

Product Data

Typical Applications

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

The G.R.A.S. Array Microphone Type 40PL (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 150 dB.

It has an integrated CCP¹ preamplifier and is delivered with a built-in TEDS² chip which enables it to be programmed as a complete unit. The Type 40PL 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 40PL with a high degree of interchangeability; a major advantage when used in multiples forming arrays and matrices.



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

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

Calibrating the Type 40PL with a G.R.A.S. piston-phone, Type 42AP (recommended) or Type , 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.

Specifications

Values quoted for 23°C and 4 mA supply	
Nominal Sensitivity: at 250Hz	10 mV/Pa ±3dB
Frequency Response (re. 250 Hz): ±3 dB	10 Hz - 100 Hz
±1 dB	100 Hz - 3 kHz
±2 dB	100 Hz - 10 kHz
±3 dB	10 kHz - 20 kHz
Upper Limit of Dynamic Range: Max. without clipping	150 dB re. 20 µPa
Lower Limit of Dynamic Range: Thermal noise	< 32 dBA re. 20 µPa
Phase Match: 100 Hz - 3 kHz	±3°
3 kHz - 5 kHz	±5°
Influence of axial vibration: for 1 m/s ²	50 dB re. 20 µPa
Temperature Range:	-10 °C to +50 °C
Output impedance:	< 50 Ω
Output connector:	SMB coaxial socket
Length:	60.0 mm (2.36 inches)
Diameter:	7.0 mm (0.28 inches)
Weight:	5.5 g (0.2 oz.)
Power supply:	2 mA to 20 mA (typically 4 mA)

1 CCP stands for Constant Current Power and describes G.R.A.S. power supplies that maintain a constant level of current for driving IEPE transducers like this microphone.
2 Transducer Electronic Data Sheet - as proposed by IEEE-P1451.4

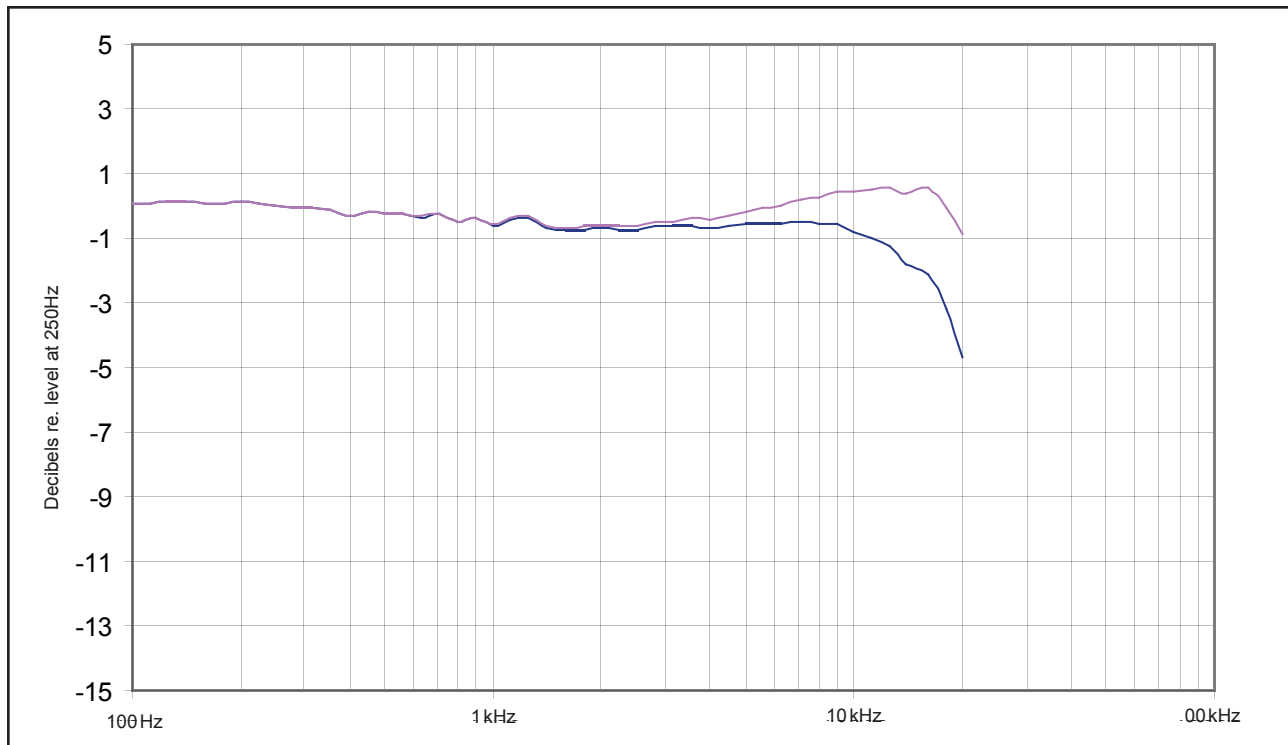


Fig. 2 Typical frequency response for Type 40PL. Upper curve shows free-field response at 0°, lower curve shows pressure response

Accessories

CCP supply.....	Type 12AL
Windscreens (set of 6)	AM0364
Rain-protection cap	RA0092
Array Module.....	PR0001
Array Module.....	PR0002
Cables (SMB to BNC):	
3 m.....	AA0027
10 m.....	AA0030
30 m.....	AA0029
also available at customer-specified lengths	
Pistonphones/Calibrator:	
Pistonphone.....	Type 42AP
Pistonphone.....	Type 42AA
Pistonphone.....	Type 42AD
Sound Calibrator.....	Type 42AB

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