

**SMART
SENSOR®**

Model: AR814

Digital sound level meter Operation manual



A Precautions:

Please read this operation manual carefully before using this equipment for correct operations. This equipment have been designed to meet the measurement requirement of Safety Engineers, Health, Industrial Safety offices and Sound Quality control in various environment.

B Features:

- 1) This unit was designed according to the IEC651 TYPE2& ANSI S1.4 TYPE2 for sound level meters.
- 2) Instantaneous sound measure function.
- 3) Measurement range: 30-130 decibel
- 4) With two equivalent weighted sound pressure levels, A and C.
- 5) Fast & Slow dynamic characteristic modes.
- 6) AC and DC signed output for frequency analyzer level recorder, FFT analyzer, graphic recorder etc.

C Specifications:

- 1) Accuracy: ± 1.5 dB (under reference conditions)
- 2) Frequency range: 31.5 Hz - 8.5 kHz
- 3) Linearity range: 50 dB
- 4) Measuring level: 30-130 dBA, 35-130 dBC
- 5) Frequency weighting: A, C
- 6) Digital display: 5 digits
Resolution: 0.1 dB
Display: 0.5 secondary
- 7) Bar graph: 50 dB scale at 1 dB step for monitoring current sound pressure level display period: 50 ms
- 8) Level ranges: 30-80 dB; 50-100 dB; 60-110 dB; 80-130 dB;
- 9) Over indicate over range:
Under indicate less than lower limit of the range.
- 10) AC output: 0.707 Vrms at FS output impedance approx 600 Ω
- 11) DC output: 10 mV / dB output impedance approx 100 Ω
- 12) Time weighting: Fast / Slow
- 13) Microphone: 1/2 inch Electret Condenser microphone
- 14) Max: Maximum hold
- 15) Power supply: 1*9V alkaline cells or DC 9V adapter
Power life: About 30 hrs (alkaline cells)
- 16) Self calibration time: 10 sec (every turn on)
- 17) Operating Temperature: 0°C to 40°C
Operating Humidity: 10% to 80% RH
- 18) Storage Temperature: -10°C to 60°C

Storage Humidity: 10% to 70%RH

19) Dimensions: 265(L)*72(W)*35 (H) mm

20) Weight: 300g (including batteries)

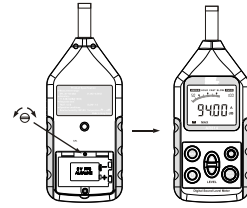


Figure1

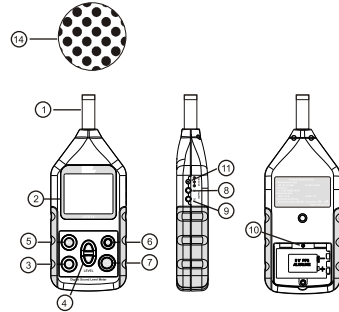


Figure2

FRONT

D Calibration Procedures:

Please use a Standard Acoustic Calibrator.

- 1) Make the following settings:
Display: SPL (dBA) Time weighting: FAST
Level range: 60 to 110 dB
Measurement mode: MAX function disable
- 2) Insert the microphone carefully into the 1/2 inch hole of the Calibrator.
- 3) Turn on the Calibrator and adjust the Prote-niometer in side the Battery compartment of the unit(shown in the diagram 1). The level of the unit (shown in the diagram 1). The level display will indicate the desired Level (94.0).
Our products are all well calibrated before Shipment. Recommended recalibration cycle: 1 year.

E Name and Functions:

- 1) Electret Condenser Microphone.
- 2) LCD Display.
- 3) Power switch
- 4) Level range control switch:
30dB~80dB; 50dB~100dB;
60dB~110dB; 80dB~130dB.
- 5) Maximum value hold switch. (MAX)
- 6) Frequency weighting select switch.
A: A weighting for general sound level measurements.
C: C- weighting for checking the low frequency content of noise.
- 7) Time weighting select switch.
Fast: For normal measurements.
Slow: For checking average level of fluctuating noise.
- 8) AC output terminal: 0.707 Vrms Corresponding to each range step.
- 9) DC out put terminal: output 10 mV / dB
- 10) Calibration control
- 11) External DC 9V power supply terminal.

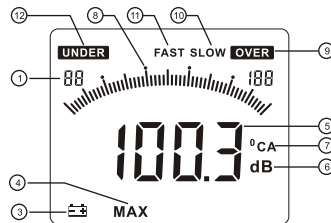


Figure3

- 12) Battery Door.
- 13) Tripod mounting screw.
- 14) Windscreen.

F LCD Display Description:

- 1) Level range.
- 2) Instantaneous sound pressure level.
- 3) Low battery mark.
- 4) Maximum value is held during measuring.
- 5) Measuring value.
- 6) Measurement Unit.
- 7) Frequency weighting A/C.
- 8) Level range Bar graph.
- 9) Rang over.
- 10) Slow time weighting.
- 11) Fast time weighting.
- 12) Range under.

G Pre-operations:

- 1) Use Screwdriver open battery door and install four 1.5V batteries in the battery compartment.
- 2) Install battery door with Screwdriver.
- 3) When the battery voltage drops below the operating Voltage, mark E appears. Please replaced with new one.
- 4) When the DC adapter is used, insert the plugs (3.5 ϕ) of the adapter into the DC 9V connector

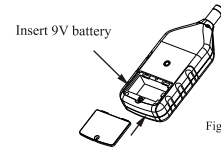


Figure4

on the side panel.

H Operation direction:

- 1) Turn on power
- 2) Select the desired response and weighting, also select desired rang.
- 3) If weighting for general noise sound level, please select dBA.
- 4) If the sound source consists of the short bursts of only catching sound peak, set response to FAST. to measuring average sound level, use the slow setting.
- 5) When MAX mode is chosen. The instrument captures and hold the maximum noise level.

I Cautions

- 1) Do not operate the unit at high temperature and Humidity environment.
- 2) Please take out battery from unit if not in use for any extended period of time.
- 3) Once using the unit in the presence of wind, it is a must to mount the windscreen to not pick up undesired signals.
- 4) Operating Environmental condition:
Humidity $\leq 80\%$ RH,
Temperature from 0°C to 40°C.

IntelSafe CE

