

AWA14403–S00E 1/2" Free-field Working Standard Microphone Set



Features

Key Parameters

Sensitivity: 14.1 mV/Pa
Frequency Range: 3.15 Hz~40 kHz
Dynamic Range: 23 dBA~159 dB
Polarization voltage: 200 V

Typical Applications

Mass and heat transfer
Free-field testing
Electroacoustic testing
Noise testing

Standards

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

Main Components

AWA14403 1/2" Free-field Working Standard Measurement Microphone
AWA14600E 1/2" Lemo-type Preamplifier

Brief Introduction

The AWA14403-S00E is a unit comprising a free-field working standard microphone and a Lemo-type preamplifier. Designed in strict accordance with specifications for working standard microphones, it features a press-fit diaphragm structure and requires external polarization power to operate. It offers exceptional stability and a frequency range extending up to 40 kHz, making it suitable for use as a transfer standard in the calibration of acoustic measurement instruments, as well as for applications in acoustic environments characterized by an absence of reflections or sound incidence from specific directions (such as anechoic or hemi-anechoic chambers).

Product Highlights

Applications of Free-Field Standard Measurement Microphone Set

Free-field standard measurement microphone sets feature a wide frequency response range, enabling accurate measurement of high-frequency sounds across various measurement scenarios. Designed specifically for environments free of reflections or echoes, these cartridges are widely used in fields such as acoustic research, noise monitoring, and sound system testing.

Compatibility

The AWA14403-S00E measurement microphone set requires an external 200 V polarization voltage supplied via a preamplifier. The preamplifier must be powered by either a low-noise dual power supply (maximum voltage not exceeding ± 75 V) or a low-noise single positive power supply (maximum voltage not exceeding 150 V).

TEDS-Enabled Measurement Microphone Units

These sets support TEDS (Transducer Electronic Data Sheet) and are programmed in accordance with the IEEE 1451.4 standard (V1.0 format). They are compatible with smart sensor technology, facilitating the integration and automated management of sensor data.

Calibration

Each measurement microphone cartridge 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 feature second-generation alloy diaphragms, high-strength protective grids, and synthetic sapphire 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.

Assembly and testing are conducted in Class 1000 cleanrooms to ensure the highest quality. These measurement microphone units come with a one-year warranty, backed by comprehensive after-sales support.

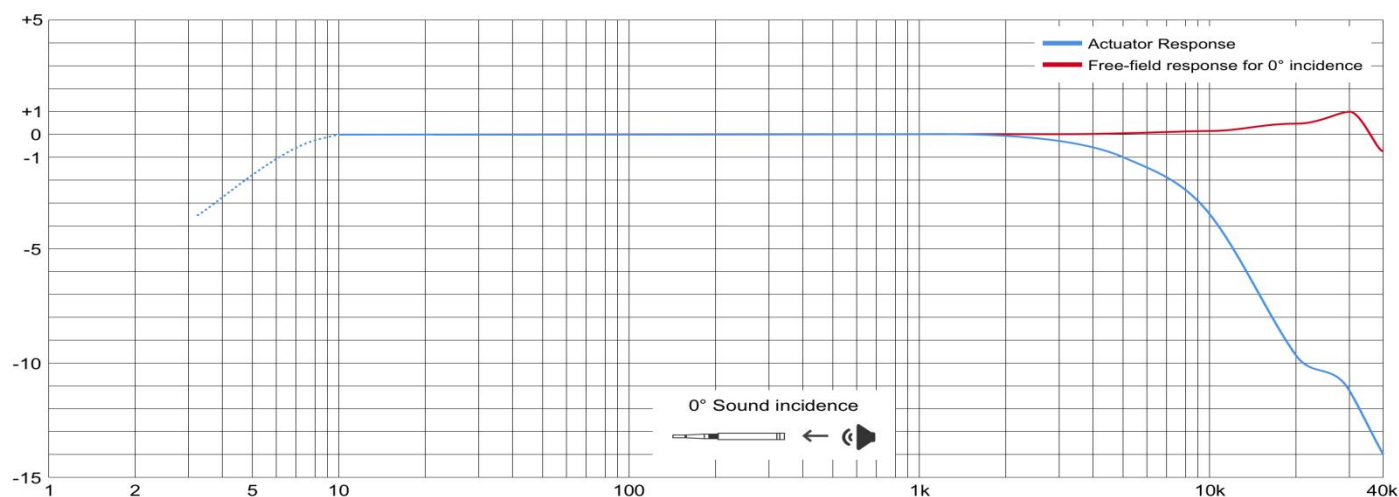
Technical Specifications

AWA14403-S00E 1/2" Free-field Working Standard Microphone Set

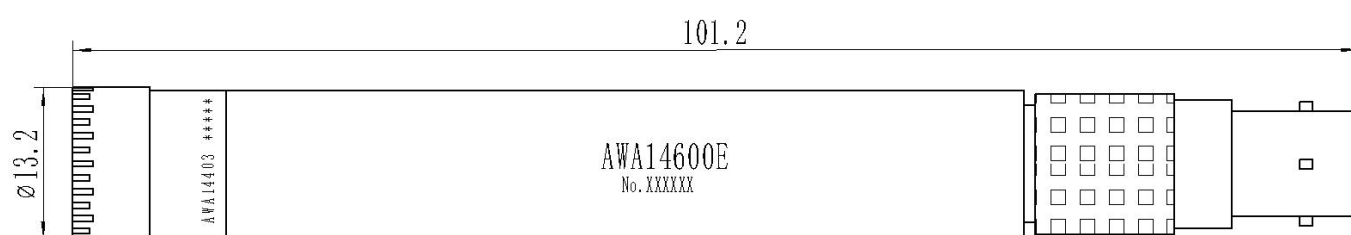
Sound Field Type	Free field	Pressure equalization method	-30 to +100
Diameter	1/2 inch	Operating temperature (°C) (@250 Hz)	-0.005
Compliant with standard (IEC 61094)	WS2F	Temperature coefficient (dB/°C)	-0.005
Polarization voltage (V)	200	Static pressure coefficient (dB/kPa)	0–100% RH
Sensitivity (mV/Pa) (@250 Hz ±2.0 dB)	14.1	Operating humidity range	≥10 GΩ / ≤0.5 pF
Frequency range (Hz)	3.15~40k	Input impedance/capacitance	>10 Vrms (at 60 V supply)
Typical capacitance (pF)	18 (@250 Hz)	Output voltage	≤50 Ω
Dynamic range	23 dBA~159 dB	Output impedance	LEMO connector
Noise floor (dBA)	≤23	Output interface	-30 to +100

Frequency response

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



Specifications and Dimensions



Ordering Information

Optional Accessories

Microphone test clip	1/2" microphone test clip
Preamplifier power supply	AWA1710
Cable	AWA8742

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

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

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

AWA14431-S14E 1/4" Free-field Wideband Measurement Microphone set
4.0 mV/Pa, 3.15 Hz - 80 kHz, 43 dBA - 160 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
