



## MPS436A Surface Microphone

### Features:

- Sensitivity (@250 Hz): 11.2 mV/Pa (-39 dB re 1V/Pa)
- Frequency response: 20 Hz ~ 20 kHz
- Dynamic range: 29 dBA ~ 141 dB
- Polarization voltage: 0V (prepolarized)
- Pressure equalization: Front equi-pressure
- Suitable for 1/4-inch preamplifier with ICCP power supply
- Optional TEDS (IEEE.1451.4)



### Applications:

- Suitable for automobile and high-speed train wind noise testing with speeds below 300 km/hr.
- Suitable for wind tunnel testing with wind speeds below 80 m/s
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### Introduction

**MPS436A** is a surface acoustic microphone developed by Beijing BSWA for wind tunnel and vehicle wind noise testing. It utilizes a polarization method that doesn't require external polarization voltage and comes with an integrated ICCP pre-amplifier (with optional TEDS support). The housing features a robust metal design, making it resistant to impact, durable, and highly immune to electromagnetic interference.

The **MPS436A** uses the front equi-pressure mode with a frequency range of 20 Hz to 10 kHz ( $\pm 2$  dB) and 10 kHz to 20 kHz ( $\pm 3$  dB). It can measure sound pressure levels of up to 141 dB. Each **MPS436A** undergoes high-pressure testing before leaving the factory to ensure total distortion is less than or equal to 3% when reaching the rated maximum sound pressure level.

**MPS436A** is suitable for scenarios where a large number of sensors are used with strict requirements on individual cost, such as high-speed train wind noise testing. Sensors can be placed near pantographs, bogies, and leading cars to measure the distribution of wind noise comprehensively. Using **MPS436A** can control the overall cost of wind noise testing while meeting basic sensitivity and measurement accuracy requirements.

In addition, optional TEDS functionality supports direct sensor information retrieval by data acquisition devices, including sensor model, serial number, sensitivity, and more. Currently, BSWA's TEDS sensors support the IEEE 1451.4 standard, defaulting to version 0.9 for compatibility with more data acquisition devices or version 1.0 based on user preferences.

Each **MPS436A** is shipped with independent calibration data charts, including sensitivity and frequency response information.

**Specifications**

Sound Field	Surface Microphone
Class (IEC 61672)	Class 1
Sensitivity@250 Hz (mV/Pa) ( $\pm 3$ dB)	11.2 (-39 dB re 1V/Pa)
Polarization Voltage	0 V (prepolarized)
Frequency Response (Hz)	20 ~ 10 k ( $\pm 2$ dB), 10 ~ 20 k ( $\pm 3$ dB)
Dynamic Range (dBA ~ dB)	29 ~ 140
Self-generated Noise (dBA)	29
Maximum Sound Pressure Level (dB)	$\geq 140$ (3% distortion)
Pressure Equalization Vent	Front-vented
Preamplifier	Built-in
Maximum Output Voltage (V <sub>peak</sub> ) 2	$\pm 5$
Output Impedence ( $\Omega$ )	<150
Power Supply	ICCP (2mA ~ 20mA, 4mA typical)
Operating Temperature Range ( $^{\circ}\text{C}$ )	-10 ~ 50
Operating Humidity Range (%RH)	0 ~ 90
Dimension (mm)	$\varnothing 60 \times 5$ (Height)
Output Connector	3 meters BNC
Weight (g)	15
TEDS	Optional, IEEE 1451.4 compliant (default v0.9, optional v1.0)

**Typical Free-Field Frequency Response**