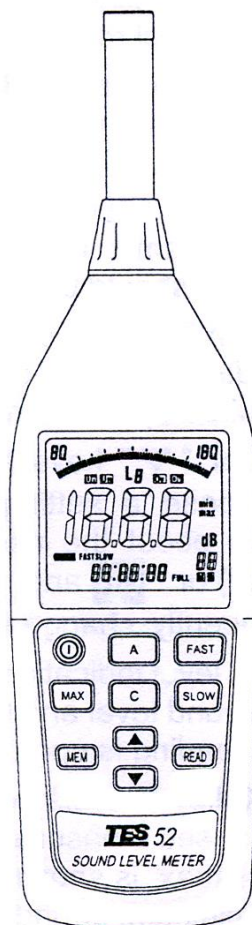


# Soundlevel Meter PCE-318



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## INSTRUCTION MANUAL



## **I. FOR SAFETY**

- 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 Operation temperature :  $-10^{\circ}\text{C}$  to  $+50^{\circ}\text{C}$
- ② Operation humidity : 30% to 90%RH (non-condensing)

### **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.

### **Safety symbols**

 Comply with EMC

## **II. PRECAUTIONS**

- Do not try to remove the microphone grid, you can easily damage the microphone in this way.
- Protect the meter from impact, Do not drop it.  
Transport it in the supplied carrying case.
- Protect the meter from shocks and vibration.
- Protect the meter from water, dust, extreme temperature, humidity and direct sunlight during storage and use.



- Protect the meter away from air with high salt or sulphur content, gases and stored chemicals.
- Always turn the unit off after use. Remove the battery from the meter if it is not to be used for a long time.
- Clean the meter only by wiping it with a soft, dry cloth or, when necessary, with a cloth lightly moistened with water. Do not use any solvents, cleaning alcohol or cleaning agents.

### **III. FEATURES**

The meter contains several features that enable you to take and save sound level measurements under a variety of conditions.

Features include :

- Easy of use.
- Easy to read large display.
- Six measurement ranges.
- Fast and slow time weightings.
- A and C frequency weightings.
- L, Lmax and Lmin three measured parameters are monitored during measurement and can be viewed selectively by pressing the MAX key.
- Storage of up to 99 data sets for L, Lmax and Lmin with elapsed time.
- Both AC and DC signal output is available from a single standard 3.5mm coaxial socket suitable for a frequency analyzer, level recorder, FFT analyzer, graphic recorder; etc.

## **IV. PARAMETERS**

The following parameters are used on the meter.

- $L_A$  : "A" frequency weighting sound pressure level.
- $L_C$  : "C" frequency weighting sound pressure level.
- FAST : Fast time weighting.
- SLOW : Slow time weighting.
- max : Maximum sound pressure level.
- min : Minimum sound pressure level.
- "max" flash : Tests time weighting characteristics.

The default settings of the meter are listed below.

Time weighting : FAST

Frequency weighting : A

Level range : 60 to 120dB

## **V. SPECIFICATIONS**

**Applicable standards:** IEC61672-1 : 2002 Class 2  
IEC60651 : 1979 Type 2  
ANSI S1.4 : 1983 Type 2

### **Measurement functions**

#### **Main processing functions**

Simultaneous measurement of all items according to selected time weighting and frequency weighting.

Sound level  $L_A$  or  $L_C$

Maximum sound level  $L_A$  max or  $L_C$  max

Minimum sound level  $L_A$  min or  $L_C$  min

**Total range :** 26 to 130dB

**Max. measurement level :** 130dB



**Noise floor A weighting** : 26dB or less

**C weighting** : 32dB or less

**Linearity range** : 60dB

**Reference level range** : 60 to 120dB

**Reference sound pressure level** : 94dB

**Calibration check frequency** : 1KHz

**Level range selection** :

6 ranges in 10dB steps 26 to 80dB , 30 to 90dB  
40 to 100dB , 50 to 110dB  
60 to 120dB , 70 to 130dB

**Frequency range** :

Overall characteristics including microphone : 31.5 to  
8000Hz

**Frequency weighting** : A, C

**Time weighting (RMS detection)** : Fast, slow

**Calibration** : Calibration using sound calibrator

**Sampling interval**

Bar graph indication : 125mS approx.

Numeric indication : 1 sec approx.

**Data memory functions**

Data can be stored in the internal memory.

Max. 99 data sets for L with elapsed time, Lmax with  
elapsed time and Lmin with elapsed time can be stored.

**Microphone** : 1/2-inch electret condenser type

**Display LCD**

**Display screens** :

4 digits indication of sound level, 0.1dB resolution.

Bar graph indication of current sound level, 1dB resolution.

Elapsed time display, 100 hours maximum.

Memory and read address display, 99 data sets maximum.

## Warning indications

Over-range indication

**OV** displayed at upper limit of the range

**Un** displayed at lower limit of the range

## Outputs

**AC output** (using selected frequency weighting)

Output voltage : 1V<sub>rms</sub> (at full-scale of the range)

Output impedance : 5K $\Omega$

Load impedance :  $\geq 1\text{M}\Omega$

**DC output**

Output voltage : 10mV/1dB

Output impedance : 5K $\Omega$

Load impedance :  $\geq 1\text{M}\Omega$

## Power requirements

**One 9V battery (006P or IEC6F22)**

Battery life : Approx. 25 hours

**AC adaptor (option)**

Current rating (when 9V DC is input) : Approx. 10mA

## Ambient conditions

**Operating ambient conditions** : -10°C to +50°C,  
30% to 90%RH non-condensing

**Storage ambient conditions** : -10°C to +60°C,  
<70%RH non-condensing

**Dimensions** : Approx. 264(L)×68(W)×27(H) mm

**Weight (including battery)** : Approx. 260g

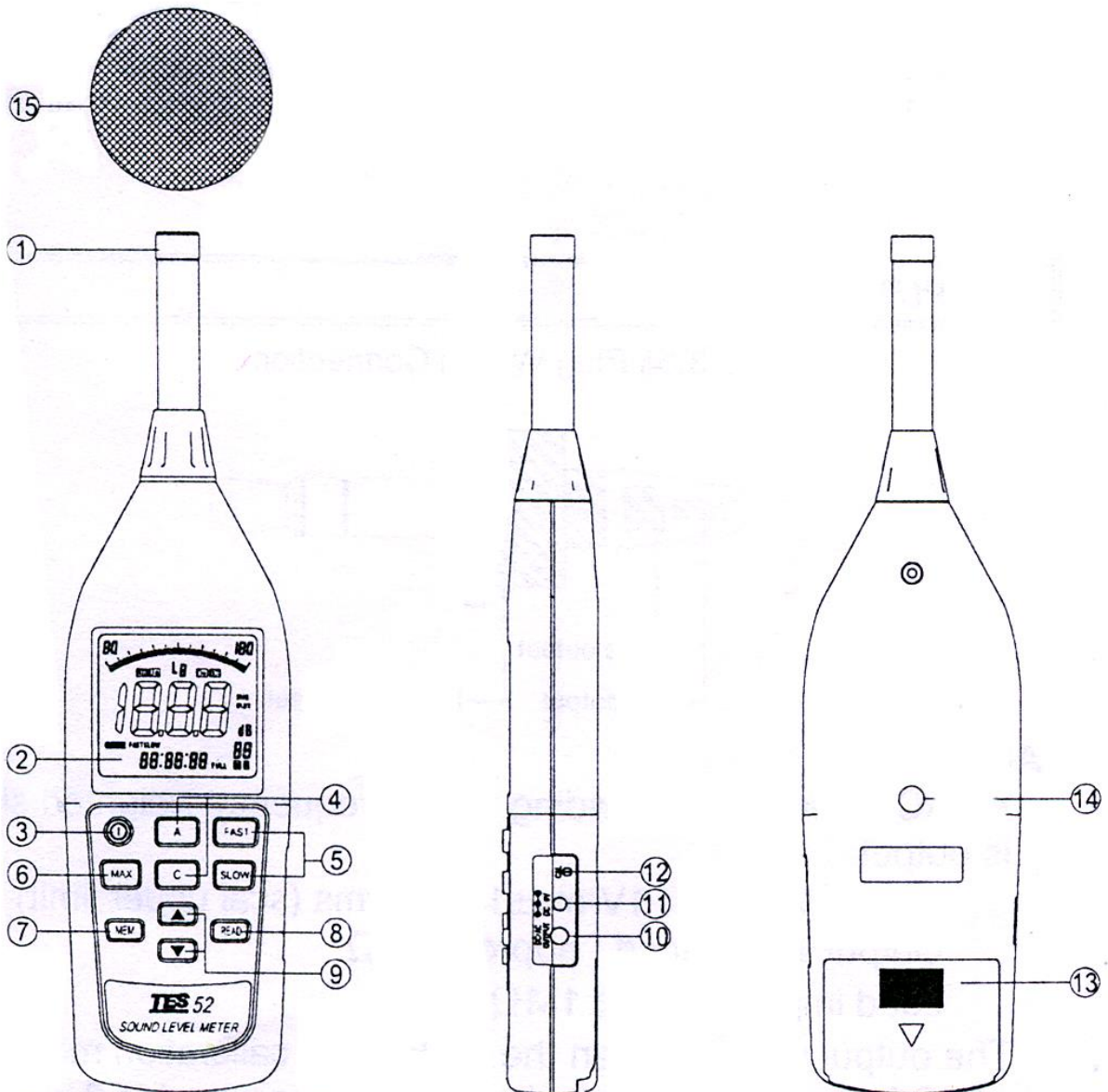
**Supplied accessories** : Battery 9V, Wind shield, Screwdriver (adjustment), 3.5 $\phi$  plug (3pin AC/DC output), Carrying case, Instruction manual

## Optional equipment

AC adaptor, Sound calibrator TES-1356



## VI. CONTROLS AND FUNCTIONS



1. **Microphone** : Electret condenser microphone

2. **Display**

3. **Ⓚ Key** : Turns the meter on and off.

4. **A, C keys** : Sets the frequency weighting to A or C.

5. **FAST, SLOW keys** : Sets the time weighting to FAST or SLOW.

**6. MAX key :**

- ① This key is used for reading the measurement results. Press MAX key to select maximum, minimum or current readings with elapsed time.
- ② Use to tests of time weighting characteristics Fast and Slow. Press MAX key 5 seconds, the “max” symbol flash enter to maximum hold, press again to exit the mode.

**7. MEM key :** Press to store measurement data sets in memory.

**8. READ key :** Press to read the stored data sets in memory, press again to exit read mode.

**9. ▲ ▼ keys :**

- ① Level range keys : select the level range for the measurement. The following six settings are available : 26 to 80, 30 to 90, 40 to 100, 50 to 110, 60 to 120, 70 to 130.
- ② When read mode, the keys select the memory address to be displayed.

**10. DC/AC output :** AC signal with frequency weighting.  
DC signal corresponding to sound level.

**11. External DC 9V power supply jack :** AC adaptor connected here for powering the unit from on AC outlet.

**12. CAL potentiometer :** Calibration control, For level calibration adjustment.

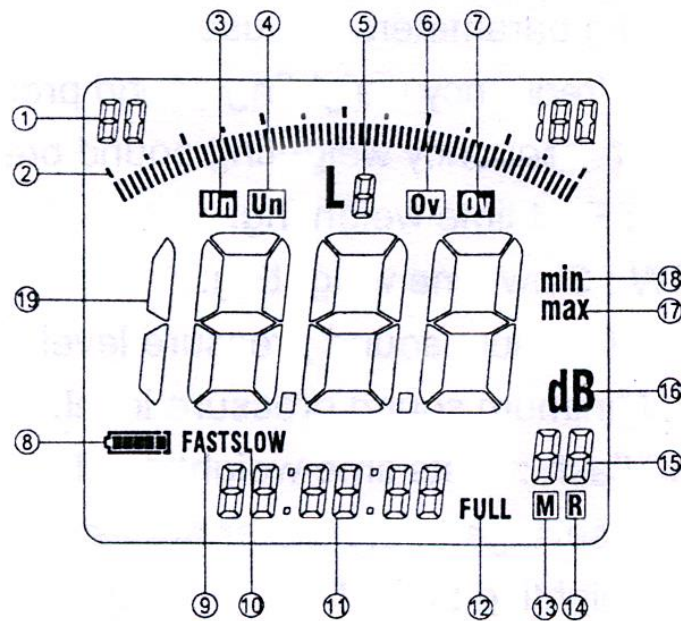
**13. Battery Cover.**

**14. Tripod mounting thread.**

**15. Windscreen :** When making outdoor measurement in windy weather or when measuring air conditioning equipment or similar, wind noise at the microphone can cause measurement errors.



## VII. LCD DISPLAY DESCRIPTION



1. Sound level range indicator (6 ranges).
2. Bar graph.
3. Under-range indicator.
4. Under-range indicator for processed value.
5. Frequency weighting indicator.
6. Over-range indicator for processed value.
7. Over-range indicator.
8. Battery capacity indicator.
9. Fast time weighting indicator.
10. Slow time weighting indicator.
11. Elapsed time indicator (max. 100hours).
12. Full data memory indicator.
13. Data memory indicator.
14. Data read indicator.
15. Memory address display (max. 99 sets).
16. Sound level reading.
17. Maximum sound level reading.
18. Minimum sound level reading.
19. Sound pressure level reading.

## VIII. PREPARATION

### Power Supply

The meter can be powered by one 9V battery or by the specified optional AC adaptor (DC 9V).

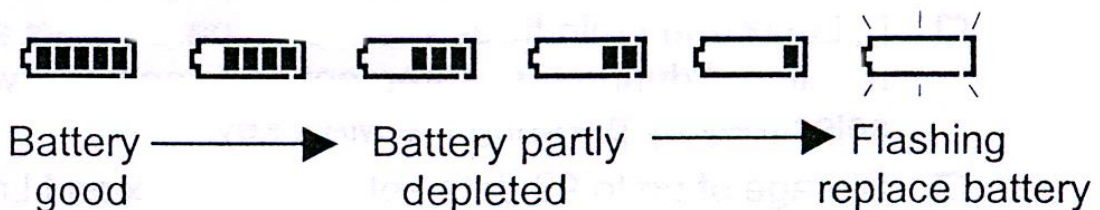
Before inserting or replacing the battery and before connecting the AC adaptor, be sure to turn off the meter.

#### 1. Battery Loading

- ① Before replace the batteries, must press ① key turn off the meter.
- ② Remove the cover of the battery compartment
- ③ Insert the new 9V battery.
- ④ Replace the battery cover.
- ⑤ Press ① key turn on the meter then press ① key turn off the meter.

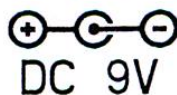
#### 2. Battery capacity indicator

When use battery operating the meter, periodically check this indicator to determine the remaining battery capacity. The number of segments decreases as the battery are used up. When the display starts to flash, correct measurement is no longer possible. Replace the battery with a new one. The indicator is also displayed while the meter is powered from the AC adaptor.



#### 3. Use AC adaptor

Insert the 3.5mm $\phi$  plug of the AC adaptor into the DC 9V jack on the side panel. When the AC adaptor is connected, the unit will be powered from the adaptor, also when battery is inserted, the AC adaptor has priority.





## IX. CALIBRATION PROCEDURES

### Acoustic Calibration with sound calibrator TES-1356



1. Turn off the sound calibrator.
2. Press  $\text{Ⓢ}$  key turn on the meter.
3. Insert the microphone very carefully and slowly all the way into the sound calibrator coupler.
4. Set the power switch of the sound calibrator to 94dB.
5. Adjust the CAL potentiometer of the meter, until display reading is 94.0dB.
6. Set the power switch of the sound calibrator to OFF.
7. Remove the microphone very carefully and slowly from the coupler.