

Nerve Stimulators

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



Model 100

Model 100 Compact Peripheral Nerve Stimulatory, incorporates the latest state-of-the-art electronics with solid state circuitry to ensure trouble free operation and extended battery life.

#19-00-100

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:	4 1/2 oz. - including battery
Power Source:	One 9-Volt battery
Output:	Adjustable with rotating potentiometer
Voltage:	0-450 volts (open circuit)
Pulse Width:	.30 millisecond
Current:	0-35 milliamp. Output is limited

Ordering Information:

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



#19-00-107P



#19-00-110P



#19-00-106

#19-00-112P



#19-00-108P

Nerve Stimulators *(continued on next page)*

Anesthesia Associates Nerve Stimulator

Item Number	Description
#19-00105	Nerve Stimulator complete with battery and ball electrodes.
#72-MN-1604	Battery (Comes with Nerve Stimulator)

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.

#19-00105



Accessories Ordering Information

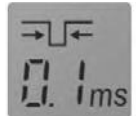
Item Number	Description
#19-00106	Ball Electrodes (set)
#19-00107P	50" Leads with alligator clips
#19-00108P	50" Leads with snaps to connect to electrode pads
#19-00109	Carrying case (not shown)
#19-00110P	50" extension leads with male and female ends

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 \pm 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.



- Adjustable stimulation impulse width: 0.1 ms, 0.3 ms, 0.5 ms, and 1.0 ms for selective stimulation of sensory and motor nerve fibres in mixed nerves.
- A PAUSE function makes it possible to interrupt stimulation without delivering impulses, in order to change the stimulation parameters whilst the appliance remains connected to the patient



Stimulating current range: max. 6 mApp, 0 Ω – 12 k Ω
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:

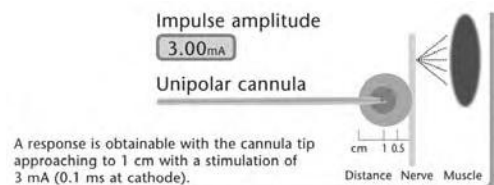
- In addition to the ability to identify peripheral nerves in conduction anaesthesia, MultiStim VARIO provides functions for percutaneous relaxation observation in general anaesthesia (50/100 Hz, TOF, DBS).
- Constant current is provided for this percutaneous application in the range 0 – 60 mA, adjustable 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 μ s (microseconds).
- Constant current range 0 – 6 mA, adjustable in 0.01 mA steps.



Nerve Stimulators *(continued from previous page)*

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.

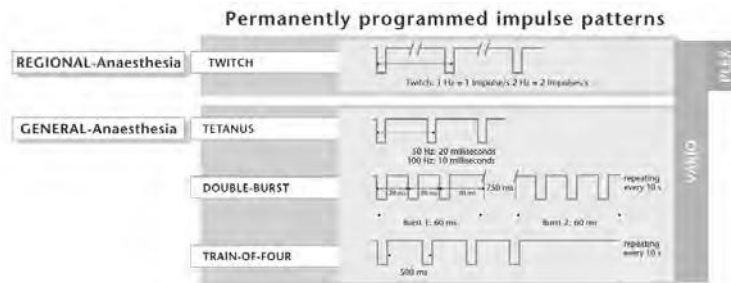


The stimulation impulse width is adjustable in a number of steps in the range 0.1 – 1.0 ms.

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.

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.



Accessories MultiStim



Ordering Information

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



Ordering Information

Item/Code	Type
MultiStim VARIO incl. plastic case and patients cable to connect stimulation cannula #DQ-1151-94-10	Nerve stimulator for peripheral conduction anaesthesia and neuro-muscular monitoring
MultiStim PLEX incl. plastic case and patients cable to connect stimulation cannula #DQ-1151-94-20	Nerve stimulator for peripheral conduction anaesthesia
1 Patients cable to connect stimulation cannula #DQ-1151-94-02	Male connector Ø 2.0 mm and clamp for ECG-electrodes
2 Patients cable for percutaneous stimulation (relaxation monitoring), not included in delivery #DQ-1151-94-03	2 snap-fastener connectors for ECG-electrodes

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.

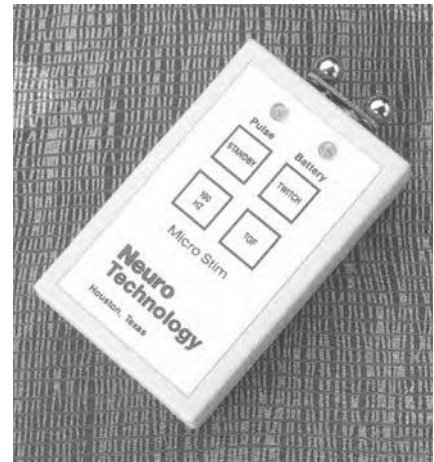
Item Number	Description
#BO - 10023	Microstim Nerve Stimulator
#BO - 100057	Safety Type Leads with Alligator Clips*

* 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" Hx 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.

Item Number	Description
#BO-7100	Microstim PLUS Nerve Stimulator

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" Hx 2.42" W x 3.88" D
Weight:	5.5 oz, including battery
Warranty:	1 year, parts and labor



Nerve Stimulators

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.

Item Number	Description
#BO-10000	DIGISTIM II NERVE Stimulator

Specifications:

Modes of Operation:

Standby:	All Switches At Off (Center Position).
Twitch:	1 s (1 pulse/s); 10 s (1 pulse/10s).
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
Weight:	1 LB 10oz, including battery.
Warranty:	1 year, parts and labor.



#BO-201010
Pole Mount Bracket
(For Digistim and Neurostim
Nerve Stimulators)

#BO-201010 SECURE
Not Shown
(Same as #BO-201010
except includes tamper
proof screw to prevent
removal from pole.)

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.

Item Number	Description
#BO-7300	DIGISTIM 2 PLUS

Specifications:

Modes of Operation:

Standby:	All toggle Switches At Off (Center Position).
Double Burst:	2 60-ms bursts of 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). 0-6.0 mA, adjustable in 0.1 - mA increments (LO 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. Audible indicator beeps each time a stimulus is generated and before the instrument automatically shuts down. The loudness of the beep is adjustable.
Power Source:	9-V alkaline battery (access door on rear panel) 72-MN1604.
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 10oz, 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	Description
#BO-10021	DIGISTIM III NERVE Stimulator

Specifications:

Modes of Operation:

Standby: A standby switch maintains power to the instrument without generating stimulus pulses.

Twitch: 1 s (1 pulse/s); 2 Hz (2 pulses/s); 10s (1 pulse/10s).

Tetanus: 50 Hz (50 pulses/s); 100 Hz (100 pulses/s).

Train of Four: (4 pulses/2 s); repeats every 10 secs.

Output Current: 0-70 mA, adjustable in 0.1 - mA increments (HI Range).

0-6.0 mA, adjustable in 0.1 - mA increments (LO 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 switch displays battery voltage on LCD. 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) (72-MN1604).

Power Consumption: Approximately 7.6 mA.

Mounting Bracket: (Optional) Attaches to carts and IV or equipment poles.

Case: High-Impact ABS plastic with lexan overlay on membrane switches.

Size: 2.09" Hx 3.60" W x 5.75" D.

Weight: 11oz, including battery.

Warranty: 1 year, parts and labor.



DIGISTIM 3PLUS

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	Description
#BO-7200	DIGISTIM 3 PLUS

Specifications:

Modes of Operation:

Standby: A standby switch maintains power to the instrument without generating stimulus pulses.

Double Burst: 2 60-ms bursts of 50 Hz separated by .75 s; repeats every 10 s.

Twitch: 1 s (1 pulse/s); 2 Hz (2 pulses/s).

Tetanus: 50 Hz (50 pulses/s); 100 Hz (100 pulses/s).

Train of Four: (4 pulses/2 s); repeats every 10 secs.

Output Current: 0-70 mA, adjustable in 0.1 - mA increments (HI Range).

0-6.0 mA, adjustable in 0.1 - mA increments (LO 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 switch displays battery voltage on LCD. 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) (72-MN1604).

Power Consumption: Approximately 2.4 mA.

Mounting Bracket: (Optional) Attaches to carts and IV or equipment poles.

Case: High-impact ABS plastic with lexan overlay on membrane touch switches.

Size: 2.09" Hx 3.60" W x 5.75" D.

Weight: 11oz, including battery.

Warranty: 1 year, parts and labor.

