Features and Benefits

+ ANSI and IEC standards compliant
+ Available in Class/Type 1 Precisions or Class/Type 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 and Z (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
+ Display adjustable among multiple languages
+ Time history data logging with 1 second to 60 minute intervals*
+ Back erase function
+ Noise dose calculation/dosimetry function

*DL only

Applications

+ Occupational noise evaluations
+ Environmental noise assessments
+ Noise ordinance enforcement and legal metrology
+ General sound and frequency analysis
+ Vehicle noise evaluations
+ Building acoustics
+ Mobile equipment evaluations

The TSI Quest™ SoundPro™ SE and DL series Sound Level Meters and Real-Time Analyzers help provide advanced sound level monitoring and comprehensive data analysis. Available in Class/Type 1 and Class/Type 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.
EASY-TO-READ INTUITIVE DISPLAYS

Sound Pressure Level 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.

Detection Management Software
Designed for dosimetry, sound level measurements, heat stress assessments and environmental monitoring, this advanced software helps safety and occupational professionals:

+ Configure instrumentation and save pre-configured setups
+ Retrieve, download, share, and save instrument data
+ Create charts, tables, and reports to intuitively interpret your measurements
+ Export and share recorded results

The software integrates with TSI Quest Detection Solutions data logging instruments and will help you improve both operating efficiency.
Quest SoundPro Outdoor
Measuring System (SP-OMS)

The SoundPro Outdoor Measuring System helps protect 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 option)

SENSOR SPECIFICATIONS

<table>
<thead>
<tr>
<th>Environmental</th>
<th>Measurements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature</td>
<td>Parameters</td>
</tr>
<tr>
<td>Operating -10ºC to +50ºC (&lt;± 0.5 dB effect); Storage -25ºC to +70ºC</td>
<td>SPL, L_A, L_B, L_C, L_D, SEL, LN (selectable L1 to L99), TWA, Taktm, Taktmx, Dose, PDose, Exposure (Pa2H/Pa2S), LDN, CNEL, PTWA, L_A</td>
</tr>
<tr>
<td>Humidity</td>
<td>Ranges</td>
</tr>
<tr>
<td>10% to 90% RH, non-condensing</td>
<td>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</td>
</tr>
<tr>
<td>External Fields</td>
<td>Peak Range</td>
</tr>
<tr>
<td>Electric - 10 V/meter, 1 kHz modulated, 30 MHz – 1 GHz, &lt;55 dBC magnetic - 80 A/m, 50/60 Hz, no significant effect</td>
<td>Up to 143 dB using standard BK4936 microphone; higher with optional microphones and preamps</td>
</tr>
</tbody>
</table>

| Frequency Weighting           | Exchange Rates        |
| A, C, Z and F (Flat)          | 3, 4, and 6 dB        |
| Response Time                 | 40 to 100 dB          |
| Fast, Slow, IEC Impulse       | 10 to 140 dB selectable |

| Upper Limit Time Logging      | 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                    | SPL: 114 dB           |
| Frequency: 1 kHz               | Frequency: 1 kHz      |
| Direction: 0 degrees using free-field response microphone | Direction: 0 degrees using free-field response microphone |
### 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 Impedance**
20 kΩ in series with 11 μF capacitance, with 100 pF capacitance to ground

**Remote Cable**
Will drive up to 15 meters of cable with negligible signal loss

**Preamplifier**
Removable preamp directly accepts ½” (0.52” or 13.2 mm) microphone; other sizes require adapter

**Preamplifier Input Impedance**
Greater than 1 GΩ; less than 2pF

### Logging and Storage

**Logging**
DL Models only. \( L_{eq}, L_{10}, L_{peak}, L_{N}, L_{C}/L_{AVG} \) may be logged at 11 selectable intervals from one second to 60 minutes to the included SD (secure digital) memory card. Use TSI Quest Detection Management Software DMS to interpret data files

**Summary Data**
All session/study data is stored to the SD card. Summary data may be interpreted with TSI Quest Detection Management Software DMS, 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 stores multiple summary sessions/studies and for setup storage (Contact factory for preferred SD card manufacturers)

### 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

### Special Functions

**Back Erase**
Selectable 1 to 20 seconds removal of measurement data (data removed by back erasing and 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 (NCR) 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

**Calibration History**
Complete calibration history with post study verification logged with calibration history

### Octave and Third Octave Filters (optional)

**(base-10 bands, as recommended by IEC61260 [2001])**

**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

### Specifications are subject to change without notice.

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