

# High-sensitivity Array Microphone Type 40PH

## Product Data

### Features and Applications

- Multi-channel measurements
- Sound-field analyses
- Sound-power measurements
- Concurrent spatial and transient measurements

The G.R.A.S. Array Microphone Type 40PH (Fig. 1) is a low-cost microphone for general purpose measurements in arrays and matrices. It has a wide useful frequency range reaching up to 20 kHz (Fig. 2) and a large dynamic range topping at around 135 dB.

It has an integrated CCP<sup>1</sup> preamplifier and is delivered with a built-in TEDS<sup>2</sup> chip which enables it to be programmed as a complete unit. The Type 40PH requires a constant-current power supply, e.g. the G.R.A.S. CCP Supply Type 12AL, or any other CCP compatible power supply.

Close manufacturing tolerances together with the advantages of the TEDS chip, provide the Type 40PH with a high degree of interchangeability; a



Fig. 1 Array Microphone Type 40PH with integrated CCP preamplifier

major advantage when used in multiples forming arrays and matrices.

The low cost of the Type 40PH is a key consideration when setting up measurements requiring a multiplicity of concurrent transient and spatial data.

Calibrating the Type 40PH with a G.R.A.S. piston-phone, e.g. the Type 42AA, is as straight forward as calibrating any other G.R.A.S. 1/4-inch microphone.

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

- 1 Constant Current Power.
- 2 Transducer Electronic Data Sheet - as proposed by IEEE-P1451.4

### Specifications

<b>Nominal Sensitivity:</b> at 250Hz . . . . . 50 mV/Pa (±2 dB)	<b>Temperature Range:</b> -10 °C to +50 °C
<b>Frequency Response (re. 250 Hz):</b> ±3dB . . . . . 10 Hz - 100 Hz ±1 dB . . . . . 100 Hz - 3 kHz ±2 dB . . . . . 3 kHz - 10 kHz ±3 dB . . . . . 10 kHz - 20 kHz	<b>Output impedance:</b> < 50 Ω
<b>Upper Limit of Dynamic Range:</b> Max. output . . . . . 135 dB re. 20 μPa	<b>Output connector:</b> SMB coaxial socket
<b>Lower Limit of Dynamic Range:</b> Thermal noise . . . . . < 32 dBA re. 20 μPa	<b>Length:</b> 60.0 mm (2.36 inches)
<b>Phase Match:</b> 100 Hz - 3 kHz . . . . . ±3° 3 kHz - 5 kHz . . . . . ±5°	<b>Diameter:</b> 7.0 mm (0.28 inches)
<b>Influence of axial vibration:</b> for 1 m/s <sup>2</sup> . . . . . 50 dB re. 20 μPa	<b>Weight:</b> 5.5 g (0.2 oz.)
	<b>Power supply:</b> 2 mA to 20 mA (typically 4 mA)

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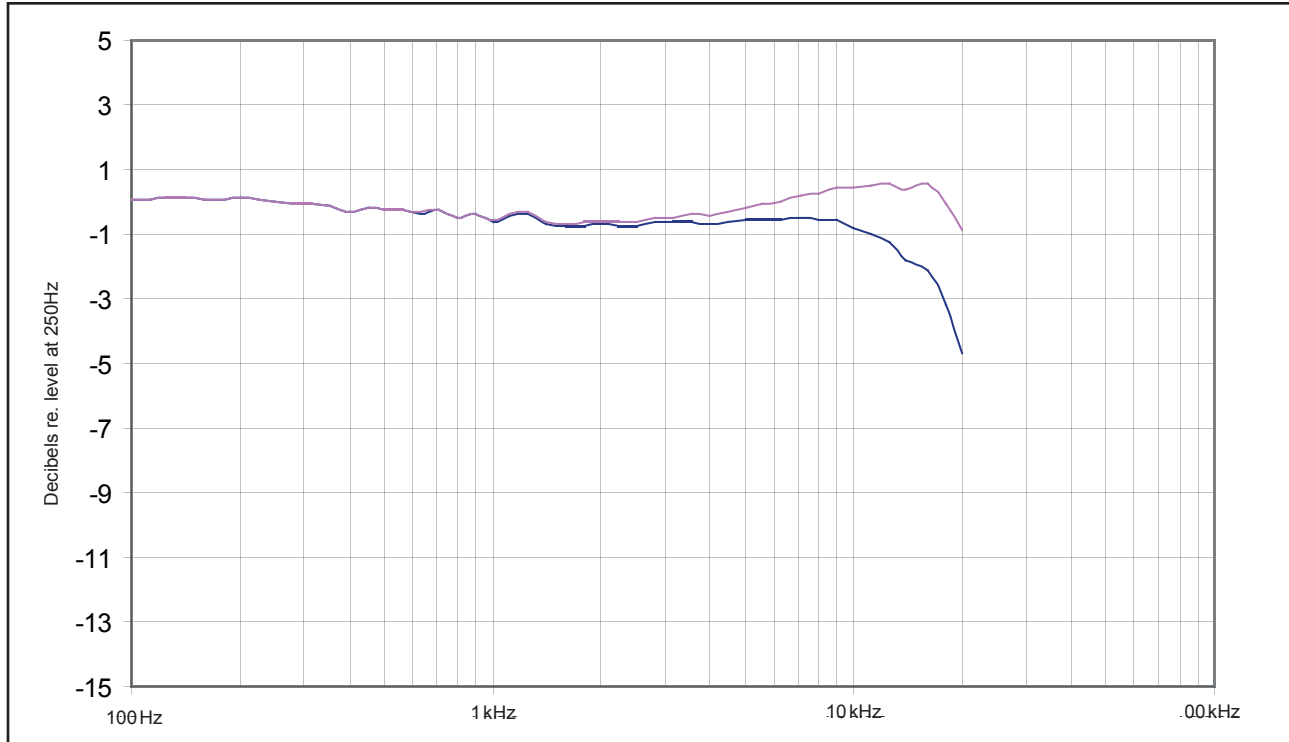


Fig. 2 Typical frequency response for Type 40PH. Upper curve shows free-field response at 0°, lower curve shows pressure response.

## Accessories

CCP supply . . . . .	Type 12AL	Pistonphones/Calibrator:	
Windscreens (set of 6) . . . . .	AM0364	Pistonphone . . . . .	Type 42AA
Rain-protection cap . . . . .	RA0092	Pistonphone . . . . .	Type 42AD
Array Module . . . . .	PR0001	Sound Calibrator . . . . .	Type 42AB
Array Module . . . . .	PR0002		
Cables (SMB to BNC):			
3 m . . . . .	AA0027		
10 m . . . . .	AA0028		
30 m . . . . .	AA0029		
	also available for customer-specified lengths		

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