

# Array Microphone Type 40PR

## Product Data and Specifications

### Typical applications

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

The G.R.A.S. Array Microphone Type 40PR (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 10 kHz (Fig. 2) and a large dynamic range topping at around 145 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 40PR 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 40PR with a high degree of interchangeability; a major advantage when used in multiples forming arrays and matrices.

### Specifications

Values quoted for 23 °C and 4 mA supply	
<b>Nominal Sensitivity :</b>	
at 250Hz	3.5 mV/Pa
<b>Frequency Response:</b>	
±1 dB	100 Hz - 3 kHz
±2 dB	100 Hz - 10 kHz
<b>Upper Limit of Dynamic Range:</b>	
Max. without clipping	145 dB re. 20 µPa
<b>Lower Limit of Dynamic Range:</b>	
Thermal noise	<38 dBA re. 20 µPa
<b>Phase Match:</b>	
100 Hz - 3 kHz	±3°
3 kHz - 5 kHz	±5°
<b>Influence of axial vibration:</b>	
for 1 m/s <sup>2</sup>	50 dB re. 20 µPa
<b>Temperature Range:</b>	-10 °C to +50 °C
<b>Output impedance:</b>	<50 Ω

...continued overleaf



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

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

Calibrating the Type 40PR with a G.R.A.S. pistonphone, e.g. the Type 42AA, is as straight forward as calibrating any other G.R.A.S. ¼-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 CCP type transducers are available from various suppliers under different trade names such as ICP®, Deltatron®, Isotron®, IEPE and Piezotron®.
- 2 Transducer Electronic Data Sheet - as proposed by IEEE-P1451.4

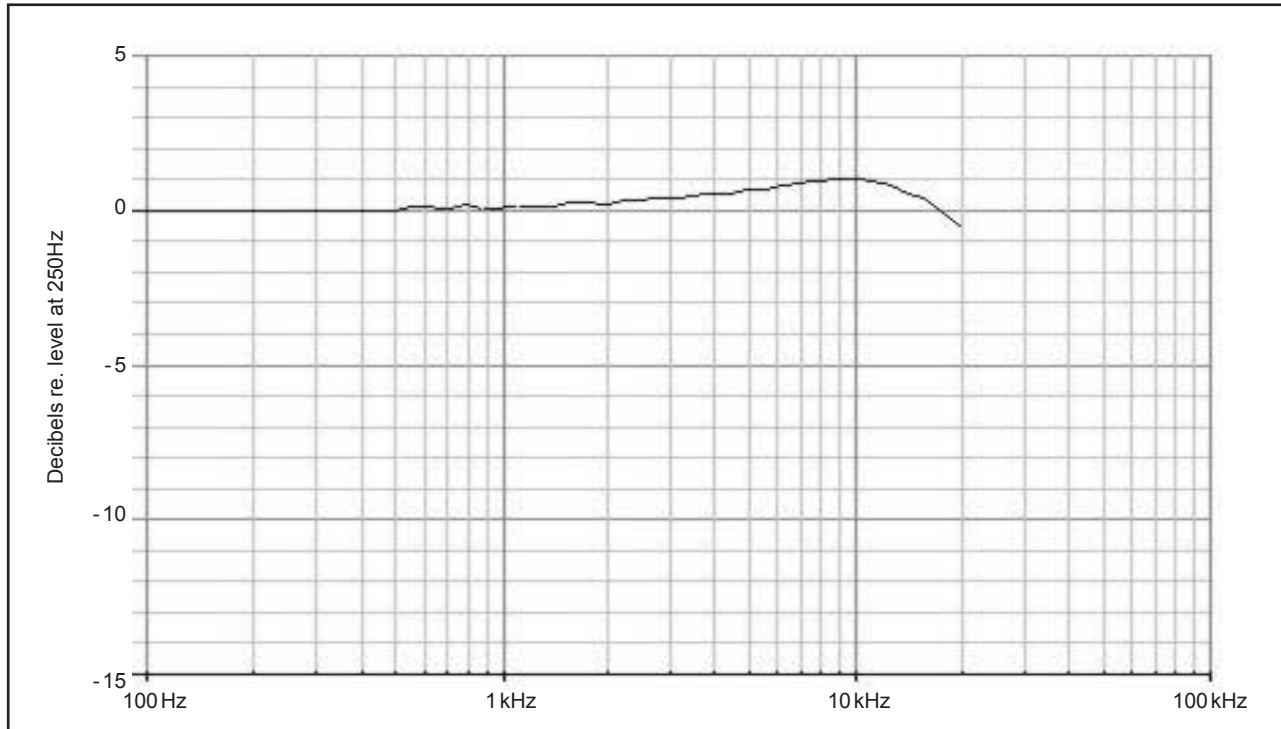


Fig. 2 Typical pressure frequency response for Type 40PR

*Specifications (continued)*

<b>Output connector:</b>	SMB coaxial socket	<b>Cables (SMB to BNC):</b>	
<b>Length:</b>	60.0 mm (2.36 inches)	3 m .....	AA0027
<b>Diameter:</b>	7.0 mm (0.28 inches)	10 m .....	AA0028
<b>Weight:</b>	5.5 gm (0.2 oz.)	30 m .....	AA0029
<b>Power supply:</b>	2 mA to 20 mA (typically 4 mA)		also available for customer-specified lengths
<b>Available accessories:</b>		<b>Pistonphones/Calibrator:</b>	
CCP supply .....	Type 12AL	Pistonphone .....	Type 42AA
Windscreens (set of 6) .....	AM0364	Pistonphone .....	Type 42AD
Rain-protection cap .....	RA0092	Sound Calibrator .....	Type 42AB
Array Module .....	PR0001		

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