

# CCP Probe Microphone Type 40SC

## *Product Data and Specifications*

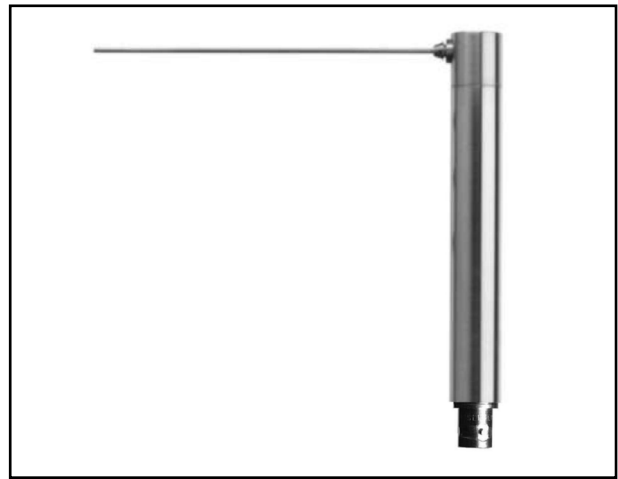
### *Typical applications*

- *Acoustic-impedance measurements*
- *Exhaust-system measurements*
- *Near-field measurements*
- *Measurements at high temperatures*
- *Pressure-distribution measurements in small enclosures*

The CCP Probe Microphone Type 40SC (Fig. 1) is a small, constant-current powered, compact unit for sound-pressure measurements in small enclosures, in harsh environments and in very close proximity to sound sources. The high acoustic input impedance at the tip of the probe minimizes its influence on the acoustic field, while the stainless-steel tube of the probe (the 160 mm long GR0261) can withstand temperatures of up to 800 °C.

The Type 40SC is constructed with detachable stainless-steel probes tubes which guide the acoustic signal to a prepolarised microphone inside the housing of the Type 40SC. After being sensed by the microphone, the acoustic signal is passed on to an impedance-matching wave guide which eliminates unwanted internal reflections. The result is a smooth frequency-response ranging from 2 Hz up to 20 kHz (see Fig. 2). The internal microphone is connected to an CCP<sup>1</sup> preamplifier with a high dynamic range; ensuring a measurement range from approximately 40 dB to 160 dB re. 20 µPa.

The integrated BNC socket is for drawing power from, and delivering the signal to, a constant-current power supply, e.g. the G.R.A.S. CCP Supply Type 12AL, or any other compatible constant-current power supply.



*Fig. 1 CCP Probe Microphone Type 40SC*

The CCP Probe Microphone Type 40SC is internally compensated to equalize the internal pressure of the microphone with the static pressure at the probe's tip. The static pressure within the Type 40SC will therefore adjust itself to the static pressure existing at the probe's tip; which it does with a time constant of approximately 0.1 s.

The Type 40SC can be used with various probe lengths and is delivered with four standard probe lengths, i.e.: 20 mm, 40 mm, 80 mm and 160 mm. Intermediate lengths can be made by cutting these standard lengths. Also, the stainless steel tubes can be bent to a radius as low as 5 mm without downgrading the system's acoustics. A flexible probe tube is also provided for use in measurements where stiff stainless-steel tubes are not practical. This does, however, slightly downgrade the system's acoustic performance.

The right angled design of the Type 40SC makes it particularly well suited for measurements on exhaust-gas systems and other machinery in general

<sup>1</sup> Constant Current Power

# CCP Probe Microphone Type 40SC

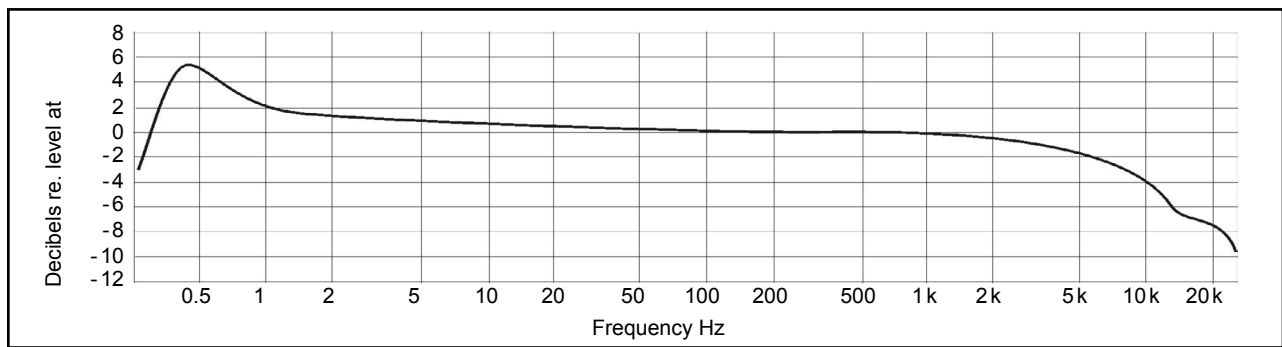


Fig. 2 Typical frequency response of the Type 40SC with a 40 mm probe tip

as well as for scanning vibrating surfaces such as loudspeaker diaphragms and cabinets.

The compact size, low weight and all-stainless-steel construction of the Type 40SC make it robust, easy to handle and easy to mount.

**Warning:** Do not use the CCP Probe Microphone Type 40SC for measurements on the human body. It is neither intended nor approved for measurements on the human body and the internal voltages may be harmful.

## Specifications

<b>Nominal sensitivity at 250 Hz:</b> 3 mV/Pa (individually calibrated)	Probe tube outside diameter: . . . . . 1.25 mm
<b>Dynamic range:</b> 40 dB to > 160 dB (re. 20 µPa)	Probe tube inside diameter: . . . . . 1 mm
<b>Frequency response (relative to tabular values):</b>	Cable length: . . . . . 3 m
2 Hz - 20 Hz: . . . . . ±1.5 dB	Cable diameter: . . . . . 2.5 mm
20 Hz - 250 Hz: . . . . . ±0.5 dB	<b>Accessories included:</b>
250 Hz - 1 kHz: . . . . . ±0.5 dB	Pistonphone adaptor for 1.25 mm: . . . . . GR0265
1 kHz - 2 kHz: . . . . . ±0.8 dB	Pistonphone adaptor for 1.6 mm: . . . . . GR0266
2 kHz - 5 kHz: . . . . . ±1 dB	Heatsink and tool: . . . . . GR0267
5 kHz - 10 kHz: . . . . . ±1.5 dB	Calibration coupler: . . . . . GR0275
10 kHz - 20 kHz: . . . . . ±3 dB	1.3 mm pin for calibration coupler: GR0263
<b>Electrical Output Impedance:</b> < 50 Ω	1.6 mm pin for calibration coupler: GR0264
<b>Power-supply:</b> 2 mA to 20 mA (typically 4 mA)	Pair of pliers: . . . . . YY0004
<b>Temperature Range:</b>	File: . . . . . YY0005
Operating: . . . . . -25°C to 70°C	Silicone grease: . . . . . MI0016
Probe temp. (with heat sink): . . . . . max. 800°C	Teflon tubing (L: 1 m Dia: 1.6 mm): EK0018
<b>Pressure-equalization time constant:</b> Internal to tip static pressure: . . . . . typically 0.1 s	20 mm Probe tube: . . . . . GR0258
<b>Dimensions:</b>	40 mm Probe tube: . . . . . GR0259
Length (housing): . . . . . 83.8 mm	80 mm Probe tube: . . . . . GR0260
Diameter: . . . . . 12.7 mm	160 mm Probe tube: . . . . . GR0261
Weight: . . . . . 40 gm	Flexible Probe tube: (L:7,5 cm Dia: 1,6 mm) GR0401
	<b>Accessories available:</b>
	Pistonphone: . . . . . Type 42AA
	Power module: . . . . . Type 12AL

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