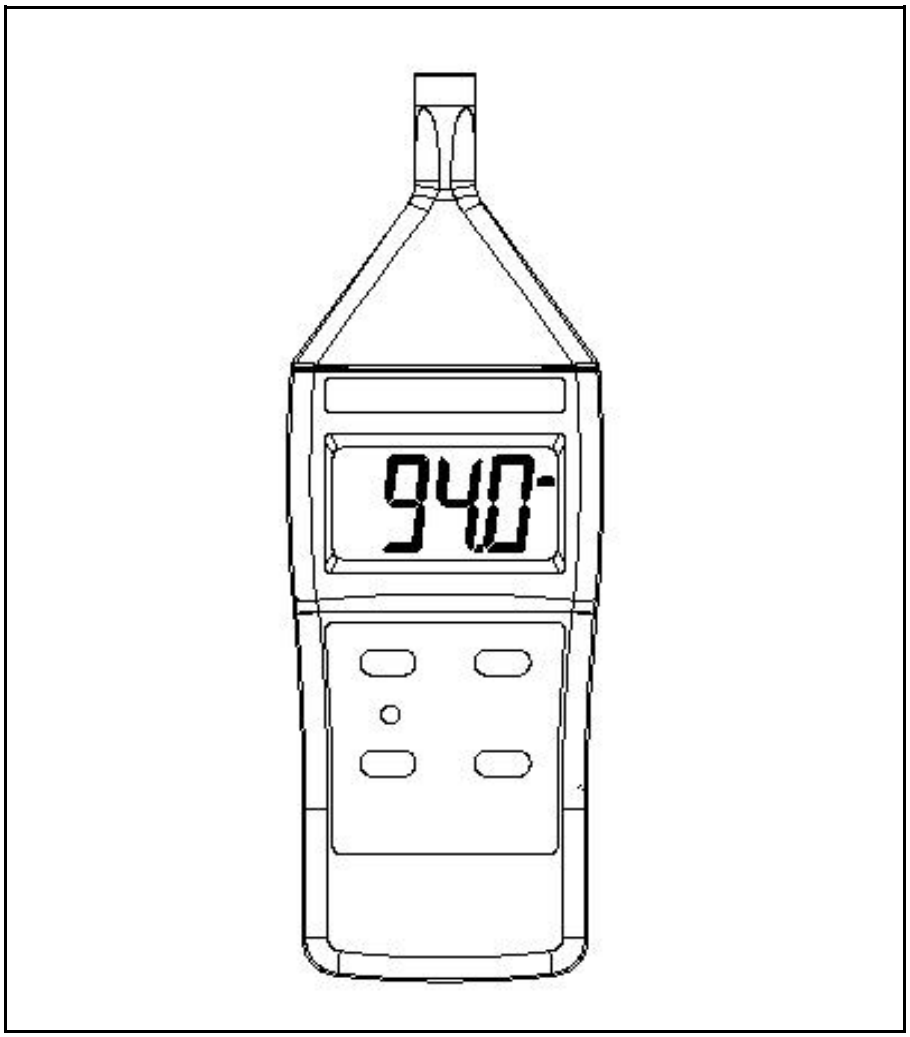
Pocket type

SOUND LEVEL METER

Model : SL-4030



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1. FEATURES

* Large LCD display, easy to read.
* Time weighting and frequency weighting meet , IEC 61672 type 2.
* A & C weighting networks are conformity to standards.
* 0.5" standard out size of the microphone.
* Time weighting (Fast & Slow) dynamic characteristic modes.
* AC / DC output for system expansion.
* External calibration VR.
* Condenser microphone for high accuracy & long-term stability.
* MAX. HOLD function for stored the maximum value.
* Warning indicator for over and under load.
* Low battery indicator.
* LCD display for low power consumption & clear read-out even in bright ambient light condition.
* Used the durable, long-lasting components, including a strong, light weight ABS-plastic housing case.
* Pocket and light weight design allow one hand operation.
* Power by 006P DC 9V battery or DC 9V adapter.

2. SPECIFICATIONS

Display	LCD size : 49 mm x 25.5 mm, Digit size : 21.7 mm x 8.8 mm.
Function	dB (A & C weighting), Time weighting (Fast, Slow), Max. hold, AC output, DC output.
Measurement Range	A Weighting- 3 ranges, 30 to 130 dB. C Weighting- 3 ranges, 30 to 130 dB.
Resolution	0.1 dB.
Accuracy *(23± 5 ℃)*	1 k Hz - ± 1.5 dB (after cal.) ** Meet IEC 61672 type 2, tested under input signal level on 94 dB & frequency range from 31.5 Hz to 8 k Hz.*
Frequency	31.5 to 8,000 Hz.
Microphone type	Electric condenser microphone.
Microphone size	Out size, 12.7 mm Dia. (0.5 inch).
Weighting Network	Characteristics of A & C.
Range selector	3 ranges (30 to 80 dB, 50 to 100 dB, 80 to 130 dB). ** 50 dB on each step,* ** with over / under range indicating.*
Time weighting (Fast, Slow)	Fast - t= 200 ms, Slow - t = 500 ms, ** "Fast" range is simulated the human ear response time.* ** "Slow" range is easy to get the avg. values of vibration sound level.* ** The "Fast" & "Slow" response range are designed to meet IEC 61672 type 2 requirement.*

Calibrator	B & K (Bruel & kjaer), Multifuction Acoustic Calibrator 4226.
Output Signal	AC output - AC 0.5 Vrms corresponding to each range step. DC output - DC 0.3 to 1.3 VDC, 10 mV / per dB. Output impedance - 600 ohm.
Output terminal	3.5 mm dia. phone output terminal is provided for connection with analyzer, level recorder, tape recorder.
Operating Temperature	0 to 50 ℃.
Operating Humidity	Less than 80% R.H.
Power Supply	006P DC 9V battery (heavy duty type) or DC 9V adapter input.
Power Consumption	Approx. DC 10 mA.
Dimension	200 x 69 x 28 mm (7.9x2.7x1.4 inch).
Weight	213 g/0.5 LB.
Accessories Included	Instruction Manual ..... 1 PC.
Optional Accessories	94 dB sound calibrator, SC-941 94 dB/114 dB sound calibrator, SC-942 AC to DC 9V adapter.

3. FRONT PANEL DESCRIPTION

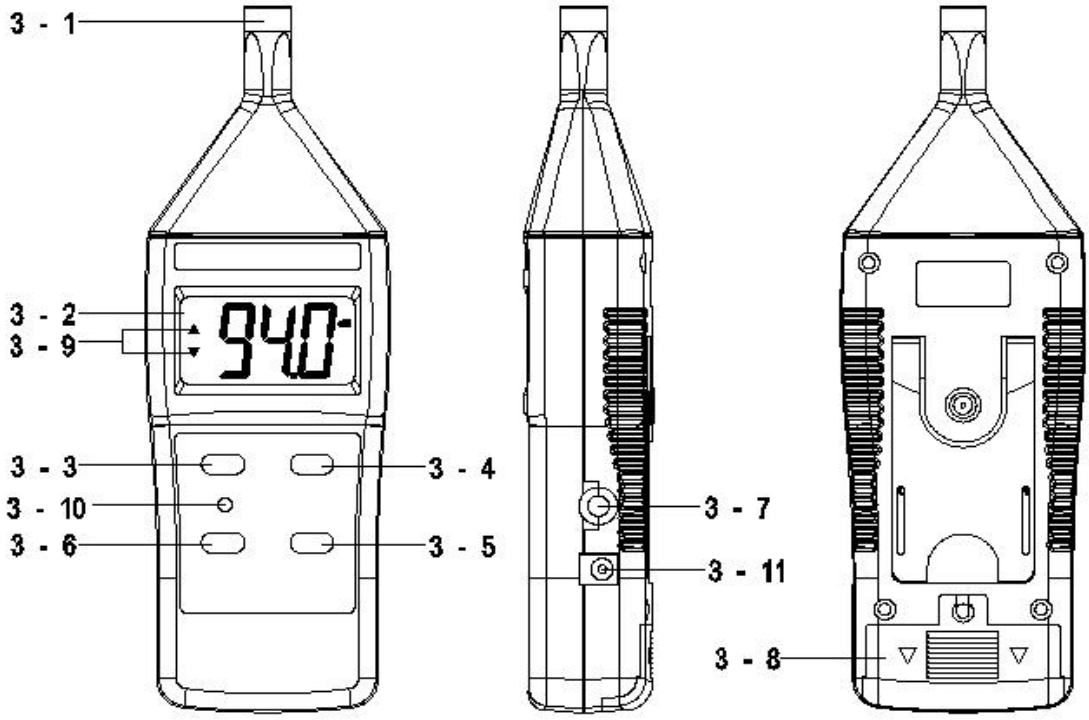


Fig. 1

3-1 Electric condenser microphone
3-2 Display
3-3 Power switch & Output type selector
3-4 A/C weighting selector
3-5 Time Weighting (Fast / Slow) / Max. hold selector
3-6 Range selector
3-7 Signal output terminal
3-8 Battery compartment / Cover
3-9 Range upper / lower indicator
3-10 Calibration VR (Accuracy adjust VR)
3-11 DC 9V adapter socket

4. MEASURING PROCEDURE

1) Slide the " A/C weighting selector " (3-4, Fig. 1) to " A " or " C " position for sound level measuring.

   Note :
   a. The characteristic table of A, C weighting, please ref. page 8.
   b. The characteristic of A weighting is simulated as the " Human Ear Listening " response. Typically, if making the environmental sound level measurement, always select the A weighting typically.
   c. The C weighting characteristic is near the " FLAT " response. Typically, it is suitable for checking the noise of machinery (Q.C. check) & knowing the real sound level of the tested equipment.

2) Determine proper measuring range by selecting the " Range selector " (3-6) to minimize the tolerance of readout. When left corner of LCD show "▲" or " ▼ " (Range upper/lower indicator, 3-9, Fig. 1), it shows the dB range selection is upper or lower setting. Slide range selector to other range for measuring.
3) According on various measuring sound source, select the " Time Weighting selector " (3-5, Fig. 1) to " Fast " or " Slow " position.

4) Hold the instrument in hand and point the microphone at measured noise source, the sound level will be displayed on " dB " (decibel) unit.
5) Max. hold - During the sound level measurement, if need to store the maximum (peak) value on display, please slide the " Time weighting/ Max. hold selector " (3-5, Fig. 1) to the " Max. hold " position.

Note :

* *When measure long-term stability under slowly varying noise environment, please use the Max. hold function to read the maximum values.*
* *Slide the selector to " Fast " or " Slow " position will cancel the max. hold values.*

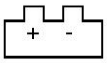
5. MEASURING CONSIDERATION

1) Please should select the proper weighting selector (A weighting or C weighting). Typically the A weighting selector will be engaged.
2) Please select proper measurements range to minimize the tolerance of readout.
3) Please don't keep or operate the instrument at high temperature & humidity environment for a long period.
4) Keep microphone dry & avoid serious vibration.

6. SIGNAL OUTPUT

The instrument is provided an " Signal output terminal (3.5 mm dia. phone socket) " (3-7, Fig. 1) terminal for connection with analyzer, level recorder, tape recorder, controller...etc. Slide Power switch & Output type selector (3-3, Fig. 1) to AC output or DC output according the user requirement.

7. REPLACEMENT OF BATTERY

1) When the left corner of LCD display show " 

", it is necessary to replace the battery. However, in-spec. measurement may still be made for several hours after Low Battery Indicator appears before the instrument become inaccurate.
2) Slide the Battery Cover (3-8, Fig. 1) & take the battery away from the battery compartment..
3) Replace with 9V battery (heavy duty type) and reinstate the cover.

8. CALIBRATION

The sound level meter is built in the internal " Calibration VR " (3-10, Fig. 1) on the front panel. Please according the following procedures to calibrate the instrument accurately, if it is necessary.

1) Prepare the optional " Sound Calibrator, model : SC-941 or SC-942 ". Power on the Sound calibrator & plug calibrator output into the " Electric microphone " (3-1, Fig. 1) of the Sound Level Meter.

2) Slide the Range selector (3-6, Fig. 1) to " 50 - 100 dB " position.
3) Slide " Time Weighting selector " (3-5, Fig. 1) to " SLOW " position.
4) Slide the " A/C weighting & Calibration selector " (3-4, Fig. 1) to " A weighting " position.
5) Carefully adjust the " Calibration VR " (3-10, Fig. 1) with " - " screw driver, until the display read within " 94.0 ± 0.2 " dB.

9. FREQUENCY WEIGHTING CHARACTERISTICS OF A & C NETWORKS

Frequency Hz	A Weighting Charac.	C Weighting Charac.	Tolerance (IEC61672 type 2)
31.5	-39.4 dB	-3 dB	± 3 dB
63	-26.2 dB	-0.8 dB	± 2 dB
125	-16.1 dB	-0.2 dB	± 1.5 dB
250	-8.6 dB	0 dB	± 1.5 dB
500	-3.2 dB	0 dB	± 1.5 dB
1 K	0 dB	0 dB	± 1.5 dB
2 K	+1.2 dB	-0.2 dB	± 2 dB
4 K	+1 dB	-0.8 dB	± 3 dB
8 K	-1.1 dB	-3 dB	± 5 dB

10. TIME WEIGHTING (FAST & SLOW) CHARACTERISTICS

Time Weighting Charac.	Max. response ref. continuous signal	Tolerance (IEC61672 type 2)
F (Fast)	- 1.0 dB	+ 1 dB - 2 dB
S (Slow)	- 4.1 dB	± 2 dB