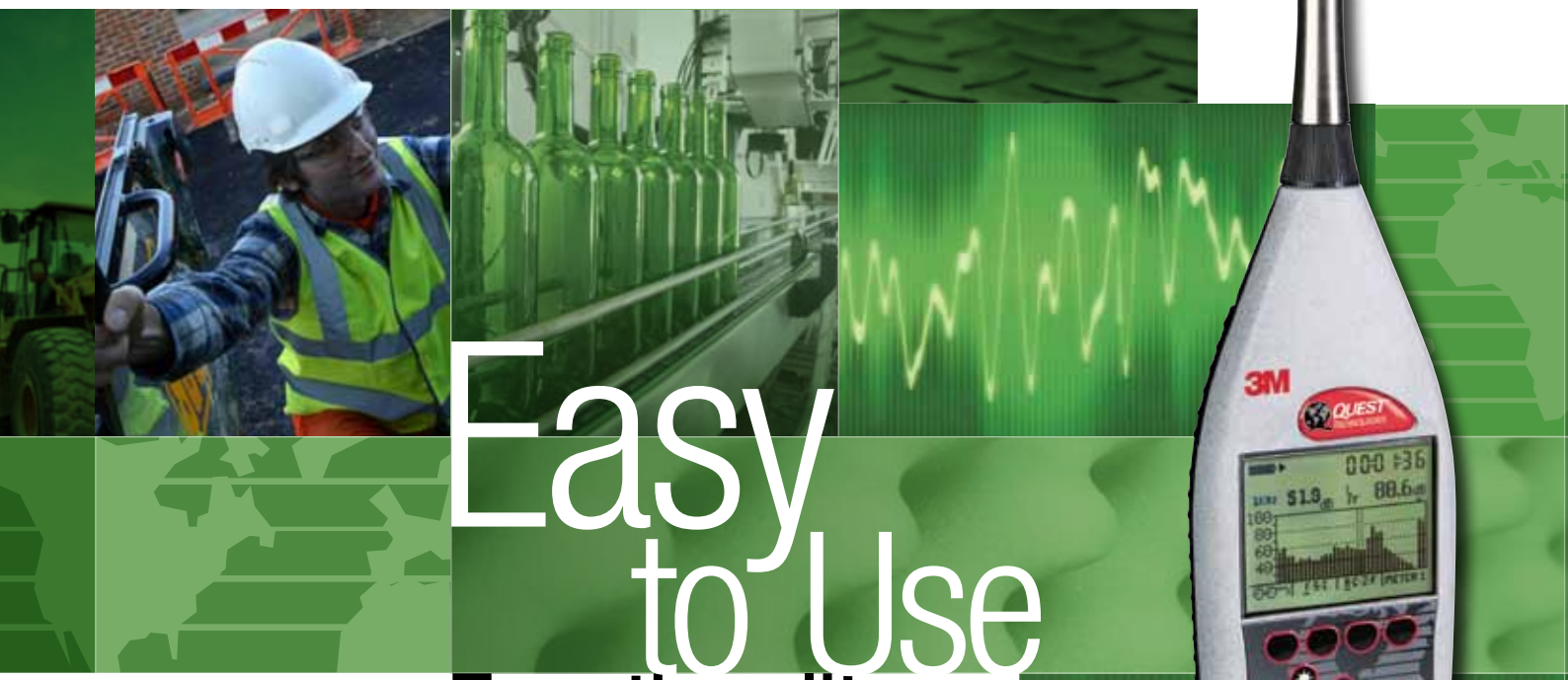
3M Occupational Health & Environmental Safety Division

SoundPro™ SE/DL Series of Sound Level Meters



Easy to Use Functionality

Advanced Sound Level Monitoring

The SoundPro SE/DL series provides advanced sound level monitoring and comprehensive data analysis. Available in Class 1 and Class 2 models, these instruments feature large screen displays that enable real-time frequency analysis, and data storing capabilities that make it easy to post-process and evaluate workplace noise levels.

The aerodynamic shape of the SoundPro is specifically designed to minimize disturbance to the sound fields being measured. From industrial and task noise sampling to hearing conservation, the SoundPro SE/DL series provides accuracy, ease-of-use and, if needed, data for professional follow-through.

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High Performance Area Sound Level Monitoring

The SoundPro SE and DL's powerful feature set make it easy to document and analyse noise exposures. These hand-held instruments include two virtual sound level meters to take full or third octave band real-time measurements while simultaneously measuring broadband sound. Features such as a menu driven user interface, quick keypad calibration, removable SD memory card and optional QuestSuite™ Professional II software allow users to simply and reliably perform advanced sound analysis.

The SoundPro series deliver the accurate sound measurement needed to support hearing conservation programs and can help companies comply with regulatory requirements.



SoundPro SE/DL Features

ANSI & IEC standards compliant
Available in Class 1 Precision or Class 2 General Purpose models
Two "virtual" sound level meters running simultaneously
Concurrent A-weighted and C-weighted measurements
Programmable and level-triggered start and stop
A, C, Z and F (Flat) frequency weighting
Fast, slow, and IEC impulse time response
Selectable thresholds 10 dB – 140 dB
3, 4, 5, 6 dB exchange rates
Luminescent keypad and backlit display
SD memory card slot
USB communications port and serial RS-232 output
Multilingual display (English, French, Spanish, German, Italian, Portuguese)
Time history data logging with 1 second to 60 minute intervals*
Back erase function
Noise dose calculation / dosimetry function

**DL only*

Applications Include:

- Occupational noise evaluations
- Environmental noise assessments
- Noise ordinance enforcement and legal metrology
- General sound and frequency analysis
- Vehicle noise evaluations
- Quality control and process measurements
- Building acoustics
- Mobile equipment evaluations



Easy-to-Read, Intuitive Displays







SPL Display

Quasi-Analogue and Numeric Screen

Analogue Display View
Displays the current Sound Pressure Level (SPL) with selected time response and filter weightings. The amplitude of the displayed measurement is shown both graphically by the length of the bar and numerically below the bar. The bar appears if the measured value is above the minimum value for the selected measurement range.

1/1 Octave

Band Bar Chart Measurement Screen

Broadband Bar Chart View
Displays 1/1 octave analysis measurements in filter band and broadband values for both meters 1 and 2. This screen contains 13 bars with 11 filter bands and two for broadband. Bars appear if the value for the measurement is above the minimum value for the selected measurement range.

1/3 Octave

Band Bar Chart Measurement Screen

Broadband Bar Chart View
Displays 1/3 octave-band analysis measurements in filter band and broadband values for both meters 1 and 2. This screen contains 35 bars with 33 filter bands and two for broadband. Bars appear if the value for the bar is above the minimum value for the selected measurement range.

Comprehensive Real-Time Analysis



Optional Features and Expanded Capabilities

SoundPro Outdoor Measuring System (SP-OMS)

The SoundPro Outdoor Measuring System protects the instrument from exposure to wind, rain, snow, chemicals, particulates, animals, vandalism and theft. It is also used for extended battery life with up to one week of continuous monitoring (two weeks with optional second battery). The weatherproof case holds the meter and battery pack with room for accessories and storage of the system components while not in use.

Exposed components are made of stainless steel, ABS and engineered polymers. The OMS kit contains all necessary masts, windscreens, cables, battery packs and adapters required for use with the SoundPro SE and DL instruments. Provisions in the case design allow customer-supplied padlocks and cables to be used to lock the case and secure it to a stationary object.





Other Options Include:

- Full (1/1) octave band real-time analysis
- Third (1/3) octave band real-time analysis
- Acoustic spectral curves option
- Speech intelligibility option
- Audiometric calibration kit configurations
- GPS data incorporation (using compatible GPS receiver)
- Optional microphones in 1/4", 1/2", and 1" sizes
- Reverberation Time (RT-60)

Specifications for the SoundPro

GENERAL:	
DISPLAY LANGUAGES	English, French, Spanish, German, Italian and Portuguese
USER INTERFACE	10 pushbuttons and 4 soft keys, menu driven
DISPLAY TYPE	Transflective 128 X 64 Dot Matrix LCD with additional fiber optic backlighting
STANDARDS:	
EN/IEC 61672, ANSI S1.4, ANSI S1.43, EN/IEC 61260, ANSI S1.11, CISPR 16-1, IEC 6100-4-2, IEC 6100-6-2 (also meets requirements of former standards IEC 60651 and 60804)	
CE Mark	
MEASUREMENTS:	
PARAMETERS	SPL, LMAX, LMIN, Peak, LEQ, LAVG, SEL, LN (selectable L1 to L99), TWA, Taktm, Taktmx, Dose, PDose, Exposure (Pa2H/Pa2S), LDN, CNEL, PTWA, L_{C-A}
RANGES	120 dB+ (A-weighted) total dynamic measurement range over 8 individual ranges of 90 dB (A-weighted) each (with filters - 80 dB ranges); overall measurement range 0 dB to 140 dB
PEAK RANGE	Up to 143 dB using standard BK4936 microphone; higher with optional microphones and preamps
FREQUENCY WEIGHTING	A, C, Z and F (Flat)
RESPONSE TIME	Fast, Slow, IEC Impulse
EXCHANGE RATES	3, 4, 5, and 6 dB
CRITERION LEVEL	40 to 100 dB
UPPER LIMIT TIME LOGGING	10 to 140 dB selectable
RUN MODES	Level triggered run/pause, clock/date triggered power on and run for programmed duration, external logic input run/pause, and keypad initiated run/pause for programmed duration
MEASUREMENT REFERENCES	SPL: 114 dB Frequency: 1 kHz Direction: 0 degrees using free-field response microphone
OCTAVE AND THIRD OCTAVE FILTERS (OPTIONAL):	
FULL OCTAVE FILTERS	11 bands with center frequencies from 16 Hz to 16 kHz
THIRD OCTAVE FILTERS	33 bands with center frequencies from 12.5 Hz to 20 kHz
CALIBRATION:	
HISTORY	Complete calibration history with post study verification logged with calibration history
LOGGING AND STORAGE:	
LOGGING	DL Models only. Max, Min, Peak, LN, LEQ / LAVG may be logged at 11 selectable intervals from one second to 60 minutes to the included SD (secure digital) memory card. Use QuestSuite™ Professional II to interpret data files
SUMMARY DATA	All session/study data is stored to the SD card. Summary data may be interpreted with QuestSuite™ Professional II or exported to spreadsheet or XML file with an available utility
MEMORY	Accepts 32 MB to 32 GB SD memory cards. Card included with all models and is required to store multiple Summary sessions/studies and for setup storage Contact factory for preferred SD card manufacturers
SPECIAL FUNCTIONS:	
BACK ERASE	Selectable 1 second to 20 seconds removal of measurement data (data removed by back erasing retained in session file)
SECURITY	4 digit code protection for Runs and Setups available
OPTIONAL ACOUSTIC SPECTRAL CURVES	Noise Criterion (NC) Curves, Preferred Noise Criterion (PNC) Curves, Room Criterion (RC) Curves, Balanced Noise Criterion (NCB) Curves, Noise Rating (NR) Curves, Audiometric Room Curves (per ANSI S3.1, per OSHA Hearing Conservation Amendment, and per ISO Hearing Screen for Audiology Booths)
OPTIONAL SPEECH INTELLIGIBILITY FUNCTION	Firmware can be installed in the SoundPro™ series to allow the testing and evaluation of intelligibility of human speech through public address (PA), fire alarm and mass notification systems (MNS) the STI-PA method in accordance with IEC 60268-16 and NFPA 72 National Fire Alarm Code. Results are in STI or CIS. On meter post-processing available
OPTIONAL REVERBERATION TIME (RT-60)	Used to measure decay time or acoustic decay performance of a room or closed space

All Specifications Subject to Change



SoundPro Specifications (cont.)

PORTS AND CONNECTIONS:	
POWER JACK	External power supply 9-16 VDC
AC/DC OUTPUT	3.5 mm stereo (tip-AC, Ring-DC, Ring2-Ground)
10 PIN AUXILIARY CONNECTOR	RS-232, 3 digital outputs, 1 digital input
USB	Conforms to USB 2.0, mini-USB connector
ELECTRICAL CHARACTERISTICS:	
BATTERIES	4 disposable AA alkaline cells, typically >10 hours continuous use without backlight (SLM only without filters activated); optional nickel metal hydride (NiMH) cells, typically 10+ hours (SLM only)
EXTERNAL DC POWER INPUT	100 – 240 VAC, 47-63 Hz transformed to 9 VDC
STANDARD MICROPHONES	Class/Type 1 Precision – BK4936; Class/Type 2 General Purpose – QE7052; other optional types and sizes available from ¼" to 1" prepolarized or standard condenser types
MICROPHONE POLARIZATION	Selectable 0 volts or 200 volts (Class/Type 1 models only)
MICROPHONE SENSITIVITY	Selectable nominal values in decibels relevant to 1 Volt/Pa
METER INPUT	50 KOhm nominal input impedance
PREAMPLIFIER	Removable preamp directly accepts ½" (0.52" or 13.2 mm) microphone; other sizes require adapter
REMOTE CABLE	Will drive up to 15 meters of cable with negligible signal loss
INPUT IMPEDANCE	20 kΩ in series with 11 µF capacitance, with 100 pF capacitance to ground
PHYSICAL CHARACTERISTICS:	
SIZE	3.1"W X 11.1"H X 1.6" thick (with preamp only); 7.9 cm X 28.2 cm X 4.1 cm
WEIGHT	0.54 kg or 1.2 lbs. (including batteries)
HOUSING	Stainless fiber filled ABS polycarbonate with additional internal EM/RFI shielding
TRIPOD MOUNT	Standard photographic mount on rear accepts ¼"- 20 screw threads
ENVIRONMENTAL:	
TEMPERATURE	Operating -10° C to +50° C (<± 0.5 dB effect); Storage -25° C to +70° C
HUMIDITY	10% to 90% RH, non-condensing
EXTERNAL FIELDS	Electric – 10 V/meter, 1 kHz modulated, 30 MHz – 1 GHz, <55 dBC; magnetic - 80 A/m, 50/60 Hz, no significant effect

All Specifications Subject to Change

QuestSuite™ Professional II Software



It's the ultimate "System Solution" for recording, reporting, charting and analyzing exposures to a variety of occupational and environmental hazards. With QuestSuite, there are no more headaches from learning different programs or switching among multiple software applications. QuestSuite Professional II offers users the ability to switch between English, French, Spanish, German, Italian, Portuguese, Korean and Chinese – Simplified, without reinstalling the software. This simple, yet robust system solution works with all Quest Technologies data logging instruments.

3M

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