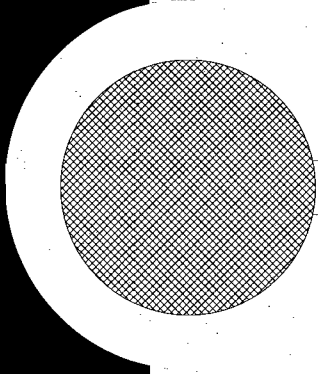
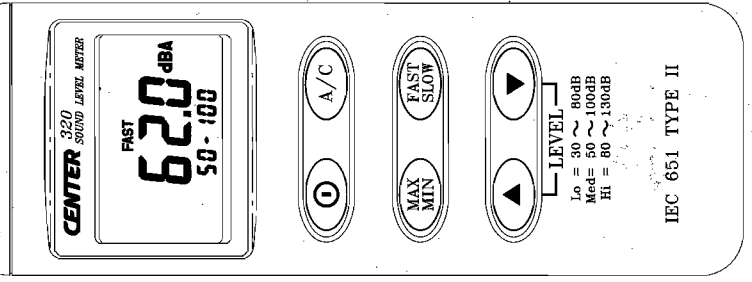


CENTER[®] 320



SOUND LEVEL METER

CE



Instruction Manual

SOUND LEVEL METER

Instruction Manual

CE

320-02 July 2006

CONTENTS

Title	Page
I. Safety Information.....	1
II. General Description.....	2
III. Specifications.....	2
IV. Name And Functions.....	5
V. Calibration Procedures.....	9
VI . Measurement Preparation.....	10
VII. Operating Precautions.....	11
VIII. Measurement.....	12

I. Safety Information

Read the following safety information carefully before attempting to operate or service the meter.

Use the meter only as specified in this manual; otherwise, the protection provided by the meter may be impaired.

➤ Environment conditions

- ❶ Altitude up to 2000 meters
- ❷ Relatively humidity 90% max.
- ❸ Operation Ambient 0 ~ 40°C

➤ Maintenance & Clearing

- ❶ Repairs or servicing not covered in this manual should only be performed by qualified personnel.
- ❷ Periodically wipe the case with a dry cloth. Do not use abrasives or solvents on this instruments.

➤ Safety symbols



Meter is protected throughout by double insulation or reinforced insulation.

When servicing, use only specified replacement parts.



Comply with EMC

II. General Description

Thank you for using our Sound Level Meter. To ensure that you can get the most from it, we recommend that you read and follow the manual carefully before use.

This unit conforms to the IEC651 type2, ANSI S1.4 Type2 for Sound Level Meters.

This Sound Level Meter has been designed to meet the measurement requirements of safety Engineers, Health, Industrial safety offices and sound quality control in various environments.

- Ranges from 30dB to 130dB at frequencies between 31.5Hz and 8 KHz.
- Display with 0.1dB steps on a 4-digits LCD.
- With two equivalent weighted sound pressure levels, A and C.
- Both AC and DC signals output is available from Both standard 3.5mm coaxial socket suitable for a frequency analyzer, level recorder, FFT analyzer, graphic recorder ; etc.

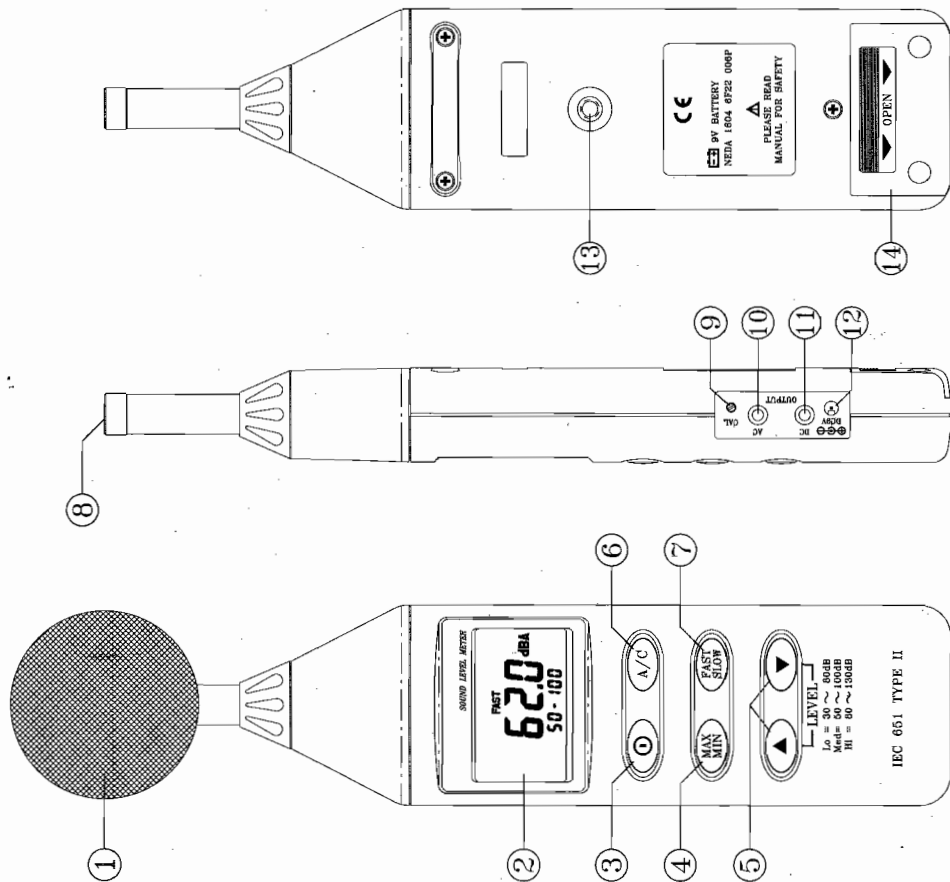
III. Specifications

- Standard applied : IEC651 Type2, ANSI S1.4 Type2.
- Frequency range : 31.5Hz ~ 8KHz
- Measuring level range : 30 ~ 130dB
- Frequency weighting : A / C
- Microphone : 1/2 inch electret condenser microphone

- Display : LCD
- Digital display : 4 digits
Resolution: 0.1dB
Display Update: 0.5 sec.
- Time weighting : FAST (125mS), SLOW (1 sec.)
- Level ranges : Lo: 30 - 80 dB
Med: 50 - 100 dB
Hi: 80 - 130 dB
Accuracy : ± 1.5 dB (under reference conditions)
- Dynamic range : 50 dB
- Alarm function : "OVER" is show when input is more than upper limit of range.
"UNDER" is show when input is Less than lower limit of range.
- MAX / MIN hold : Hold readings the Maximum and Minimum Value.
- AC output : 1 Vrms at FS (full scale).
output impedance : Approx. 50 Ω
- DC output : FS: means the upper limit of each level range.
: 10mV / dB , output impedance approx. 100 Ω
- Power supply : One 9V battery, 006P or IEC 6F22 or NEDA 1604.
- Power life : About. 50hrs (alkaline Battery)

IV. Name And Functions

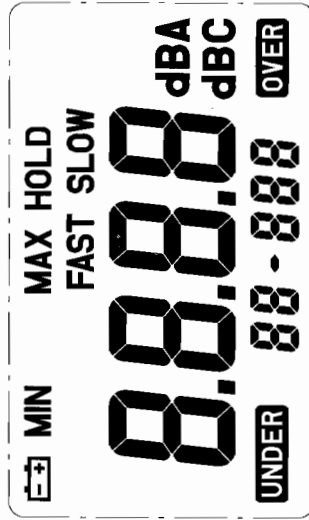
- AC adapter : Voltage 9 V_{dc} (8-10V_{dc} Max)
 Supply current: > 30mA_{DC}
 Socket: pin → Ground
 Casing → Positive
 External Diameter → 3.5mm
 Internal Diameter → 1.35mm
- Operation temperature : 0 to 40°C (32 to 104°F)
 Operation humidity : 10 to 90%RH
 Storage temperature : -10 to 60°C (14 to 140°F)
 Storage humidity : 10 to 75%RH
- Dimensions : 275 (L) × 64 (W) × 30 (H)mm
 10.8 (L) × 2.5 (W) × 1.2 (H)inch
- Weight : 275g (including battery)
- Accessories : 9V battery, carrying case. Screwdriver, Instruction manual. Windscreen, 3.5 φ plug.



① **Windscreen**

If you operate at wind speed over 10m/sec, please put protective accessories in front of the microphone.

② **Display**



SYMBOL

- LCD
- MAX
- MIN
- OVER
- UNDER
- FAST
- SLOW
- dBA
- dBC
- Battery icon
- Low-Battery icon
- LO-

FUNCTION

- 4 digits
- Maximum Value hold
- Minimum Value hold
- Over range
- Under range
- Fast response
- Slow response
- A-Weighting
- C-Weighting
- Range Indicate
- Low-Battery
- Under range 20dB

③ **Power Switch**

The ① key turns the sound level meter ON or OFF.

④ **MAX / MIN hold switch**

Press button to enter the maximum and minimum recording mode. Select the proper Level range before using MAX/MIN to ensure that reading value will not exceed the measurement range. Press once to select MAX value. Press again to select MIN value, and press again to select current Value with "MAX MIN" annunciator blinking. Press and hold down button for 2 seconds to exit the MAX MIN mode.

Note: If change sound level range or change A-C weight, the MAX.MIN mode will clear.

Sampling rate: 160ms

⑤ **Level range control switch**

Each time the UP switch ▲ is pressed. The level range increments from "Lo" Level to "Hi" Level range. Each time the DOWN switch ▼ is pressed. The range decreases from "Hi" Level to "Lo" Level range.

⑥ **Frequency Weighting select switch**

A : A - Weighting. for general sound level measurements.
 C : C - Weighting. for checking the low-frequency content of noise.
 (If the C-Weighted level is much higher than the A-weighted level, then there is a large amount of low-frequency noise)

⑦ **Time weighting select Switch.**

FAST : for normal measurements
 SLOW : for checking average level of fluctuating noise.

⑧ **Microphone**

1/2 inch Electret Condenser microphone

⑨ **CAL potentiometer**

Calibration control , For level calibration adjustment.

⑩ **AC output terminal**

1 Vrms Corresponding to each range step.

Output impedance $\approx 50 \Omega$

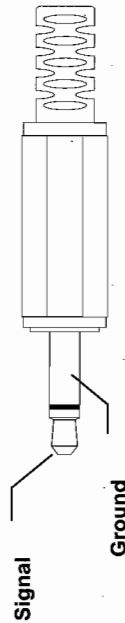
Output signal by standard 3.5mm coaxial socket signal on pin.

⑪ **DC output terminal**

Output : 10mV/dB

Output impedance $\approx 100 \Omega$

Output signal by standard 3.5mm coaxial socket signal on pin.



⑫ **External DC 9V power supply terminal**

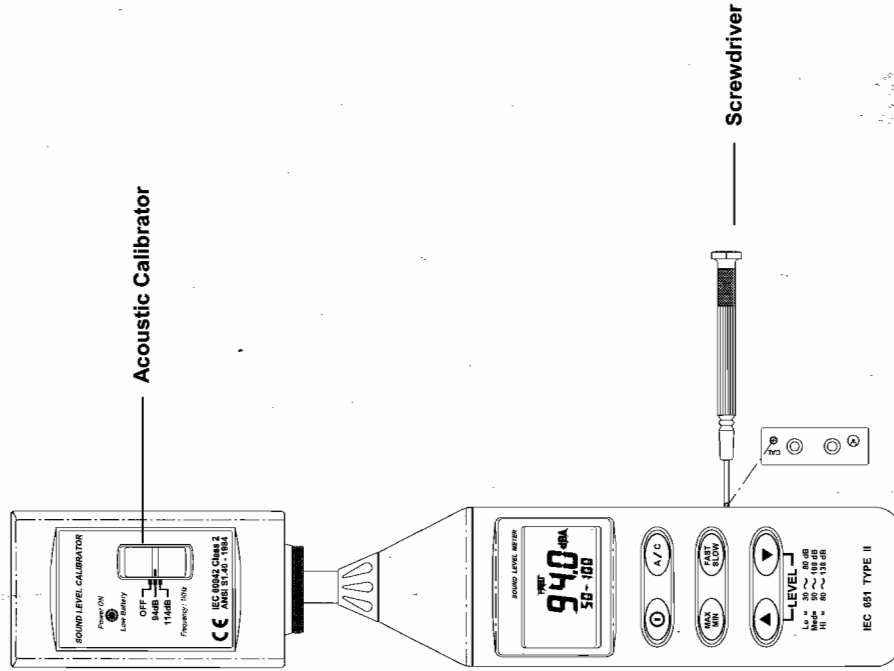
For connection with AC adapter.

⑬ **Tripod mounting screw.**

⑭ **Battery Cover**

V. Calibration Procedures

Using a standard Acoustic Calibrator (94dB , 1KHz Sine wave)



VIII. Measurement

- (1) Open battery cover and install a 9-volt battery in the battery compartment.
- (2) Turn on power and select the desired response Time and weighting. If the sound source consists of short bursts or only catching sound peak, set response to FAST. To measure average sound level, use the slow setting.
Select A- weighting for general noise sound level and C-weighting for measuring sound level of acoustic material.
- (3) Select desired Level.
- (4) Hold the instrument comfortably in hand or fix on tripod and point the microphone at the suspected noise source , the sound pressure level will be displayed.
- (5) When MAX MIN (maximum, minimum hold) mode is chosen. The instrument captures and holds the maximum and minimum noise level for a long period using any of the time weightings and ranges.
Press the MAX MIN button 2 seconds to clear the MAX/MIN reading . " MAX/MIN " symbol disappears.
- (6) Turn OFF the instrument and remove battery when not in use.