

AWA14431-S14E 1/4" Free-field Broadband Measurement Microphone set



Features

Key Parameters

Sensitivity: 4.0 mV/Pa

Frequency Range: 3.15 Hz~80 kHz

Dynamic Range: 43 dBA – 160 dB

Typical Applications

High-frequency (ultrasonic) testing

Free-field testing

High sound pressure testing

Standards

IEC 61094-4:1995 Measurement microphones – Part 4: Specifications for working standard microphones

SJ/T 10724-2013 Electroacoustics – General specifications for measurement condenser microphones

Main Components

AWA14431 Measurement Microphone

AWA14614E Preamplifier

Brief Introduction

The AWA14431-S14E is a set comprising a free-field measurement microphone and a preamplifier, specifically designed for free-field acoustic measurement applications. Supplied with an individual calibration certificate, it is suitable for acoustic environments that are either reflection-free or characterized by sound waves incident from specific directions (such as anechoic or semi-anechoic chambers). It features a flat frequency response ranging from 3.15 Hz to 80 kHz, the ability to withstand sound pressure levels up to 160 dB, and advantages such as compact size and high stability. Compatible with mainstream acoustic analysis instruments, the unit is widely used in fields including noise source localization, acoustic performance testing of equipment, and ultrasonic testing.

Product Highlights

Applications of Free-Field Wideband Microphone sets

Free-field wideband microphone sets feature an exceptionally wide frequency response range and a high dynamic upper limit. Capable of accurately capturing high-frequency acoustic signals, they are ideally suited for applications such as high-frequency signal testing, noise source localization, and acoustic performance testing of equipment.

Compatibility

The AWA14431-S14E measurement microphone set requires an external constant-current power supply module capable of delivering 2 mA to 20 mA of current and an open-circuit voltage of 24 V. Manufacturers may use various terms for such power modules and their supply modes, including IEPE (Integrated Electronics Piezo-Electric), ICP (Integrated Constant-current Circuit), CCP (Constant Current Power), and CCLD (Constant Current Line Drive).

TEDS-Enabled Measurement Microphone Unit

This set supports TEDS (Transducer Electronic Data Sheet) functionality, is programmed according to the IEEE 1451.4 standard, and complies with V1.0 format requirements. It is compatible with smart sensor technology, facilitating the integration and automated management of sensor information.

Calibration

Each measurement microphone set is calibrated at the factory using traceable calibration equipment and is supplied with a calibration certificate. Annual recalibration is recommended.

Quality and Warranty

All Aihua microphones utilize second-generation alloy diaphragms, high-strength protective grids,

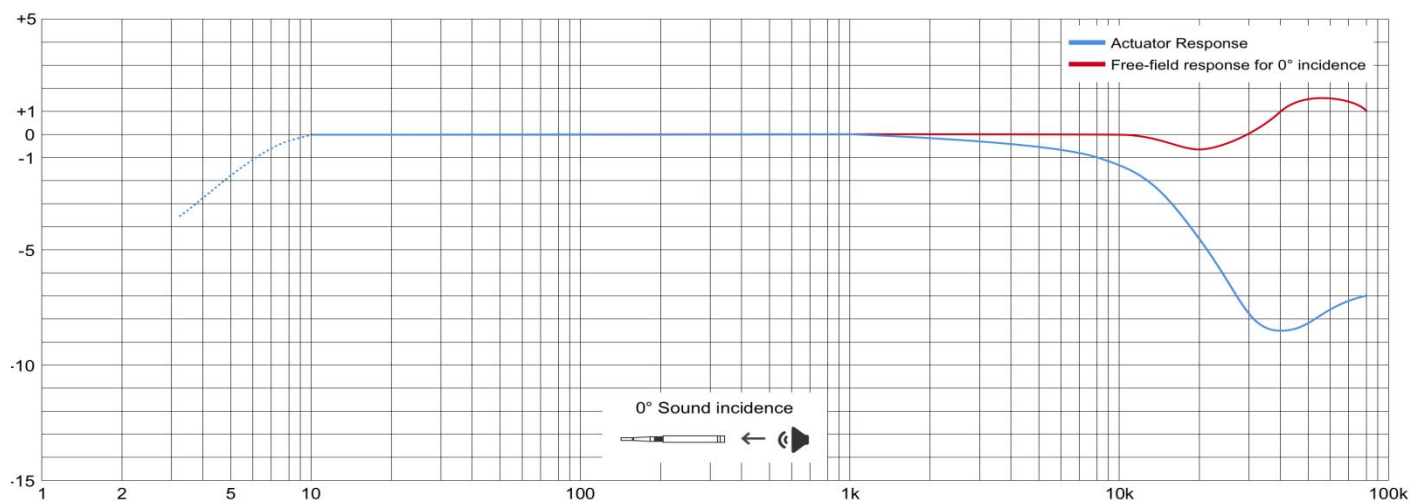
and synthetic corundum insulators, making them highly stable and reliable measurement microphones. Compared to traditional nickel or stainless steel, these alloy diaphragms offer superior corrosion resistance, high-temperature stability, impact resistance, and specific strength. All microphones are assembled and tested in a Class 1000 cleanroom to ensure the highest quality. The measurement microphone set comes with a one-year warranty, backed by comprehensive after-sales support.

Technical Specifications

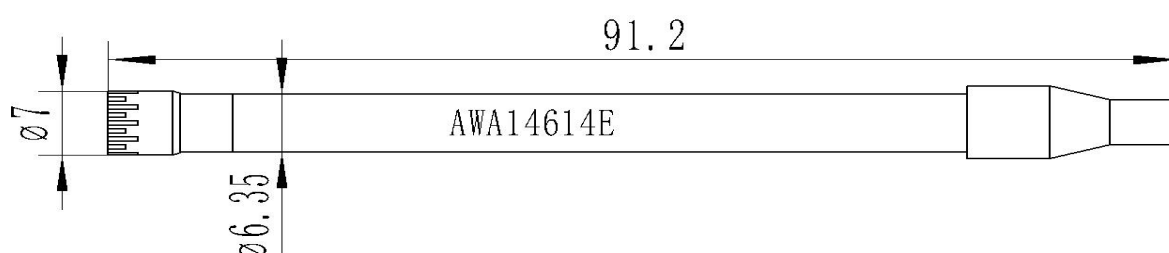
AWA14431-S14E 1/4" Free-field Broadband Measurement Microphone set			
Sound Field Type	Free field	Pressure Equalization	Post-equalization
Diameter	1/4 inch	Operating Temperature (°C)	-30 to +80
Dimensions Standard (IEC 61094)	WS3F	Temperature Coefficient (dB/°C) (@250 Hz)	-0.01 (-10°C to 50°C)
Power Supply	IEPE (2 mA to 20 mA)	Static Pressure Coefficient (dB/kPa)	-0.005
Sensitivity (mV/Pa) (@250 Hz ±2.0 dB)	4.0	Input Impedance/Capacitance	≥10 GΩ / ≤0.5 pF
Frequency Range (Hz)	3.15~80k	Output Voltage	≥5 Vrms @ 24 V supply
Polarization Voltage (V)	0	Output Impedance	≤50 Ω
Dynamic Range	43 dBA~160 dB	TEDS	Standard
Noise Floor (dBA)	≤43	Output Connector	BNC

Frequency response

Test conditions: Temperature 23 °C, Relative humidity 50 %RH



Specifications and Dimensions



Ordering Information

Optional Accessories

Microphone test clip	1/4" microphone test clip
Preamplifier power supply	AWA1710
Cable	Customizable length

Related Products:

AWA14404-S00E 1/2" Pressure-field working standard microphone set
12.6 mV/Pa, 3.15 Hz–20 kHz, 24 dBA–160 dB

AWA14403-S00E 1/2" Free-field working standard microphone set
14.1 mV/Pa, 3.15 Hz–40 kHz, 23 dBA–159 dB

AWA14423-S04E 1/2" Free-field measurement microphone set
50.0 mV/Pa, 3.15 Hz–20 kHz, 17 dBA–135 dB

AWA14423C-S01C 1/2" Free-field infrasound microphone set
39.8 mV/Pa, 0.1 Hz–20 kHz, 21 dBA–137 dB

AWA14424C-S01C 1/2" Pressure-field infrasound microphone set
21.1 mV/Pa, 0.2 Hz–16 kHz, 28 dBA–143 dB

AWA14523-S04E 1/2" Free-field infrasound/wideband microphone set
31.6 mV/Pa, 0.5 Hz–40 kHz, 21 dBA–139 dB

AWA14434-S14E 1/4" Pressure-field high-SPL measurement microphone set
0.63 mV/Pa, 3.15 Hz–40 kHz, 61 dBA–173 dB

AWA14435-S14E 1/4" Free-field High-SPL Measurement microphone set
4.0 mV/Pa, 5 Hz - 20 kHz, 43 dBA - 160 dB

AWA14436-S14E 1/4" Pressure-Field Wideband High-SPL measurement microphone set
1.0 mV/Pa, 3.15 Hz~70 kHz, 57 dBA~171 dB

AWA14411-S04E 1-inch free-field low-noise measurement microphone set
100.0 mV/Pa, 10 Hz–16 kHz, 11.5 dBA–129 dB
