

40LA High-Precision Surface Microphone

Product Data

The G.R.A.S. 40LA High-Precision Surface Microphone is a high-precision microphone for measurements on planar and curved surfaces. It has a wide useful frequency range reaching up to 70 kHz (Fig. 2) and a large dynamic range topping at around 174 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 40LA requires a constant-current power supply, such as the G.R.A.S. 12AL CCP Supply or any other CCP compatible power supply.

Close manufacturing tolerances, together with the advantages of the TEDS chip, provide the 40LA with a high degree of interchangeability; a major advantage which excludes accounting for individual characteristics.

The 40LA is both very stable and robust. It has an integrated 1.5 m co-axial cable with a micro-dot connector and is delivered with a supple, detachable silicon-rubber fairing.

Because of its lightness, the microphone with fairing can readily be mounted on surfaces using double-sided adhesive tape.

The broad temperature range makes the 40LA well-suited for the aerospace industry.

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

Main Features

- Uses Constant Current Power supply (CCP)
- Built-in TEDS (supports IEEE 1451.4)
- Flush-mounting on planar and curved surfaces
- Low sensitivity to surface bending at the mounting point



Fig. 1 40LA High-Precision Surface Microphone

Typical Applications

- Aerospace industry
- Wind-induced noise analysis on airplanes
- In-flight measurements
- Wind-tunnel testing
- Acoustic-fatigue testing

¹ Constant Current Power

² Transducer Electronic Data Sheet - according to IEEE-1451.4

Specifications

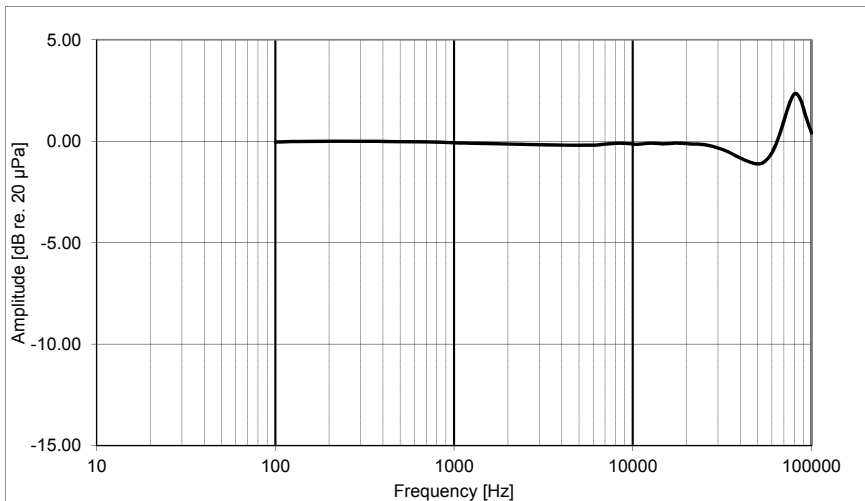


Fig. 2 Typical pressure frequency response for 40LA

Technical Data

Nominal Sensitivity :
 at 250Hz 0.5 mV/Pa

Frequency Response:
 10 Hz – 20 kHz ±1 dB
 5 Hz – 70 kHz ±3 dB

Upper Limit of Dynamic Range:
 Max. without clipping..... 174 dB re. 20 µPa

Lower Limit of Dynamic Range:
 Thermal noise < 56 dB(A) re. 20 µPa
 Temperature Range: -55 °C to +100 °C

Output impedance:
 < 50 Ω

Output:
 Integral cable with coaxial microdot connector

Cable:
 Length: 1.5 m
 Diameter 1.1 mm
 Special: on request

Thickness:
 2.5 mm

Diameter:
 Without fairing 16.2 mm
 Weight: 3 g

Power supply:
 2 mA to 20 mA (typically 4 mA)

Values quoted for 23 °C and 4 mV supply.

What to Order

40LA High-Precision Surface Microphone including:

- GR0933 Adhesive tape, pre-cut, single-sided
- GR0934 Adhesive tape, pre-cut, double-sided
- MI0031 Cleaning tissue
- AE0046 Adapter, BNC male to microdot female
- GR1252 Rubber fairing

Accessories
 These must be ordered separately.

- GR1297 Stainless-steel fairing
- 12AQ Power Module, dual-channel

For calibration

- RA0202 Calibration Adapter (required)
- 42AP Intelligent Pistonphone with built-in precision barometer (250 Hz or 251.2 Hz, 114 dB ±0.05 dB) (recommended)

or

- 42AA Pistonphone (250 Hz, 114 dB ±0.08 dB)

G.R.A.S. Sound & Vibration continually strives to improve the quality of our products for our customers; therefore, the specifications and accessories are subject to change.