

SP79 SOUND LEVEL METER



INSTRUCTION MANUAL



ALWAYS READ THESE INSTRUCTIONS BEFORE PROCEEDING

Thank you for buying one of our products. For safety and a full understanding of its benefits please read this manual before use. Technical support is available from 01923 441717 and support@martindale-electric.co.uk

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1. SAFETY INFORMATION: Always read before proceeding.

REMEMBER: SAFETY IS NO ACCIDENT

These instructions contain both information and cautions that are necessary for the correct operation and maintenance of this product. It is recommended that you read the instructions carefully and ensure that the contents are fully understood.

Particular attention should be paid to the Precautions and Technical Specifications.

Please keep these instructions for future reference. Updated instructions and product information are available at:
www.martindale-electric.co.uk

1.1 Meaning of Symbols and Markings



Caution - refer to instructions



Equipment complies with relevant EU Directives



End of life disposal of this equipment should be in accordance with relevant EU Directives

1.2 Precautions

This product has been designed with your safety in mind, but please pay attention to the following warnings and cautions before use.

Cautions

The SP79 must only be used by a skilled and competent person who is familiar with the relevant regulations, the safety risks involved and the consequent normal safe working practices, and under the conditions and for the purposes for which it has been constructed and specified.

Before use check the unit for cracks or any other damage. Make sure the unit is free from dust, grease and moisture. **Do not** use if damaged.

The microphone in particular must be protected from exposure to water or dust as dust or contamination can alter the performance characteristics of the unit. Always replace the unit in its storage case when not in use.

Avoid severe mechanical shock or vibration and extreme temperature.

To avoid possible corrosion from a leaking battery, remove the battery if discharged, or when the unit is not in use for an extended period.

2. INTRODUCTION

2.1 Inspection

Examine the shipping carton for any sign of damage. Inspect the unit and any accessories for damage. If there is any damage then consult your distributor immediately.

2.2 Description

The Martindale SP79 has the following functions and features:

- ◆ Complies with BS EN 61672-1 Class 2
- ◆ Measuring level range from 32 to 130dB
- ◆ Frequency range from 20Hz to 8kHz
- ◆ AC and DC outputs for the connection of external instruments
- ◆ Min-Max function
- ◆ Auto power off
- ◆ Low battery indication
- ◆ Tripod mounting

2.3 Accessories

The SP79 comes with the following accessories:

- ◆ 1 x 9V PP3 battery
- ◆ Windscreen
- ◆ Storage case
- ◆ Instructions

Accessories not included:

- ◆ SPC70 Sound calibrator

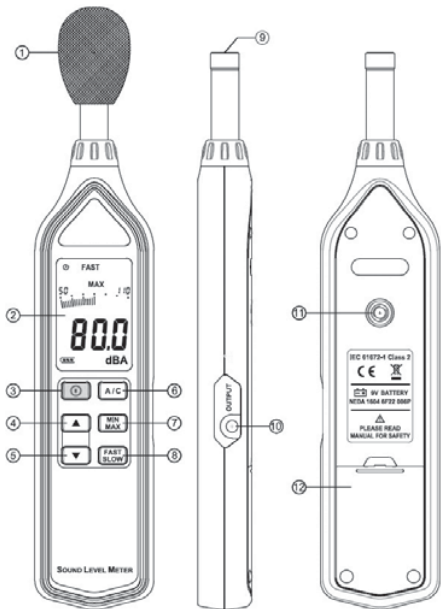
2.4 Battery Installation

Refer to Section 4.1 (Battery Replacement) for the battery installation instructions for the SP79.

3. OPERATION

3.1 SP79 Elements

1	Windscreen
2	Liquid crystal display
3	Power button
4	Range increment button
5	Range decrement button
6	Frequency weighting button
7	Min/Max button
8	Time weighting button
9	Microphone
10	AC/DC output socket
11	Tripod mounting thread
12	Battery cover



3.2 Description of Press Buttons

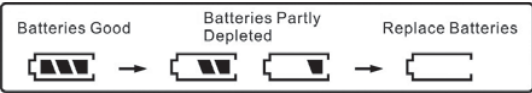
	Turns on/off the SP79
	Increases the range Increments the displayed reading in CAL mode
	Decreases the range Decrements the displayed reading in CAL mode
	Sets A or C frequency weighting
	Selects Min/Max function
	Sets fast or slow time weighting

3.3 Description of LCD Symbols



	Auto power off is active
FAST	Fast time weighting is selected
SLOW	Slow time weighting is selected
UNDER	Indicates measurement is under range
MIN	Minimum recorded reading is displayed
MAX	Maximum recorded reading is displayed
OVER	Indicates measurement is over range
CAL 94dB	Cal mode is activated
	Indicates battery capacity
dBc, dBA	Units of measurement being displayed

3.4 Battery Capacity and Low Battery Indication



If the symbol is displayed, the battery needs replacing as measurement accuracy can no longer be guaranteed (see section 4.1 Battery Replacement).

3.5 Power On/Off

Press **⏻** to power on the SP79.

To power off the SP79 press and hold **⏻** until the bargraph has decreased to zero, at which point the unit will power off.

3.6 Auto Power Off

If the unit is inactive for a period of 30 minutes it will automatically power off.

To disable this function hold down the **FAST SLOW** button when powering on the SP79. The **⏻** symbol will no longer be displayed on the LCD.

3.7 Frequency Weighting

The SP79 powers up with **A** - weighting selected. The LCD displays **dBA**.

To set to **C** - weighting, press **A/C**. The LCD displays **dBC**.

Press **A/C** again to return to **A** - weighting.

A - weighting is used for general sound level measurements.

C - weighting is used for checking the low-frequency noise content.

Note: If the C-weighted level is much higher than the A-weighted level, then there is a large amount of low-frequency noise.

3.8 Time Weighting

The SP79 powers up with **fast** weighting selected. The LCD displays **FAST**.

To set to **slow** weighting, press **FAST SLOW**. The LCD displays **SLOW**.

Press **FAST SLOW** again to return to **fast** weighting.

Set to **fast** weighting for normal measurements.

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Set to **slow** weighting for checking the average level of fluctuating noise.

3.9 Min/Max

To display the maximum measured value press **MIN MAX**. The LCD will display **MAX**.

To display the minimum measured value press **MIN MAX** again. The LCD will display **MIN**.

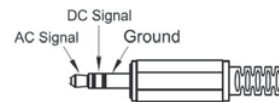
Pressing **MIN MAX** for a third time will return the meter to a normal display mode with maximum and minimum measured values being stored. The LCD will display **MIN MAX** flashing.

To exit the Min/Max function, press **MIN MAX** for 2 seconds.

Note: If the sound level range or the frequency weighting is changed, the SP79 will exit the Min/Max function.

3.10 AC/DC Output Socket Connections

If required a frequency analyzer, level recorder, FFT analyzer, graphic recorder, etc. may be connected to a standard 3.5mm coaxial socket that provides both AC and DC signal outputs.



3.11 Adjustment using Sound Calibrator

Most noise testing regulations and guidelines require that your sound level meter is tested using a sound calibrator before use. In any case, it is good practice to test the SP79 against a sound calibrator before and after use to be sure it has not been damaged or is not faulty.

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The SP79 should be tested against a sound calibrator with a 94dB 1kHz reference level, and if required adjusted to correctly display the certified value of sound calibrator.

A suitable sound calibrator is the Martindale SPC70.

To perform the test, hold down **MIN MAX** when powering on the SP79. The LCD will display **CAL 94dB** flashing.

Insert the microphone of the SP79 into the microphone well of the sound calibrator, ensuring the microphone is correctly seated.

Power on the sound calibrator and read the displayed sound level reading on the SP79 LCD.

If required press **▲** or **▼** to increase or decrease the SP79 reading until it agrees with the certified value of the sound calibrator, taking into account any corrections for ambient conditions for the sound calibrator.

Press **MIN MAX** to complete the adjustment.

To abort the test, press **⏻**.

3.12 Sound Level Measurements

Press **⏻** to power on the SP79.

Select the required time and frequency weighting. The SP79 defaults to **FAST** and **A** respectively at power up.

If the sound source consists of short bursts, set the time weighting to **FAST**. To measure average sound level, use the **SLOW** setting.

For general noise sound level measurement set the frequency weighting to **A**. To measure the sound level of acoustic material, use the **C** setting.

Set the required level range using the **▲ ▼** buttons.

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Referring to 3.13 (Measurement Considerations), point the SP79 microphone at the noise source to be measured and read the measured sound level from the display.

If **UNDER** or **OVER** is displayed on the LCD, reset the level range and re-read the measured sound level from the display.

If required, the SP79 can be mounted on a tripod.

3.13 Measurement Considerations

Outdoor noise measurements should be made on a day with a calm to gentle breeze, and not be made in the rain.

If wind is blowing across the microphone, attach the windscreen to the microphone.

The best method when making sound level measurements is to mount the SP79 on a tripod, and to allow sufficient clearance to minimize any sound reflections from the user's body.

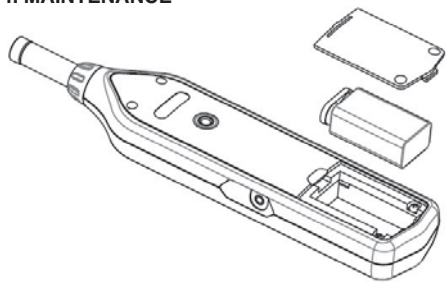
If the SP79 is held by hand, it should be held out to the side of the body at arm's length to minimize any sound reflections from the user's body.

The microphone should be placed well away from reflective surfaces such as walls or the floor, in order to eliminate errors caused by reflections.

Make sure the noise source is not obstructed.

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4. MAINTENANCE



4.1 Battery Replacement

The battery compartment is on the rear of the unit.

Remove the battery cover and old battery and replace with a new 9V battery (IEC 6LR61, NEDA 1604A), observing correct polarity.

Replace the battery cover.

4.2 Calibration

To maintain the integrity of measurements made using your instrument, Martindale Electric recommends that it is returned at least once a year to an approved Calibration Laboratory for recalibration and certification.

Martindale Electric is pleased to offer you this service. Please contact our Service Department for details.

Email: service@martindale-electric.co.uk

Tel: 01923 650660

4.3 Cleaning

If contamination is found, clean with a damp soft cloth and if necessary a mild detergent or alcohol. Do not use abrasives,

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abrasive solvents, or detergents which can cause damage to the unit. If a mild detergent is used, the unit should subsequently be thoroughly cleaned with a water dampened soft cloth. After cleaning, dry and allow to remain in a dry environment for 2 hours before use.

4.4 Repair & Service

There are no user serviceable parts in this unit other than those that may be described in section 4. Return to Martindale Electric if faulty. Our service department will quote promptly to repair any fault that occurs outside the guarantee period.

Before the unit is returned, please ensure that you have checked the unit and battery.

4.5 Storage Conditions

The instrument should be kept in its storage case with the battery removed, and in warm dry conditions away from direct sources of heat or sunlight, and in such a manner as to preserve the working life of the unit. It is strongly advised that the unit is not kept in a tool box where other tools may damage it.

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5. WARRANTY AND LIMITATION OF LIABILITY

This Martindale product is warranted to be free from defects in material and workmanship under normal use and service. The warranty period is 2 years and begins on the date of receipt by the end user. This warranty extends only to the original buyer or end-user customer, and does not apply to fuses, disposable batteries, test leads or to any product which, in Martindale's opinion, has been misused, altered, neglected, contaminated, or damaged by accident or abnormal conditions of operation, handling or storage. Martindale authorised resellers shall extend this warranty on new and unused products to end-user customers only but have no authority to extend a greater or different warranty on behalf of Martindale.

Martindale's warranty obligation is limited, at Martindale's option, to refund of the purchase price, free of charge repair, or replacement of a defective product which is returned to Martindale within the warranty period.

This warranty is the buyer's sole and exclusive remedy and is in lieu of all other warranties, expressed or implied, including but not limited to any implied warranty of merchantability or fitness for a particular purpose. Martindale shall not be liable for any special, indirect, incidental or consequential damages or losses, including loss of data, arising from any cause or theory.

Since some jurisdictions do not allow limitation of the term of an implied warranty, or exclusion or limitation of incidental or consequential damages, the limitations and exclusions of this warranty may not apply to every buyer. If any part of any provision

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of this warranty is held invalid or unenforceable by a court or other decision-maker of competent jurisdiction, such holding will not affect the validity or enforceability of any other provision or other part of that provision.

Nothing in this statement reduces your statutory rights.

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Specification

SP79

Sound Level Meter



All specified accuracies are at 23°C ± 5°C, <70% R.H. for 1 year.
Temperature coefficient: 0.1 x (specified accuracy) per °C, (0°C to 18°C, 28°C to 50°C).

Measuring level range: 32 – 130dB

Frequency range: 20Hz – 8kHz

Frequency weighting: A or C

Level ranges: Lo: 30 – 90dB

Med: 50 – 110dB

Hi: 70 – 130dB

Accuracy: ±1.4dB (at reference conditions)

Dynamic range: 60dB

Time weighting: Fast or slow

Microphone: ½ inch electret condenser microphone

AC output: 1 Vrms at full scale (full scale is the upper limit of the selected level range)

DC output: 10mV/dB



Specification

SP79

Sound Level Meter

GENERAL

Display: Liquid crystal display


Digital, 4 digits, updates 2/sec

Bar-graph, 30 segments, updates 10/sec

Power: 1 x 9V, PP3 alkaline battery (IEC 6LR61, NEDA 1604A)

Continuous operating time: 60 hours typical (alkaline battery)

Auto power off: after approx. 30 minutes

Low battery indication: The  symbol is displayed

Dimensions: 258(L) x 55(W) x 25(D) mm

Weight: Approx. 185g including battery

Includes: 1 x 9V battery, windscreen, storage case, instructions

ENVIRONMENTAL

Operating conditions: Temperature: 0°C to 40°C

Relative humidity: 10 to 90% R.H.

Storage conditions: Temperature: -10°C to 60°C

Relative humidity: 10 to 75% R.H.

FUNCTIONALITY

Complies with BS EN 61672-1 Class 2

EMC

Conforms to BS EN 61326-1

Check out what else you can get from Martindale:

- 18th Edition Testers
- Accessories
- Calibration Equipment
- Continuity Testers
- Electricians' Kits
- Environmental Products
- Full Calibration & Repair Service
- Fuse Finders
- Digital Clamp Meters
- Digital Multimeters
- Labels
- Microwave Leakage Detectors
- Motor Maintenance Equipment
- Multifunction Testers
- Non-trip Loop Testers
- Pat Testers & Accessories
- Phase Rotation Testers
- Proving Units
- Socket Testers
- Thermometers & Probes
- Test Leads
- Voltage Indicators
- Specialist Metrohm Testers (4 & 5kV)
- Specialist Drummond Testers



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