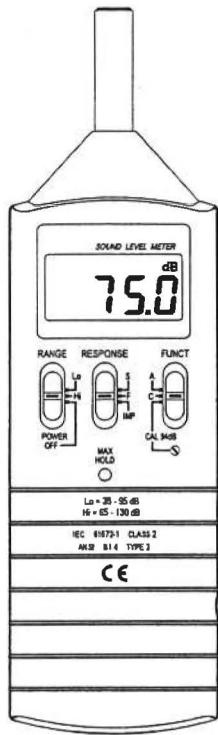


# SM150

## INSTRUCTION MANUAL



### 3. SPECIFICATIONS

Standard applied : IEC 61672-1 Class 2, ANSI S1. 4 Type2  
 Frequency range : 20Hz ~ 8KHz  
 Measuring level range : 35~130dB  
 Frequency weighting : A/C  
 Time weighting : Fast, Slow and Impulse  
 Microphone : 1/2 inch Electret condenser microphone  
 Display : LCD  
 Digital display : 4 digits  
 Resolution  $\Rightarrow$  0.1dB  
 Display period  $\Rightarrow$  0.5 sec.  
 Time weighting : FAST (125mS), SLOW (1 sec.) , IMPULSE (35mS)  
 Level ranges : Lo: 35~95dB and Hi: 65~130dB  
 Accuracy :  $\pm 1.4$ dB (under reference conditions)  
 Dynamic range : 65dB  
 Alarm function : " OVER " is show when input is out of range.  
 Maximum hold : Hold readings, with decay < 1dB / 3minutes.  
 Calibration : Electrical calibration with the internal oscillator (1KHz sine wave)  
 AC output : 0.6 Vrms at FS (full scale), output impedance approx. 5K $\Omega$   
 DC output : 10mV / dB, output impedance approx. 5K $\Omega$   
 Power supply : One 9V battery 006P or IEC 6F22 or NEDA 1604  
 Power life : About 50hrs ( alkaline cell )  
 Operating temperature : 0 to 40°C ( 32 to 104°F )  
 Operating humidity : 25 to 90%RH  
 Storage temperature : -10 to 60°C ( 14 to 140°F )  
 Storage humidity : 10 to 70%RH  
 Dimensions : 240 (L) x 62 (W) x 25 (H)mm

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Instruction manual, 3.5φ plug, windscreen.

### 1. 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

- ① Altitude up to 2000 meters
- ② Relatively humidity 90% max.
- ③ Operation Ambient 0 ~ 40°C

#### Maintenance & Clearing

- ① Repairs or servicing not covered in this manual should only be performed by qualified personnel.
- ② Periodically wipe the case with a dry cloth. Do not use abrasives or solvents on this instruments.
- Do not use abrasives or solvents on this instruments.

#### Safety symbols

Comply with EMC

### 2. GENERAL DESCRIPTION AND FEATURES

Thanks you for selecting 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.

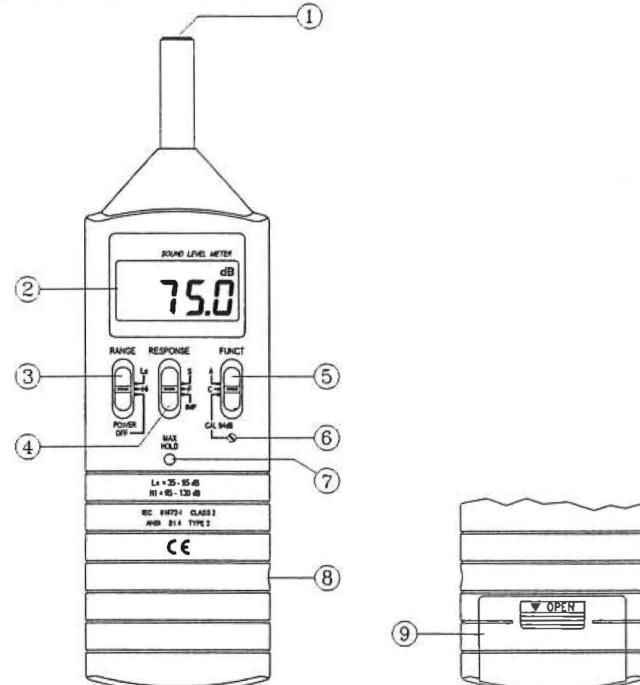
This unit conforms to the IEC 61672-1 Class 2, ANSI S1.4 Type2 for Sound Level Meters.

The Sound Level Meter has been designed to meet the measurement requirements for Industrial safety offices and sound quality control in various environments.

- Ranges from 35dB to 130dB at frequencies between 20Hz and 8KHz.
- Display with 0.1dB steps on a 4-digits LCD.
- With two frequency weighting, A and C.
- With three time weighting, Fast, Slow and Impulse.
- Both AC and DC signals output is available from a single standard 3.5mm coaxial socket suitable for a frequency analyzer, level recorder, FFT analyzer , graphic recorder ; etc.

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### 4. NOMENCLATURE AND FUNCTIONS



① Microphone : 1/2 inch Electric Condenser microphone

② Display : Serves to display the sound pressure level (dB), over or under range "OVER", maximum hold data "MAX HOLD" and Low battery indicator "BT".

dB : Sound pressure level with 0.1dB resolution.

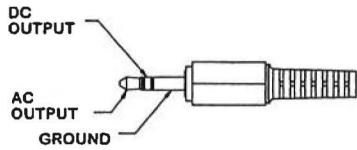
OVER : Shown when the range setting is too high (or Low).

③ Power and Range switch :

- When "OVER" is indicated, Slide range switch to another range for measurement.

- ④ Response switch : Setting the meter dynamic characteristics.  
 S (Slow) : User a 1s time constant, which smoothes out fluctuating levels.  
 F (Fast) : User a 125mS time constant. This setting is used in most situations.  
 IMP (Impulse) : Uses a 35mS time constant with a slow decay, which allows readings of short-duration sound events.
- ⑤ Function switch (A/C weighting & calibration selector)  
 A : A-weighting  
 C : C-weighting  
 CAL 94dB : Calibration

- ⑥ Calibration control can be adjusted clockwise or counterclockwise to standard 94.0dB.
- ⑦ MAX HOLD key : Press MAX HOLD key enter to maximum hold mode, press again to exit this mode.
- ⑧ Output jack : Standard 3.5mm 3 pole coaxial output socket.  
 Serves to supply AC signals and log-converted DC signals to external equipment.
- OUTPUTS : Two outputs can be accessed through 3.5mm stereo phone plug refer.
- DC output : Logarithmic signal. 10mV/dB  
 Impedance : 5KΩ
- AC output : approx. 0.6 Vrms corresponding to each range step.  
 Impedance : 5KΩ



- ⑨ Battery cover (on bottom)

#### LCD display Description

- ① Sound Pressure Level measuring value, resolution 0.1dB.  
 ② Measuring unit  
 ③ When readout is out of range.  
 ④ MAX HOLD: Maximum hold.  
 ⑤ BT: Low battery indicator.



#### 5. CALIBRATION PROCEDURES

- (1). Using a acoustic calibrator

- a). Make the following switch settings.  
 RANGE : Hi  
 RESPONSE : F  
 FUNCT : A

- b). Insert the microphone carefully into the insertion hole of the calibrator.

- c). Turn on the switch of calibrator and adjust the CAL screw of the instrument, until the level display indicates the desired level.

Note: Our products are well calibrated before shipment. Recommended calibrator cycle is one year.



- (2). Calibration using the internal oscillator

- a). Make the following switch settings.  
 RANGE : Hi  
 RESPONSE : F  
 FUNCT : CAL 94dB

- b). Display will show  $94.0 \pm 1.4$ dB

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#### 6. MEASUREMENT PREPARATION

- (1). Battery Loading:  
 Remove the battery cover on the back and put in one 006p 9V Battery.  
*Note : make sure the battery polarity is correct.*
- (2). Battery Replacement:  
 When the battery voltage drops below the operating voltage, "BT" mark will appear in the display and, battery should be replaced with new one.

#### 7. OPERATING PRECAUTIONS

- (1). Wind blowing across the microphone would bring additional extraneous noise. Once using the instrument in the presence of wind, it is a must to mount the windscreen in order not to pick up undesirable signals.
- (2). Calibrate the instrument before operation if the instrument not in use for a long time or operated at bad environment.
- (3). Do not store or operate the instrument at high temperature and humidity environment for a long period.
- (4). Keep microphone dry and avoid severe vibration.
- (5). Please take out the battery and keep the instrument in low humidity environment when not in use.

#### 8. MEASUREMENT

- (1). Open battery cover and install a 9-volt battery in the battery compartment.
- (2). Turn on power and select the desired response and weighting. If the sound source consists of short bursts or only catching sound peak, set RESPONSE to Impulse. To measure average sound level, use the Slow setting. The time weighting you choose will usually depend on the regulations for which you are measuring. If no time weighted is specified, then use the Fast weighting.  
 Select A- weighting for general noise sound level and C-weighting for measuring sound level of acoustic material.
- (3). 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.  
 When MAX HOLD mode is chosen. The instrument captures and holds the maximum noise level for a long period.
- (4). Turn OFF the instrument when not in use.

