

GRAS 40AP-FV

1/2" Ext. Polarized Pressure
Microphone, High Sensitivity,
Front Vented



Freq range: 3.15 Hz to 10 kHz
Dyn range: 16 dBA to 149 dB
Sensitivity: 50 mV/Pa

The 40AP-S1 is an IEC 61094 WS2P 1/2" externally polarized pressure microphone with front venting. It is a high-precision condenser microphone made according to IEC 61094-4 requirements and is ideal for coupler and boundary measurements in both laboratory and production environments. It is extremely robust and reliable and can measure sound pressure levels up to 160 dB within 3.15 Hz to 20 kHz. Because of its high sensitivity, it can also measure sound pressure levels down to 16 dB(A).

Introduction

The 40AP-FV is an IEC 61094 WS2P ½" externally polarized pressure microphone with front venting.

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40AP-FV is individually factory-calibrated and delivered with a calibration chart stating its specific open-circuit sensitivity and pressure frequency response.

Typical applications and use

The 40AP-FV is especially suited for audiometer calibration when using a sound level meter / analyzer with a 200 V polarization feature.

It is used for production line testing in coupler setups for test of hearing aids, earphones, headphones, and headsets.

Compatibility

The 40AP-FV requires a standardized ½" or ¼" LEMO preamplifier and an input module that supports this technology with a 7-pin LEMO connector.

System verification

For daily verification and check of your measurement setup, we recommend using a calibrator like GRAS Sound Level Calibrator 42AG

For proper sensitivity calibration, we recommend using a pistonphone like GRAS Intelligent

Pistonphone 42AP

Quality and warranty

All GRAS microphones are made of high-quality materials that will ensure life-long stability and robustness. The microphones are all assembled in verified clean-room environments by skilled and dedicated operators with many years of expertise in this field.

The microphone diaphragm, body, and improved protection grid are made of high-grade stainless steel, which makes the microphone resistant to physical damage, as well as corrosion caused by aggressive air or gasses.

This, combined with the reinforced gold-plated microphone terminal which guarantees a highly reliable connection, enables GRAS to offer 5 years warranty against defective materials and workmanship.

Service

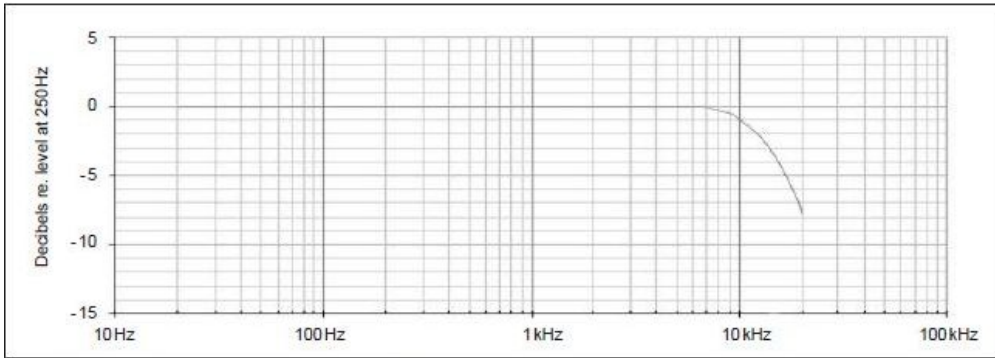
If you accidentally damage the diaphragm on a GRAS microphone, we can – in most cases – replace it at a very reasonable cost and with a short turn-around time. This not only protects your investment, but also pleases your quality assurance department because you don't have to worry about new serial numbers, etc.

Calibration

Before leaving the factory, all GRAS microphones are calibrated in a controlled laboratory environment using traceable calibration equipment.

Depending on the use, measurement environment, and internal quality control programs, we recommend recalibrating the microphone at least once a year.

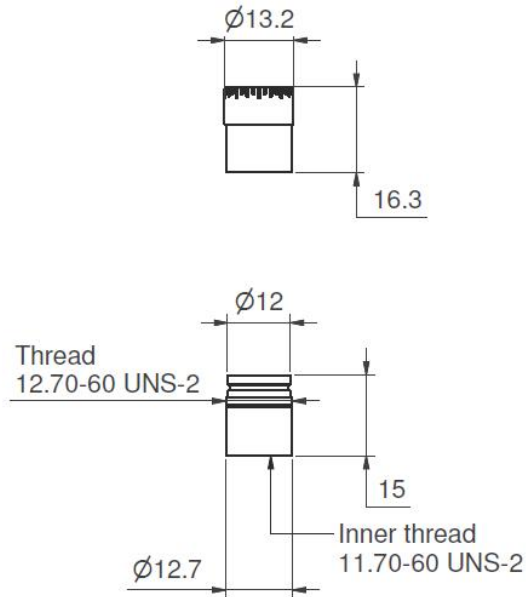
Polarization/Connection		200 V / Traditional
Frequency range (± 1 dB)	Hz	12.5 to 7.5 k
Frequency range (± 2 dB)	Hz	3.15 to 10 k
Dynamic range lower limit (microphone thermal noise)	dB(A)	16
Dynamic range lower limit with GRAS preamplifier	dB(A)	18
Dynamic range upper limit	dB	149
Dynamic range upper limit with GRAS preamplifier @ +28 V / ± 14 V power supply	dB	142
Dynamic range upper limit with GRAS preamplifier @ +120 V / ± 60 V power supply	dB	149
Open-circuit sensitivity @ 250 Hz (± 1 dB)	mV/Pa	50
Open-circuit sensitivity @ 250 Hz (± 1 dB)	dB re 1V/Pa	-26
Resonance frequency	kHz	8
Microphone cartridge capacitance, typ.	pF	20
Microphone venting		Front
Temperature range, operation	$^{\circ}\text{C}$ / $^{\circ}\text{F}$	-40 to 150 / -40 to 302
IEC 61094-4 Designation		WS2P
Temperature range, storage	$^{\circ}\text{C}$ / $^{\circ}\text{F}$	-40 to 85 / -40 to 185
Temperature coefficient @250 Hz	dB/ $^{\circ}\text{C}$ / dB/ $^{\circ}\text{F}$	-0.01 / -0.006
Static pressure coefficient @250 Hz	dB/kPa	-0.008
Humidity range non condensing	% RH	0 to 90
Humidity coefficient @250 Hz	dB/% RH	-0.001
Influence of axial vibration @1 m/s ²	dB re 20 μPa	62
CE/RoHS compliant/WEEE registered		Yes / Yes, Yes
Weight	g / oz	9 / 0.317



Typical frequency response.

GRAS Sound & Vibration reserves the right to change specifications and accessories without notice.

Dimensions in mm



Optional items

GRAS AF0008	Adapter for ¼" preamplifier and ½" microphone
GRAS GR0010	Adapter for ¼" preamplifier and ½" microphone
GRAS RA0001	Right-angled (90°) adapter for ½" microphone and ¼" preamplifier
GRAS RA0003	Adapter for ¼" preamplifier and ½" microphone
GRAS RA0016	20 dB Attenuator for externally polarized ½" microphones

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GRAS Worldwide

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than 40 countries

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ABOUT GRAS SOUND & VIBRATION

GRAS is a worldwide leader in the sound and vibration industry. We develop and manufacture state-of-the-art measurement microphones to industries where acoustic measuring accuracy and repeatability is of utmost importance in R&D, QA and production. This includes applications and solutions for customers within the fields of aerospace, automotive, audiology, and consumer electronics. GRAS microphones are designed to live up to the high quality, durability and accuracy that our customers have come to expect and trust.

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& Vibration