



COVIDIEN

positive results for life™

Sandman™ Digital 20™ amplifier

Sandman Digital 20 Amplifier (SD20) offers state-of-the-art technology in a compact, cost-saving design. The *SD20* provides high quality signals, integrated sensors and built-in Nellcor™ *Oximax*™ oximetry.

- Built-in Nellcor *Oximax* pulse oximetry eliminates the need for manual calibration and tracks true SpO2 and pulse rate values
- Convenient LED indicators on the headbox to display the impedance check at the bedside
- Plug-and-play interface with Puritan Bennett™ sleep therapy products via *Sandman elink*™ Adapter
- Separate, streamlined headbox is small and lightweight with quick disconnect for easy patient mobility
- Customizable references, filters, gains and sampling rates from within *Sandman Elite*™ software
- Multi-referencing and re-referencing of any channel during collection from within *Sandman Elite* software
- Flexibility for your entire sleep recording needs from beginning to end
- Integrated pressure transducer

AMPLIFIER

- Digital conversion immediately after signal is received from electrode and/or sensor
- Software high/low frequency filters are fully customizable
- Electrode impedance check for all channels
- Signal amplification—20 levels for DC channels, 9 levels for AC Channels
- True 16-bit resolution
- Sampling rates selectable up to 4,096 Hz
- Common mode rejection ratio >100 dB
- DC offset ± 300 mV
- Leakage current <100 μ A

POWER

- Isolated medical grade AC/DC adapter (Class I, Type B), providing 15 V DC

HEADBOX

- Lightweight, allows for easy patient mobility
- Compatible with standard 1.5 mm electrodes, sensors and inputs
- Connects to amplifier using 6' cable

CHANNELS

- 20 channels (additional channels available through optional therapy and DC expansion)
 - 19 monopolar AC inputs
 - 3 bipolar AC inputs (DC optional)
 - 1 body position (powered by amplifier)
 - 1 thermistor (powered by amplifier)
 - 1 nasal pressure

APPLICATIONS

- PSG – Attended Sleep Diagnostics (MSLT/Split)
- PSG – Portable Attended Sleep Diagnostics (MSLT/Split)



Sandman elink Adapter

SANDMAN elink ADAPTER

- Plug-and-play, state-of-the-art cat5 interface
- Plenum cabling to control room, standard 100', available up to 330' (30-76 meters)

PURITAN BENNETT THERAPY PRODUCTS (OPTIONAL)

- Adjustable CPAP/bi-level pressures via *Sandman* software remote control
- No calibration required
- Puritan Bennett therapy channels (Pressure, Flow, Leak, Backup Rate*)
- Backup rate and delay ramp feature (up to 30 minutes), starting at any pressure*

PULSE OXIMETRY

- Includes fast averaging mode (2–3 seconds), ideal for accurate event detection
- Built-in *Nellcor Oximax* pulse oximetry eliminates the need for manual calibration
- Provides SpO₂, pulse rate, pulse amplitude and pleth channels

DC EXPANSION BOX (OPTIONAL)

- 8 DC inputs with a full range of ± 5 V
- Connect any external DC device such as: pH, CPAP, bi-level, EtCO₂

SAFETY STANDARDS

- Risk Class II b
- Meets requirements IEC 60601-1
- Complies with CSA and UL requirements
- Classified according to MDD 93/42/EEC

PARTS

- D.2118 *SD20* Amplifier
- D.2120 *SD20* Headbox
- D.2101 Sandman Power Adapter for *SD32+* or *SD20* Amplifier
- D.2108 *SD20* 8 Channel DC Expansion Box
- D.2115 *Sandman elink* Adapter
- D.2123 Holder/Bracket for *SD20* Amplifier
- D.7075 *SD20* DC Interface Cable
- D.7149 *SD32+* and *SD20* Headbox Cable
- D.7150-10 *SD32+* and *SD20* Fiber Optic Cable, 10'
- D.7161 Power Cord – *SD32+* and *SD20* Amplifier
- D.7185-00 Crossover Network Cable
- D.7187 *SD20* Power Transfer Cable
- DOC10 Nellcor Oximax Oximetry Interface Cable for (*SD32+* or *SD20* Interface)

Puritan Bennett therapy interface cables also required, please call for details.

PHYSICAL CHARACTERISTICS: AMPLIFIER

Size (L x H x D)	Weight
135 x 97 x 38 mm	<300g
5.34" x 3.82" x 1.50"	<0.66lb

PHYSICAL CHARACTERISTICS: HEADBOX

Size (L x H x D)	Weight
127 x 97 x 25 mm	200g
5.00" x 3.82" x 0.984"	0.44lb

Some features not available with *Sandman EXpress* sleep diagnostic systems.

Specifications subject to change without notice.

CAUTION: Federal (U.S.A.) law restricts this device to sale by or on the order of a physician.

*Device dependent

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