SOUND LEVEL METER

INSTRUCTION MANUAL
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:

- **Environment conditions**
  1. Altitude lower than 2000 meters
  2. Relatively humidity ≤90% RH
  3. Operation Ambient 0 ~ 40°C

- **Maintenance & Clearing**
  1. Repair or servicing not covered in this manual should be performed by qualified personnel.
  2. Periodically wipe the case with a dry cloth. Do not use solvents or eradicator on this instrument.

- **Safety symbols**
  - Comply with EMC

2. **FUNCTIONS DESCRIPTION**

This Sound Level Meter is designed for noise project; quality control; illness prevention and cure and all kinds of environmental sounds measurement. It is applied to the sounds measurement at factory; school; office; traffic access and household, etc.

- This unit confirms to the IEC61672-1 CLASS2 for Sound Level Meters.
- MAX & MIN measurements
- Over range display
- Under range display
- A & C Weighting

- FAST & SLOW response
- Analog AC/DC outputs for connection to frequency analyzer or X-Y shaft recorder

3. **SPECIFICATION**

- **Standard applied**: IEC61672 -1 CLASS2
- **Accuracy**: ±1.4dB
- **Frequency range**: 31.5HZ ~ 8KHZ
- **Dynamic range**: 50dB
- **Memory**: 32700
- **Level ranges**: LO:30dB~80dB
  - Med:50dB~100dB
  - Hi:80dB~130dB
  - Auto:30dB~130dB
- **Frequency weighting**: A/C
- **Time weighting**: FAST (125ms), SLOW (1s)
- **Microphone**: 1/2 inch electret condenser microphone
- **Display**: 4 digits LCD display with a resolution of 0.1dB
- **Display Update**: 2 times/sec.
- **MAX hold**: Hold the Maximum reading
- **MIN hold**: Hold the Minimum reading
- **HOLD**: Hold the readings
- **Alarm function**: "OVER" is when input is more than upper limit of range."UNDER" is when input is less than lower limit of range.

- **Analog output**: AC/DC outputs from earphone outlet
  - AC=1Vrms , DC=10mV/dB
- **Data output**: USB data data traffic
Auto power off: Meter automatically shuts down after approx. 15 minutes of inactivity.

Power supply: One 9V battery, 006P or NEDA1604 or IEC 6F22.

Power life: About 30 hours

Operation temperature and humidity:
0°C~40°C, 10% RH~90% RH

Storage temperature and temperature:
-10°C ~+60°C, 10% RH~75% RH

Dimension: 278 (L) x 76 (W) x 50(H) mm

Weight: 350g

Accessories: Instruction manual, battery, screwdriver,
3.5mm earphone plug, windscreen,
software, USB cable.

4. NAME AND FUNCTIONS

<table>
<thead>
<tr>
<th>SYMBOL</th>
<th>FUNCTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>LCD</td>
<td>4 digits</td>
</tr>
<tr>
<td>MAX</td>
<td>Maximum hold</td>
</tr>
<tr>
<td>MIN</td>
<td>Minimum hold</td>
</tr>
<tr>
<td>OVER</td>
<td>over range</td>
</tr>
<tr>
<td>UNDER</td>
<td>under range</td>
</tr>
<tr>
<td>FAST</td>
<td>Fast response</td>
</tr>
<tr>
<td>SLOW</td>
<td>Slow response</td>
</tr>
<tr>
<td>dBA</td>
<td>A-Weighting(response to human sense)</td>
</tr>
<tr>
<td>dBC</td>
<td>C-Weighting(response to machine monitor)</td>
</tr>
<tr>
<td>30—130</td>
<td>Range indicate</td>
</tr>
<tr>
<td>REC</td>
<td>Recording data into computer</td>
</tr>
<tr>
<td>AUTO</td>
<td>Auto level range selection</td>
</tr>
<tr>
<td>FULL</td>
<td>Memory full</td>
</tr>
<tr>
<td>HOLD</td>
<td>Data hold function</td>
</tr>
<tr>
<td></td>
<td>AutopoweroffPress the &quot;SETUP&quot; button to disable power off</td>
</tr>
<tr>
<td></td>
<td>Low battery indicate</td>
</tr>
</tbody>
</table>

① Windscreen

② LCD:

③ REC button
3.0 DATALOGGER function
Press "REC" button after it power on, the display will show "REC" to start Data Recording, press the button again to exit the record (Note: In order to avoid data error, please don't power it off under REC condition, when the REC function is deleted then it can power off).

3.1 Adjusting DATALOGGER response
Press the button ( ) continuously before power it on, then press ( ), it will be displayed as following: Press 'LEVEL' button to adjust memory time, press 'HOLD' button to hold the setup:

3.2 Data zero function
Press the button continuously before power it on, loosen the button when the display showing 'CLR' after the meter power on, which indicates that the data in DATALOGGER has been deleted.

CLR

④ SETUP button

4.0. The time chip adjustment
Press ‘SETUP’ button and then power it on, when ‘TIME’ symbol displays then loosen ‘SETUP’, the meter will be under time adjustment mode, at the time the display will show the date as following:

Press the ‘SETUP’ button second time, the display showing:

The display showing “minute” adjustment mode, press ‘LEVEL’ to make the adjustment, press ‘HOLD’ to keep the setup:
Press the ‘SETUP’ button third time, the display showing:

The display showing “hour” adjustment mode, press (h-P=P.M, h-A=A.M) ‘LEVEL’ to make the adjustment, press ‘HOLD’ to keep the setup:
Press the ‘SETUP’ button fourth time, the display showing
The display showing "date" adjustment mode, press 'LEVEL' to make the adjustment, press 'HOLD' to keep the setup; Press the 'SETUP' button fifth time, the display showing:

The display showing "month" adjustment mode, press 'LEVEL' to make the adjustment, press 'HOLD' to keep the setup; Press the 'SETUP' button sixth time, the display showing:

The display showing "year" adjustment mode, press 'LEVEL' to make the adjustment, press 'HOLD' to keep the setup; Press the 'SETUP' button seventh time, the display showing:

The display showing initialization of the time chip, press 'HOLD' to keep the setup; time and date have returned to factory setup. When the battery is exhausted or replaced, if the time can't be adjusted then please initialize the time chip first.

4.1. USB communications setting:
Turn on the meter, connect the meter with the computer correctly, choose the software COM3 (COM4), hen press 'SETUP', '⑦' disappears from the display to indicate and disable auto power off, that the USB data is transmitting.

⑤ FAST/SLOW button:
Time weighting selection
FAST: st sampling measurement, 1 time per 125mS.
SLOW: Slow sampling measurement, 1 time per second.

⑥ MAX/MIN button:
Maximum and Minimum hold Press this button for one time to enter MAX/MIN measurement, 'MAX' will appear on LCD, maximum sound level will be captured and held until higher sound level is captured. Press the button again, 'MIN' will appear on LCD and minimum sound level will be captured and held until new lower sound level is captured. Press the button one more time to exit MAX/MIN measurement.

⑦ LEVEL button: Level range selection
Each time you press "LEVEL" button, the level range will change between 'Lo' level, 'Med' level, 'Hi' level and 'Auto' level in the circular.
8 Backlight button

8.0. Turn the backlight on/off

8.1. DATALOGGER response setting;

Press the button continuously until ‘INT’ symbol appears after the meter turn on, press ‘LEVEL’ to set up the data memory response, then press ‘HOLD’ to keep the setting.

9 Frequency weighting select button

A: A-Weighting
C: C-Weighting

10 HOLD button:

Press “HOLD” button, The hold function freezes the reading in the display.

11 Power button

Turn the meter power ON/OFF

12 External DC 9V power supply terminal

For connection with DC 9V power supply.
Aperture size: external diameter: 3.5mm, internal diameter: 1.35mm

13 USB interface

USB signal output is a 9600 bps serial interface.

14 AC/DC signal output earphone outlet

AC: Output voltage: 1Vrms corresponding to each range step.
Output impedance: 100Ω
DC: Output voltage: 10mV/dB
Output impedance: 1kΩ

15 Calibration potentiometer (CALL)

For external standard level calibration adjustments.

16 Tripod mounting screw

17 Battery cover

18 Microphone

1/2 inch Electret Condenser microphone
5. CALIBRATION PROCEDURES
   ① Make the following switch settings:
      Frequency weighting: A-weighting
      Time weighting: FAST
      Level range: 50 ~100dB
   ② Insert the microphone housing carefully into the 1/2 inch insertion hole of the calibrator (94dB @ 1kHz).
   ③ Turn on the switch of calibrator and adjust the CALL potentiometer of the unit 94.0dB is displayed.

NOTE: All products are well calibrated before shipment. Recommended recalibration cycle: 1 year.

6. MEASUREMENT PREPARATION
   ① Remove the battery cover on the back and put in one 9V battery.
   ② Recover the back cover.
   ③ When battery voltage drops below the operating voltage or battery aging, this symbol \( \text{-} \) will appear on LCD. Replace the 9V battery.
   ④ When the AC adapter is used, insert the plug of the adapter (3.5φ) into the DC 9V connector on the side panel.

7. OPERATING PROCEDURE
   ① Power on the meter.
   ② Press ‘LEVEL’ button to select desired level, base on ‘UNDER’ or ‘OVER’ do not appear on LCD.
   ③ Select ‘dBA’ for general noise sound level and ‘dBC’ or measuring sound level of acoustic material.
   ④ Select ‘FAST’ for instant sound and ‘SLOW’ for average sound level.
   ⑤ Select ‘MAX/MIN’ button for measuring maximum and minimum noise level.
   ⑥ Hold the instrument comfortable in hand or fix on tripod and measure sound level at a distance of 1~1.5 meter.

8. NOTICE
   i. Do not store or operate the instrument at high temperature and high humidity environment.
   ii. When not in use for long time, please take out the battery to avoid battery liquid leakage and cauterity on the instrument.
   iii. When using the instrument in the presence of wind, it is a must to mount the windscreent to not pick up undesirable signals.
   iv. Keep microphone dry and avoid severe vibration.

9. Accessories:
   ① installation CD
   ② USB interface cable
   ③ screwdriver
10. Installing the software

1.0 Start windows

1.1 Insert the CD into the CD-drive.

1.2 Run SETUP.EXE installation program in file DISK1, install it to the referred directory

1.3 Install CP210X drive software:
Connecting the meter with the computer by USB interface, install CP2102 drive software in my computer property:\hardware\facility management\ COM CP210X USB.

**USB Drive Installation**

1. Copy the CP210XWIN Drivers to a certain directory, such as: C:\usb_driver.

2. Connect the USB to the computer, the Windows system will show finding a new hardware. Choose specific directory C:\usb_driver according to the instruction.

3. After Driver installation, a new COM port will be added to the Ports in the Device Manager. Port number will be ranged following the primary COM ports, such as: COM3 or COM4.

1.4 Once the drive software is installed, start the application software, connect the meter to the computer by USB, then search for the COMX port occupied by CP210X, press 'Setup' button, the ' Symbol will not appear on the display, which indicate the meter is transmitting data to the computer.

1.5 Enter the menu REAL TIME \ 'SETUP' to set the monitoring data (data volume, response, monitoring time)

1.6 DATALOGGER menu:
The computer read the memory data in the meter when REC not appear on the display and the connection is in order.