Compact Peripheral Nerve Stimulator

Features:
Although compact in design, it offers many functions found in much larger units such as:
- Adjustable output voltage
- 1 pulse per 8 second
- 2 pulses per second
- Train of four (2 cycles of 2 per second)
- Frequency can be selected at 50 or 100HZ
- Built-in battery test
- Will accept optional leads for electrode pads or needle
- Uses standard 9 volt battery
- Designed for one-hand operation

Switch Functions:
ON-OFF - Rotate to ON Position and to a higher number for output voltage required. 1 pulse per 8 seconds in this mode.
2 SEC. - (top left) When depressed and held, an output of 2 pulses per second will be in operation. For a train of four, hold for two cycles. When button is released, unit will return to 1 pulse per 8 seconds.
TET- (bottom left) When depressed and held, tetanus at 100 HZ will be the output. To change output to 50 Hz, refer to owner’s manual. When button is released, unit will return to 1 pulse per 8 seconds.

Specifications:
Dimensions: 5.5” long x 1.5” wide & 1” thick
Weight: 41/2 oz. - including battery
Power Source: One 9-Volt battery
Output: Adjustable with rotating potentiometer
Voltage: 0-450 volts (open circuit)
Pulse Width: .30 millisec
Current: 0-35 milliamp. Output is limited

Ordering Information:
<table>
<thead>
<tr>
<th>Item Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>#19-00-100</td>
<td>Model 100 with ball electrodes</td>
</tr>
<tr>
<td>#19-00-106</td>
<td>Ball electrodes (set)</td>
</tr>
<tr>
<td>#19-00-107P</td>
<td>50” leads with alligator clips</td>
</tr>
<tr>
<td>#19-00-108P</td>
<td>50” leads with snaps to connect to electrode pads</td>
</tr>
<tr>
<td>#19-00-110P</td>
<td>50” extension leads with male and female ends</td>
</tr>
<tr>
<td>#19-00-112P</td>
<td>Safety Adapter Kit</td>
</tr>
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<td>This Safety adapter kit allows the conversion of</td>
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<tr>
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<td>older models to accept compliant protected lead</td>
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<tr>
<td></td>
<td>sets. Does not alter equipment function. Ball</td>
</tr>
<tr>
<td></td>
<td>electrodes can still be used normally. Comes</td>
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<tr>
<td></td>
<td>complete with 2 adapter jacks, allen key for</td>
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<td></td>
<td>installation and instructions.</td>
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</table>
### Anesthesia Associates Nerve Stimulator

<table>
<thead>
<tr>
<th>Item Number</th>
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<tbody>
<tr>
<td>#19-00105</td>
<td>Nerve Stimulator complete with battery and ball electrodes.</td>
</tr>
<tr>
<td>#72-MN-1604</td>
<td>Battery (Comes with Nerve Stimulator)</td>
</tr>
</tbody>
</table>

**Features:**
- Built-in train of four.
- Built-in battery test.
- Tetanus frequency can be selected (100 Hz or 50 Hz).
- Easy-to-understand and operate push button controls.
- Unique wire bail on the back of the unit that can be used for hanging on your belt.
- Durable, lightweight, brushed aluminum case.

### Accessories Ordering Information

<table>
<thead>
<tr>
<th>Item Number</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>#19-00106</td>
<td>Ball Electrodes (set)</td>
</tr>
<tr>
<td>#19-00107P</td>
<td>50” Leads with alligator clips</td>
</tr>
<tr>
<td>#19-00108P</td>
<td>50” Leads with snaps to connect to electrode pads</td>
</tr>
<tr>
<td>#19-00109</td>
<td>Carrying case (not shown)</td>
</tr>
<tr>
<td>#19-00110P</td>
<td>50” extension leads with male and female ends</td>
</tr>
</tbody>
</table>

### Performance features of all MultiStim appliances
- MultiStim appliances are fully equipped, pocket-sized peripheral nerve stimulators, independent of mains electricity supply.
- The desired intensity of the stimulation current can be selected using the ± keys and is shown on the large, easily read LCD display.
- The actual stimulation current flowing through the patient is constantly measured and by pressing a key it can be depicted on the LCD display alternatively with the selected current. Thus, there is a switching facility between displaying the selected and the actual stimulation current.
- Membrane touch pads make it very easy to select the chosen stimulation function.
- The stimulation function selected is shown continuously on the digital LCD display.
- In addition to illuminating the stimulation impulse LED, a tone sounds (with adjustable volume) each time a stimulation impulse is delivered. This facilitates better direct observation of the patient’s reactions.
- The appliance provides highly accurate constant current regulated by microprocessor with high performance end stages.

**Stimulating current range:** max. 6 mA, 0 Ω – 12 kΩ
**Stimulating voltage range:** max. 65 Vpp
**Signal form:** monophasic, negative rectangular impulse

**Current supply:** 9 V alkali battery
- Continuous comparison of selected vs. actual current, with optical and acoustic warning if the actual current flowing deviates from the selected current.
- Nerve tracts can be localised very accurately: constant current range for identification of peripheral nerves 0 – 6 mA, adjustable in 0.01 mA steps.
- Low power consumption.
- The appliance is shut off automatically with a preceding acoustic warning signal if no keys are operated over a period of 20 minutes.
- Battery test function.
- Coded connector plug on the cable prevents false connection and limits the exit current for identification of peripheral nerves to a maximum of 6.0 mA (safety function).
- Optical and acoustic warning signals in the event of disruption or interruption of the current circuit.

### MultiStim VARIO only:
- In addition to the ability to identify peripheral nerves in conduction anaesthesia, MultiStim VARIO provides functions for percutaneous relaxation observation in general anaesthesia (50/100 Hz, TOF, DBS).
- Constant current is provided for this percutaneous application in the range 0 – 60 mA, adjustable in 0.1 mA steps.

### MultiStim PLEX

With the new MultiStim PLEX we are offering a nerve stimulator for plexus anaesthesia which is very simple to operate. It offers all the functions of the MultiStim VARIO apart from the functions for percutaneous relaxation monitoring, the PAUSE function and adjustable stimulation impulse width. The device is particularly suitable for training purposes. Relaxation monitoring cannot be performed with it.

- The stimulation impulse width is 0.1 ms = 100 μs (microseconds).
- Constant current range 0 – 6 mA, adjustable in 0.01 mA steps.

**Impulse amplitude**

![Impulse amplitude](image)

A response is obtainable with the cannula tip approaching 1 cm with a stimulation of 3 mA (0.1 ms at cathode).
MultiStim VARIO

The new MultiStim VARIO is a state-of-the-art aid, which can be used for both indications of anaesthesiological nerve stimulation, i.e. firstly, for identification of peripheral nerves in conduction anaesthesia and secondly, for percutaneous stimulation in neuro-muscular monitoring in general anaesthesia. The pocket-sized casing and simple operation enable the unit to be used with one hand; audio-visual signals with adjustable volume allow you to give your undivided attention to the patient.

MultiStim VARIO has a very precise constant-current microprocessor control system, providing all stimulation impulse patterns and frequencies required for the two fields of application. It ensures optimum dependability and objectivity for locating the nerve as well as for measuring the neuro-muscular block with muscle relaxants.

By pressing a key, the actual stimulation current strength flowing through the patient can be depicted on the LCD display alternatively with the selected target current strength.

The stimulation impulse width is adjustable in a number of steps in the range 0.1 – 1.0 ms.

Stimulation needles with varying point geometry, lengths and diameters are available for identification of peripheral nerves in conduction anaesthesia. They serve as a different electrode for locating the peripheral nerve and are connected to MultiStim VARIO’s patient conductor, which is designed to resist being pulled out inadvertently. Regular stimulation electrodes are normally used as a neutral electrode. A patient conductor with two clips to connect it to stimulation electrodes is available for percutaneous application.

This handy unit was especially designed for peripheral conduction anaesthesia. Simple operation and modern design make it possible to use this unit with one hand.

Accessories MultiStim

<table>
<thead>
<tr>
<th>Item/Code</th>
<th>Size</th>
<th>Type</th>
<th>Qty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adapter cable, 40 cm, re-sterilizable, sterile single packaged - #DQ-01151-861K</td>
<td>1.6 - 2.0 mm male to male</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Extension cable, 40 cm, re-sterilizable, sterile single packaged - #DQ-01151-861F</td>
<td>2.0 - 2.0 mm male – female</td>
<td>10</td>
<td></td>
</tr>
</tbody>
</table>

<table>
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<tr>
<th>Item/Code</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>MultiStim VARIO incl. plastic case and patients cable to connect stimulation cannula #DQ-1151-94-20</td>
<td>Nerve stimulator for peripheral conduction anaesthesia and neuro-muscular monitoring</td>
</tr>
<tr>
<td>MultiStim PLEX incl. plastic case and patients cable to connect stimulation cannula #DQ-1151-94-20</td>
<td>Nerve stimulator for peripheral conduction anaesthesia</td>
</tr>
<tr>
<td>1 Patients cable to connect stimulation cannula #DQ-1151-94-02</td>
<td>Male connector Ø 2.0 mm and clamp for ECG-electrodes</td>
</tr>
<tr>
<td>2 Patients cable for percutaneous stimulation (relaxation monitoring), not included in delivery #DQ-1151-94-03</td>
<td>2 snap-fastener connectors for ECG-electrodes</td>
</tr>
</tbody>
</table>
Nerve Stimulators

MICROSTIM NERVE Stimulator

Features:
• The MicroStim is a complete muscle relaxant monitor that fits in the palm of your hand.
• Its function include twitch, tetanus, and automatic train-of-four.
• This unit, though small, still offers sufficient output to ensure supramaximal stimulation:
  Output current is fully adjustable from 0 to 70 mA.
• In addition to the flash of the pulse LED, an audible indicator sounds as each stimulus
  pulse is delivered, enabling direct monitoring of the patient’s response.
• The MicroStim is delivered ready to use: instruction manual, battery, diagnostic probe,
  and 6-foot leads with alligator clips are included.

<table>
<thead>
<tr>
<th>Item Number</th>
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<tbody>
<tr>
<td>#BO - 10023</td>
<td>Microstim Nerve Stimulator</td>
</tr>
<tr>
<td>#BO - 100057</td>
<td>Safety Type Leads with Alligator Clips*</td>
</tr>
</tbody>
</table>

* Safety version can only be used on the following units:
  MicroStim BO-10023; Updated Version

Specifications:
Modes of Operation:
Standby: A Standby switch maintains power to the instrument without generating stimulus pulses.
Twitch: 1 s (1 pulse/s)
Tetanus: 100 Hz (100 pulses/s)
Train of Four: Single (4 pulses/2 s)
Output Current: Adjustable from 0-70 mA
Stimulus Pulse: Square Wave Monophasic pulses (200 - U.S. duration)
Indicators: Battery LED (green) indicates that the unit is on; it flashes when battery voltage is low.
Pulse LED (red) flashes and audible indicator sounds each time a stimulus pulse is generated.
Power Source: 9-V alkaline battery (access door on rear panel)
Power Consumption: Approximately 15.5mA
Case: High-impact ABS plastic with lexan overlay on membrane touch-switches
1.0" H x 2.42" W x 3.88" D
Warranty: 1 year, parts and labor

MICROSTIM PLUS NERVE Stimulator

Features:
• The MicroStim is a complete muscle relaxant monitor that fits in the palm of your hand.
• Its functions include twitch, 50 AND 100 tetanus, automatic train-of-four, and double burst stimulation.
• This unit, though small, still offers sufficient output to ensure supramaximal stimulation:
  Output current is fully adjustable from 0 to 70 mA.
• As in the other instruments in the PLUS series, an audible indicator sounds as each
  stimulus pulse is delivered, enabling direct monitoring of the patient’s response.
• The MicroStim is delivered ready to use. Instruction manual, battery, diagnostic probe,
  6-foot leads with alligator clips are included.

<table>
<thead>
<tr>
<th>Item Number</th>
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<tbody>
<tr>
<td>#BO-7100</td>
<td>Microstim PLUS Nerve Stimulator</td>
</tr>
</tbody>
</table>

Specifications:
Modes of Operation:
Double Burst: 2 60-ms bursts of Hz separated by .75 s
Twitch: 1 s (1 pulse/s)
Tetanus: 50 Hz (50 pulses/s) or 100 Hz (100 pulses/s)
Train of Four: Single (4 pulses/2 s)
Output Current: Adjustable from 0-70 mA
Stimulus Pulse: Square Wave Monophasic pulses (200 - μ duration)
Indicators: Battery LED (green) indicates that the unit is on; it flashes when battery voltage is low.
Pulse LED (RED) flashes and audible indicator sounds each time a stimulus pulse is generated.
Power Source: 9-V alkaline battery (access door on rear panel)
Power Consumption: Approximately 13.0 mA
Case: High-impact ABS plastic with lexan overlay on membrane touch-switches
1.0" H x 2.42" W x 3.88" D
Weight: 5.5 oz, including battery
Warranty: 1 year, parts and labor
DIGISTIM II

Features:
- The dual purpose Digistim II peripheral nerve Stimulator efficiently monitors muscle relaxants and precisely locates nerves in regional anesthesia procedures.
- The amount of current delivered to the patient is displayed in mA on a large easy-to-read, digital LCD.
- In addition to the flash of the pulse LED, an audible indicator sounds as each stimulus pulse is delivered, enabling direct monitoring of the patient’s response.
- Nerves can be located precisely: the low-level output is adjustable in 0.1 mA increments from 0 to 6.0 mA.
- An optional computer interface is available for evoked potential and EMG application.

Specifications:
Modes of Operation:
Standby: All switches at off (center position).
Twitch: 1 s (1 pulse/s); 10 s (1 pulse/10 s).
Tetanus: 50 Hz (50 pulses/s); 100 Hz (100 pulses/s).
Train of Four: Single (4 pulses/2 s); repeat (4 pulses/2 s; repeats every 10 s).
Output Current: 0-70 mA, adjustable in 0.1 - mA increments (Hi Range).
Stimulus Pulse: Square Wave Monophasic pulses (200 - μ duration).
Display Resolutions: 0.1 mA.
Indicators: Digital LCD shows current delivered to the patient in mA. Battery LED (green) indicates that the unit is on; it flashes when battery voltage is low. Pulse LED (red) flashes and audible indicator sounds each time a stimulus pulse is generated.

Power Source: 9-V alkaline battery (access door on rear panel).
Power Consumption: Approximately 9.6 mA.
Mounting Bracket: Attaches to carts and IV or equipment poles.
Case: High-Impact ABS plastic with anodized aluminum front and rear panels. Switches and handles are chrome plated.
Size: 2.5” H x 6.06” W x 6.25” D.
Weight: 1 LB 10 oz, including battery.
Warranty: 1 year, parts and labor.

DIGISTIM 2 PLUS

Features:
- The dual-purpose DigiStim 2 PLUS efficiently monitors muscle relaxants and precisely locates nerve in regional anesthesia procedures.
- The amount of current delivered to the patient is displayed in mA on a large, easy-to-read, digital LCD.
- In addition to the flash of the pulse LED, an audible indicator sounds as each stimulus pulse is delivered, enabling direct monitoring of the patient’s response.
- Nerves can be located precisely: The low-level output is adjustable in 0.1 mA increment from 0 to 6.0 mA.
- An optional computer interface is available for evoked potential and EMG applications.

Specifications:
Modes of Operation:
Standby: All toggle switches at off (center position).
Double Burst: 2 60-ms bursts of Hz separated by .75 s; single or automatic repeat every 10 s.
Twitch: 1 s (1 pulse/s); single or repeat.
Tetanus: 50 Hz (50 pulses/s); 100 Hz (100 pulses/s).
Train of Four: Single (4 pulses/2 s); repeat (4 pulses/2 s; repeats every 10 s).
Output Current: 0-70 mA, adjustable in 0.1 - mA increments (HI Range).
Stimulus Pulse: Square Wave Monophasic pulses (200 - μ duration).
Display Resolutions: 0.1 mA.
Indicators: Digital LCD shows current delivered to the patient in mA. Battery LED (green) indicates that the unit is on; it flashes when battery voltage is low. Pulse LED (red) flashes and audible indicator sounds each time a stimulus pulse is generated.

Power Source: 9-V alkaline battery (access door on rear panel).
Power Consumption: Approximately 4.6 mA.
Mounting Bracket: Attaches to carts and IV or equipment poles.
Case: High-Impact ABS plastic with anodized aluminum front and rear panels. Switches and handles are chrome plated.
Size: 2.5” H x 6.06” W x 6.25” D.
Weight: 1 LB 10 oz, including battery.
Warranty: 1 year, parts and labor.

Additional Features: PLUS Model Only:
- Lower-power consumption
- Double-burst stimulation
- Automatic shutdown indicated by audible signal after 20 min of non-use
- Adjustable volume on beep-tone
**Nerve Stimulators**

**DIGISTIM III**

**Features**
- The Digistim III is a full featured peripheral nerve Stimulator in a convenient, hand-held unit.
- Membrane touch-switches make the selection of stimulus function easy.
- The amount of current delivered to the patient is displayed in mA on a large easy to read, digital LCD.
- In addition to the flash of the pulse LED, an audible indicator sounds as each stimulus pulse is delivered, enabling direct monitoring of the patient’s response.
- Nerves can be located precisely: the low level output is adjustable in 0.1 - mA increments from 0 to 6.0 mA.
- The DigiStim III is delivered ready to use. Instruction manual, built-in mounting bracket, battery, and 6-foot leads with alligator clips are included.

**Item Number**  
#BO-10021  
**Description**  
DIGISTIM III NERVE Stimulator

**Specifications:**

<table>
<thead>
<tr>
<th>Modes of Operation:</th>
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<td>Standby:</td>
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<tr>
<td>Twitch:</td>
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<td>Tetanus:</td>
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<tr>
<td>Train of Four:</td>
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<td>Output Current:</td>
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<tr>
<td>Stimulus Pulse:</td>
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<td>Display Resolutions:</td>
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<td>Indicators:</td>
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<td>Power Consumption:</td>
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<td>Mounting Bracket:</td>
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<td>Case:</td>
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<td>Size:</td>
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<td>Weight:</td>
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<td>Warranty:</td>
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**DIGISTIM 3 PLUS**

**Features**
- The dual-purpose DigiStim 3 PLUS is a full featured peripheral nerve Stimulator in a convenient, hand-held unit.
- Membrane touch switches make the selection of stimulus functions easy. Like the LARGER DIGISTIM 2 PLUS.
- In addition to the flash of the pulse LED, an audible indicator sounds as each stimulus pulse is delivered, enabling direct monitoring of the patient’s response.
- Nerves can be located precisely: the low-level output is adjustable in 0.1 mA increments from 0 to 6.0 mA.
- The DigiStim 3 PLUS is delivered ready to use: instruction manual, built-in mounting bracket, battery, and 6-foot leads with alligator clips are included.

**Item Number**  
#BO-7200  
**Description**  
DIGISTIM 3 PLUS

**Specifications:**

<table>
<thead>
<tr>
<th>Modes of Operation:</th>
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<tbody>
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<td>Standby:</td>
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<tr>
<td>Double Burst:</td>
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<tr>
<td>Twitch:</td>
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<td>Tetanus:</td>
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<td>Train of Four:</td>
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