

Technical Specifications

Amplifiers

Channels

- The Protektor32 is now upgradeable with both 16 and 32 channel options.
- 1.5 mm touch-proof input jacks on pods
- Four color-coded acquisition pods with 16 inputs each, 10ft cable length (20' optionally available)

Amplifier Input Impedance

Differential	>100 MΩ
Common Mode.....	>50 MΩ
Noise Level	<20nV/√Hz
Common Mode Rejection (CMRR).....	>93 dB

Sampling

Rate	60 KHz, simultaneously sampling
Resolution	16 bits
Low Frequency Filters	0.1 – 500 Hz
High Frequency Filters	30 Hz – 15 KHz
Notch Filter.....	50/60 Hz
Sensitivity.....	0.1 μV/division - 5.0 mV/division
Impedance Test	Up to 50kΩ

Acquisition

Timebase

1 ms/division - 2 sec/division

- Can record multiple EP, EEG, EMG recordings simultaneously (64 measurements)

Artifact Rejection

Independent rejection for each channel

Stimulators

Electrical

Two low level; Constant Voltage stimulators allow biphasic stimulation

- 16 programmable (0-100mA, in 1mA increments), high level constant current outputs (0 – 100 mA), Duration: 0.05 – 1 ms, monophasic
- 2 low level constant current/voltage outputs (20mA intensity - 20VP-P max) Duration: 0.05 – 1 ms, monophasic
- 4 programmable TcMEP constant voltage outputs (0 – 1000V P-P, 1500mA max), Duration: 0.05ms
- Electrical Modes: single, repetitive, trains

Auditory

Click, pip, tone, noise

Rate	0.2 – 100 Hz
Intensity.....	125 db nhl
Polarity.....	Condensation, rarefaction, alternating
Transducers	TDH-39 headphones, TIP 300 inserts

Visual

LED goggles or monitor

Rate	0.1 – 100 Hz
Modes.....	Full field, Hemi-fields, Quadrants; Flash or Stripes
Colors	Black, red, green, blue

External Trigger Input/Output

2 independent with standard TTL Levels

Recording Modalities

Somatosensory (SEP)

Motor evoked potentials (MEP)

Transcranial electrical motor evoked potentials (TcMEP)

Auditory evoked potentials (BAEP)

Visual evoked potentials (VEP)

Electromyography (EMG)

Electroencephalography, 32 Channel (EEG)

Multi-modality



Display Options

Selectable baseline, stacked, superimposed, waterfall presentations

Quantitative Analysis

Compressed spectral analysis (CSA)

Density spectral analysis (DSA)

Spectral edge

Trending

Graphical and numeric formats for both EP and Pulse Oximetry data

Nerve Integrity Monitoring

Selectable chimes for automatically detected activity on up to 8 individual EMG channels

Selectable stimulator contact chimes

Selectable stimulus delivery chimes

ESU Detection

Automatically detects use of electrosurgical devices, mutes audio, protects averages

General Specifications

Power Supply 100-240 VAC, 50/60 Hz

Power Consumption..... 60 W

Environmental Limits

Temperature 10° to 40° C

Relative Humidity..... 30%–75%

Altitude..... Up to 4600 meters above sea level

System Architecture

CPU/RAM Minimum AMD Athlon X2 Dual Core 2.2 GHz or Intel Core 2 Duo 3.0 GHz, 2 GB memory

Graphics 1280 x 800 or greater

Storage Minimum 160 GB hard-disk

Operating System Windows® 7 Professional or Ultimate

Printers..... Windows Compatible

Patient Safety

Patient applied parts have reinforced insulation type BF. System complies with IEC60601 standard.

Mechanical

Isolation Module..... 5.0"D x 3.8"W x 5.5"H (12.7cm x 9.6cm x 3.8cm)

Acquisition module..... 8.5"D x 10" W x 5.5"H (21.6cm x 25.4cm x 14cm)

Stimulator Module 8.5"D x 10"W x 5.5"H (21.6cm x 25.4cm x 14cm)