



MP201SY 1/2-inch Side Vented Dedicated Microphone

Features:

- 1/2-inch pressure-field microphone
- Sensitivity (@250 Hz) :56 mV/Pa (-25 dB re 1V/Pa)
- Frequency response: 20 Hz ~ 3 kHz (± 3 dB)
- Dynamic range: 17 dBA ~ 140 dB
- Polarization voltage: 0V (prepolarized)
- Pressure equalization: side vented
- Suitable for 1/2-inch preamplifier with ICCP power supply



Applications:

- Noise measurement in photoacoustic cell

Introduction

MP201SY is the 1/2-inch pressure-field microphone developed by BSWA. It is prepolarized microphone without external polarization voltage, and suitable for ICCP powered MA221 / MA221A preamplifier (optional TEDS).

This type of microphone is specifically designed for measure low-frequency low sound pressure level noise in photoacoustic cells. A typical photoacoustic cell is a sealed small chamber with variable static pressure. In order to use it in this environment, a side vented and strictly sealed inner cavity microphone should be used to prevent air pressure leakage of the photoacoustic cell. In addition, due to the rapid change in static pressure inside the photoacoustic cell, the traditional side vented structure of the microphone has a larger pressure equalization time constant (the reciprocal of the cutoff frequency), which means that its pressure equalization time is longer and cannot keep up with the speed of static pressure change in the photoacoustic cell, thereby affecting the accuracy of measurement. **MP201SY** has specially designed a maze venting structure, which can significantly reduce the pressure equalization time while keeping the same cutoff frequency. Due to the low-frequency signal in the photoacoustic cell (the photoacoustic effect is generally below 50 Hz), **MP201SY** sacrifices its high-frequency performance (the frequency response is only 3 kHz, but it is already sufficient for photoacoustic cell applications), which can achieve higher sensitivity and facilitate the measurement of weak noise signals in the photoacoustic cell.

MP201SY is not equipped with a grid protective cover, but instead uses a protective ring, which is also intended to be suitable for the photoacoustic cell and minimize the front chamber volume as much as possible. Users need to pay attention to protecting the diaphragm of the microphone. Any diaphragm damage is irreparable and is not warranted.

MP201SY can be equipped with MA221 or MA221A compact 1/2-inch preamplifier, where MA221 is an SMB connector output and MA221A is a line output, and different connectors can be used according to customer requirements. All preamplifier can choose the TEDS which 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's requirements.

Each **MP201SY** is supplied with an individual calibration data chart including sensitivity, frequency response and so on.



Specifications

Sound Field	Pressure-field
Diameter	1/2"
Open-circuit Sensitivity@250 Hz (mV/Pa) (±2 dB)	56 (-25 dB re 1V/Pa)
Polarization Voltage	0 V (Prepolarized)
Frequency Response (Hz) (±3 dB)	20 ~ 3 k
Dynamic Range (dBA ~ dB) ¹	17 ~ 140
Cartridge Thermal Noise (dBA)	17
Maximum Sound Pressure Level (dB) (3% distortion) ¹	140
Capacitance (pF)	16
Equivalent Air Volume@250 Hz (mm ³)	47
Pressure Equalization Vent	Side vented
Operating Temperature Range (°C)	-30 ~ 80
Operating Humidity Range (%RH)	0 ~ 98
Temperature Coefficient (250 Hz) (dB/°C)	-0.02
Pressure Coefficient (250 Hz) (dB/kPa)	-0.01
Influence of Humidity (dB)	<0.1
Dimensions (mm)	with Ring
	without Ring
Mounting Thread for Pre-amplifier	11.7 mm-60 UNS
Weight (g)	8.2
Suitable Pre-amplifier	MA221 / MA221A (Optional TEDS, IEEE 1451.4 v0.9 / v1.0)

Note 1: the maximum sound pressure level will reduce to 134 dB with MA221 / MA221A pre-amplifier.

Typical Frequency Response

