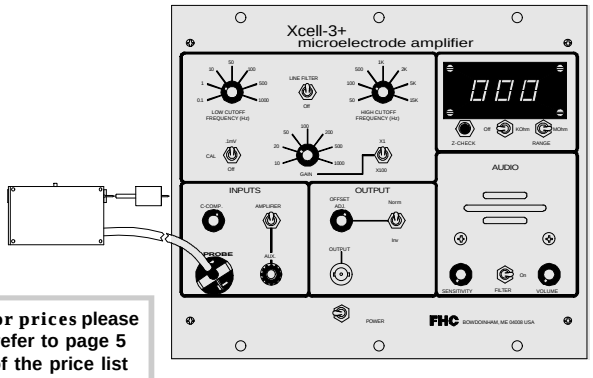
***Note:*** *FHC products described here have not been FDA approved for human use. IRB approval for experimental procedures must be secured.*

**Please see FHC's microTargeting® products for FDA cleared, intraoperative versions.**

## Iso - Xcell 3+ Microelectrode Amplifier




**For prices please refer to page 5 of the price list**

**ORDERING INFORMATION**

Cat. # IS-AM-00 Iso-Xcell 3+ Amplifier (shown above)
Cat. # IS-AM-00-01 Iso-Xcell 3+ Amplifier w/Probe Integral with Drive Unit (see picture on Page 49)
Cat. # IS-AM-04 4 Channel Iso-Xcell 3+ Amplifier

The **Iso-Xcell 3+ Amplifier** represents a new standard of low noise, amplification for intra-operative recording and microneurography. By mounting a high impedance, low noise, differential preamplifier near the microelectrode, external noise pickup is minimized.

For intra-operative recording, the probe is small enough to be mounted directly on the drive system to minimize cable length. For microneurography, the probe can be mounted within a few inches of the recording.

Sharp low and high cut-off filters and a line notch filter allow the investigator to reject signals outside the bandwidth of interest. The instrument also includes provision for:

- Impedance Check: A push of a button and the impedance (1000 Hz) of the microelectrode is displayed on a 3-digit readout.
- Microelectrode Disconnect: A switch electrically disconnects the microelectrode from the preamplifier input and connects it instead to a front panel connector (AUX), permitting the investigator to apply stimulation or lesion currents through the microelectrode.
- Audio Monitor: circuitry includes a noise filter, high gain, and adjustable frequency response.

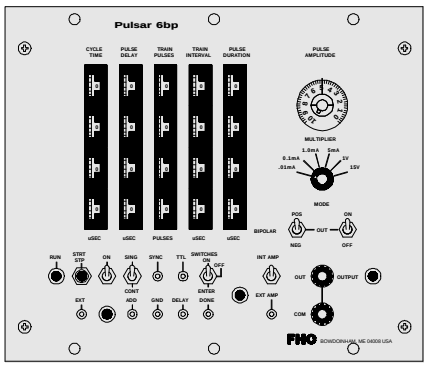
Isolation is provided by a separate isolation transformer which meets the current requirements of UL544 and is VDE certified to IEC 950 specifications. The isolated circuitry is coupled to the ground-referenced output stage through optical isolation amplifiers.

The Xcell 3+ is also available in a 4 channel configuration providing additional channels for EMG and/or evoked response recordings.

### SPECIFICATIONS

**Input:** Differential, $>10^{12}$ Ohms Impedance
**Frequency Response:** .1 - 15KHz (-3db)
**Isolation:** Leakage current <100 microamps (per UL544), typically <10 microamps
**Power Requirements :** 115V/230V, switch selectable, 50-60Hz
**Dimensions**
**Module:** 7"h x 8.25"w x 9"d (18 x 21 x 23cm); 6.5 lbs. (3kg)
**Probe:** 1.90 x 1.2 x .62" (5 x 2.9 x 1.5cm) with 8' (2.5m) cable (other lengths optional)

## Iso - Pulsar Stimulator




**ORDERING INFORMATION**

Cat. # IS-PL-06 Isolated Bipolar Pulsar Stimulator

**For prices please refer to page 5 of the price list**

Bipolar waveforms are recommended for micro- and macro-stimulation to maximize current flow and minimize electrode tip degradation and electrolysis product build-up.

The **Iso-Pulsar Stimulator** has controls for CYCLE TIME, DELAY, NUMBER OF TRAIN PULSES, TRAIN INTERVAL, PULSE DURATION AND PULSE AMPLITUDE. Pulsars have SINGLE or CONTINUOUS (recycle) modes and feature a unique 3-position SYNCHRONOUS SWITCH which, when in the OFF position, disconnects the thumbwheel switches even while a program is running, so that new values set are not entered until the end of cycle after the ENTER position is activated. In the third ON position, thumbwheel switch value changes are immediately effected.

Digital values are set on 4-digit thumbwheel switches using the general form $XXX{\cdot}10^{P}$ where XXX, the significant figures, are the first three digits and P, the exponent, is the fourth.

The isolated output features 6 constant current (0-10mA) or constant voltage (0-150V) ranges. It is optically coupled, powered by an isolated supply; no batteries are required. The output pulse can be specified as positive, negative, or symmetrical bipolar.

### SPECIFICATIONS

**Cycle Time:** adjustable from 1uSec to 99,900Sec
**Cycle Delay:** adjustable from 1uSec to 99,900Sec
**Train Pulses:** adjustable from 1 to $999x10^{8}$ pulses
**Train Interval:** adjustable from 1uSec to 99,900Sec
**Pulse Duration:** adjustable from 1uSec to 99,900Sec
**Output:** optically isolated; constant current (1-10,000uA in 3 ranges) or constant voltage (.1-150V in 3 ranges), positive, negative, or bipolar pulse, switch selectable.

**Power Requirements:** 115/230V, switch selectable, 50-60Hz, 1A
**Dimensions:** 8 1/4"w x 7"h x 12"d (21 x 18 x 30cm). 8 lbs. (3.6kg)