A New Generation Sound Level Meter

NA-27

Precision Integrating Sound Level Meter with 1/3 octave band real-time analyzer
Tremendous versatility

- Measurement modes: $L_p$, $L_{eq}$, $L_E$, $L_{max}$, $L_{min}$, $L_{peak}$, $L_x$, Impulse, $L_{tm3}$, $L_{tm5}$, $P_{AVE}$, $P_{SUM}$ and REVERB
- Dual measurement
- Real-time 1/1-octave and 1/3-octave analysis
- 8-hour continuous operation with alkaline batteries
- Memory max. 10 000 data capacity
- Various trigger functions (external trigger, level trigger and time trigger)
- Data exclusion (back-erase) function
- Time delay setting function
- Back up function
- Large display with backlighting

1/1 and 1/3 octave analysis

The NA-27 is a compact and eminently portable unit that allows real-time 1/1-octave and 1/3-octave analysis without requiring external accessories. Being able to perform quick and precise 1/3-octave analysis in the field is an advantage that will be appreciated by researchers and scientists anywhere. During measurement, the user can switch between 1/1-octave, 1/3-octave, and noise level analysis, as well as between numeric and graphical indication at the simple touch of a key.

Output data from NA-27

Output data from NA-27 can take two basic formats, ASCII format and binary format, depending the commands sent from PC.

Infrared remote control:
The supplied infrared remote control allows operation of 18 functions including START/STOP from a distance. Available functions by the remote control are;

1. START/STOP
2. PAUSE/CONT
3. LEVEL UP/DOWN
4. FAST, SLOW, 10mS
5. $L_p$, $L_{eq}$, $L_E$, $L_{max}$, $L_{min}$
6. STORE
7. A, C
8. PRINT
**Dual measurement**

For noise evaluation, it will be sometimes desirable to check the peak sound pressure or to weigh transient levels with a suitable time constant. NA-27 perfectly fulfills these requirements incorporating two separate sound level measurement channels which can operate simultaneously, using different settings for frequency response and time weighting. Measurement results are shown on independent readouts in the display, and the data can also be output separately to other equipment for later frequency analysis.

*Splitter adapter CC-59 is required for simultaneous output of main and sub channel signal.*

**P_AVE, P_SUM and REVERB**

Using recall processing function, power average (P_AVE), power sum (P_SUM) and reverberation time (REVERB) can be calculated easily. All you have to do is just to store data before recall processing.

**Delayed measurement**

The user can set a delay to be inserted after activating measurement before actual processing starts.

**Optional equipment**

- **AC adapter** NC-94A (100 to 240V)
- **Soft case** NA-27-026
- **Microphone extension cable** EC-04 series (2, 5, 10, 30, 50, 100 m)
- **BNC-to-pin cable** CC-24
- **Splitter adapter** CC-59
- **Pistonphone** NC-72, NC-74
- **Printer** DPU-414
- **Level recorder** LR-07

**System configuration**

<table>
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<tr>
<th>Equipment</th>
<th>Model/Details</th>
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<tr>
<td>Microphone extension cable</td>
<td>EC-04 series</td>
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<tr>
<td>Windscreen</td>
<td>WS-02</td>
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<tr>
<td>Pistonphone</td>
<td>NC-72, NC-74</td>
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<td>Sound calibrator</td>
<td>SA-78</td>
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<tr>
<td>AC adapter</td>
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<td>General printer cable</td>
<td>SWCD2320 (25 pins, male, straight)</td>
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<tr>
<td>Cable CC-24 (AC or DC signal output)</td>
<td>CC-24</td>
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<tr>
<td>I/O connector Serial interface - 5WKRF4030 (9 pins, D-sub, female)</td>
<td>CC-24</td>
</tr>
<tr>
<td>General interface cable, 9 pins, female, cross</td>
<td>CC-24</td>
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<tr>
<td>Printer</td>
<td>DPU-414</td>
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<tr>
<td>Level recorder</td>
<td>LR-07</td>
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<tr>
<td>FFT analyzer (2 ch)</td>
<td>SA-78</td>
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**Data exclusion (back-erase) function:**

Data that were gathered a few seconds before the pause key was pressed can be excluded from processing.
Specifications

Applicable standards
IEC 61672-1: 2002 Class 1, IEC 60804: 2000 Type 1, IEC 61260: 1995 Class 1, IEC 608051: 1979 Type 1, ANSI S1.11 Type 1D, JIS C 1513: 2002 Class 1, JIS C 1514: 2002 Class 1, JIS C 1505-1988

Microphone and preamplifier
1/2-inch prepolarized condenser microphone UC-53A and preamplifier NH-20

Dual Measurement and real-time frequency analysis
Main and sub
Individual frequency weighting and time weighting settings are possible for main and sub channels.
1/1, or 1/3 octave band real-time frequency analysis capability in main channel

Measurement functions
Instantaneous sound pressure level ($L_p$)
Equivalent continuous sound pressure level ($L_{eq}$)
Sound exposure level ($L_E$)
Maximum and minimum sound pressure level ($L_{max}$ and $L_{min}$)
Percentile sound pressure level ($L_{1}$, $L_{5}$, $L_{10}$, $L_{50}$, $L_{90}$, $L_{95}$, $L_{99}$)
Takt-max sound pressure level ($L_{tm3}$, $L_{tm5}$) *
Waveform peak hold ($L_{peak}$) *
*sub channel only

Measurement time (except for instantaneous sound pressure level $L_p$)
Presetting from 1 to 99 (units: h, m, s)
Manual measurement by start and stop (max. 99 h)
$L_x$ requires more than 10 s setting.

Max. measurement level
140 dB rms, 133 dB at c.f.3, 143 dB peak for peak hold

Noise floor
Typical 17 dB (A) rms

Frequency range
20 to 12 500 Hz (including microphone)
10 to 20 000 Hz (electrical characteristics)

Frequency weighting
A, C, Flat (main and sub channels)

Time weighting
Main channel: Fast, Slow, 35 ms, 10 ms
Sub channel: Fast, Slow, 35 ms, 10 ms, Impulse, Peak hold

Display
Backlit LCD panel (192×192 dots)

Power requirements
4 to 6 V DC, approx. 310 mA (at 5 V, 1/3 oct analysis mode, 20 °C)
Battery: Four IEC R14P (size “C”) batteries
Life: Approx. 8 h (alkaline batteries, continuous operation, 1/3 oct. analysis)
AC adapter: AC adapter NC-94A, 100 to 240 V (option)

Ambient conditions for operation
−10 to +50 °C, 30 to 90 % RH

Dimensions, weight
Approx. 30 (H) × 10 (W) × 5 (D) cm, approx. 800 g (including batteries)

Supplied accessories
Windscreen × 1, Carrying case × 1, Tripod adapter × 1, IEC R6 batteries × 4, Lithium battery CR-1/3N × 1
Remote controller × 1, Miniature screwdriver × 1
Instruction manual × 1

Specifications subject to change without notice.