

Technical Specifications

Amplifiers

Amplifier Options	3-, 6- or 8-channel amplifiers
Preamplifiers	Electrically isolated preamplifiers with software controlled interconnection of reference inputs
Amplifier # 1 - 3	Differential inputs with electrode cable capacitance reduction
Connector types	5 pin DIN connector and 1.5mm touch-proof input jacks
Amplifier # 4 - 6 or 4 - 8	Differential inputs
Connector types	1.5 mm touch-proof input jacks.
Input Impedance	
Differential	>200 MΩ
Common Mode	>1000 MΩ/25 pF
Noise Level	Typical 0.4 μV RMS (2Hz - 10k Hz) shorted Input
Isolation Mode Rejection	>160 dB
Common Mode Rejection Ratio (CMRR)	>124 dB
Sampling	
Resolution	24 Bits
Rate	48 kHz per amplifier
Lower Frequency Limits (-3dB)	
Programmable	0.01 Hz - 3 kHz (16 steps)
Upper Frequency Limits (-3dB)	
Programmable	20 Hz - 13 kHz (12 steps)
Sensitivity	0.5 μV/D - 20 mV/D (15 steps)
Display Sensitivity	0.05 μV/D - 20 mV/D (18 steps)
Impedance Test of Electrodes	0.1 kΩ - 1 MΩ
For 6 and 8 Amplifier Options Impedance indicators for each input pin and patient ground	

Acquisition

Sweep Speeds	0.2 ms/D - 12 s/D (Test type dependant)
Delay Line	± 500 ms (Test type dependant)
EMG Event Recording	Maximum 15 minutes per event

Averager

Epochs	Autostop at maximum 10000 per Averager
Samples per Averager	4800

Timing

Trigger Mode	
Stimulation Trigger	manual, repetitive or external
Repetition Rate	0.1 - 200 Hz
Extended set-ups with Pulse, Paired Pulse and Trains.	
All with user-definable configuration at fixed or random frequency.	
Dual stimulation with simultaneous or alternate mode.	
EMG trigger	signal and free run
Stimulation Train	
Number of pulses	1 - 1000
Frequency	0.1 - 200 Hz
External Trigger Input	
Pulse Form	5 V TTL-level, negative going duration min. 21 μs
Stimulus Delay	2.5 ms
External Trigger Output	
Pulse Form	5 V TTL-level, negative going, duration min. 10 μs



Electrical Stimulator

Single or Dual Constant Current Stimulator

Output Range	0 - 100 mA (software controlled)
Intensity Resolution	0.1/0.02 mA
Source Voltage	400 V
Output Resistance	>5 MΩ
Stimulus Duration	20 μs - 1 ms (9 steps)
Safety Features	
Power Limitation	Maximum mean power: 0.5 W

Visual Stimulator

Pattern Type	Checkerboard, horizontal bars, vertical bars
Sizes	3x4, 6x8, 12x16, 24x32, 48x64, 96x128
Field Format	Full, left half, right half, upper right, lower right, upper left, lower left
Stimulus Type	Onset, reversal, goggles
Fix Point	4 types, movable
Background	Black, grey

Auditory Stimulator

Stimulus Shapes	Clicks, Tone burst, Pips, Half Sine, Full Sine
Tone Burst	0 - 120 dB peSPL depending on signal frequency
Click	0 - 132 dB peSPL
Click Duration	50 or 100 μs
Max. Intensity	
Software dependent	132 dB peSPL (1.0dB Steps)
Masking	White, low pass, high pass, band stop filtered
Masking Level	-15 to 99 dB peSPL
Headset	
Calibration data is stored in headset	
Calibration	peSPL or NHL (software controlled)

Typical Computer Performance

Processor Performance

- 3.1 GHz Intel Core i5
- 4 GB RAM
- 500 GB Hard disk
- DVD-RW Drive
- 10/100 Mbit TP Network

Display

Size 22"
Resolution 1680 x 1050
Operating System Microsoft® Windows® 7 Ultimate

Patient Safety

Isolation between mains and patient-applied parts >4 kV.

Complies with IEC 601-1, type BF specifications

Power Supply

Mains Voltage 100 - 120 V~ 50/60 Hz or 200 - 240 V~ 50/60 Hz
Power Consumption, incl. Isolated Power Outputs Max 1000 V A
Isolated Power Outlets 100 - 120 V ~ max8 A, 200 - 240V ~ max 4 A
Patient Safety Isolation between mains and patient-applied parts >4 kV

Mechanical Data

Total Height 1200 – 1320 mm (floor to top of display)
Width 610 mm
Depth 630 mm
Weight 65 kg (cart system incl. arm, amplifier and stimulator)

Environmental Limits

Operating

Temperature +10° to +35° C
Relative Humidity 20% to 80% (non-condensing)
Altitude -15 m to 3000 m

Storage

Temperature -40° to +65° C
Relative Humidity 20% to 80% (non-condensing)
Altitude -15 m to 10600 m



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