

1/2-inch Pressure Microphone Type 40AP

Product Data and Specifications

Typical applications

- Precision acoustic measurements
- Coupler measurements
- Flush (boundary) measurements

The G.R.A.S. Microphone Type 40AP is a 1/2-inch precision condenser microphone for general purpose acoustic measurements, e.g. in couplers, boundaries and in enclosures. It is an externally polarized pressure microphone with a large dynamic range and a wide frequency response.

As a pressure microphone, the Type 40AP measures the sound pressure at the location of its diaphragm. It has a flat pressure-frequency response over its entire working frequency range (see Fig. 2).

In an open sound field, a pressure microphone will also include the disturbing effects of its presence in the sound field. These are minimal at low frequencies (large wavelengths compared with microphone size).

At higher frequencies the effects of reflections and diffractions must be accounted for. Generally, they lead to an increase in the measured sound pressure and corrections have to be made. Fig. 3 shows what these corrections are in a free field for various angles of incidence.

Specifications

Frequency response:

3.15 Hz - 10 kHz	± 2.0 dB
12.5 Hz - 7.5 kHz	± 1.0 dB

Nominal sensitivity:

50 mV/Pa

Polarization voltage:

200 V

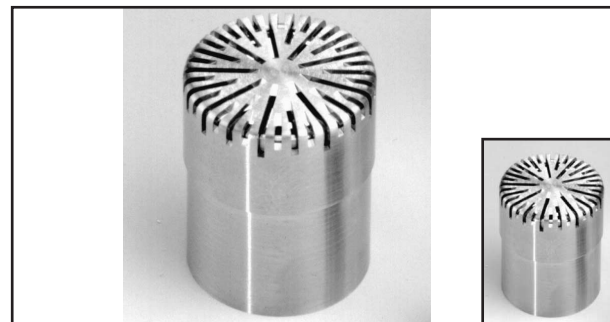


Fig. 1 1/2-inch Pressure Microphone Type 40AP (inset shows true size)

G.R.A.S. 1/2-inch preamplifiers (see data sheets for Types 26AG, 26AH, 26AJ, 26AK and 26AM) are also available for use with the Type 40AP. The mounting thread (11.7 mm - 60 UNS-2) is compatible with other available makes of similar microphone preamplifiers.

All G.R.A.S. microphones comply with the specifications of IEC 1094: *Measurement Microphones, Part 4: Specifications for working standard microphones*.

Non-corrosive, stainless materials are used in manufacturing these microphones to enable them to withstand rough handling and corrosive environments.

All G.R.A.S. microphones are guaranteed for 5 years and are individually checked and calibrated before leaving the factory. An individual calibration chart is supplied with each microphone.

Upper limit (3 % distortion):

148 dB re. 20 µ Pa

Microphone thermal noise:

16 dBA re. 20 µ Pa

Capacitance:

20 pF

Temperature range:

-40 °C to +150 °C

...continued overleaf

G.R.A.S.
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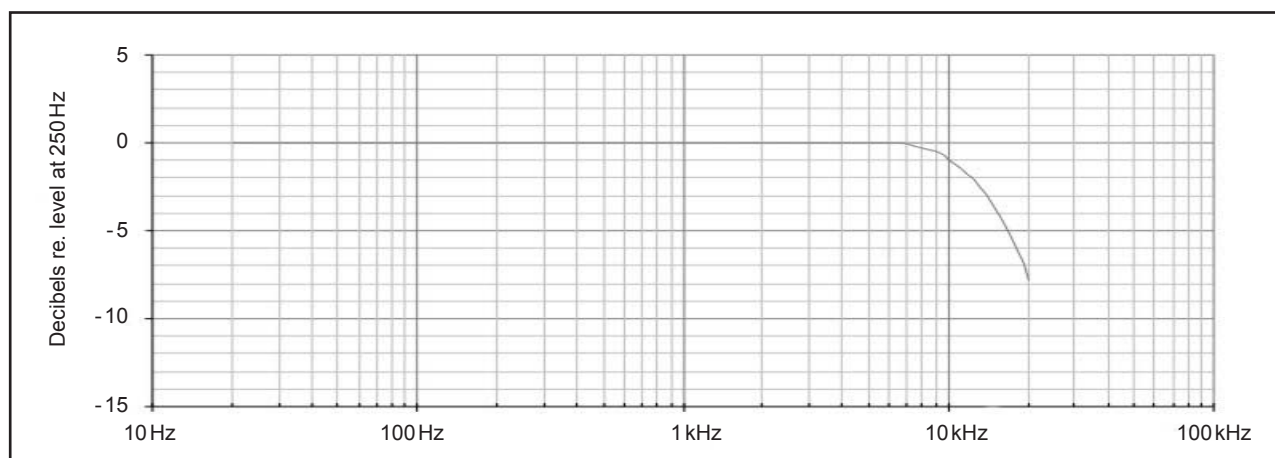


Fig. 2 Typical frequency response for Type 40AP

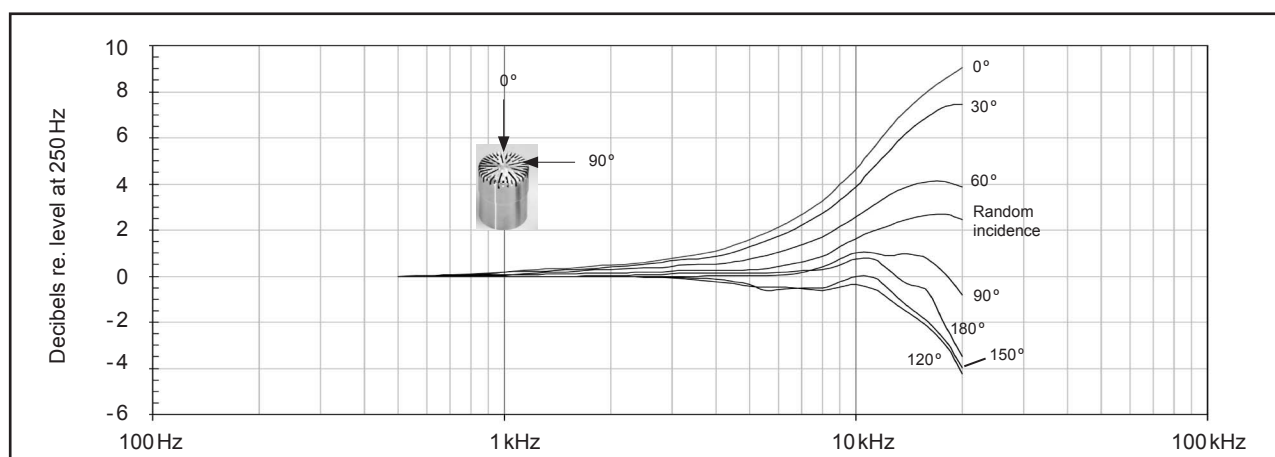


Fig. 3 Free-field corrections for various angles of incidence

Specifications (continued)

Temperature coefficient (250 Hz):		Dimensions (with protection grid):	
	-0.008 dB/°C	Length:	16.2 mm
Static-pressure coefficient:		Diameter:	13.2 mm
	-0.01 dB/k Pa	(without protection grid):	
Humidity range:		Length:	15.3 mm
	0 - 100 % (non-condensing)	Diameter:	12.7 mm
Influence of humidity (250 Hz):		Diameter (diaphragm ring):	
	<0.1 dB (0 - 100 % RH)		12.1 mm
Influence of axial vibration, 1 m/s²:		Threads:	
	64 dB re. 20 µ Pa	Protection Grid:	12.7 mm - 60 UNS
Venting:		Preamplifier Mounting:	11.7 mm - 60 UNS
	Rear vented	Weight:	
IEC 1094-4 type designation:			7 gm
	W2SP		

G.R.A.S. Sound & Vibration reserves the right to change specifications and accessories without notice

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