

HSE-Harvard Stimulator I and II Series



HSE-Harvard series of modular, rack mountable stimulators are designed to meet the needs of almost ever application that requires a controlled electrical voltage/current stimulus. These systems provide a flexible platform that can be easily configured from a number of basic and specialized plug-in modules or selected from several pre-configured systems.

There are two types of rack mount chassis designs in the STIMULATOR series, I and II. Stimulator I systems have a single row of modules consisting of 8 module slots. The first 4 of these slots are used for the basic timing/control modules and the other 4 positions are used for output, additional timing/control and/or other types of specialty function modules. The single rack configuration of the STIMULATOR I will provide one channel of basic timing controls (4 module slots) and up to 2 stimulus output modules. STIMULATOR II has the same facilities as the STIMULATOR I except it has 2 rows of slots providing 2 channels of basic timing controls (4 module slots) and up to 4 stimulus output modules.

There are a number of plug-in modules that will fit into the slots of the Stimulator I and II chassis. The two basic types of stimulator modules, one for controlling the timing (Timing and control modules) of the stimulus and the other to produce the stimulation energy as either constant current or constant voltage (output modules). Some of these modules such as the Multiple Current Output Modules and High Current Monitor require the use of 2 slots per module.

- Modular rack-mountable construction
- Plug in modules for timing and control, stimulation output and specialty functions
- Configurations for up to 24 output (stimulation) channels
- Select from either constant current/constant voltage, constant voltage only and constant current only output modules

Both STIMULATOR I and II models can be equipped with up to 2 single slot output modules or 2 dual-slot current output modules per channel. Output modules are available in one, four and six stimulation outputs so that up to twelve (12) individual outputs of stimulus can be achieved for applications such the simultaneous stimulation of isolated tissues. With the available output modules, systems with 1,2,4,5,6, 8, or 12 outputs per channel can be configured.

In addition to the basic timing and output modules (base Rhythm, Delay, Width and Timer) there are a number of modules for special applications:

- **High Current Output Module** with alternating polarity (Bi-Phasic) prevents the formation of gas bubbles and polarization of the stimulation electrodes
- **R-Wave Trigger Module** provides electrical stimuli that can be generated in synchronism with the cardiac rhythm
- **Double Stimulus Preset DP Module** permits the production of double stimuli after a pre-selected number (0 to 99) of single stimuli
- **Stimulus Preset SP Module** controls the number of stimulus pulses produced by an adjustable number (1 to 9999 pulses) rather than by time

For applications that require an isolated (ungrounded) stimulus (e.g. when applying a stimulation while simultaneously recording biological potentials), a **Universal Isolated Stimulation** benchtop unit can be used to convert the ungrounded stimuli into low-capacity isolated stimuli. Although stimulators are mains (AC) operated, use of the isolation unit produces the same conditions as a battery-operated instrument providing the stimuli. If you have any questions on how to configure a system for your specific applications, call our Technical Sales department for assistance.