CircuSoft Instrumentation

Microvessel Velocity OD-RT

Overview:

The *Microvessel Velocity OD-RT* system is designed to invasively measure blood velocity in individual microvessels. The system adapts to a microscope fitted for intravital microscopy. The image of the blood vessel seen through the microscope is projected onto a pair of photosensors. If the photosensors are aligned in the direction of flow, the output is a pair of time-shifted signals. These signals are conditioned, digitized, and fed to a computer running the velocity software package. The software calculates and outputs the blood velocity in real time.

System Components:

- Data Acquisition Unit – A microscope adapter that holds the optics, photosensors, and pre-amplifiers.
- Signal Processing Unit – A self-contained signal conditioning unit that digitizes the output from the photosensors and communicates through a serial cable with a desktop computer.
- Software Package – A custom program that both provides the user interface with the instrument and outputs the resultant velocities.

Specifications:

- Velocity Range – Approximately 0.5 to 20 mm/s.
- Frequency Response – Depends on computer speed, around 10 Hz on a Pentium.
- Sampling Frequency – Adjustable (2500, 5000, 10000, or 15000 Hz).
- Power Input – Standard 110V 60Hz (220V 50Hz power supply also available).
- Calibrated using reticle slide (not supplied).
- Software requires Windows 95, 98, or NT 4.0 or better with 800x600 resolution. Pentium or better processor recommended.
- DC light source required for intravital microscope.

Software Features:

- Software adjustable gain, sampling frequency, correlation set size, correlation sensitivity, display ranges, and much more.
- View input waveforms, cross-correlation output, and velocity graphs in real time.
- Export data as text or as a bitmapped graph or directly to a printer.
- Easy setup and configuration including an automatic port detector.
- Highly customizable measurement parameters.
- Easy and convenient Windows interface.