Instruction Manual
Digital Sound Level Meter

SAUTER SU

V. 1.2
06/2015
GB

PROFESSIONAL MEASURING

SU-BA-e-1512

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V. 1.2 06/2015
Instruction Manual Digital Sound Level Meter

Thank you for buying a digital SAUTER sound level Meter. We hope you are pleased with your high quality instrument and its big functional range. Although this Sound Meter is a complex and advanced instrument, its ruggedness will allow many years of use if you will care for an appropriate operating technique and maintenance. Please read the following operating instructions carefully and always keep this manual within easy reach.

If there are any queries, wishes or helpful suggestions, do not hesitate to call our service number.

Summarize:

1   Features

* Widely used to test the sound level of the environment, machinery, vehicle, ships and other noise
* Multi functional: it offers 4 measurement parameters:
    Lp (sound level), Lmax (maximum sound level),
    Leq (equivalent continuous A sound level) and
    Ln (percentage of all readings over alarm value set).
* With alarm set and alarm output
* This instrument permits choice of "A", "C" or "Flat" Weighting and "Slow" / "Fast" response times
* DC output: 0 up to 1.3V 10mV / dB
* Auto range selection and digital display with no reading errors
* Manual or automatic shut down. The tester can be switched off by pressing the power key at any time.
On the other hand, the tester can be set to "Auto-Power-off" between 1 to 9 minutes or disable Auto Power Off.
* The instrument can memorize 30 measurement results and measuring conditions for later use or download to PC
* Can communicate with PC for statistics, printing and analysing by the optional cable and the software for RS 232C interface.

2   Specifications

Display: 14mm (0.5") LCD with backlight

Parameters measured: Lp, Lmax, Leq, Ln

Measurement range: Lp: 30~130dB (A)
                            35~130dB (C)
                            35~130dB (F)
                     Leq: 30~130dB (10 s, 1 min, 5 min,
                            10 min, 15 min, 30 min, 1 h, 8 h, 24 h)
                     Ln: 0-100%

Resolution: 0.1dB

Accuracy: ± 1dB

Frequency weighting: "A", "C", "F" (Flat)

Time weighting: Fast (125ms)
                    Slow (1 second)

Microphone: ½ inch electrets condenser type

Internal memory: 30 values with measuring conditions

Inbuilt calibration signal: 94dB at 1 kHz (sinusoidal)

Frequency range: 20 to 12,500 Hz

Alarm value set: 30-130 dB

Alarm output: LED

PC interface: RS 232C

Low battery indication
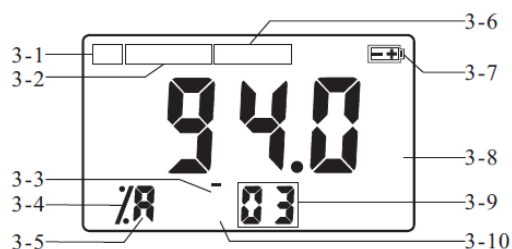
Power supply: 4 x 1.5V AAA (UM-4 battery)

Dimensions: 236 x 63 x 26 mm (9.3 x 2.5 x 1.0 Inch)

Weight: 170 g (including batteries)

Standard equipment: Main unit
                     Carrying case
                     Instruction Manual
                     Foam cover

Optional Accessories: Sound level meter calibrator (ASU-01)
                        Cable and software for RS 232C (ATC-01)

3   Front panel description

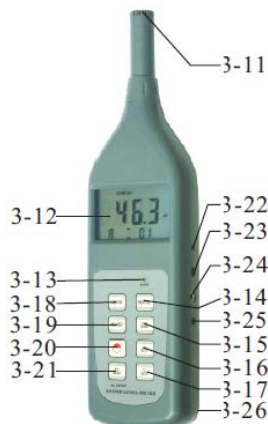3-1 Calibration Mark
3-2 Time Weighting
3-3 Memory state
3-4 Mark for L_N
3-5 Weighting Icon
3-6 Function Mark

3-7 Battery indicator

3-8 Max Hold

3-9 Number memorized

3-10 Browsing Icon

3-11 Microphone

3-12 Display

3-13 Alarm LED

3-14 Weighting key

3-15 Fast/Slow key

3-16 Up/Save key

3-17 Down/Read key

3-18 Function key

3-19 Max Hold key

3-20 Power key

3-21 Delete/Menu

3-22 Cal. Adjusting

3-23 Jack for RS 232C interface

3-24 Jack for output

3-25 Jack for AC

3-26 Battery compartment / cover

4   Measuring procedure

4.1 The ⌼ key 3-20 has to be pressed and released to switch on the instrument.

4.2 It has to be checked whether the function selected is right. If not, it can be changed by pressing the ⌼ key 3-18.
The default setting is Lp, weighting A, Fast.
Lp – current sound pressure level
Leq – Equivalent Continuous A Sound pressure Level, i.e. arithmetically mean value in a period of time set.

Ln – Statistic analysis, i.e. which percentage of all measurement values is larger than or equal to the alarm value set by the user. For setting the alarm value, please see chapter 7.

4.3 It has to be checked whether the weighting is right. If not, it can be changed by pressing the ⬚ key 3-14 to select "A", "C" or "Flat".
With the "A" weighting selected, the frequency response of the device is similar to the response of the human ear. "A" weighting is commonly used for environmental or hearing conversation programs such as OSHA regulatory testing and noise Ordinance law.
"C" weighting is a much flatter response and is suitable for the sound level analysis of machines, engines etc.

Note: Weighting "A" will be automatically selected when measuring "Leq".

4.4 The ⬚ key 3-15 has to be used to select a Fast (125ms) or a Slow (1 second) response time.
Fast has to be selected to capture noise peaks and noises that occur very quickly.
Slow response has to be selected to monitor a sound source that has a consistent noise level or to average quickly changing levels. Slow response is selected for most applications.
4.5 The reading is the highest one if the icon "max" appears on the display. The reading is an instant value if "max" does not appear. This appearance is controlled by pressing the ⬚ key 3-19 during the process of measurement.

5   Storing and recalling readings

5.1 In ˋM̄ˋ state, the reading can be saved to the instrument together with measuring conditions by pressing the ⬚ key 3-16. Then the icon ˋM̄ˋ changes to ˈMˈ state automatically, while the number of memorized readings increases for 1.
5.2 No matter, in ˋM̄ˋ or in ˈMˈ state, the memorized data can be browsed by pressing the ⬚ key 3-17. The browsing state is marked by ˋRˋ on the display.
In ˋRˋ state, all the readings memorized, can be recalled by pressing the ⬚ or ⬚ key.

5.3 To delete the memorized value in memory, the browsing state has just to be entered and the reading to be deleted has to be located by pressing the ⬚ or ⬚ key.
Then the ⬚ key 3-21 has to be pressed. If there appears "Err0" on the display, this indicates that there is no more reading to delete.

6 How to set the „Leq" time

Leq is used to access the rms average noise level over a preset period of time, often the starting point of a noise assessment. To take the Leq measurement, the period of time which has to be tested, must be selected. The longer the period of measurement time, the more accurate the Leq reading will be. To set the period of measurement time, the 🔘 key 3-21 just has to be pressed for about 8 seconds until "Leq" appears on the display. Then the key has to be released and the time has to be selected among 10s, 1 min, 5 min, 10 min, 15 min, 30 min, 1 hour, 8 hours or 24 hours by pressing the Up (3-16) or Down (3-17) key.

To quit, any key except 🔘 or 🔘 key can be pressed.

7 How to set the alarm value

The alarm LED is on when the instant measurement value is bigger than or equal to the alarm value set. The default setting value at the factory is 85dB. It can be changed to any value between 30 and 130dB by the following steps:

The 🔘 key 3-21 has to be pressed for about 5 seconds. It has to be released after "AL" is shown on the display.

Then 🔘 key or 🔘 key have to be pressed to preset the alarm value as desired.

To quit, any key except 🔘 or 🔘 key can be pressed.

8 How to set the time of Auto-Power-off

The default setting for auto power off at the factory is 5 minutes, which means that the device will auto power off 5 minutes from the time of the last key operation. This can be changed by the user to any value between 1 to 9 minutes by the following steps:

The 🔘 key 3-21 has to be pressed for about 10 seconds and it can be released after "AUTO" is shown on the display. Then the 🔘 or 🔘 key has to be pressed to preset the time as desired. To stop the function of auto power off, time just has to be preset to "0". So the device will not be powered off automatically, it can only be shut down manually in that case.

9 Calibration

The standard method to calibrate the instrument requires an external calibrator (ASU-01) in addition to a small screw-driver.

9.1 Calibration of the device with ASU-01
   a) The device has to be turned on.
   b) It has to be preset in the "A" weighting mode
   c) It also has to be preset the "SLOW" response mode

d) Then the microphone has to be placed into the calibrator. The calibrator has to be switched ON.

e) The CAL potentiometer of the device has to be adjusted in the way that the device's display matches the output of the calibrator.

9.2   Calibration of the device by the inbuilt signal

The instrument has to be switched on to enter the calibration state. Then the ⌨ key 3-18 has to be pressed until the icon "CAL" is to be seen on the display.

The screw-driver has to be used to adjust the CAL potentiometer of the device in the way that the device shows 94dB.

10 General Considerations

- Wind blowing across the microphone increases the noise measurement. The *supplied foam cover* has to be used to cover the microphone when applicable.

- The instrument may not be dismantled by inexperienced staff. There are no parts inside which might serve the user.

11 Battery replacement

11.1 When the battery voltage is less than approx. 5V, it is necessary to replace batteries.

11.2 The 4 x 1.5 V batteries have to be installed correctly into the case.

11.3 If the device is not going to be used for an extended period, batteries have to be removed.

12 Takeover of data memory into software

Important: First start the continuous data logging and then read out the stored data!

1. Connect the SU 130 to the PC (cable is optional available with software ATC 01).

2. Put the SU 130 into the Memory Read Mode (by pressing the READ-button).
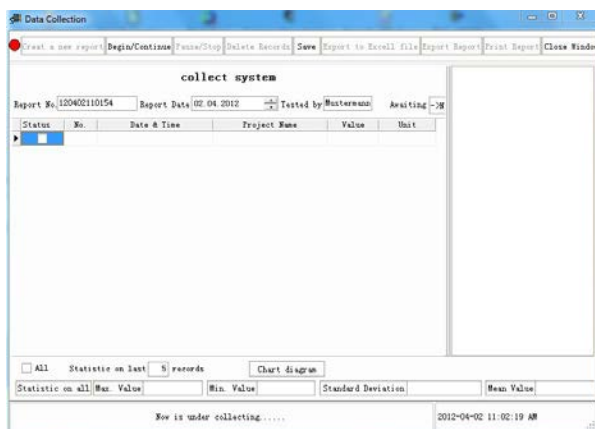
3. Start the appropriate software.
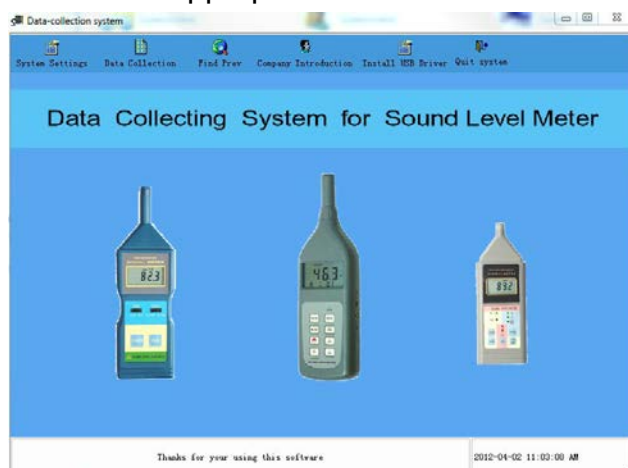
4. Select Port at System Settings at Interface Setup (e.g. COM1, USB4 or similar).
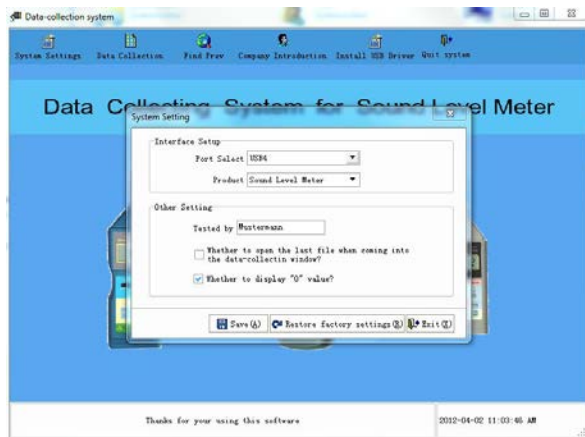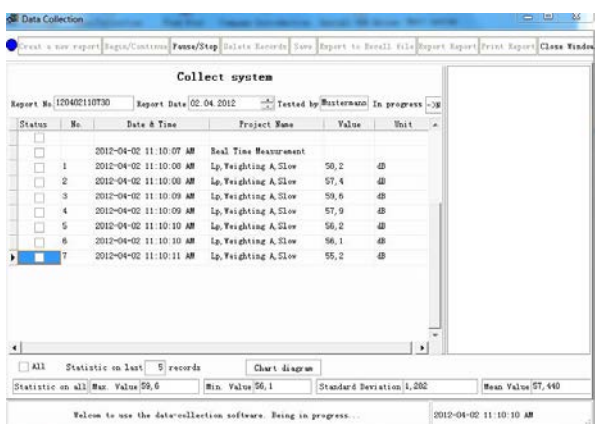

5. Select Product: <u>Sound Level Meter</u>.
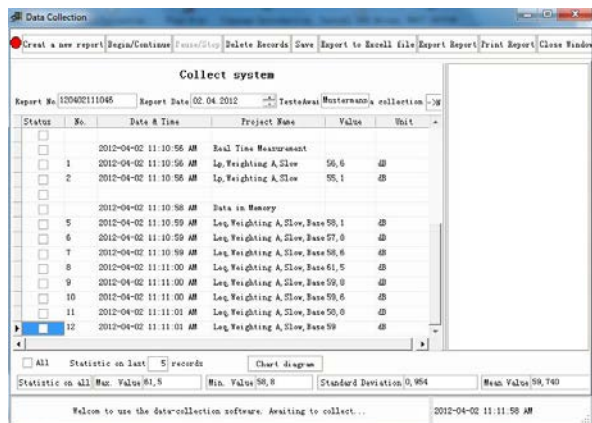6. Press Save (A) button and leave this window by Exit (X).
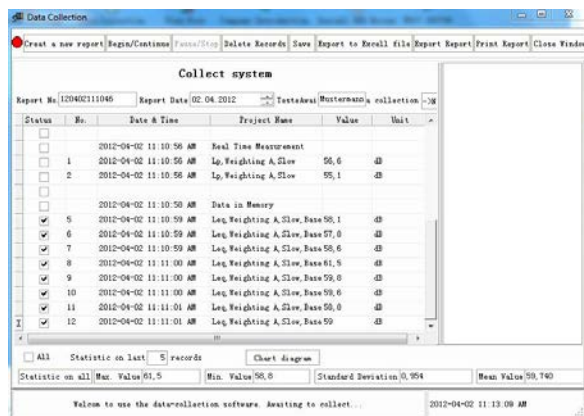7. Open Data Collection.

8. Press Continue Button- press button on SU 130 (e.g. FAST/SLOW) – Data acquisition Real Time starts

9. Press READ- button on the SU 130- data in memory.
Readout of data starts and ends automatically with the last stored memory.

10. Select data (all which appears after "data in memory")accordingly and continue processing.

13 Declaration of Conformity

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Konformitätserklärung

Declaration of conformity for apparatus with CE mark
Konformitätserklärung für Geräte mit CE-Zeichen
Déclaration de conformité pour appareils portant la marque CE
Declaración de conformidad para aparatos con marca CE
Dichiarazione di conformità per apparecchi contrassegnati con la marcatura CE

D	Konformitäts-erklärung	Wir erklären hiermit, dass das Produkt, auf das sich diese Erklärung bezieht, mit den nachstehenden Normen übereinstimmt.
GB	Declaration of conformity	We hereby declare that the product to which this declaration refers conforms with the following standards.
E	Declaración de conformidad	Manifestamos en la presente que el producto al que se refiere esta declaración está de acuerdo con las normas siguientes
F	Déclaration de conformité	Nous déclarons avec cela responsabilité que le produit, auquel se rapporte la présente déclaration, est conforme aux normes citées ci-après.
I	Dichiarazione di conformità	Dichiariamo con ciò che il prodotto al quale la presente dichiarazione si riferisce è conforme alle norme di seguito citate.

Schallpegelmessgerät: SU 130

EMV-Richtlinie	Normen
89/336/EEC	EN 61326:1997
	EN 55022 EN 61000-4-2/-3

Datum   25.02.2014   **Unter-schrift**

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