## Bio12Pod Configurations

Differential versus Single-Ended refers to how pairs of electrodes are used to obtain a signal.

DSI's Bio12Pod can be used for both differential and single-ended configurations.

Differential Configuration:
- Record the difference between positive and negative input signals
- Each positive and negative electrode is treated as a distinct pair
- One or more pairs are typically studied at a time
- Each pair is used to generate an EEG waveform
- If a separate ground electrode is used, differential delta will also subtract the ground value

Differential Calculation: Δ (+ & ground) – Δ (- & ground)
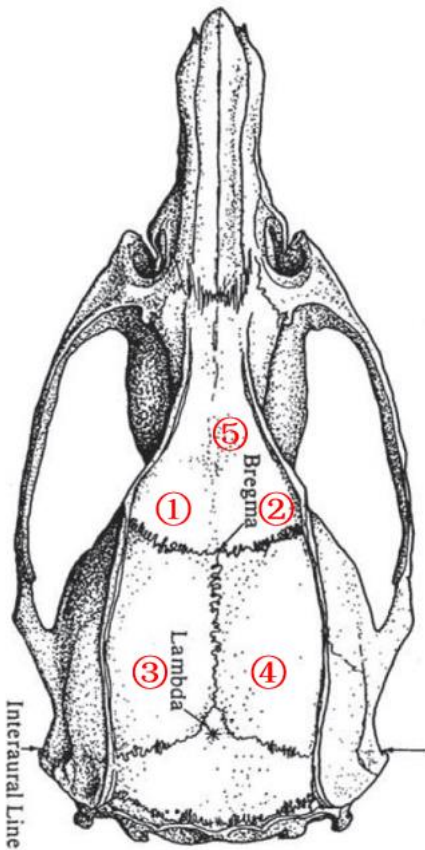
Differential Example			
Electrodes	1 (+)	2 (-)	= Waveform
Electrodes	3 (+)	4 (-)	= Waveform
Electrode	5		= Ground electrode

Single-Ended Example			
Electrodes	1 (+)	5 (ref)	= Waveform
Electrodes	2 (+)	5 (ref)	= Waveform
Electrodes	3 (+)	5 (ref)	= Waveform
Electrodes	4 (+)	5 (ref)	= Waveform

Single-ended Configuration:
- Record the difference between an input signal (positive) and a common reference (negative)
- Each positive electrode uses the same common reference
- 2 or more positive electrodes are typically studied at a time
- If a separate ground electrode is used, the differential delta will also subtract the ground value

Single-ended Calculation: Δ (+ & ground) – Δ (reference & ground)

Connection to the Bio12Pod requires distinct electrode pairs. When using a single-ended configuration, the single reference electrode coming from the test subject must be split using jumpers. Each split signal is then connected to a negative (-) jack on the Bio12Pod.
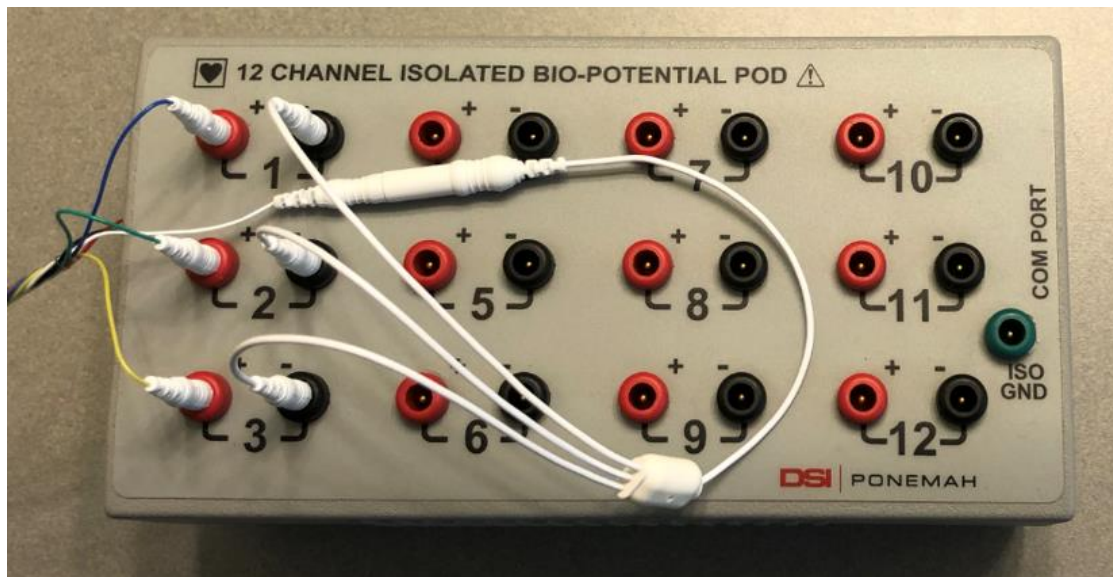
DSI Bio12Pod 1.5mm splitter (1:3) part number: 274-0032-001