GRAS 47BX

1/4" CCP Flush-mount Microphone Set

Freq range: 4 Hz to 70 kHz
Dyn range: 44 dB(A) to 166 dB
Sensitivity: 1.6 mV/Pa

The GRAS 47BX 1/4" CCP Flush-Mounted Microphone Set is a low profile 1/4" precision pressure microphone with built-in CCP preamplifier.

GRAS Sound & Vibration
Skovlytoften 33, 2840 Holte, Denmark
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Typical applications and use

- Flush mounting in confined spaces
- Flush mounting in clay models
- Flush mounting in scale models for wind tunnel tests
- Ground array measurements
- General noise measurements

Design

With a height (to the diaphragm) of only 8 mm, 47BX is suitably designed for flush mounting in plates in ground array applications and other applications with size constraints.

The microphone is a prepolarized pressure microphone with a dynamic range from 44 dB to 165 dB and a frequency range from 4 Hz to 70 kHz. The built-in preamplifier is a low noise constant current power (CCP) type, with a built-in TEDS circuit for automatic transducer identification. The set has an integrated 1.5 m cable (GRAS 47BX-CL with customized length optional) with Microdot connector plus an adapter for BNC cable.

Flush-mounting is ideal where holes can be made in the structure, such as a clay model, to accommodate the front-vented 47BX. A rear-vented version is also available, the 47BX-S1

The 47BX is based on the IEC 61094 standard for measurement microphones.

Calibration

When leaving the factory, all GRAS microphones have been calibrated in a controlled laboratory environment using traceable calibration equipment. Depending on the use, measurement environment and internal quality control programs we recommend that the microphone is recalibrated at least once a year.

We offer two kinds of calibration as an optional after-sales service: GRAS Traceable Calibration and GRAS Accredited Calibration.

GRAS Traceable Calibration is a traceable calibration performed by trained personnel under controlled conditions according to established procedures and standards. This is identical to the rigorous calibration that all GRAS microphones are subjected to as an integral part of our quality assurance.

GRAS Accredited Calibration is performed by the GRAS Accredited Calibration Laboratory that has been accredited in accordance with ISO 17025 by DANAK, the Danish Accreditation Fund.

If you want a new microphone set delivered with an accredited calibration in stead of the default factory calibration, specify this when ordering.

Learn more at gras/calib.

Quality and warranty

GRAS microphone sets are made of components from our proven standard portfolio and are all manufactured of high-quality material and branded parts that were chosen and processed to ensure life-long stability and robustness.

All parts are manufactured and assembled at the factory in Denmark by skilled and dedicated operators in a verified clean-room environment. The microphone diaphragm, body and unique protection grid are made of high-grade stainless steel and make the microphone set resistant to physical damage as well as corrosion caused by aggressive air or gasses.

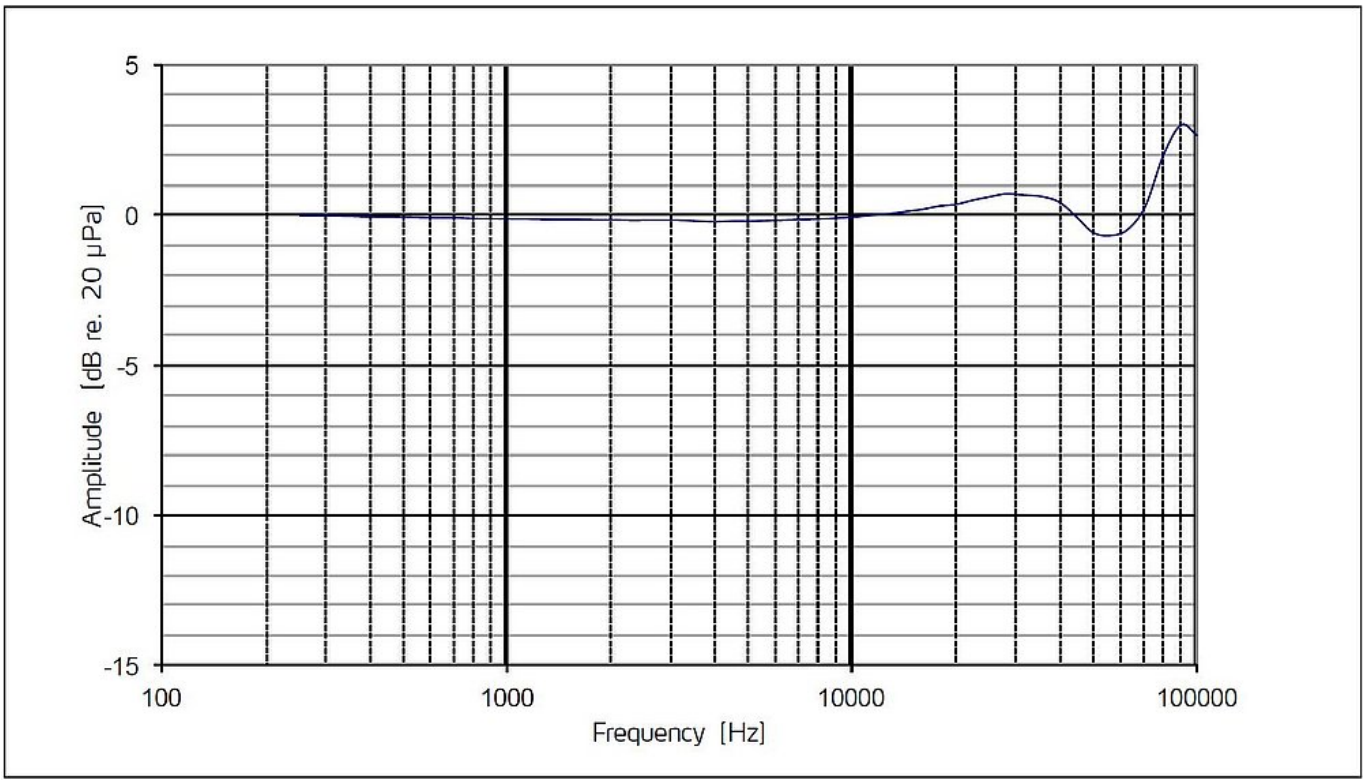
This, together with the enforced gold-plated microphone terminal guarantees a highly reliable connection. Thanks to the high quality, our warranty against defective materials and workmanship is 5 years.

Service

Should you by mistake damage the diaphragm on a GRAS microphone we will in most cases be able to exchange it at a very reasonable cost and short turn-around time. This not only protects your investment but also meets your quality assurance department since you do not have to worry about new serial numbers etc.

Specifications

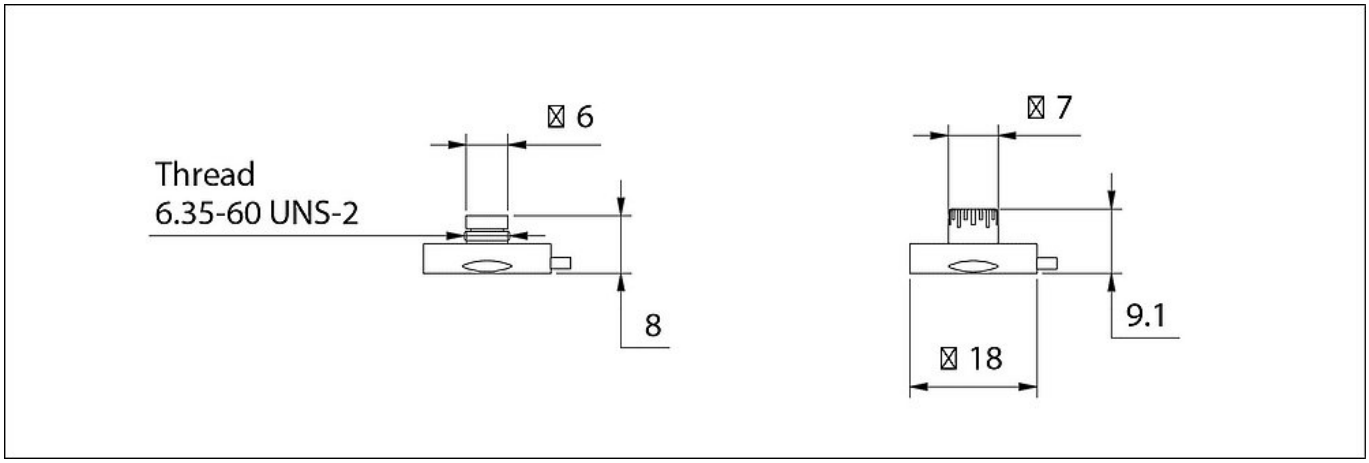
Polarization/Connection		0 V / CCP
Frequency range (±1 dB)	Hz	10 to 25 k
Frequency range (±2 dB)	Hz	4 to 70 k
Dynamic range lower limit (microphone thermal noise)	dB(A)	44
Dynamic range upper limit with GRAS preamplifier	dB	166
Set sensitivity @ 250 Hz (±2 dB)	mV/Pa	1.6
Power supply (Constant Current Power)	mA	2 to 10
Microphone venting		Front
IEC 61094-4 Compliance		WS3P
Output impedance	Ω	<50
Temperature range, operation	°C / °F	-30 to 70 / -22 to 158
Temperature range, storage	°C / °F	-40 to 85 / -40 to 185
Temperature coefficient @250 Hz	dB/°C / dB/°F	-0.01 / -0.006
Static pressure coefficient @250 Hz	dB/kPa	-0.008
Humidity range non condensing	% RH	0 to 100
Humidity influence on sensitivity (0-100% RH @ 25°C)	dB	<0.1
Influence of axial vibration @1 m/s²	dB re 20 µPa	66
TEDS (IEEE 1451.4)		27 v. 1.0
Connector type		Microdot 10/32
CE/RoHS compliant/WEEE registered		Yes/Yes/Yes
Weight	g / oz	7.5 / 0.265



Typical frequency response

GRAS Sound & Vibration reserves the right to change specifications and accessories without notice.

Dimensions



All dimensions in mm.

Ordering info

Included items

GRAS AE0046	Microdot - BNC male adapter

Optional items

GRAS 12AL	1-Channel CCP Power Module with A-weighting filter
GRAS 42AP	Intelligent pistonphone
GRAS RA0228	Pistonphone Calibration Adapter for 1/4" Flush-mount Microphone Sets
GRAS RA0302	Removal Tool for 1/2” & 1/4” Flush-mount Microphones
GRAS RA0502	Mounting Adapter for 1/4” Flush-mount Microphone Set
GRAS AE0074	BNC male to female adapter
GRAS AA0035	3 m BNC - BNC Cable
GRAS AA0037	10 m BNC - BNC Cable
GRAS CA0029	Traceable Calibration of Microphone Set
GRAS CA2301	Accredited Calibration of Microphone Set

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GRAS Worldwide

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About GRAS Sound & Vibration

GRAS is a worldwide leader in the sound and vibration industry. We develop and manufacture state-of-the-art measurement microphones to industries where acoustic measuring accuracy and repeatability is of utmost importance in R&D, QA and production. This includes applications and solutions for customers within the fields of aerospace, automotive, audiology, and consumer electronics. GRAS microphones are designed to live up to the high quality, durability and accuracy that our customers have come to expect and trust.

GRAS Sound & Vibration is represented through subsidiaries and distributors in more than 40 countries and is part of Axiometrix Solutions, a leading test solutions provider comprised of globally recognized measurement brands. Read more at www.GRASacoustics.com

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