

1/2-inch Wide-frequency, Pressure Microphone Type 40AG

Product Data and Specifications

Typical applications

- Precision sound pressure measurements
- Very high frequency measurements
- Laboratory reference measurements
- In couplers and ear simulators

The G.R.A.S. Microphone Type 40AG (Fig. 1) is a 1/2-inch precision reference microphone for laboratory use, e.g. in couplers, ear simulators, enclosures and at boundaries. It is an externally polarized pressure microphone with a large dynamic range and an extended frequency response.

As a pressure microphone, the Type 40AG 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:		Dynamic range:	
3.15 Hz - 20 kHz	±2.0 dB	Upper limit (3 % distortion):	160 dB re. 20 µ Pa
5 Hz - 12.5 kHz	±1.0 dB	Microphone thermal noise:	20 dBA re. 20 µ Pa
Nominal sensitivity:	12,5 mV/Pa	Capacitance:	20 pF
Polarization voltage:	200 V	Temperature range:	-40 °C to +150 °C
			...continued overleaf



Fig. 1 1/2-inch Wide-frequency, Pressure Microphone Type 40AG

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 40AG. 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.

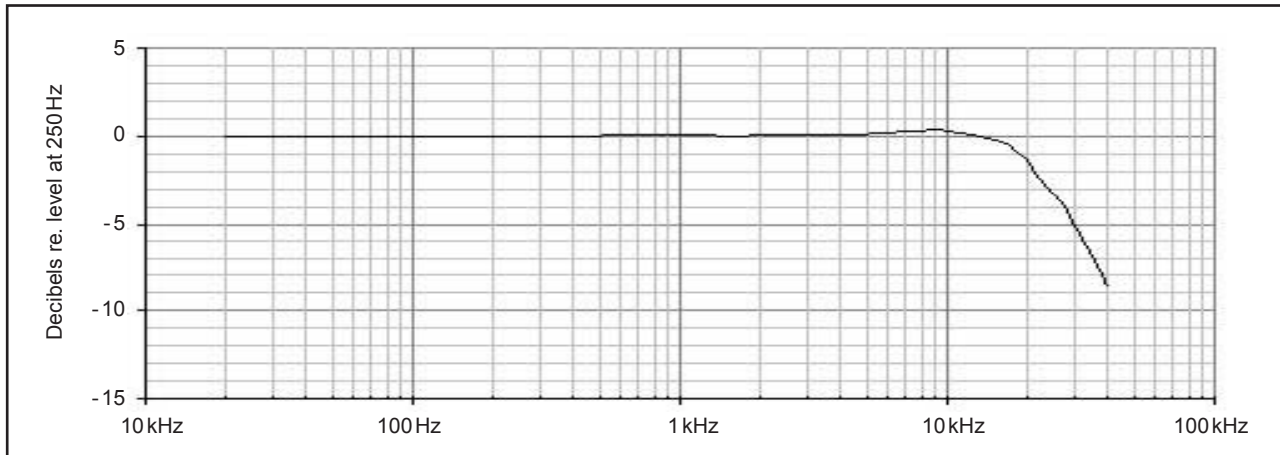


Fig. 2 Typical frequency response for Type 40AG

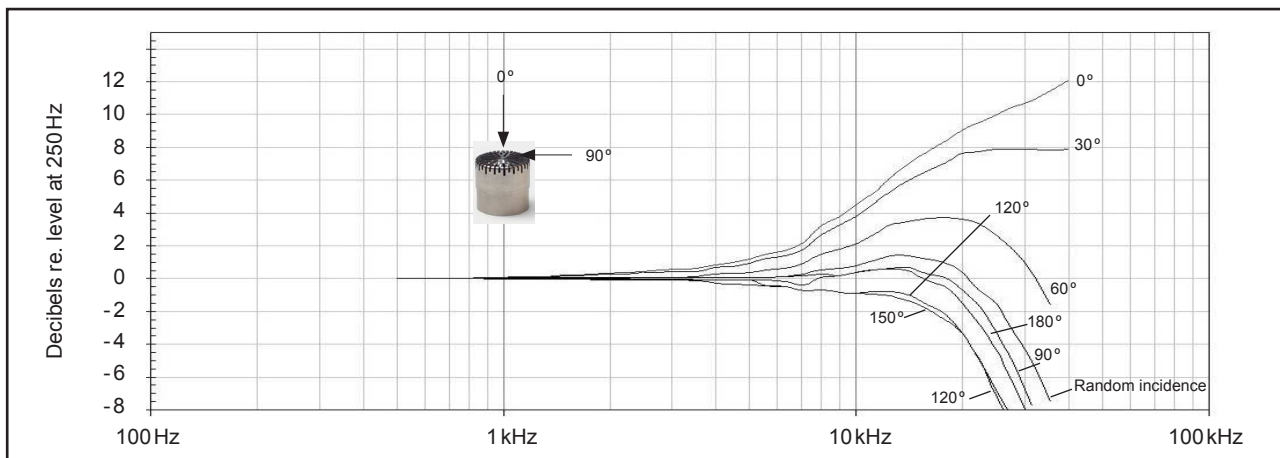


Fig. 3 Free-field corrections for various angles of incidence

Specifications (continued)

Temperature coefficient (250 Hz):	-0.002 dB/°C	Dimensions (with protection grid):	
Static-pressure coefficient:	-0.008 dB/k Pa	Length:	12.5 mm
Humidity range:	0 - 100% (non-condensing)	Diameter:	13.2 mm
Influence of humidity (250 Hz):	<0.1 dB (0 - 100% RH)	(without protection grid):	
Influence of axial vibration, 1 m/s²:	66 dB re. 20 μ Pa	Length:	11.6 mm
Venting:	Rear vented	Diameter:	12.7 mm
IEC 1094-4 type designation:	WS2P	Diameter (diaphragm ring):	12.1 mm
		Threads:	
		Protection Grid:	12.7 mm - 60 UNS
		Preamplifier Mounting:	11.7 mm - 60 UNS
		Weight:	7 gm

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

G.R.A.S.
Sound & Vibration

Skovlytoften 33
2840 Holte, Denmark
Tel +45 45 66 40 46 Fax +45 45 66 40 47
e-mail: gras@gras.dk www.gras.dk