User Manual

SI522 Sound Intensity Probe

BSWA Technology Co., Ltd.

SI522 Sound Intensity Probe User Manual

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v1.0

www.bswa-tech.com

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Change History

Version	Date	Changes	Handle by
1.0	2018.04.27	Initial version.	Li Huimin

Contents

1. Introduction

1.1 General Description

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 measurement, sound localization and so on.

The BSWA sound intensity measurement equipment includes of sound intensity probe, ICCP power supply, sound intensity measurement device, etc.

SI 522 is the new sound intensity probe developed by BSWA. The face to face type sound intensity probe complies with IEC 61043. SI 522 is an upgraded version of SI 512 with adds a control handle and is more convenient for field measurement.

1.2 Applications

- Sound-source location
- Equipment troubleshooting

1.3 Features

- Microphone pairs matched for phase and amplitude response
- Handle control
- Different spacers apply to different frequency range

1.4 Specification

SI 522 Sound Intensity Probe	
Standard	IEC 61043 Class 2
Frequency Range (1/3 Octave)	8.5 mm Spacer: 250 Hz ~ 5000 Hz 12 mm Spacer: 160 Hz ~ 5000 Hz 50 mm Spacer: 63 Hz ~ 1250 Hz
Output Connectors	7-pin Lemo socket
Connect to Data Acquisition	3 meter cable with Lemo to 2 BNC and USB connectors
Shipping Case Dimension (mm)	W428 x H153 x D350
Weight	0.37kg (Intensity Probe only), 4.0kg (with shipping case)
Microphone Pairs	
Microphone Pairs	Selected Type MP201 for microphone pair

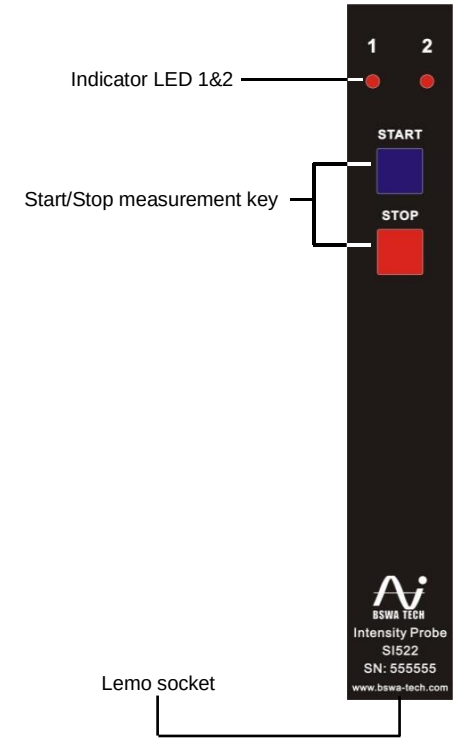
Diameter	1/2 inch, Prepolarized
Response	Free Field
Combined Sensitivity	45mV/Pa
Phase Difference	<0.3º, 45Hz ~ 500Hz <1º, 500Hz ~ 2500Hz <2º, 2500Hz ~ 6000Hz
Amplitude Response Difference (Ref.250Hz)	< 0.5dB, 45Hz ~ 6000Hz
Equivalent Air Volume	46 mm^3 @ 250 Hz
Temperature Coefficient (-10 °C ~ 50 °C)	-0.005 dB/°C
Humidity Coefficient	-0.003 dB/%RH
Pressure Coefficient (250 Hz)	-0.004 dB/kPa
Dimensions	IEC 61094-4 Type WS 2
Preamplifier	MA401

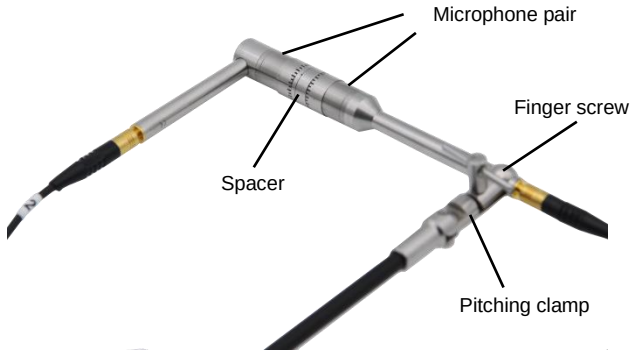
1.5 Packing List

No.	Type	Description
Standard		
1	SI522	Sound intensity probe
2	MP201	2 pcs, microphone pair
3	Spacers	Spacers of 8.5mm, 12mm and 50mm at length
4	CSS00033	SMB to SMB cable, 0.33m
5	CSS0004	SMB to SMB cable, 0.4m
6	CLL703	Lemo extension cable, standard 3m, customizable length
7	CLBBU7005	Lemo to BNC and USB cable, 0.5m
8	WS092	Windscreen
9	Open-ended wrench	Open-ended 5.5mm, to tighten the pitching clamp
10	User Manual	User guide of sound intensity probe
11	Certificate of Calibration	Certificate of factory calibration

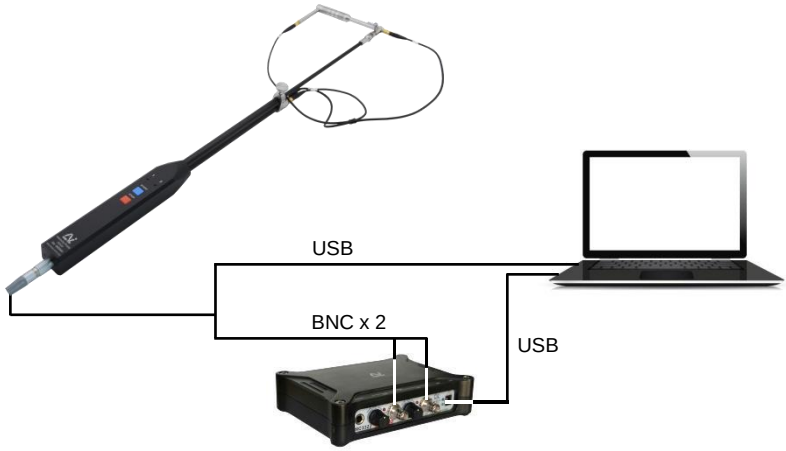
2. Instructions

2.1 Structure





2.2 Typical Measurement System



2.3 Operation

1. Take out the microphone pair carefully which has been connected to the preamplifier.
2. Select an appropriate spacer according to measurement frequency range. Connect the microphone pair face to face via spacer.
3. Insert one end of the CLL703 (7-pin Lemo extension cable) into the bottom of handle, the other end connects the CLBBU7005 cable which from Lemo to two BNC connectors and one USB plug.
4. Connect the data acquisition via two BNC connectors, pay attention to the corresponding channel.
5. Connect the PC via the USB plug (the driver program should be installed first) and set the port number which can query via device management in the test software.
6. Star the measurement.

3. Operation Notes

3.1 Operation

- Please minimize the influence of vibration when using sound intensity probe, vibration in

the audio range (10Hz~20kHz) could affect the measurement results.

- The measurement microphone is a sensitive component, please use it careful. Store the microphone in the attached box which can protect it against damage from outside.
- Please follow the introduction and using step in the user manual. Do not drop, knock or shake the product. Any operation over the limit could damage the product.
- Keep out the water and any other liquid due to no waterproof design on this product.

3.2 Common Issue and Solutions

Issue	Possible Root Cause and Solution
Handle key doesn't work	● Check if the driver has installed correct. ● Check the port number in the device manager and set in the test software accordingly. ● The key is damaged and need to return for repair.
Inaccurate measurement value	● Please recalibration the microphone.
Measurement value is opposite to the expected value	● Check if each signal output cable of the probe is correctly connected to the corresponding channel of data acquisition.
The pitching clamp loosen	● Tighten the clamp with the supplied open-ended wrench.

3.3 Calibration

The sound intensity probe has been calibrated before sales. Keep regular calibration can ensure the accuracy of the measurement. BSWA provide the calibration service for acoustic products.

3.4 Warranty

BSWA can provide warranty service during the warranty period. The component could be replaced according to the determination of BSWA to solve the issue caused by materials, design or manufacture.

Please refer to the product warranty promise in sales contract. Do not try to open or repair the device by customer. Any unauthorized behavior will result in loss warranty of this product

3.5 Customer Service Phone Number

Please do not hesitate to contact us for any issue:

Customer Service Phone Number:	+86-10-51285118	(workday 9:00~17:00)

Sales Service Phone Number:	Please visit BSWA website www.bswa-tech.com to find the sales number of your region.

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BSWA Technology Co., Ltd.

Room 1003, North Ring Center, No.18 Yumin Road,
Xicheng District, Beijing 100029, China
Tel: 86-10-5128 5118
Fax: 86-10-8225 1626
E-mail: info@bswa-tech.com
URL: www.bswa-tech.com