

*made to measure*

# ELC-01MX

The “Swiss Army Knife” for Electrophysiology



## Features:

- ⇒ Records **extracellular** AC oder DC coupled
- ⇒ Allows precise, **single cell stimulation** with current or voltage
- ⇒ Suitable for **juxtosomal filling** of cells with dyes or DNA in **loose-patch** configuration
- ⇒ Records and stimulates **intracellular** in CC or VC mode
- ⇒ **BRIDGE balance** for cancelling the electrode artifact
- ⇒ Available with **differential headstage** for recordings *in vivo*
- ⇒ Suitable for **amperometric** or **voltammetric** investigations with carbon fiber electrodes
- ⇒ Suitable for **iontophoresis** as well



# ELC-01MX

## Technical Data

### Headstage:

Input voltage range:  $\pm 12$  V  
Operating voltage:  $\pm 15$  V  
Enclosure: 23 x 70 x 26 mm, grounded  
Headstage connector: 8-pole DIN connector  
Electrode connector: BNC with driven shield  
Ground connector: 2.4 mm connector  
Reference electrode connector: SMB connector (optional)  
Input resistance (CC):  $> 10^{13} \Omega$  (internally adjustable)  
Current range:  $\pm 120$  nA max.

### Electrode parameter controls:

BIAS range:  $\pm 100$  pA, current adjustable with trim potentiometer  
OFFSET range:  $\pm 100$  mV, ten-turn control  
CAPACITY COMPENSATION range: 0 - 30 pF ten-turn control

### Bridge balance:

0 - 100 M $\Omega$ , adjustable with ten turn control

### Electrode resistance test:

Sensitivity: 1 mV / M $\Omega$ , by application of square current pulses  $\pm 1$  nA  
Display: 3½ digits, XXX M $\Omega$ , activated by spring-loaded switch

### Bandwidth and speed response:

Full power bandwidth (rise time (10% - 90%))  
 $> 30$  kHz ( $R_{EL} = 0$ )  
 $< 10 \mu$ s ( $R_{EL} = 100$  M $\Omega$ )  
 $< 5 \mu$ s ( $R_{EL} = 5$  M $\Omega$ )

### Outputs:

Output impedance: 50  $\Omega$   
Max. voltage:  $\pm 12$  V  
Current output: BNC connector, sensitivity V / nA  
Current output sensitivity: Rotary switch, range: 0.1, 1, 10  
Current display: 3½ digits, resolution 10 pA  
Potential output x1: BNC, sensitivity 1 mV/mV  
Potential output: BNC, range 10, 100, 1000  
Potential low-pass filter: 3-pole BESSEL filter  
attenuation: -18 dB/octave,  
corner frequency: 2 kHz  
Potential high-pass filter: 1-pole filter  
attenuation: -6 dB/octave,  
corner frequencies (Hz): 1, 10, 50, 100, 500

### Inputs:

Input impedance analog: 100 k $\Omega$   
Input range:  $\pm 12$  V  
Input impedance digital (TTL): 10 k $\Omega$   
Input range (TTL): 0-5 V, LO:  $< 0.8$  V, HI:  $> 1$  V  
Current stimulus input via BNC connector, sensitivity: 10 nA / V  
Step gate input via BNC connector (TTL)  
Gated stimulus with ten-turn control of holding current, resolution: 10 pA, range:  $\pm 100$  nA or with ten-turn control of holding potential  
*in VC mode*: resolution 1 mV, range  $\pm 1$  V  
*in VCx10 mode*: resolution 10 mV, range  $\pm 10$  V  
Polarity selectable by toggle switch  
Voltage command input via BNC connector, sensitivity: /10 mV

### Digital displays:

Display mV / M $\Omega$ : 3½ digits, XXXX mv or XXX M $\Omega$   
Display current: 3½ digits, XX.XX nA

## For more information please contact:

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