AMPROBE®

SM-10
SM-20-A
Sound Level Meters

Users Manual
- Mode d'emploi
- Bedienungshandbuch
- Manuale d'Uso
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Users Manual

Limited Warranty and Limitation of Liability

Your Amprobe product will be free from defects in material and workmanship for 1 year from the date of purchase. This warranty does not cover fuses, disposable batteries or damage from accident, neglect, misuse, alteration, contamination, or abnormal conditions of operation or handling. Resellers are not authorized to extend any other warranty on Amprobe's behalf. To obtain service during the warranty period, return the product with proof of purchase to an authorized Amprobe Test Tools Service Center or to an Amprobe dealer or distributor. See Repair Section for details. THIS WARRANTY IS YOUR ONLY REMEDY. ALL OTHER WARRANTIES - WHETHER EXPRESS, IMPLIED OR STAUTORY - INCLUDING IMPLIED WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE OR MERCHANTABILITY, ARE HEREBY DISCLAIMED. MANUFACTURER SHALL NOT BE LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES OR LOSSES, ARISING FROM ANY CAUSE OR THEORY. Since some states or countries do not allow the exclusion or limitation of an implied warranty or of incidental or consequential damages, this limitation of liability may not apply to you.

Repair
All test tools returned for warranty or non-warranty repair or for calibration should be accompanied by the following: your name, company's name, address, telephone number, and proof of purchase. Additionally, please include a brief description of the problem or the service requested and include the test leads with the meter. Non-warranty repair or replacement charges should be remitted in the form of a check, a money order, credit card with expiration date, or a purchase order made payable to Amprobe® Test Tools.

In-Warranty Repairs and Replacement – All Countries
Please read the warranty statement and check your battery before requesting repair. During the warranty period any defective test tool can be returned to your Amprobe® Test Tools distributor for an exchange for the same or like product. Please check the "Where to Buy" section on www.amprobe.com for a list of distributors near you. Additionally, in the United States and Canada In-Warranty repair and replacement units can also be sent to a Amprobe® Test Tools Service Center (see address below).

Non-Warranty Repairs and Replacement – US and Canada
Non-warranty repairs in the United States and Canada should be sent to a Amprobe® Test Tools Service Center. Call Amprobe® Test Tools or inquire at your point of purchase for current repair and replacement rates.

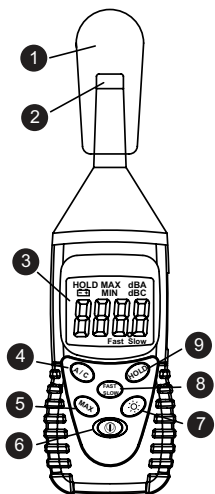| **In USA**	**In Canada**
Amprobe Test Tools	Amprobe Test Tools
Everett, WA 98203	Mississauga, ON L4Z 1X9
Tel: 877-AMPROBE (267-7623)	Tel: 905-890-7600

Non-Warranty Repairs and Replacement – Europe
European non-warranty units can be replaced by your Amprobe® Test Tools distributor for a nominal charge. Please check the "Where to Buy" section on www.amprobe.com for a list of distributors near you.
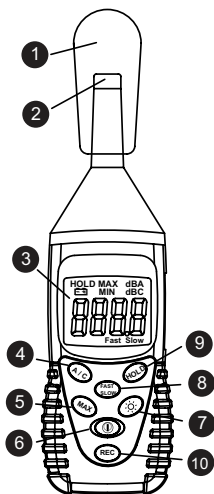
European Correspondence Address*
Amprobe® Test Tools Europe
In den Engematten 14
79286 Glottertal, Germany
Tel.: +49 (0) 7684 8009 - 0

*(Correspondence only – no repair or replacement available from this address. European customers please contact your distributor.)

SM-10   SM-20-A

❶ Windscreen
❷ Microphone
❸ LCD display
❹ Frequency weighting select button
❺ Maximum/Minimum Hold button
❻ Power button
❼ Backlight button
❽ Time weighting select button
❾ Data Hold button
❿ Record button

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CONTENTS

SYMBOLS

⚠	Refer to the manual	☒	Do not dispose of this product as unsorted municipal waste.
C	Conforms to relevant Australian standards.	CE	Complies with EU directives

⚠ Warning and Precautions

- For wind speeds over 10 m/sec (22.3 mph), use the windscreen on the microphone.
- For general sound level measurements use A weighting. For checking the low-frequency content of noise use C weighting. If the C-Weighted level is much higher than the A-weighted level, then there is a large amount of low-frequency noise
- For normal measurements use the FAST mode. For checking average level of fluctuation noise use the SLOW mode.

UNPACKING AND INSPECTION

Your shipping carton should include:

1	SM-10 / 20-A sound level meter
1	9 volt battery
1	Download Suite CD-ROM (SM-20-A)
1	USB Cable (SM-20-A)
1	Users Manual

If any of the items are damaged or missing, return the complete package to the place of purchase for an exchange.

INTRODUCTION

This Sound Level Meter has been designed to meet the measurement requirements of safety Engineers, Health, Industrial safety offices and quality control in various environments. This unit conforms to the IEC651 Type 2, ANSI S1.4 Type 2, JISC1502 requirements for Sound Level Meters.

OPERATION

1. Press ① button for power ON.
2. Select the desired response time 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.

MAX/MIN

The MAX MIN feature reads and updates the display to show the maximum or minimum average value measured after you press the MAX MIN button. Pressing the MAX MIN button for less than 1 second will put the meter into a mode of displaying the maximum, minimum, average, or actual readings. Each time the button is pressed, the meter will alternate between MAX and MIN. Press the MAX MIN button for more than 2 seconds to disable this feature.

HOLD

Freezes the reading present on the LCD at the moment the button is pressed. To use this button feature set up the meter for the type of measurement and range desired before pressing the button.

Backlight

Press the button you enable the display backlight to easy readings in dark environments. Press more than 1 second to disable backlight, which however it automatically OFF after 15 seconds.

Record (SM-20-A Only)

Refer to CD-ROM for Download Suite™ instructions .

To transfer the data from the instrument to the PC the following procedure must be followed:

1. Switch ON the instrument
2. Connect the serial output of the instrument to the serial output of the PC through the serial cable
3. Press the REC button on the SM-20-A.
4. Install the software and start it – Close the introduction window
5. Press F2 and follow the commands.
6. Refer to software help file for further instructions.

Calibration Procedures

Using a standard Acoustic Calibrator (SM-CAL1) (94dB, 1 kHz Sine wave)

1. Set meter for dBA and FAST.
2. Insert the Microphone nozzle carefully into the insertion hole of the calibrator.
3. Press A/C button then press the HOLD button, hold the 2 buttons at the same time more than 1 second. LCD will be blinking to confirm calibration.

4. When LCD blinked, release the A/C and the HOLD buttons. The sound level meter will display 94.0 dBA . The calibration is done.

5. The 94 dB calibration process can be repeated until the meter reads 94.0 dB. Recalibration cycle: 1 year.

SPECIFICATIONS

General

Display:	4 digits LCD
Microphone:	1/2 inch Electret condenser microphone.
Low Battery Indication:	Replace battery when LCD displays "$\boxed{-+-}$".
Power Supply:	9V NEDA 1604, IEC 6F22, JIS 006P battery.
Power Life :	Approx. 50 hrs (alkaline Battery).
Auto Power Off:	Approx. 5 min
Environment:	Indoor operation, < 2000 m
Temperature / Humidity	
Operation:	5 °C to 40 °C (41°F to 104°F); < 80% RH
Storage:	-10 °C to 60 °C (14°F to 140°F); < 70 %RH
Dimension:	200 x 55 x 38 mm (7.8 x 2.2 x 1.5 in)
Weight:	233g. (0.5 lb.) Including battery

$C\epsilon$-EMC: EN61326-1 This product complies with requirements of the following European Community Directives: 89/336/EEC (Electromagnetic Compatibility) and 73/23/EEC (Low Voltage) as amended by 93/68/EEC (CE Marking). However, electrical noise or intense electromagnetic fields in the vicinity of the equipment may disturb the measurement circuit. Measuring instruments will also respond to unwanted signals that may be present within the measurement circuit. Users should exercise care and take appropriate precautions to avoid misleading results when making measurements in the presence of electronic interference.

Electrical (Audio)

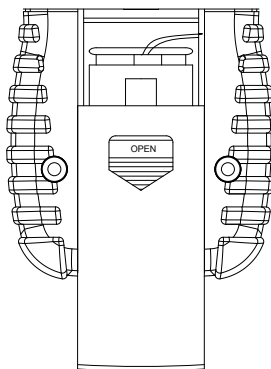|	
Standard applied:	IEC 651 Type2, ANSI 1.4 Type 2.
Dynamic range:	50 dB.
Resolution:	0.1 dB, Display Update: 0.5 sec.
Time weighting:	FAST(125mS), SLOW(1 sec).
Frequency range:	31.5 Hz to 8 kHz.
Measuring level range:	(Auto Range)
A Weighting:	30 to 130 dB.
C Weighting:	35 to 130 dB.
Accuracy:	± 1.5 dB.
Calibration cycle:	1 year.

MAINTENANCE AND REPAIR

If there appears to be a malfunction during the operation of the meter, the following steps should be performed in order to isolate the cause of the problem.

1. Check the battery. Replace the battery immediately when the symbol "⊟" appears on the LCD.

2. Review the operating instructions for possible mistakes in operating procedure.

Except for the replacement of the battery, repair of the meter should be performed only by a Factory Authorized Service Center or by other qualified instrument service personnel. The front panel and case can be cleaned with a mild solution of detergent and water. Apply sparingly with a soft cloth and allow to dry completely before using. Do not use aromatic hydrocarbons or chlorinated solvents for cleaning.

Battery Replacement

1. Turn off the meter and slide out the battery cover. Replace the battery with a NEDA type 1604 or equivalent 9V alkaline battery. Replace the cover.

2. Remove battery when the SM-10/SM-20-A is not used for extended period.

Battery Replacement

Visit www.Amprobe.com for
• Catalog
• Application notes
• Product specifications
• User manuals

Please Recycle