integrates seamlessly with existing headstage and cable setups and can be easily adapted to your system, enhancing behavioral outcomes and animal welfare without requiring any changes to your workflow.



Custom Gyro Headstages

When used with headstages equipped with a compatible gyroscope sensor, the existing HDMI cable can carry the gyro signal directly to the commutator, eliminating the need for an external sensor cable.



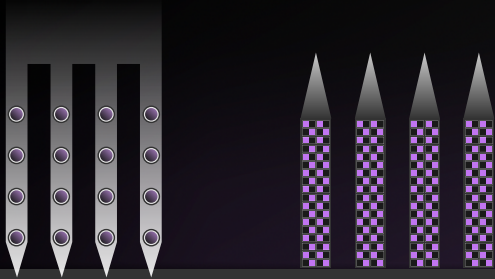
2. Hall Sensor

The Commutator PRO can also operate using an integrated Hall sensor with a magnetic encoder to detect cable rotation. This configuration eliminates the need for an external sensor and is generally suitable for rat experiments and non-Neuropixels applications.

* requires XDAQ IO Expander

Simultaneously Supports Passive Probe x Neuropixels

The PRO line supports advanced multi-probe applications, enabling simultaneous use of Neuropixels and passive probes. Researchers can deliver electrical stimulation through passive probes while recording high-density neural activity with Neuropixels, facilitating integrated stimulation and recording for complex circuit analysis.



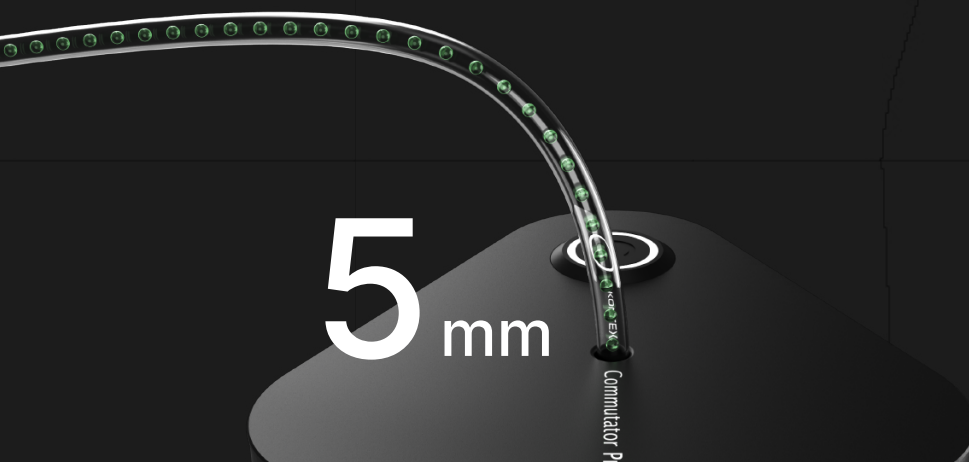
Highly Customizable

- Dual mode: Neuropixels + conventional probe simultaneous operation
- Up to 4 Neuropixels Ports
- Customizable HDMI port
 - up to 64ch XSR or 256+ch XR headstages
 - integrated gyro control
 - integrated GPIO signal
- Up to 9 GPIO

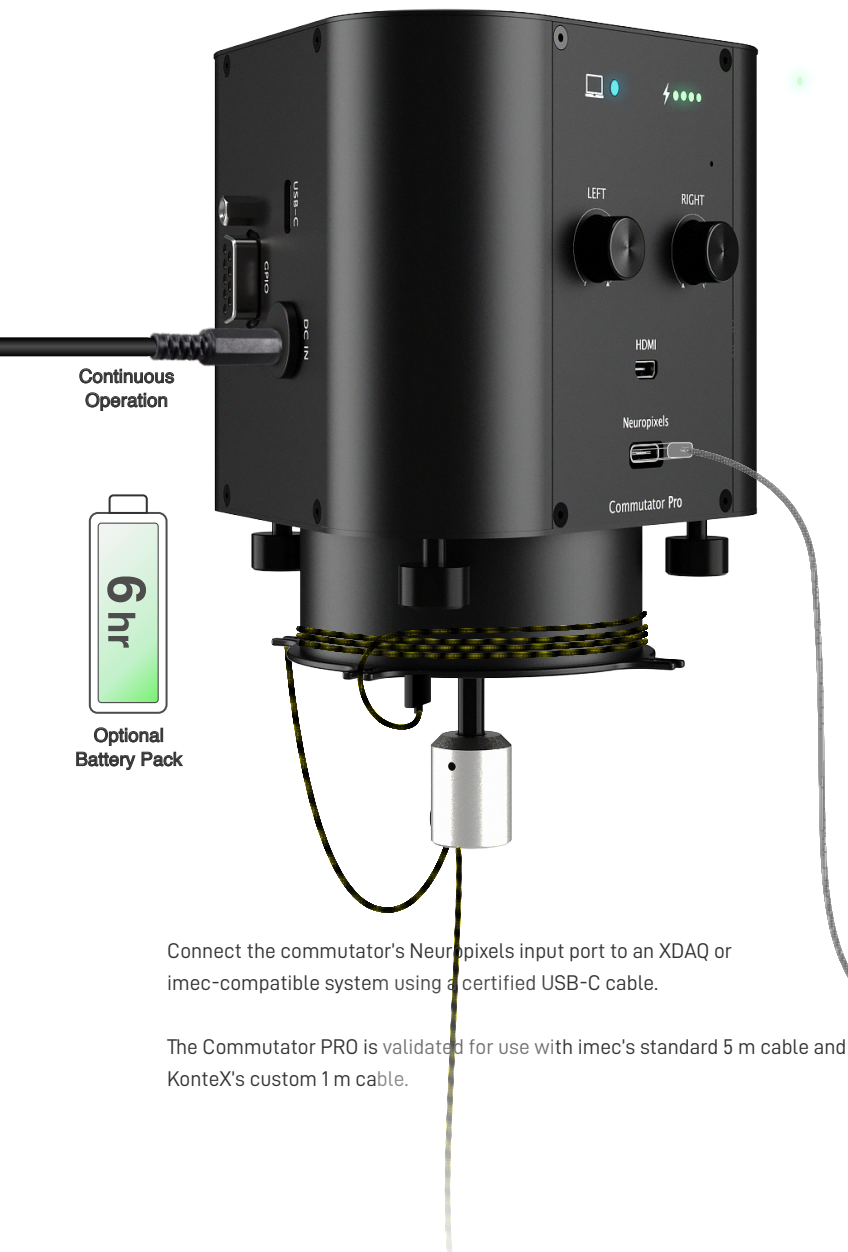
*subject to configuration limitation

Multi-Paradigm Experimental Support

The Commutator PRO can be optionally configured with a 5 mm inner diameter channel, enabling fluid delivery or optical fiber access during ongoing electrophysiological experiments and further enhancing experimental flexibility.



Noise-Free Operation: Plug-In or Battery Powered



Connect the commutator's Neuropixels input port to an XDAQ or imec-compatible system using a certified USB-C cable.

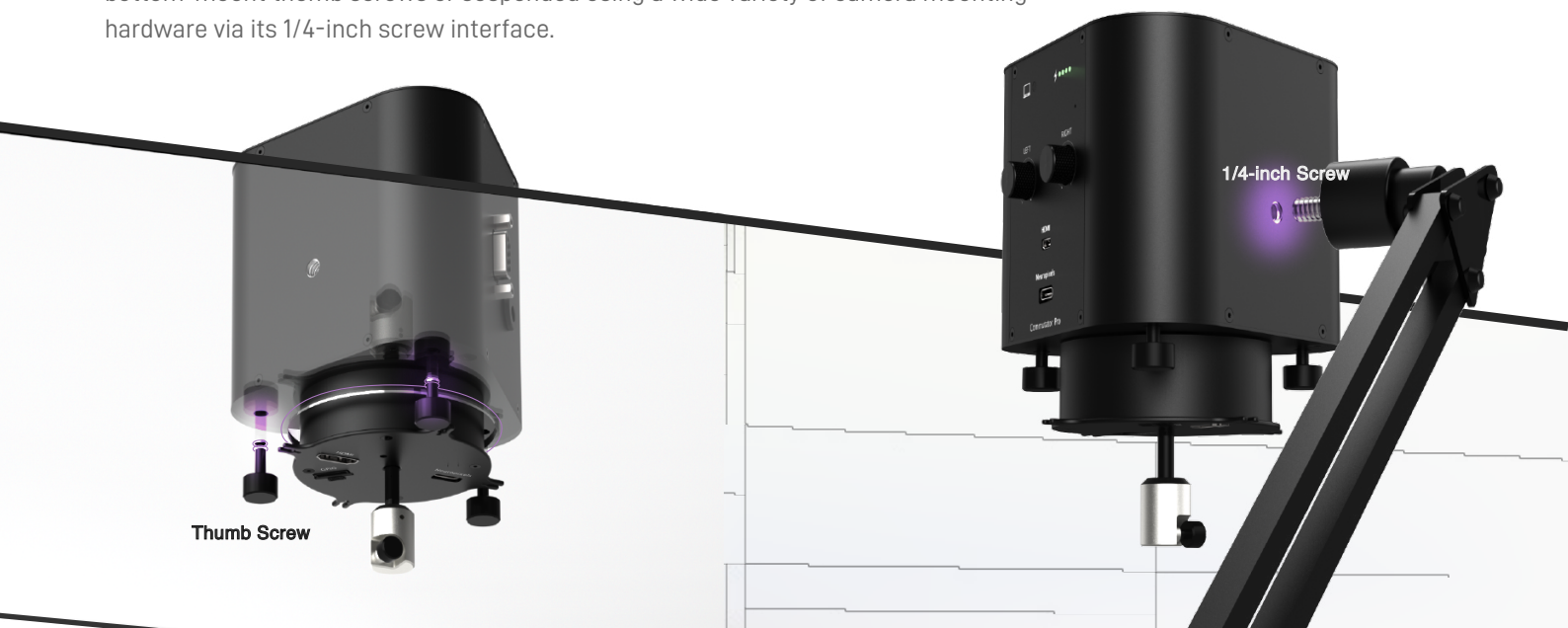
The Commutator PRO is validated for use with imec's standard 5 m cable and KonteX's custom 1 m cable.



Gen 2 XDAQ / Imec OneBox

Versatile, Easy Mounting Solutions

The Commutator PRO can be mounted directly to your behavior box using the included bottom-mount thumb screws or suspended using a wide variety of camera mounting hardware via its 1/4-inch screw interface.



Feature Summary

- Flexible torque sensing - headside gyro sensor or rotor side hall sensor
- Supports simultaneous use of passive and Neuropixels probes
- Supports multiple Neuropixels probes
- Compatible with KonteX XR (recording) and XSR (stimulation-recording) headstages
- Optional fluidic or fiber passthrough channel
- Optional battery pack
- General purpose IO available
- Adapters available for open-platform hardware, including Intan headstages and controllers
- PC- and panel-controlled left/right rotation override
- Adjustable Hall sensor rotation tracking sensitivity and speed
- Fully compatible with imec Neuropixels headstages and cables

STANDARD COMMUTATOR

Our newly redesigned non-motorized commutator delivers enhanced signal quality and low friction operation that are improved over the previous generation. It features integrated animal-side cable management for secure mounting and convenient cable storage. This versatile design supports both XR (recording only, up to 256 channels per cable) and XSR (stimulation-recording, up to 32 channels per cable) headstages, providing a streamlined solution for diverse experimental needs.

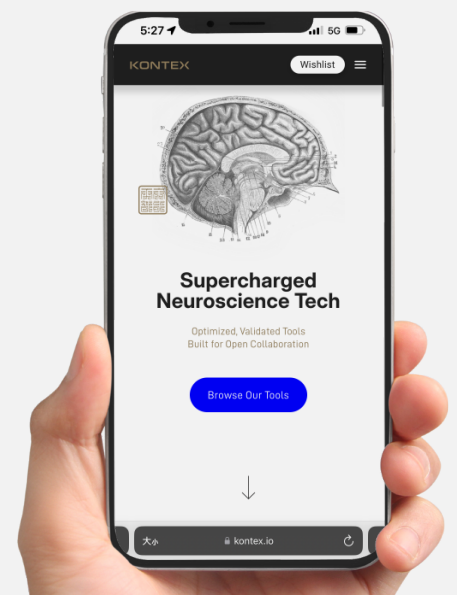
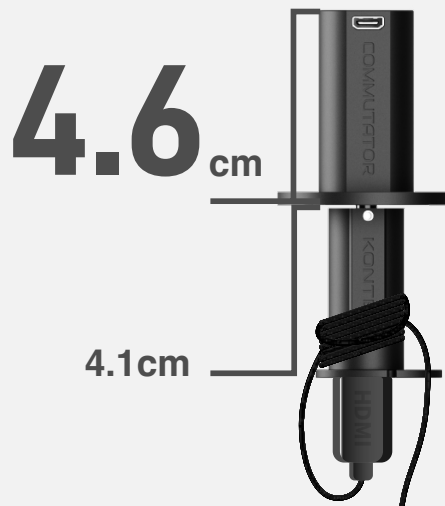
Plug-n-Play

The standard commutator operates mechanically, requiring no external power. Its off-center tether attachment amplifies rotational motion, enabling smooth, reliable cable management while preserving natural animal movement during experiments.

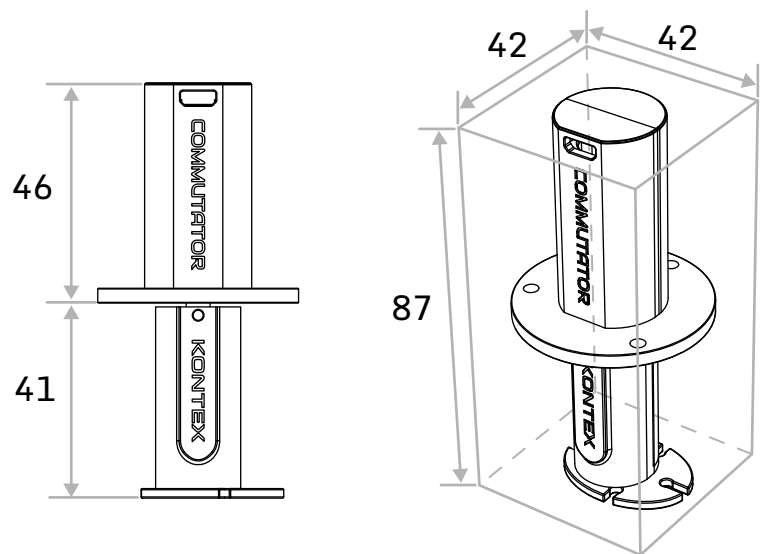
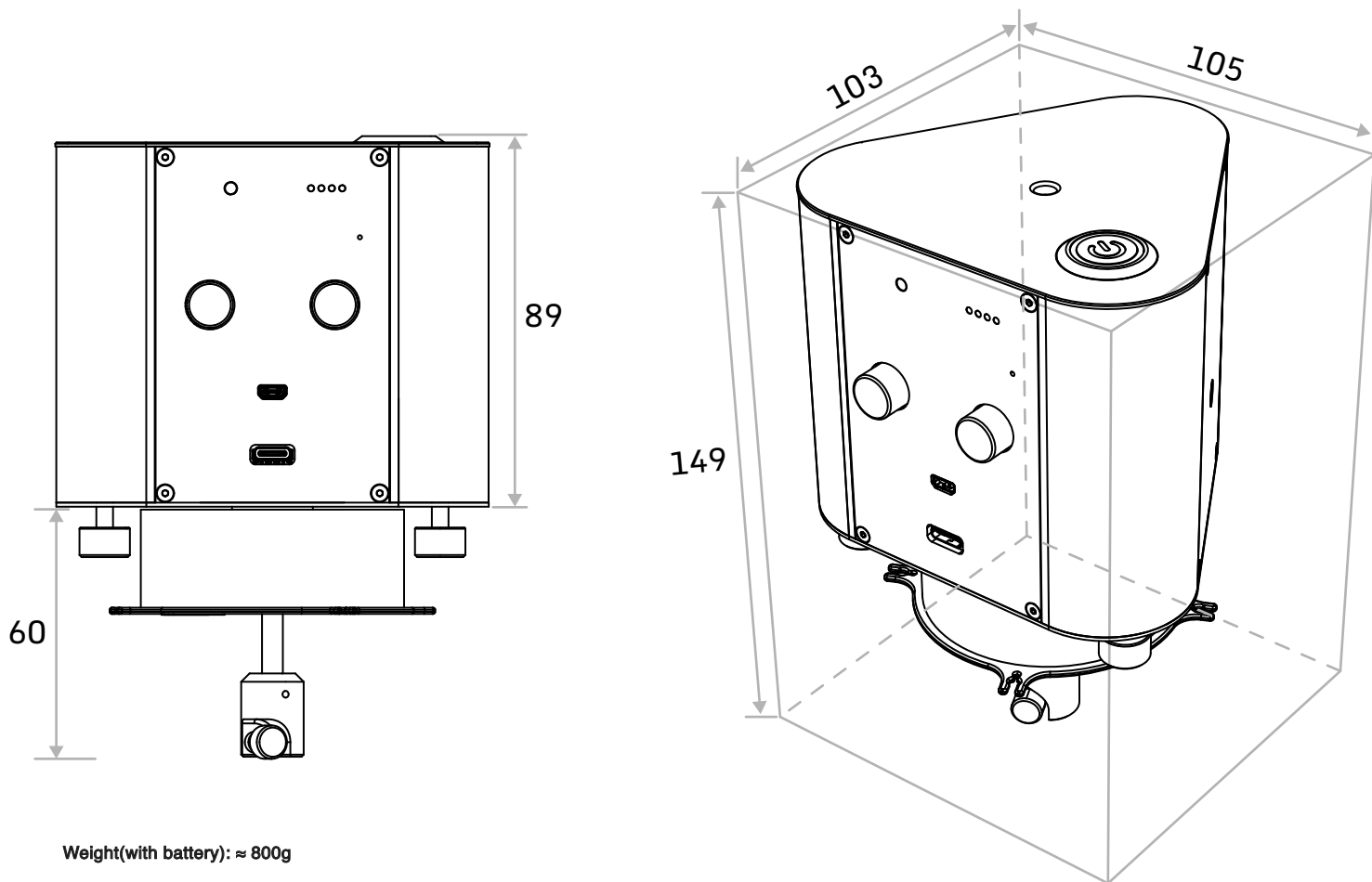


ULTRASMALL

The updated standard commutator is smaller than the previous version. With a box side height of only 4.3cm, it can be used in densely spaced animal racks.



Dimensions



Unit: mm