



## MPA446 Rugged Microphone

### Features:

- Press-field microphone, suitable for use in cavity or space with strong reflection
- Calibration by sound calibrator with adaptor
- Rugged stainless-steel shell, easy to be fixed firmly
- Sensitivity (@250 Hz): 11.2 mV/Pa (-39 dB re 1V/Pa)
- Frequency response: 10 Hz ~ 10 kHz
- Dynamic range: 29 dBA ~ 140 dB
- Polarization voltage: 0 V (Repolarized)
- Pressure equalization: front-vented
- Built-in preamplifier with ICCP power supply
- Optional TEDS (IEEE.1451.4)



### Applications:

- NVH test of railway and vehicle applications.
- Noise test in harsh environment.

### Introduction

**MPA446** pressure-field rugged microphone is developed by BSWA, suitable for measurement in moving objects such as vehicles. It is prepolarized microphone without external polarization voltage, and equipped with built-in ICCP power supply preamplifier (optional TEDS).

**MPA446** is front-vent and can measure the sound pressure level up to 140 dB. Each MPA446 passed a high sound pressure test before leaving the factory to verify its total distortion  $\leq 3\%$  when the rated maximum sound pressure level is reached.

**MPA446** has rugged stainless-steel shell thus suitable for harsh environment measurement. It can be fixed in the test area by means of adhesive or special magnetic seat. It can be applied for noise test of automobile engine compartment, wheel rail and other parts that may produce strong vibration.

Moreover, the optional TEDS function support data acquisition equipment to read microphone information directly, including microphone model, serial number, sensitivity, etc. BSWA microphone supports the IEEE 1451.4 standard. The v0.9 version is used by default to be compatible with more data acquisition equipment. The v1.0 version can also be selected according to user requirements.

Each MPA446 is supplied with an individual calibration data chart including sensitivity, frequency response and so on.

### Specifications

Sound Field	Pressure-field
Diameter (mm)	12.7 (non-standard 1/2", adaptor is required for calibration)
Sensitivity@250 Hz (mV/Pa) ( $\pm 3$ dB)	11.2 (-39 dB re 1V/Pa)
Polarization Voltage	0 V (Prepolarized)
Frequency Response (Hz)	10 ~ 10 k (+3 dB / -5 dB)
Dynamic Range (dBA ~ dB)	29 ~ 140
Self-generated Noise (dBA)	29
Maximum Sound Pressure Level (dB)	$\geq 140$ (3% distribution)



Pressure Equalization Vent	Front-vented
Preamplifier	Built-in
Output Impedence ( $\Omega$ )	< 150
Maximum Output Voltage (Vpeak)	$\pm 5$
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)	W23 x H8.8 x D13.2
Output Connector	10-32 UNF
Weight (g)	5.7
TEDS	Optional, IEEE 1451.4 compliant (default v0.9, optional v1.0)