



SI522 Sound Intensity Probe

Features:

- Microphone pairs matched for phase and amplitude response
- Handle with remote control function
- Frequency range 50 Hz ~ 6.3 kHz (1/3 octave)

Applications:

- Sound-intensity measurement
- Sound-source localization
- Equipment troubleshooting



Introduction

The measurement of sound intensity provides information of magnitude and direction in the sound field, which is used for a variety of applications such as the determination of sound power, sound absorption, sound transmission, sound source localization, etc.

SI522 is the new sound intensity measurement equipment developed by BSWA according to IEC 61043 and GB/T 17561. It has a pair of BSWA phase-matched 1/2-inch prepolarized microphone MP231 which are in the face to face configuration. The microphones are separated by a fixed distance in the sound field, and three solid spacers are supplied with probe to define the distance between the microphones at 8.5 mm, 12 mm and 50 mm which cover the full frequency range from 50 Hz to 6.3 kHz. The spacers are threaded studs on the microphone grids and can be easily interchanged.

SI522 supplied with BSWA MA401 preamplifier and attached with a pair 1/4-inch to 1/2-inch adapters (straight and right-angle) for connect to MP231 microphone. The aluminum handle of sound intensity probe has remote control function, which can be easily handle by one person to carry out measurement with certain software.

Specifications

Standard	IEC 61043:1993 Class 2, GB/T 17561-1998 Class 2
Frequency Range (1/3 Octave)	8.5 mm Spacer: 250 Hz ~ 6.3 kHz
	12 mm Spacer: 250 Hz ~ 5 kHz
	50 mm Spacer: 50 Hz ~ 1.25 kHz
Probe Output Connector	Lemo connector (EPG.1B.307)
Probe Output Cable	Adapter cable (Lemo to dual BNC and USB type B), 3m extension cable
Operating Environment	Temperature: -10 °C ~ 50 °C, Humidity: 0 ~ 90 %RH
Dimension (mm)	W30 x H433 x D70
Shipping Case Dimension (mm)	W428 x H153 x D350
Weight	0.46kg (Intensity probe only with 8.5mm spacer)

Microphone Pairs

Microphone Pairs	Phase-matched MP231 prepolarized microphone
Diameter	1/2-inch
Sensitivity (with adapter)	40mV/Pa



Phase Difference	$\leq 0.15^\circ @ 50 \text{ Hz} \sim 630 \text{ Hz}$ $\leq [f(\text{Hz})/4000]^\circ @ 630 \text{ Hz} \sim 6.3 \text{ kHz}$
Amplitude Response Difference	$\leq 0.2 \text{ dB} @ 50 \text{ Hz} \sim 1 \text{ kHz}$ $\leq 0.5 \text{ dB} @ 1 \text{ kHz} \sim 6.3 \text{ kHz}$
Sensitivity Difference	$\leq 1 \text{ dB}$
Equivalent Air Volume	$46 \text{ mm}^3 @ 250 \text{ Hz}$
Temperature Coefficient (-10 °C ~ 50 °C)	-0.012 dB/°C
Humidity Influence	$\leq 0.1 \text{ dB}$
Pressure Coefficient (250 Hz)	-0.004 dB/kPa
Dimension	IEC 61094-4 WS2
Microphone Pairs	Phase-matched MP231 prepolarized microphone
Preamplifier	
Preamplifier	MA401 (ICCP power supply)
Input Impedance	$6 \text{ G}\Omega 0.4 \text{ pF}$
Phase Difference	$\leq 0.03^\circ @ 50 \text{ Hz} \sim 250 \text{ Hz}$ $\leq [f[\text{kHz}]] \times 0.1^\circ @ 250 \text{ Hz} \sim 10 \text{ kHz}$

Hardware

