



a division of Harvard Bioscience, Inc.



Gemini X2/SC Twin Wave Electroporation Systems

Quick Start Guide

Download full user's manual at: www.btxonline.com

Unpacking the System

The shipping carton in which your BTX Gemini Twin Waveform Electroporation System is packed has been specifically designed to provide maximum protection to the instrument during transportation and normal handling conditions. Upon receipt, the carton should be examined for any external damage resulting from shipment.

Open the carton and carefully remove the BTX Gemini Twin Waveform Electroporator and inspect the unit for any apparent damage. Save the carton and packing materials for future transportation and shipping requirements.

Packing Data

Check the packing slip to ensure that all items ordered and listed are included in the shipment. Inform BTX immediately if any parts are missing or damaged.

Power Source

As received, the instrument is ready for use with either 100-240 VAC, 50/60 HZ.

The power requirements are 350 watts. In the USA, the power cord has a standard three prong plug.

Installation

Once you have determined that the components of the system have not sustained any obvious damage in shipment, proceed with the installation.

Remove the insulating tab from the battery at the base of the unit.

Place the generator in a location that is a dry, level, sturdy surface free from extremes in ambient temperature, dust or chemical exposure. Allow the device to equilibrate to room temperature.

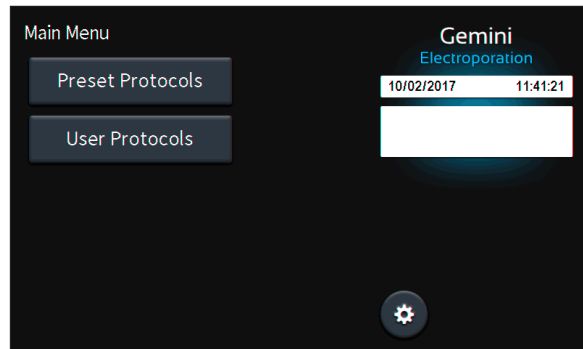
Unpack the safety dome, cuvette rack and disposable cuvette chambers. Connect the safety dome, or in the case of the BTX Gemini X2 System, specialty electrodes or HT Plate Handler, into the connectors at the bottom right-hand side of front panel.

Connect the mains/power cord to into the back panel at the bottom left.

Power up the system by pushing the rocker switch located on the back panel at the bottom left. The display will flash the BTX logo. Once the software initializes, the Main Menu screen will appear.

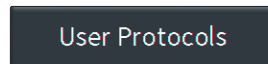
You are now ready to begin your work.

Main Menu



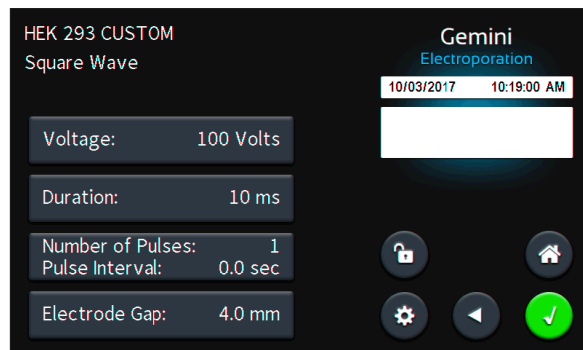
Protocols with preset parameters for common cell and tissue types.

Cannot be modified by user, however Preset protocols may be copied to User Protocols for modification.



Protocols may be copied from Preset Protocols or created from scratch by the user for later use.

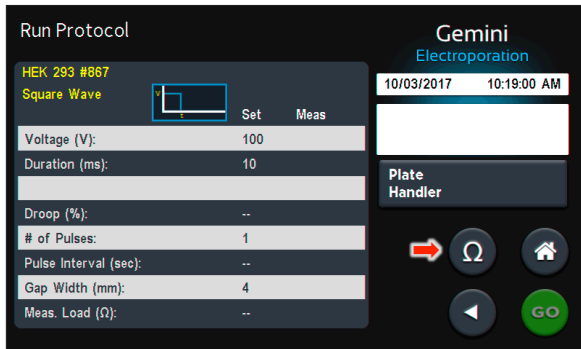
User Protocol Review Screen



Voltage, Duration, Number of Pulses, Pulse Interval, and Electrode Gap may be modified by tapping on the gray icons for each. Green Accept icon may be tapped to proceed to Run Protocol screen.

In Exponential Decay Wave protocols, (instead of Duration) Resistance and Capacitance values may be set.

Run Protocol Screen



Tap for HT-100 or HT-200 HT Plate Handler settings (Gemini X2 only).

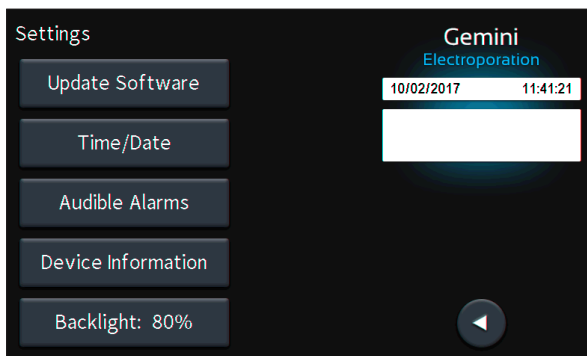


Tap for pre-pulse Sample Resistance Check.



Will illuminate if Sample Resistance is in acceptable range. Tap to run protocol.

Device Settings Main Menu



Notification Box Quick Reference

Information / Status Message

Provides information or guidance for next steps, including acceptable ranges for protocol programming.

Warning Message

Requires Notification Box tap for acknowledgement of information, but does not prevent operation of the system.

Failure Message

Caused by user input error, failure of a protocol, or a system error. Requires user to correct this issue in order to complete the operation.

Touchscreen Icon Quick Reference



Accept



Cancel



Back One Screen



Home/Main Menu



File Options



Settings



Protocol Locked



Protocol Unlocked



Pre-Pulse Resistance Measurement



Run Protocol



Stop Protocol



Delete Protocol



Exponential Decay Wave Indicator



Square Wave Indicator



Page Down



Page Up



Scroll Down



Scroll Up