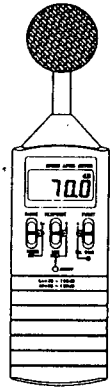


TES SOUND LEVEL METER

TES-1350A INSTRUCTION MANUAL



TES ELECTRICAL ELECTRONIC CORP.

Microphone	: 1/2 inch Electret condenser microphone
Display	: LCD
Digital display	: 4 digits Resolution $\approx 0.1\text{dB}$ Display period $\approx 0.5\text{ sec.}$
Time weighting	: FAST (125mS), SLOW (1 sec.)
Level ranges	: Lo: 35~100dB and Hi: 65~130dB
Accuracy	: $\pm 2.0\text{dB}$ (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	: 0.65 Vrms at FS (full scale), output impedance approx. 600 Ω
DC output	: 10mV / dB, output impedance approx. 100 Ω
Power supply	: One 9V battery 006P or IEC 6F22 or NEDA 1604
Power life	: About 50hrs (alkaline cell)
Operating temperature	: 0 to 40 $^{\circ}\text{C}$ (32 to 104 $^{\circ}\text{F}$)
Operating humidity	: 10 to 90%RH
Storage temperature	: -10 to 60 $^{\circ}\text{C}$ (14 to 140 $^{\circ}\text{F}$)

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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 $^{\circ}\text{C}$

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.
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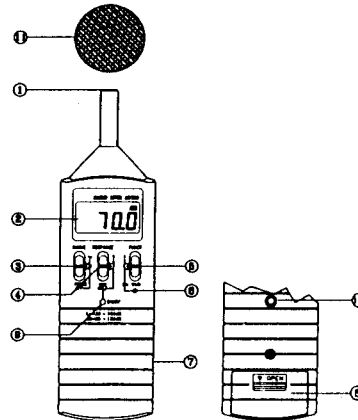
Safety symbols

-  Meter is protected throughout by double insulation or reinforced insulation
When servicing, use only specified replacement parts.
-  Comply with EMC

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Storage humidity	: 10 to 75%RH
Dimensions	: 240 (L) x 68 (W) x 25 (H)mm
Weight	: 210g (including battery)
Accessories	: 9V battery, carrying case. Screwdriver, Instruction manual, 3.5 ϕ plug, windscreen.

4. NOMENCLATURE AND FUNCTIONS



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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 was designed according to the IEC651, ANSI S1.4 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 31.5Hz and 8KHz.
- Display with 0.1dB steps on a 4-digits LCD.
- With two weighting, A and C.
- 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.

3. SPECIFICATIONS

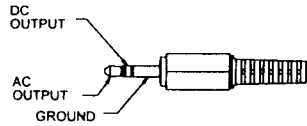
Standard applied	: According to IEC651, ANSI S1.4
Frequency range	: 31.5Hz ~ 8KHz
Measuring level range	: 35 ~ 130dB
Frequency weighting	: A/C

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- 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
 - Turn power ON and select measurement range.
(Hi range = 65~130dB, Lo range = 35~100dB)
 - When "OVER" is indicated, Slide range switch to another range for measurement.
- ④ Response and Max hold switch
Setting the meter dynamic characteristics (Fast/slow) and maximum value hold.
S (slow response) : for comparatively stable noise measurement.
F (fast response) : for fast varying noise.
MAX HOLD : The max hold position is used to measure the maximum level of sounds. The maximum measured level is up dated continuously.
To re-refresh please set switch to "F" or "S" position to cancel existing value, then, set switch to "MAX HOLD" position.
- ⑤ Function switch (A/C weighting & calibration selector)
 - A** : A-weighting
 - C** : C-weighting
 - CAL 94dB** : Calibration

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- ⑥ Calibration control can be adjusted clockwise or counterclockwise to standard 94.0dB.
- ⑦ 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 $\leq 100\Omega$
- AC output** : approx. 0.65 Vrms corresponding to each range step.
Impedance $\approx 600\Omega$

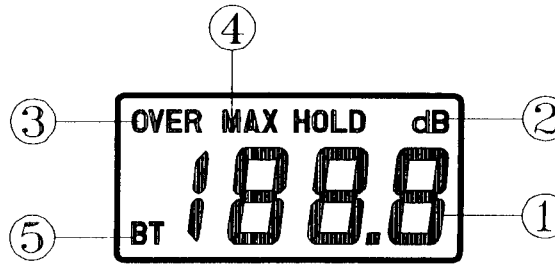


- ⑧ Battery cover (on bottom)
- ⑨ Reset button:
Serves to reset the maximum level indication.
- ⑩ Tripod mounting screw
For long-term measurements, the unit can be mounted on a tripod. Use the tripod mounting screw provided on the bottom of the unit.
- ⑪ Windscreen
Strong wind striking the microphone can cause misreading.
For measurements in windy locations, the windscreen should be used.

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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.



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5. CALIBRATION PROCEDURES

- (1). Using an 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 1.5dB

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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.

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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 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). 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.
- (4). When MAX HOLD mode is chosen. The instrument captures and holds the maximum noise level for a long period.
 - a). Select response switch to "MAX HOLD" position.
 - b). Press "RESET" button to start maximum noise level measurement.
- (5). Turn OFF the instrument when not in use.

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TES

TES ELECTRICAL ELECTRONIC CORP.

Add: 7F, No. 21, Lane 513, Rui Guang Road, Neihu Dist. Taipei, Taiwan, R. O. C.

Tel: (02) 2799-3660

Fax: 886-2-2799-5099

E-Mail: tes@ms9.hinet.net

Home page: <http://www.tes.com.tw>