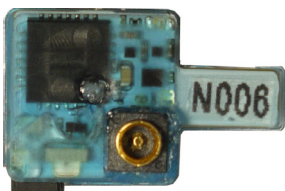
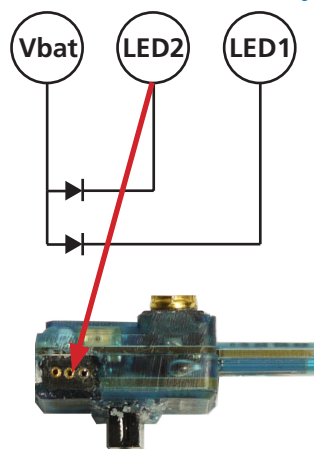


W2100-HS4-opto Headstage

W2100 Headstage equipped with Connector for two LEDs for Optical Stimulation for Use with the W2100-System



W2100-HS4-opto top side
Please use the storage battery connector for the orientation of the headstage.



W2100-opto-Test
Equipped with two LEDs for testing the W2100-HS4-opto.
Important: Please use max. 20 mA!



Advantages

- The small-sized headstage provides an interface to connect two LED lights for optical stimulation.
- Small-sized headstage with integrated A/D converter and LED lights for video tracking.
- The W2100-System converts the recorded signals into digital data already on the headstage.
- The signal-to-noise ratio is excellent and most important, independent from the distance between sender and receiver.

Connector for optical Stimulation

An additional connector with three pins is available for the optical stimulation via LED: Connector from Mill-Max 1 mm Pitch: 861-13-050-10-002000 + Magnet-cuboid Maqna QA-3x1x1-N45-N on the headstage mates with Mill-Max 1 mm Pitch: 860-10-050-10-002000 + Magnet-cuboid Maqna QA-3x1x1-N45-N)

Power supply (Vbat), LED 1 and LED 2.

Please see the scheme for the electrical circuit. Connect the W2100-opto-Test or the optrode from TBSI for example, in correct orientation as shown on the picture below.

Applications

The W2100 headstage is the ideal solution for the measurement of spikes, LFP, EEG, ECG, EMG, and ECoG. Additional inputs to the interface board allow the synchronization of the data with external devices. Equipped with an connector for a probe with two LEDs, the headstage supports optogenetic experiments. A programmable interface provides the synchronization of recording and light stimulation.

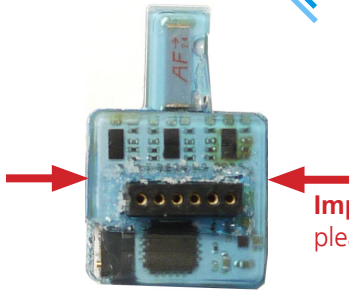
W2100-B-30mAh-BB

Standard battery for W2100-HS4-opto. Please connect the battery board to the headstage.



W2100-HS4-opto Headstage

Technical Specifications

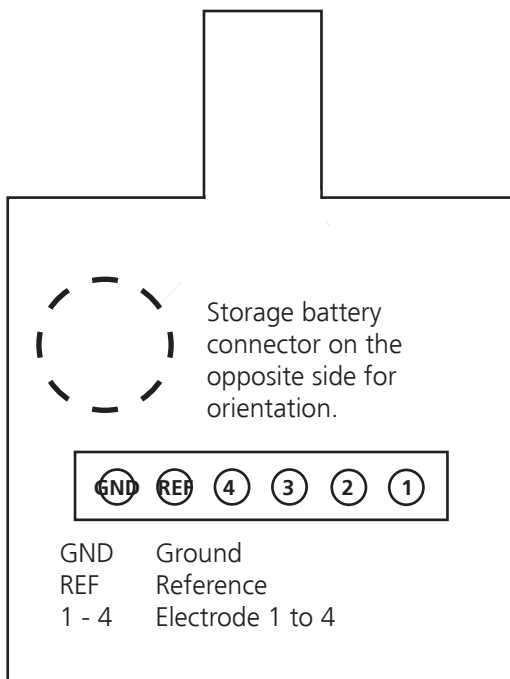


Important: To handle the headstage, please touch the body, but not the antenna.

W2100-HS4-opto bottom side
Connector for the electrode probe or the ME/W-Signal generator.

W2100 Headstage with Single Row Connector

Diagram of the bottom side with pin layout. Please orientate the headstage as shown in the diagram.



Connector for this Headstage

Single row precession socket 1.27 mm, round pin, Preci-Dip: 851-87-006-10-001101
The connector mates with a standard single row 1.27 mm pin connector such as: preci-dip 850-10-006-10-001101

Technical Specifications

Number of recording channels	4
Number of LED stimulation channels	2
Weight (without battery)	± 1.9 g
Dimensions (W x D x H) w/o antenna	12.5 mm x 12.5 mm x 5.5 mm
Distance for wireless link	5 m and more under normal conditions

Amplifier

Bandwidth: High pass	1 Hz (0.1 Hz on request)
Low pass	5 kHz

Warning: Risk of aliasing if sampling frequency is lower than 10 kHz!

Gain	101
Input Impedance	1 GΩ 10 pF
Resolution	16 bit
Input voltage range	± 12.4 mV
Input noise	< 1.9 μV _{RMS}

Sampling rate (max.) in kHz

	Number of channels simultaneously	
	2	4
Single Headstage Mode	10 kHz	10 kHz
Multi Headstage Mode	10 kHz	5 kHz

Optical Stimulation

Stimulation time (min.)	1 ms
LED driving current output for each channel	max. 1A @ max. 3.7 V compliance voltage

Software

Operation system	Windows ® 10, 8.1 (64 bit)
Data acquisition, analysis and export software	Multi Channel Suite Version 1.5.1 and higher